# *Com-post-humanism: Implications for Foundation Phase Environmental Education in South Africa*

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Thesis Presented for the Degree of

DOCTOR OF PHILOSOPHY

in the School of Education

UNIVERSITY OF CAPE TOWN

University of Cape Town

February 2018

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# Acknowledgements

> This places the practice of acknowledgement at the top of the ethical agenda in scholarship (Braidotti, 2006a:175).

To my own four children and to Thando: for I learnt more from you than I could ever teach you.

To my husband: for supporting a wife who is forever studying or doing community work.

To the children of the school between the mountain and the sea: for your love and trust.

To their teachers and school principal: for your acceptance and cooperativeness.

To my supervisor, Professor Karin Murris: for your keen insight and guidance in complicated philosophical matters and for introducing me to ideas that have changed the way I make 'sense' of life.

To my 'academic' friends: for your willingness to be sounding boards for my ideas and proof readers of passages from my writing. Especially to Dr Carmen Blyth who is the best teacher and most widely read person I know.

# Dedication

I dedicate this thesis to my father, Willem du Preez, who sponsored my Master's and PhD studies and without whose financial assistance this thesis would not have been written.

# Com-post-humanism: Implications for Foundation Phase Environmental Education in South Africa

In early childhood education research (which includes Grade R and Grade 1 in the Foundation Phase in South Africa), posthuman frameworks are mostly used without explicitly making the connection to issues of climate change and environmental education/sustainability education. Within the context of the Anthropocene where natural and human forces are visibly entangled, this thesis draws on posthuman frameworks combined with multidisciplinary, place-conscious environmental education theories to inform research and educational practices. These theories are not motivated by a Western ideology or take for granted that Western theorists have the answers that all cultures should live by. These environmental theories and a posthuman praxis are always relational (nature-culture, body-mind, intellect-affect), have a flat ontology where human qualities are not at the centre of relationality and they explore the perceptual, cultural, ecological, and political dimensions of land/place. These theories eschew ideas of romantic (colonial) wilderness experiences and foster wider concerns of ecojustice, ecological thought and life processes that are also relevant to everyday (South African) urban living experiences. The following ‘(in)tension’ (imagining different futures in the midst of the frictions of research) is explored: How do posthuman environmental philosophies disrupt anthropocentric thinking and inform new ways of doing theory and practice for environmental education in South African schools in the Foundation phase? In(tension)s are supposed to disturb and provoke. During an eleven month period of practical exploration, ‘walking a world into being’ and encountering Grade R and Grade 3 lessons in a Cape Town urban government school, video recordings and intraviews provoked and disturbed all possibilities of ‘pre-knowing’. In an attempt to rework the post-human subject at the intersection of post-qualitative research and Anthropocene entanglement, posthuman ‘ethodologies’ (inspired by Deleuze & Guattari’s idea that research starts in the middle) were conceptualized. The idea of methods as processes of gathering ‘data’ changed to methods as ‘a-becoming-entangled-in-relations’. Methods became receptive of ethicopolitical matters and concerns as they happen. Rather than concluding with ontological certainties and

‘findings’, normative standards (a humanist curriculum and work books) are problematized and the suggestion that all education should be environmental, is offered. The thesis gestures towards a pedagogy of affective learning right across the curriculum with land, multispecies engagements and ‘storied matter’ as an affirmative and creative way to ‘stay with the trouble’.

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# Abbreviations and Acronyms

| | |
|---|---|
| ACRWC | African Charter on the Rights and Welfare of the Child |
| ANC | African National Council |
| AZAPO | Azanian People’s Organisation |
| CAPS | Curriculum and Assessment Policy Statement |
| CBD | Convention on Biological Diversity |
| CDR | Carbon Dioxide Removal |
| DBE | Department of Basic Education in South Africa |
| DST | Department of Science and Technology |
| ECE | Early Childhood Education |
| EE | Environmental Education |
| ESD | Education for Sustainable Development |
| ESE | Environmental and Sustainable Education |
| GITL | Guidelines for Inclusive Teaching and Learning |
| IK | Indigenous Knowledge |
| ILD | Index of Linguistic Diversity |
| IP | Intellectual Property |
| IPCC | Intergovernmental Panel on Climate Change |
| NCS | National Curriculum Statement |
| OBE | Outcome-based education |
| MIT | Multiple Intelligence Theory |
| MLE | Multilingual Education |
| NAAEE | North American Association of Environmental Education |
| NCATE | National Council of the Accreditation of Teacher Education |
| NCE | Nature Conservation Education |
| OOO | Object Oriented Ontology |
| SDG | Sustainable Development Goal |
| SRM | Solar Radiation Management |
| TEK | Traditional Ecological Knowledge |
| UNCRC | United Nations Convention on Children’s Rights |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| WCED | World Commission on Environment and Development |
| WCED | Western Cape Education Department |

| | |
|---|---|
| WESSA | Wildlife and Environment Society of South Africa |
| WWF | World Wide Fund for Nature |

# Chapter 1 Compost

## 1.1 Starting with the Trouble[1]

> In the decommissioned synagogue in Woodstock, Cape Town, South Africa, the double volume of the Whatiftheworld gallery opens up in gasps for breath as matter and meaning merge. The South African artist Sanell Aggenbach has created poetry from mycology – from snatches of flower and fungus, hybridised with metal, wood or resin in her 2017 exhibition. The 'poems' on the wall rootlessly sprout and weave hybrid plant-arms, tree-fingers and rayon hair, whispering of cultural disorientation, impermanence, a state of in-betweenness when one does not identify with one's cultural heritage anymore[2]… and of hope. Hope that pulses even through her still lives (Memory story, April, 2017).

Situating my research for this thesis was like standing in the Whatiftheworld gallery, overwhelmed and wondering where to start, which whispered hail to follow first in a hybrid multidisciplinary field... Taking advice from philosophers Gilles Deleuze and Felix Guattari as well as biologist Donna Haraway, I will start in the middle[3] and with the trouble[4] – with the biggest problem facing earth and her organisms today: How to live and be educated in a time of climate change and species extinction, how to learn to breathe within 'the roar of life'[5]. As environmental philosopher David Gruenewald pointed out fifteen years ago, "the signs are here: deforestation, global warming, species extinction, desertification, and all manner of toxification

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[1] Haraway uses the expression "staying with the trouble" in many of her works. She says: "Staying with the trouble does not require such a relationship to times called the future. In fact, staying with the trouble requires learning to be truly present, not as a vanishing pivot between awful or endemic [Garden of Eden] pasts and apocalyptic or salvific [leading to salvation] futures, but as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings" (Haraway, 2016:1).

[2] In a live interview with the artist (for a local radio station in Cape Town) she mentions that she (like me) finds it difficult to find her 'place' in her Afrikaner cultural heritage and feels as if she is living in liminality, on the threshold (Fmr Live Interview 5 April, 2017 at 13:35).

[3] Deleuze and Guattari talk about 'starting in the middle' when they refer to a rhizome and to 'a line of becoming' which are both important concepts in this thesis. Referring to a rhizome, they explain: "A rhizome has no beginning or end; it is always in the middle… it is about 'coming and going' rather than 'starting and finishing'" (Deleuze & Guattari, 1987:25). And referring to a line of becoming: "But a line of becoming has neither beginning nor end, departure nor arrival, origin nor destination…a line of becoming has only a middle" (Deleuze & Guattari 1987: 293).

[4] See footnote 1.

[5] The 'roar of life' refers to the last chapter where posthuman philosopher Rosi Braidotti refers to "the roar which lies on the other side of the urbane, civilized veneer" (Braidotti, 2013:55).

(Gruenewald, 2003b:40) and "'we' are all in *this* together[6]", as biologist-philosopher Rosi Braidotti expresses it (Braidotti, 2006a:119; original emphasis).

The Intergovernmental Panel on Climate Change (IPCC), the scientific body designated by the governments of the world to recommend solutions to the causes and effects of global warming, published a report in 2014 after a five year analysis of a vast archive of published climate research (Intergovernmental Panel on Climate Change, [IPCC] 2014). The report expresses grave concern that society remains far from having any serious policy to limit global warming and that adaptation and mitigation are constrained by among other things, "the inertia of global and regional trends in economic development" as well as "social and cultural attitudes and behaviours" (IPCC, 2014: 94). Unlimited greenhouse emissions caused by humans, will not only affect humans, it will cause massive species extinctions among our earth others (IPCC: 2014) which is already occurring at an alarming rate. Ironically, the human animal in general, (there has always been exceptions) only becomes alarmed when its own survival seems to be at risk.

Extinction is a natural phenomenon which has occurred over the last 5 mass extinctions on earth. It occurs at a background rate which is used by scientists to determine the 'unnatural' rate at which species extinction now occurs due to human action. According to scientists, "Current rates of extinction are about 1000 times the background rate. These are higher than previously estimated and likely still underestimated" (Pimm et al., 2014:1246752–1) since many species are still undescribed (unknown). Combined with the unpredictable impacts of climate change, prediction and modelling of species extinction is a complex undertaking. Despite this, in a recent study some scientists were able to declare:

> The evidence is incontrovertible that recent extinction rates are unprecedented in human history and highly unusual in Earth's history. Our analysis emphasizes that our global society has started to destroy species of other organisms at an accelerating rate, initiating a mass extinction episode unparalleled for 65 million years (Ceballos et al., 2015:4) [and] These estimates reveal an

[6] Braidotti uses this phrase to indicate our interconnectedness of everyone and everything on earth and to demonstrate the compatibility of an ethics of sustainability with an ethics of care (Braidotti, 2006a:119).

exceptionally rapid loss of biodiversity over the last few centuries, indicating that a sixth mass extinction is already under way (Ceballos et al., 2015:1).

To make matters worse, acute habitat fragmentation can exacerbate the situation – according to Pimm et al., (2014:1246752–4), since "[t]heory predicts" that habitat fragmentation could cause even higher extinction rates. Geophysicist Daniel Rothman claims that accruing modern ocean uptake of carbon, in other words "anthropogenic disturbance of the carbon cycle" may "lead to mass extinction if they exceed either a critical rate at long time scales or a critical size at short time scales" (Rothman, 2017:1). According to Rothman's hypotheses, "all scenarios for cumulative uptake at the century's end either exceed or are commensurate with the threshold for catastrophic change" (Rothman, 2017:4).

Yet, in the face of all the evidence, there are still those who deny human involvement in the change of earth's climate and species extinctions. Educationalists and sustainability researchers Karen Malone and Son Truong put it like this: "…these anthropocentric perspectives of 'human exemptionalism' and 'human exceptionalism' have led us to this very point where the planet is facing climate change, mass extinctions, and a host of other unsustainable beliefs and practices dominated by political and social discourses of how to 'manage' the environmental crisis" (Malone & Truong, 2017:5).

Anthropocentric changes to the surface of the Earth, its oceans, its cryosphere, its ecosystems, and its climate are now so fast and extensive that the concept of a new geological epoch defined by human activity, has been suggested by geologists (Crutzen, 2002; Zalasiewicz et al., 2008, 2014, Waters, 2016). They suggested calling it the Anthropocene[7]:

[7] Anthropocene: 'The Age of Man.' The age of the Anthropocene implies that humans have become a geophysical force that wrought significant stratigraphic changes in the structure of the earth, operating from within nature. The term 'Anthropocene' has been used by Russian scientists in the 1960's, but in the sense that we use it now, it was first applied by Eugene Stoermer and popularised by atmospheric chemist Paul Crutzen. In *Science* (January 2016) it was suggested that the era since mid-20th century should be recognised as the epoch of the Anthropocene (Waters et. al., 2016 http://science.sciencemag.org/content/351/6269/aad2622). The term Anthropocene has become a conversation about the place of the human in the web of life. Historian and ecologist Jason Moore, drawing on Voosen 2012, calls it "an argument wrapped in a word" (Moore, 2017:594).

> A case can be made for its consideration as a formal epoch in that, since the start of the Industrial Revolution, Earth has endured changes sufficient to leave a global stratigraphic signature distinct from that of the Holocene or of previous Pleistocene interglacial phases, encompassing novel biotic, sedimentary, and geochemical change (Zalasiewicz et. al., 2008:4).

A reason for the human-induced species extinctions and geochemical changes to the planet was suggested by historian Yuval Noah Harari: Homo Sapiens suddenly moved from the middle of the food chain to the top where its powerful position was increased first 10 000 years ago through agriculture and then the last 500 years through the industrial revolution and the subsequent use of fossil fuels (Harari, 2015). This seems to indicate that environment (animals we tamed, interacted with and consumed, plants we cultivated, altered and consumed and fossil fuels we extracted) had an influence on this jump to power and the changes in human 'culture' from out of and as part of our 'nature'. According to Harari, the human animal's sudden jump to power, did not give the ecosystem time to adjust (Harari, 2015). This is in line with what geophysicist Daniel Rothman believes: "Extinction is not simply a result of environmental change but is also a consequence of failure of the evolutionary process to keep pace with changing conditions in the physical and biological environment" (Rothman, 2017:1). The evolutionary process also did not seem to give Homo Sapiens time to adjust to its position of power. As quoted in Harvard Magazine, biologist E.O. Wilson remarked: "The real problem of humanity is the following: we have paleolithic emotions; medieval institutions; and god-like technology" (Wilson, 2009[8]). Despite clever developments in natural sciences and philosophical endeavours, species extinctions and the geochemical changes to the planet are the two strongest indications of Homo Sapiens' inability to understand, foresee or control its own nature or the nature (biological or as forces) of its environment. This has powerful implications for natural sciences, humanities and education – finally material proof for the predictions and speculations which shows how everything and everyone is entangled and equally part of nature. There is no

[8] This quote came from a public discussion between Wilson and James Watson, moderated by NPR correspondent Robert Krulwich (see ref list) and published in Harvard Magazine on 9 October 2009. Available: https://harvardmagazine.com/breaking-news/james-watson-edward-o-wilson-intellectual-entente

divide between our ‘natural’ and human histories. It is a warning that we must enter into partnerships with our environment and our earth others, this time without exploitation or destruction. The whole planet reaps the unfortunate results of the humanist ‘master’ legacy and hierarchical structure of matter and life with Man as the measure of all things (from Plato, Aristotle and the Old Testament through to Renaissance Man and the 17$^{th}$ century Cartesian mind/body dualism of Descartes). But there were other ways of living and thinking all along. Some Eastern, African, Native American and Proto-Indo-European[9] philosophies had non-dominating relationships (see chapter 2) with their environments. Baruch Spinoza’s 17$^{th}$ century monist Nature/God philosophy inspired the more recent relational philosophies of Alfred North Whitehead, Henri Bergson, Gregory Bateson, Gilles Deleuze and Felix Guattari. A new generation of critical posthuman/new materialist and environmental philosophers followed, who are critical of the hierarchical structure that justifies human action and dismisses other perspectives. These philosophies and philosophers did not need to wait for scientific ‘evidence’ of species extinction and a declared ‘Age of the Anthropocene’ – their philosophies already implicitly carried non-anthropocentric, non-hierarchical and non-exploitative values. What kind of values lend itself to exploitation of others and environment? According to environmental author Naomi Klein, ample research has shown that “having politically conservative or ‘hierarchical’ views and a pro-industry slant makes one particularly likely to deny climate change” and even more studies show that “materialistic values” are connected to carelessness about the environment (Klein, 2014:60). Psychologist Tim Kasser and biologist and change strategist Tom Crompton link values such as “achievement, money, power, status and image” to “more negative attitudes towards the environment” and find that people with those values[10] are “more likely to use natural resources unsustainably” (Crompton & Kasser, 2009:10). But perhaps when we pull on these ‘values’, they might rhizomatically reveal a link to another part of the trouble. Historian and ecologist Jason Moore argues that the main drivers of the age of the Anthropocene is not only processes like industrialization, urbanization and population growth but the effects of Cartesian dualism: “As with Descartes, the separation of humans from the rest of nature appears as self-evident reality. In its

[9] PIE: See glossary of meaning

[10] In posthumanism ‘identity’ is not seen as something fixed, but entangled and always emergent in relationships – like Deleuze and Guattari’s “lines of becoming” (Deleuze & Guattari, 1987:239).

simplest form, this philosophy locates human activity in one box, and the rest of nature in another" (Moore, 2017:603). He believes "Anthropocene thinking" has little awareness of these roots because it is "captive to the very thought structures that created the present crisis" (Moore, 2017:604). Which leads to a necessary discussion of the Cartesian nature/culture divide.

## 1.2 The nature/culture divide

To "overcome decades of sedimented ontologies – settled ideas, lived constructs and understandings" (Rautio, 2017:94) we need to attend to the trouble caused by the nature/culture divide, inherent in it also the body/mind, social/science and the art/science divide. Ironically, it is new 'scientific' concepts that confirm creativity as inherent in all life forms and not limited to human culture. The fundamental scientific principle on which the current view of nature is based – quantum theory which includes quantum superposition[11], string theory and the network theories called M theory[12] – all point to what physicists Stephen Hawking and Leonard Mlodinow call "spontaneous creation" in the universe: "Spontaneous creation is the reason there is something rather than nothing, why the universe exists, why we exist" (Hawking & Mlodinow, 2010:180). Quantum theory also banished the doctrine of scientific determinism as quantum mechanics introduced "an unavoidable element of unpredictability[13] or randomness into science" (Hawking, 1988:56). String theory first made waves in the early 1970's and has implications across many fields of physics, theoretical mathematics and cosmology. Although up to now it has "failed to live up to its promise as a way to unite gravity and quantum mechanics," according to science journalist K. C. Cole, it has "blossomed into one of the most useful sets of tools in science" (Cole, 2016:1). How does string theory differ from traditional particle physics in how it understands the fundamental nature of matter and the human as part of this nature? According to physicist Lisa Randall, "the most

[11] According to the quantum superposition approach to quantum theory, also called "alternative histories" the universe does not have "just a single existence or history but rather every possible version of the universe exists simultaneously in what is called a quantum superposition" (Hawking & Mlodinow, 2010:59).

[12] M theory is a 'fundamental' network theory which incorporates different string theories and supergravity as "different approximations" of this fundamental theory (Hawking & Mlodinow, 2010:116). See glossary of meaning for more.

[13] According to physicist Karen Barad, "the so-called uncertainty principle in quantum physics is not a matter of 'uncertainty' at all, but rather of indeterminacy" (Barad, 2003:814).

basic indivisible objects underlying all matter are strings – vibrating, one dimensional loops or segments of energy" and "string theory's radical hypothesis is that particles arise from the resonant oscillation modes of strings" (Randall, 2006:283). Particles arise from one underlying string and its vibrations – relations become objects. Randall continues: "Because of the many ways in which strings can vibrate, a single string can give rise to many types of particle (Randall, 2006: 283). Quantum physicist and philosopher Karen Barad understands all quantum theory as "relational ontology" (Barad, 2007:352). Her comprehensive study of the work of philosopher-physicist Niels Bohr[14], leads her to a posthuman elaboration of his work which "honors Bohr's deeply naturalist insight that quantum physics requires us to take account of the fact that we are part of that nature which we seek to understand" (Barad, 2007: 352). According to Barad, Bohr also "calls into question the related Cartesian belief in the inherent distinction between subject and object, and knower and known" (Barad, 2003:813). So, quantum physics as interpreted by the above physicists does not constitute a nature/culture divide. Let us now call on the other philosophers:

Brian Massumi refers to Baruch Spinoza as one of those "orphan line of thinkers" rediscovered by Gilles Deleuze (Massumi, 1987: x) and indeed, Spinoza was orphaned from his religious and Portuguese origins as a Sephardic Jew living in Holland (November 1632 – February 1677). As neuroscientist Antonio Damasio explains, Spinoza's ideas of God as Nature and Nature as God and substance, went directly against what René Descartes (and the church) proclaimed at the time, where the human body was associated with feeling and nature, inferior to the mind which was associated with the capacity to reason and to find God through the disembodied mind (Damasio, 2003:209–220). Spinoza however, firmly places the body and embodied experience back in a place of relational importance and not on a hierarchical scale of Cartesian thought (Spinoza, 2002:255). According to Spinozist scholar Michael Morgan, "perspective" was of utmost importance for Spinoza since in his monist, unified world, our experience of that world is always only a perspectival one (Morgan, 2002:ix). Spinoza saw all of creation (human, animal, plant, stone) as modes of the same substance (God/Nature) with the only difference

[14] Danish physicist Niels Bohr was the 1922 Nobel Prize winner for his quantum theory.

between these modes, its degree of striving to preserve itself, its conatus (Spinoza, 2002:283). Spinoza once again firmly keeps body and mind entangled in his proposition 14 as he explains how in a nomadic way, we are able to perceive and experience: "The human mind is capable of perceiving a great many things and this capacity will vary in proportion to the variety of states which its body can assume" (Spinoza, 2002:255). There is only one substance in Spinoza's world view, made up of the various attributes of which the human possesses the modes of thought and extension (body and mind). This is how we can perceive the world – different ways of understanding the same things. The human mind is therefore "not granted unique ontological status" (Dahlbeck, 2015:3), but works together with the body as part of one mode and its perspectives. Like Hawking and Mlodinow, who saw 'spontaneous creation' in the universe, philosopher Henri Bergson understands Life as "endlessly continued creation" (Bergson, 1998:178). To him intuition is "sympathetic communication between us and the rest of the living" – it expands our consciousness and helps us to "grasp what it is that intelligence fails to give us… it introduces us into life's own domain" (Bergson, 1988: 177,178). Mathematician-philosopher Alfred North Whitehead argues against theories that tend to "bifurcate nature into two divisions" (Whitehead, 1964: 30) which are "nature apprehended in awareness and the nature which is the cause of awareness" (Whitehead, 1964:31). He explains these two sides of the same coin as follows:

> The nature which is the fact apprehended in awareness holds within it the greenness of the trees, the song of the birds, the warmth of the sun, the hardness of the chairs, and the feel of the velvet. The nature which is the cause of awareness is the conjectured system of molecules and electrons which so affects the mind as to produce the awareness of apparent nature (Whitehead, 1964:31).

Whitehead argues for no bifurcation – not nature versus culture, but human culture as part of its nature. Anthropologist-philosopher Gregory Bateson expresses his concern about the ingrained notion that we are a separate species from the rest of nature in more emphatic terms: "It is the attempt to s*eparate* intellect from emotion that is monstrous and I suggest that it is equally monstrous – and dangerous – to attempt to separate the external mind from the internal. Or to separate mind from body" (Bateson, 1987:470; original emphasis). The reason why he calls it

‘monstrous’ and ‘dangerous’ becomes clear when he continues: “We are learning by bitter experience that the organism which destroys its environment destroys itself” (Bateson, 1987:491). Historian and ecologist Jason Moore believes that the “violence inscribed in Nature/Humanity” has been there for a long time – first the “expulsion of many humans from their homes during the rise of capitalism”… and then the “expulsion of many from Humanity” (Moore, 2017:600). He classifies this last group as “mostly women [and children] most peoples of color and virtually all Amerindian peoples were excluded from full, often even partial membership in Humanity” (Moore, 2017:600). Environmental philosopher Val Plumwood accounts how the domain of ‘nature’ in the past was understood as the “more primitive forms of the human [which] included women and supposedly backward or primitive people [and children?]” with their “supposed deficit in rationality” (Plumwood, 2003:52). Today the realm of nature is mostly thought of as the ‘non-human’ realm although a culture of re-ordering, controlling or overcoming this ‘less-than-rational’ realm is still a lingering colonial legacy. Plumwood expresses it like this:

> a culture of rational colonization in relation to those aspects of the world, whether human or non-human, that are counted as ‘nature’ is part of the general cultural inheritance of the West. An encompassing and underlying rationalist ideology applying both to humans and to non-humans is thus brought into play in the specific processes of European colonization (Plumwood, 2003:53).

The nature/culture divide is thus mostly an inheritance from the West and is still lingering in coloniality/neo-colonialism[15]. As mentioned in the previous section, some Eastern, African, Native American and Proto-Indo-European[16] philosophies had non-dominating relationships with their environments and never saw themselves as separate from nature. These philosophies and indigenous ways of knowing will be discussed throughout this thesis. According to philosopher Francesca Ferrando, “[h]istorically, the posthuman can be seen as the philosophical approach which suits the informal geological time of Anthropocene” (Ferrando, 2013a:23), since the posthuman on the one hand decenters the human as main focus point and the

[15] See glossary of meaning
[16] PIE: See glossary of meaning

Anthropocene points to the evidence of humanity's negative effect on a planetary level.

We will now turn to posthumanism – the main navigational tool that will inform environmental education in this thesis to find out why this is an appropriate framework in order to compost a 'Whatiftheworld' of hope during an age now called the Anthropocene and Capitalocene[17] – and an age that biologist-philosopher Donna Haraway calls "the scandals of times and exterminating forces" (Haraway, 2016:2) when "the earth is full of refugees, human and not, without refuge" (Haraway, 2015:160).

## 1.3 Posthumanism

There are two ways in which posthumanism is a 'post': It is a 'post' to the idea of the 'human' as a white male of Western descent and it is a post to "the historical occurrence of 'Humanism', connected to a hierarchical social construct based on anthropocentric assumptions" (Ferrando, 2013a:25). The boundaries of what is considered 'human' and what is considered 'other' have mostly been moved over the years, except for some religion-informed cultures where 'woman' is still part of 'other' (one example being the old Dutch Reformed Church with which my own earth-bound history is entangled). But what I find still universally and firmly entrenched in the 'other' of Western culture, is animal/plant/stone and 'child'. According to posthumanist educator Candice Kuby, the 'post' in posthumanism "for most scholars is not to signal 'after the human,' but as a way to decenter the human" (Kuby, 2017:2). She gives a useful overview of the posthumanist movement:

> This posthumanist movement is referred to by several names, each with distinct yet overlapping features and histories, such as feminist materialism (Alaimo & Hekman, 2008; Barad, 2007, 2008), new materialism (Coole & Frost, 2010), neo-pragmatism (Rosiek, 2015), and while not new, Indigenous ways of knowing and being (Tuck,

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[17] Historian and ecologist Jason Moore argues that "capitalism is premised on the separation of Humanity and Nature" (Moore, 2017:600). The Capitalocene is "the 'age of capital' – the historical era shaped by the endless accumulation of capital" (Moore, 2017:596) and it is "an unusual combination of productive and necrotic violence defines capitalism… it drives extinction" (Moore, 2017:597). Also see *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (2016, PM Press) edited by Jason Moore.

> 2015; Wall Kimmerer, 2013). Some scholars are even re-entering Deleuze and Guattari's poststructural writings in posthumanist ways (Kuby & Gutshall Rucker, 2016; Leander & Boldt, 2013). In the field of education, researchers of mathematics (de Freitas & Sinclair, 2014) and most prominently early childhood education (Kuby & Gutshall Rucker, 2015; Kuby, Gutshall, & Kirchhofer, 2015; Kuby & Gutshall Rucker, 2016; Davies, 2014; Holmes & Jones, 2016; Hultman & Lenz Taguchi, 2010; Lenz Taguchi, 2010; Murris, 2016; Poststructural; posthuman; early childhood writing; ontology Pacini-Ketchabaw, Taylor, & Blaise, 2016; Sellers, 2013; Somerville & Green, 2015; Thiele, 2015a, 2015b) are at the forefront of this 'more than human ontology' movement (Kuby, 2017:2).

Philosopher Fransesca Ferrando (2013b) teases apart the origins, similarities and differences among all the strands of 'posthumanism' that may cause confusion among the uninitiated. Whereas critical posthumanism also explores science and technology it does not limit itself to that, but rather explores the interconnectedness of life itself. I am attracted to Nathan Snaza and John Weaver's very open definition of posthumanism: "What if the human doesn't have to be the measure? We would call 'posthumanist' any thinking that responds to *this* question" (Snaza & Weaver, 2015:6). They claim that a growing number of texts that can be understood as "posthumanist", could "reconfigure" education (Snaza & Weaver, 2015:1, 3). In its decentring of the human, posthumanism also addresses the nature/culture divide where 'culture' (perceived as belonging to the human animal exclusively) entitled it to its place of superiority. Posthumanist Rosi Braidotti warns that "[w]hereas the body cannot exist in isolation from its surrounding totality, the mind is capable of thinking itself as an autonomous substance" (Braidotti, 2006a:149) resulting in a body/mind split. Yet her posthumanism is pro-active and affirmative, not anti-humanist – which is how posthumanism is also understood in this thesis. Braidotti describes Posthumanism as "the historical moment that marks the end of the opposition between Humanism and Anti-humanism and traces a different discursive framework, looking more affirmatively towards new alternatives" (Braidotti, 2013:37). This affirmative understanding of Life through Posthumanism is one of the important features in this thesis. An affirmative understanding of life does not

mean however that positivity or joy becomes a simplified logic or failure to acknowledge the arguments of dark ecologists[18].

According to Timothy Morton, dark ecology has to do with coming to terms with our ecological reality of coexistence with other entities in and through and around us, a self-awareness, the recognition of ourselves as hyperobjects[19]/a geophysical species which can be dark and depressing and scary. It is also an awareness and recognition of our role in the destruction of the planet and it is not pleasant. Andrew Culp goes a bit further and in *Dark Deleuze* (Culp, 2016) he argues that contemporary Deleuze scholarship tends to be "connectivist and productivist" but Culp sees world destruction instead of positive connectivity (Culp, 2016:66, 67) – not a very hopeful picture. I am with Braidotti who claims: "Hope is a way of dreaming up possible futures: an anticipatory virtue that permeates our lives and activates them" (Braidotti, 2013:192).

Candice Kuby helps to place Deleuze and Guattari in the posthuman paradigm: "We [scholars] came to know posthumanist scholarship by way of poststructural readings, specifically of Deleuze and Guattari. For us, poststructuralism was a paradigm that helped us focus on what is produced unlike an interpretivist paradigm that focuses on what an interaction means" (Kuby, 2017:5). The production of difference is also embedded in the 'diffraction' metaphor of biologist Donna Haraway, later built on by physicist Karen Barad and this time not only as metaphor. Barad remarks that the "representationalist trap of geometrical optics" (the same image between two mirrors which produces nothing new) needs to be discarded and using "physical optics" as model, she moves to "questions of diffraction rather than reflection" (Barad, 2003:803). Geometrical optics does not account for the nature of light and this is where Barad's quantum physics illustrates diffraction through the interference patterns of light, sound or water waves. Barad does not call herself a posthumanist, but Kuby uses her production or difference in what she calls her "agentic in-between-ness" that produces newness to further her argument that the philosophical and quintessential shift in posthumanism "e/affects both practices and pedagogies in classrooms as well as research methodologies and methods" (Kuby, 2017:2). She

[18] See Dark Ecology in glossary of meaning.
[19] See glossary of meaning.

argues: “The agency doesn’t lie in the human (nor the nonhuman) but in the in-between-ness of humans with the material world” (Kuby, 2017:2).

Transhumanism takes humanism even further in their crucial goal of human enhancement through mainly science and technology (Hayles, 2011, Ferrando, 2013b) and “ultra-humanistic endeavours” (Ferrando, 2013b:27). The transhuman movement is not part of my posthumanist praxis[20] in this thesis. According to Ferrando, critical posthumanism (I will simply call it posthumanism) “offers a unique balance between agency, memory and imagination” (Ferrando, 2013b:32). Posthumanists also draw on the work of Karen Barad and her “ethico-onto-epistemology” – the interweaving of ethics, knowing and being (Barad, 2007:90) in a relational ontology. The very open definition of posthumanism for the purposes of this thesis (where the human is not the measure) includes ‘feminist new materialism’, where matter is re-inscribed as a process of materialization, to a large extent in reaction to representationalism and constructivism (Barad, 2003). Awareness of how the material world affects us does not negate the importance of the linguistic, it merely helps to “theorize the social and the natural together” (Barad, 2007:25).

Object Oriented Ontology (OOO) is also not included in my understanding of posthumanism. In her critique of OOO, posthumanist and ecocultural theorist Tracey Alaimo claims that “[a]lthough OOO intends to level various entities, putting the human on the same ontological plane as other ‘objects,’ the human voice is the only thing we hear” (Alaimo, 2016:178). New materialist Iris van der Tuin also finds incompatibility with OOO and she argues that a posthuman understanding “neither places the Subject in the centre nor attempts to remove it like OOO does, but rather opts for a proper placing of subject, object and instrument in an agential and material-discursive environment” (Van der Tuin, 2014:235). According to ecocritical philosopher Serpil Oppermann, posthumanism is “like a perturbed middle space where many crisscrossing discourses mingle to consolidate a non-anthropocentric humanism, and to negotiate the ‘boundaries of posthuman concern, whether they are moral, political or cultural’” (Oppermann, 2016:274 drawing on Miah, 2008).

[20] See glossary of meaning.

A posthuman praxis is dynamic, nomadic and reconciliatory yet *without new* hegemonic 'politically correct' exclusivist thought patterns. An important comment by Donna Haraway (and she does not call herself 'a posthumanist') is that "our people" – and here she talks about 'us' as anti-capitalists, anti-imperialists, anti-neoliberalists, non-sexist, non-racialist and very, very 'open-minded.' Yet, she says, we

> can be partially compared to some Christian climate-change deniers: beliefs and commitments are too deep to allow rethinking and refeeling. For our people [the so-called left] to revisit what has been owned by the right and by development professionals [such as criticism of] the 'population explosion' can feel like going over to the dark side (Haraway, 2015:164).

The context in which Haraway is making this statement, is in 'our' reticence to talk about the population explosion as part of 'staying with the trouble' because it reminds us of capitalists, imperialists and neoliberalists and we as posthumanists are 'above all that'. Social theorist Brian Massumi's warning is perhaps a timely reminder here: "beware of philosophies that tout themselves in overly serious apocalyptic or messianic terms as the be-all and end-all of philosophy. These philosophies need a small dose of the modesty of the plant and a heavy dose of the playfulness of the animal to give them an enactive reflexive distance on their own importance" (Massumi, 2014:54). And Haraway asserts: "I am a compost-ist, not a posthuman-ist: we are all compost, not posthuman" (Haraway, 2015:161). That we are all part of what composts Earth and its beings, is an important concept in this thesis as is suggested in the title. As compost-ists, we now turn to what is embedded in the term 'sustainability education' and discuss why this term was substituted for 'environmental education'.

## 1.4 Sustainability Education or Environmental Education?

> Rather, we wonder why environmental educators should be satisfied with such meagre aims as sustainable development and the Earth Charter when education can offer so much more and potentially more radical engagement with socioenvironmental issues (Jickling & Wals, 2013:84).

Environmental education researcher Arjen Wals seems to have changed his mind about 'sustainability education' from being negative about it (Jickling &Wals, 2008) to being positive about it between 2009 and 2012 (see more detail about his disagreement with his friend Jickling in chapter 8.3) to admitting that sustainability education is not good enough as in the above quote (Jickling & Wals, 2013:84), to suggesting a reversion to "environmental *and* sustainability education" (ESE) (Wals, Weakland & Corcoran, 2017:74; my emphasis).

Environmental educator Christine Winter accounts how in the Brundtland Report (produced by representatives of 22 countries and chaired by Norwegian Prime minister Brundtland in 1987) it was decided to integrate 'environment' and 'economic development' through the concept of "global sustainable development" (Winter, 2007:337). According to Winter, the Brundtland Report is still committed to "a western model of economic development" which relies on "economic growth, industrialization, marketization, consumerism and individualism" (Winter, 2007:338). This begs the question of how this kind of capitalist development could be reconciled with sustainability goals since it is one of the underlying reasons for our current environmental problems. The nature/culture divide is also built into this report with its definite divide between human and non-human. Neoliberal politics is supposed to save us from our environmental woes and humans are "privileged and entrusted to take responsibility for ethical stewardship and use of the non-human elements of the world" (Winter, 2007:340). In a history of the field of Environmental Education, researcher Annette Gough (2013; 2015[21]) describes how, despite unhappiness among environmental educators about the term 'education for sustainable development' the shift in terminology from 'environmental education' to 'education for sustainable development' took place at the United Nations Conference on Environment and Development at Rio de Janeiro in 1992 (Gough, 2013:13). The terminology was reinforced at the World Summit on Sustainable Development in Johannesburg South Africa in 2002 and eventually became official in the United Nations Decade on Education for Sustainable Development 2005–2014.

It should be clear by now that 'education for sustainable development' is a contested term. Environmental education researchers Bob Jickling and Arjen Wals argue that

[21] Gough's 2013 chapter was again summarized in her 2015 work on posthumanism and education.

when using the term 'education for sustainable development', education is seen as an instrument to convince or make people act in a certain way and it has carried "educational prescriptions" from its inception under the auspices of "common interest" (Jickling & Wals, 2013:77). According to environmental educator Lesley Le Grange, this is a form of indoctrination which is in fact anti-educational (Le Grange, 2011: 744) and could "reinforce a resourcist, neoliberal perspective where environmental education becomes a tool for consumerism and unbridled economic growth" (Le Grange 2011: 743). Ecofeminist Val Plumwood expresses concern that the "often-invoked term 'sustainability' tends to obscure the seriousness of the situation" of ecological change (Plumwood, 2002:1). Jenny Ritchie, an early childhood educator in Indigenous Knowledges, remarks that indigenous peoples who hold alternative understandings, find the term 'sustainable development' a contradiction in terms since indefinite exploitation is unsustainable (Ritchie 2013:35). Ecofeminist Stacey Alaimo also expresses discomfort with the word 'sustainability' when linked with what she calls 'socionature' (nature/culture). I share her doubt as to whether it is possible to recast 'sustainability' in such a way that it "ceases to epitomize distancing epistemologies that render the world as resource for human use" (Alaimo, 2016:169). Yet, some educators try to do just that. Jickling and Wals re-introduces (2013:78) a "four quadrant heuristic[22]" first developed in Jickling and Wals (2008:10) to illustrate how sustainable development and education could be conceptualized. Quadrant 1 is a "Big Brother Sustainable Development" of "extreme state control" (Jickling & Wals, 2013:78). Quadrant 2 entails participatory approaches to learning "yet it also tilts toward transmissive goals[23]" (Jickling & Wals, 2013:78). Quadrant 3 entails socio-constructivist and/or transformative goals "moderated by authoritative approaches to teaching" and both quadrant 2 and 3 involve a "feel good sustainable development – limited, by (possibly) false control… freedom bounded by development." (Jickling & Wals, 2013:79). They then work towards a Quadrant 4: "Enabling thought and action – beyond sustainable development" where it would be "counterproductive to build a sustainable development fence" around this kind of education (Jickling & Wals, 2013:80). Their position is eventually that "…we work from the position that

[22] See figure 1.1 for Jickling and Wals' quadrant.

[23] Transmissive goals are based on the transferral of facts, skills and values to learners. "Content and learning outcomes are predetermined and prescribed by a small group of experts" (Jickling & Wals, 2008:7)

sustainable development and the Earth Charter can be seen as just one of many stepping stones in environmental thought…” (Jickling & Wals, 2013:84).

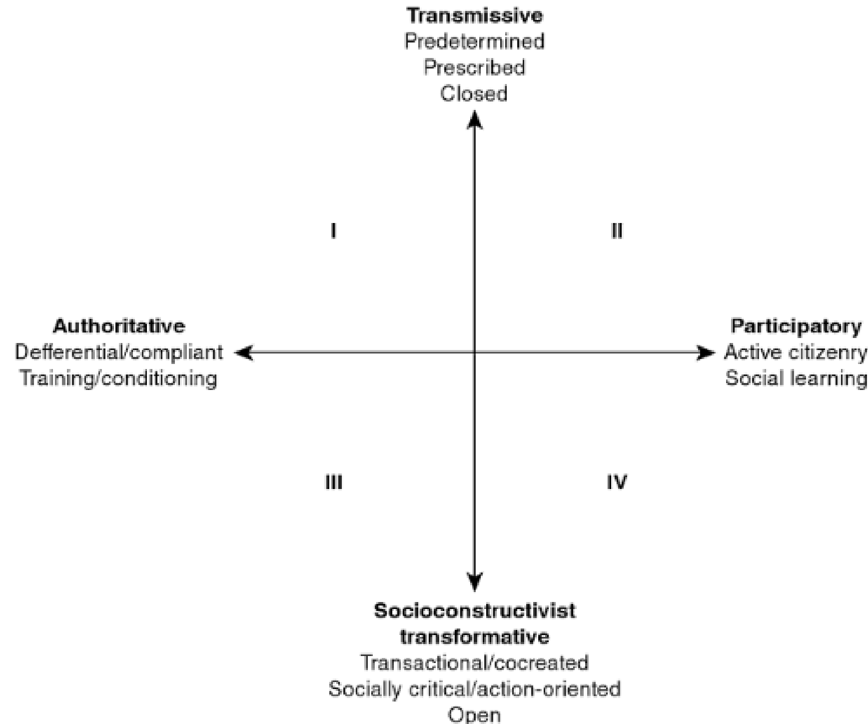


***Figure 1.1*** *Positioning of Ideas about "acquisition of ideas about education and/or ethics" alongside the social role of the "citizen" (Based on Jickling and Wals, (2008:77).*

Specifically tackling problems in Higher Education, educators Heila Lotz-Sisitka, Arjen Wals, David Kronlid and Dylan McGarry, articulate the complexity, cross-disciplinarity and ambiguity of sustainability concerns as “wicked problems” (2015:73) and of an “indeterminate and boundary crossing nature” (Lotz-Sisitka, Wals, Kronlid & McGarry, 2015:73) that involves “learning” which “requires ‘hybridity’” (Lotz-Sisitka et al., 2015:75). The ideas of hybridity, indeterminacy and boundary crossing are of course nothing new in posthumanism and in Barad’s/Bohr’s philosophical ‘indeterminacy’ view of quantum physics (see section 1.2 and 1.3). Wals, Weakland and Corcoran propose a table, also with four quadrants of “historical perspective of education in relation to people and planet” in their 2017 article in a Japanese educational journal (Wals, Weakland & Corcoran, 2017:74). This table was adapted from Wals 2012[24] and they do indicate that these perspectives do not necessarily follow a linear historicity, as they are often in use simultaneously.

[24] Wals, A. E. J., 2012. Learning our way out of un-sustainability: the role of environmental education. In *Oxford Handbook on Environmental and Conservation Psychology*. S. Clayton Ed. London: Oxford University Press.

Their quadrants take us from the left quadrant – nature conservation education (NCE), to environmental education (EE), to education for sustainable development (ESD) and finally to the far right quadrant – environmental *and* sustainability education (ESE). Their main focus block in the far right quadrant (ESE) entails everything that is also in ESD but adds "connecting with place and the non-human world (deepening of relations)" more attention to agency and critique of and going beyond unsustainable practices (Wals, Weakland & Corcoran, 2017:74). In the impact column they envision this to be a "transition towards a more relational way of being in the world and a society based on values and structures that make sustainable living the default" (Wals, Weakland & Corcoran, 2017:74). Their time column indicates the present (2017). They conclude: "We are envisioning a future of environmental and sustainability education that operates very much in the right hand column of Table 1" (Wals, Weakland & Corcoran, 2017:75).

My question is just: Why still bother when posthumanism had gone beyond 'the far right quadrant' many years ago?

In another article, Wals, Weakland and Corcoran propose a 'post-Anthropocene period' which they call 'The Ecoscene' – "a geological epoch during which Earth enters a long relatively stable period where life on Earth is in a state of a dynamic equilibrium and homo-sapiens lives by a so-called flat ontology, recognizing that all species are exceptional" (Wals, Weakland & Corcoran, 2017:73). They acknowledge that we are not nearly there yet but suggest that "energy and innovation" should be "paired with some kind of planetary consciousness and underpinned with values and ethics that move Earth closer to the post-Anthropocene" (Wals, Weakland & Corcoran, 2017:73). This is partially in line with how posthumanism understands a post-anthropocene period but their aside "let us assume that we have still plenty of time to get there or somewhere else that may turn out to be more sustainable" is troubling. Where might they go that is 'more sustainable' – Mars? It is the human lifestyle that is unsustainable, not the place[25].

[25] Also see chapters 4 and 5 about the 'earthbound' human, drawing on Latour's 2013 Gifford lectures.

| | Nature Conservation Education (NCE) | Environmental Education (EE) | Sustainability Education (SE) | Environmental and Sustainability Education (ESE) |
|---|---|---|---|---|
| **Starting period** | Late 19th century, early 20th century | Late 1960-ties, early 1970-ties | Early 1990-ties, end of the DESD (2014) | Present |
| **Main focus** | Connecting with nature, understanding web-of-life, protecting species, raising awareness, knowledge and understanding | Raising environmental awareness about pollution of water, soil and air. (note: there are forms of critical EE that resemble the focus and impact of SE) | Increasing citizen engagement, participation in sustainable development issues and increasing their understanding of the connections between environment, economy, culture and ecology and how today's actions affect future generations | As under SE but also: connecting with place and the non-human world (deepening of relations) as well as attention for both agency (learning to make change) and the critique and transgression of unsustainable societal structures. Global citizenship and local identity. |
| **Intended impact** | Ecological literacy, societal support-base for nature conservation through national parks | Changing individual environmental behaviors, developing agency and societal support for environmental legislation | A more holistic or integrated approach of dealing with issues around water, food, energy, poverty, biodiversity in governance, education, business. | A transition towards a more relational way of being in the world and a society based on values and structures that make sustainable living the default. |
| **Examples** | Visitor centers in National Parks, Public awareness campaigns, nature programs in schools, school gardening | Environmental education centres in cities, Public awareness campaigns, school curricula, teacher training | Multi-stakeholder platforms focusing on sustainable development issues, Whole institution approaches to sustainability, Corporate Social Responsibility | Brokering learning and engagement within transitions: Intentional communities such as ecovillages, transition towns, whole school approaches, local food movements, shared economies, cradle-to-cradle design. |

***Table 1.2*** *A historical perspective of education in relation to people and planet. From Wals, Weakland and Corcoran, (2017:74).*

Yet, after all that has been said, posthumanist Rosi Braidotti embraces the possibilities for the concept of sustainability, arguing that what it stands for is "a regrounding of the subject in a materially embedded sense of responsibility and ethical accountability for the environments she or he inhabits" (Braidotti, 2006a:ix). She proposes a nomadic philosophical framework for sustainability for the age we are living in. Only from this nomadic, relational and interconnected approach, does Braidotti see the ethics of sustainability to be compatible with the ethics of care, where "'we' are in this together" (Braidotti, 2006a:119). Influenced by Deleuze and Guattari, she has a Spinozist embodied understanding, not an abstract understanding of sustainability. I prefer to use the term 'environmental education' in this thesis, except where the term 'sustainable education' is used by other writers, see e.g. (Davis, 2009:227; Somerville & Williams, 2015:105) since it is an accepted and widely used term. In this section, the differences between environmental education and sustainability education has been discussed in general and it included primary to Higher education. Educator David Orr's comment: "All education is environmental education" (Orr, 2004:59) will also be given attention in this thesis and commented on in chapter 8.2. The next section explores Early Childhood Education as an

important part of Foundation Phase education in South Africa and therefore an integral part of this thesis.

## 1.5 Early Childhood Education (ECE)

Environmental Education in the Foundation Phase in South Africa (Grade R to Grade 3) could be regarded as part of Early Childhood Education[26] in the rest of the world where ECE tends to indicate ages between 0 and 8 years old. In South Africa some children are still 8 years old in Grade 2. It is therefore relevant to take note of the latest survey of the literature on 'Sustainable Education in Early Childhood' conducted in 2015. This survey replicates methods used by educationalist Julie Davis in her 2009 study of global literature on Sustainable Education in Early Childhood, in which she reported a "research hole" (Davis, 2009: 227) that needed to be addressed. She surveyed studies published in seven Environmental Education journals and seven Early Childhood Education English speaking journals over a period of 12 years. In conclusion of her 2009 study, Davis emphasized the need for research "that gives consideration of the capabilities of young children, their teachers and carers and the learning environments in which they operate" (Davis, 2009:239). Since its publication, there has been an increase in general public awareness of human-induced climate change. Also, following the major report by the European Panel on Sustainable Development (EPSD) in 2010, (see previous section) environmental education has officially been redefined as sustainability education encompassing three areas of knowledge which apart from environment, also includes society (human rights, human security, etcetera) and the economy (reduction of poverty, participation of corporate world) (European Panel on Sustainable Development [EPSD], 2010:29). So with new environmental policies in place and a new name for environmental education, researchers in Education, Margaret Somerville and Carolyn Williams revisited the same journals and updated the 2009 survey, using a 5 year survey period and adjusting the results. They discovered "a doubling of the number of articles on environmental/sustainability education in these mainstream journals" (Somerville & Williams, 2015:105) which points to the growing research interest in the field. Not every aspect of these studies can or need to be addressed here, but important for this thesis is that they found that the

[26] In South Africa ECE tends to be associated only with the 0 – 4 year age group.

theoretical discourses informing the research articles in their survey could be categorised as: ‘Connection to Nature’, ‘Children’s Rights’ and ‘Posthuman frameworks’ (Somerville & Williams, 2015:109). The first category (Connection to Nature) does not include the social and economic dimensions of sustainability education and draws on positivist/empirical frame/interpretative frameworks. There seems to be a romantic child-nature connection without questioning core meanings of words like ‘nature’ and ‘environment’ and which seems to be separated from the human social world (Somerville & Williams, 2015: 109). Somerville and Williams observe that it would be beneficial for these studies to take account of global issues and discourses as well as issues of children’s rights. In the second category of the 2015 survey (Children’s Rights) educators seem to hold the belief that children have agency of their own and should be able to express opinions on global environmental issues that involve them. Although the papers seem to promote children-led research, they instead use traditional methods of ‘data collection’ and analysis. Somerville and Williams suggest that more should be done in these studies to connect global issues to local place by combining theory and practice. The third category of studies, those drawing on posthuman frameworks, all experiment with ways to remove nature/culture boundaries in early childhood research, yet only five of these studies focus on environmental or sustainability education specifically. Somerville and Williams also include studies with indigenous understandings of nature/culture in this category, which were mostly informed by the bi-cultural treaty based New Zealand national curriculum as well as those informed by Western philosophies and critical animal studies (Somerville & Williams, 2015:110). They believe this field of posthuman frameworks “has much to offer research about sustainability education in early childhood” and specifically refer to “place as a linking theoretical framework”. Here they refer to the work of Affrica Taylor’s commonworlds pedagogies (Taylor, 2013; Taylor, & Pacini-Ketchabaw, 2015a), the use of intra-action as concept to research child/nature relationality as well as “practitioner inquiry” methods within the same posthuman frameworks (Somerville & Williams, 2015:110). They found that articles examining national curricula in the field of sustainability in early childhood education, were all based on the Australian Early Years Learning Framework and the bi-lingual and bi-cultural nature of the New Zealand early childhood curriculum (Somerville & Williams, 2015:111). Reading through the Australian and New Zealand articles mentioned in their survey,

I was reminded how different their circumstances are from natureculture situations in South Africa and more specifically in Cape Town. The African Charter on the Rights and Welfare of the Child (ACRWC 1990, entered into force 1999) 'rectified' the fact that The United Nations Convention on the Rights of the Child (UNCRC 1989) did not include "responsibilities of the child". Although the UNCRC is seen by many educators as a step in the right direction, it is also described as "still developmental" by early childhood educator and posthumanist Karin Murris (Murris, 2016:82) and of an "individualistic nature" which "decontextualizes children from their socio-economic, linguistic, cultural and historical environments" which is of concern to posthumanists who see posthuman child as "relational" (Murris, 2016:84). Does the African Charter (ACRWC, 1990) perhaps present a more relational child? Or does it only imply that there are pre-conditions to the freedom of the child? In many indigenous African traditions child is seen as "communal child[27]" (Murris, 2016:109) who belongs to the whole community or village and their beliefs need to be inculcated in the child. Article 31 of The African Charter on the Rights and Welfare of the Child has the following six responsibilities of the Child built into it:

> Article 31: Responsibility of the Child
>
> Every child shall have responsibilities towards his family and society, the State and other legally recognized communities and the international community. The child, subject to his age and ability, and such limitations as may be contained in the present Charter, shall have the duty;
>
> (a) to work for the cohesion of the family, to respect his parents, superiors and elders at all times and to assist them in case of need;
>
> (b) to serve his national community by placing his physical and intellectual abilities at its service;
>
> (c) to preserve and strengthen social and national solidarity;

[27] Murris describes "communal child" as one of the figurations of child with the African philosophy of Ubuntu as one of the theoretical influences. Child lacks social relationships, norms and values by nature and this needs to be provided by the elders through socialisation and inculcation (Murris, 2016:109).

> (d) to preserve and strengthen African cultural values in his relations with other members of the society, in the spirit of tolerance, dialogue and consultation and to contribute to the moral well-being of society;
>
> (e) to preserve and strengthen the independence and the integrity of his country;
>
> (f) to contribute to the best of his abilities, at all times and at all levels, to the promotion and achievement of African Unity (ACRWC1990:14).

In chapter 7.5 the South African classroom implications of these responsibilities are explored.

We have eleven official languages and although our population is mainly black African, urban communities are of mixed race. Urban African (White and Black) children have different hopes and aspirations from their parents and grandparents and 'harking back' to either tribal or old European values that are not adapted to postmodern/posthuman (African) times will be unproductive. This will be discussed further in chapters 3 (Makang's idea of 'living tradition') and chapters 7 and 8.

To illustrate the importance of ECE, Wals uses a quote by Robert Fulghum – "wisdom is not at the top of the graduate school mountain, but there in the sandbox" (Wals, 2017:158). Yet, he claims that "[p]resently by and large, education from Early Childhood Education onwards appears to be eroding basic predispositions for relational caring ways of being in the world" (Wals, 2017:158), which is quite a shocking prospect in an age of climate change and species extinction. In chapters 4 and 5 of this thesis the child's 'innate' attraction to animals and their ability to accept the agency of the 'more than human' world is discussed. But what other 'predispositions' is Wals talking about when he argues that "there are a lot that adults can learn from children when it comes to sustainability" (Wals, 2017:159)? He emphasizes the child's "innate relational way of being in the world" (Wals, 2017:160) as an important predisposition that should be cultivated and expanded in ECE. He then lists some of the "qualities or features of learning environments" that will be "conducive to both the well-being of children, adults and other species" – spaces that "'breathe' sustainability… empathy, agency and care" (Wals, 2017:161):

> (1) living by example by being caring in how they act; (2) dialogical engagement—seeking open dialogue and interactions that invite empathy and appreciation that do not lead to a predetermined intended outcome; (3) space for experimentation—creating safe contexts for children to try things out and apply their agency; (4) confirmation and reinforcement—giving positive feedback (Wals, 2017:161)

Wals also attests to the importance for children to encounter "a multiplicity of different worlds by crossing boundaries” and by “bodily experiences that strengthen their relationality with the human, the non-human and the material” because it is through these meetings that children develop “agency, care and empathy”, which he calls, “foundational for a world that is more sustainable than the one currently in prospect” (Wals, 2017:162, 163). These qualities are all already embedded in a posthuman educational praxis as we will discuss in the next section. It also points to the fact that perhaps all education should be environmental. And again – it is not the ‘current world’ but ‘current human culture’ that is unsustainable. This seems to be one of the basic misconceptions in sustainability education.

## 1.6 Posthuman Child

Despite ample examples of ‘histories of the present’ and the metaphysical roots of Early Childhood theory (starting with Plato and Aristotle) which are found in literature review sections of books[28] it has been argued that environmental education lacks “comprehensive theories of childhood that might challenge dominant trends in education theory and policy” (Russel, 2009:623). One such a challenge of dominant trends has been provided by philosopher of education Andrew Stables (Stables, 2008) arguing for example that fundamental human rights are “simply violated by compulsory schooling” (Stables, 2008:131 drawing on Holt 1974). Stables also touches on posthumanism (Stables, 2008:165) and believes that instead of identity, difference is of more importance (Stables, 2008:119), but his focus on individual rights and freedoms are not in line with a posthumanist relational approach.

[28] See for example Andrew Stables’ comprehensive account of the history of early childhood theory in *Childhood and the Philosophy of Education: An anti-Aristotelian perspective*. (Stables, 2008).

The importance of relational pedagogical practices is a salient thread throughout *The Posthuman Child* (Murris, 2016), an important work with a posthuman praxis, focused on teacher training in early childhood and primary education. Instead of listing a number of qualities or features or a framework that will foster and develop "agency, care and sympathy" (Wals, 2017:162) in children, Karin Murris argues that posthumanism "does not offer just another 'conceptual' framework for teaching and research from which educators can *choose*" from other available options (Murris, 2016:121) since posthumanism is a way of living and breathing with all earth others, influencing everything we do and choose. In that sense, in a posthuman praxis, ontology, epistemology and ethics are never separated but considered an "ethico-onto-epistemology" as Barad calls it (Barad, 2007:90). The nature of "being, knowing and valuing" as configured in "analytic philosophical traditions" separate ethics, ontology and epistemology (Barad, 2007:409) but in a posthuman praxis these are intertwined. In the first chapters of her book Murris meticulously reveals how "the nature/culture dualism affirms the adult/child binary" but then maintains that these dualisms and binaries are "ontologically redundant in posthumanism as a navigational tool" (Murris, 2016:121). Murris uses the nature/culture dichotomy as "apparatus" for her mapping instead of the usual linear historical mapping in her quest to create "something new" (Murris, 2016:129). For her, accommodating difference is not an individualist, human rights-based affair as implied in Stables (2008:127–135), but a "forever becoming and moving, exposing increasingly fine nuances of difference in being, knowing and doing" (Murris, 2016:121, drawing on Dolphijn and Van der Tuin). Deleuze and Guattari's idea of knowledge as a rhizome is employed to conceptualize a rhizomatic curriculum where "*difference* rather than *sameness*" is the focus of learning (Murris, 2016:174).

Drawing on Barad, early childhood educator Lenz Taguchi, argues that an ethics of immanence in education is an ethics that is concerned with the intra-actions[29] between human and nonhuman, all in processes of "*mutual engagement and transformation*" (Lenz Taguchi 2010:176). This also brings mutual responsibility in the way in which we affect and are being affected. Drawing on Deleuze, she emphasizes that we have to look for the virtual possibilities of the child, not defining

[29] Karen Barad coined the neologism intra-action in her 1996 work and explains it as "the mutual constitution of entangled agencies" eschewing the idea that there are separate, pre-determined agencies before the entanglement takes place as is assumed in the term 'interaction' (Barad, 2007:33).

the child by its limitation but by its ability to affect and be affected. She defines an ethics of immanence and potentialities as one that goes beyond divides in education, is transgressive and affirmative of change and development in an evolutionary and creative way in co-existence with everything else (Lenz Taguchi, 2010:177). One of the ways in which she suggests the teacher or researcher practises an ethics of immanence and potentialities is through "becoming-minoritarian" (Lenz Taguchi 2010:172). This means that instead of looking at the child from a lesser-valued position and giving child a voice, we become child, change ourselves and become transformed through becoming aware of the intra-activities taking place around us. Traditional educational philosophies have positioned Child as unknowing, irrational and immature and this has been critiqued by many early childhood educators and theorists (Olsson, 2009; Lenz Taguchi, 2010; Oswell, 2013; Davies, 2014; Murris, 2016). According to Murris, immaturity has become an umbrella term for a period in a human's life that is lacking: lacking cognitive ability, moral responsibility, emotional independency and rationality" (Murris, 2016:112). There is a connection between desire as 'lack' (see chapter 8.4.3) when linked to developmental psychology. Through definitions of children's desires as 'lacks' and 'needs', developmental psychology "repress and tame children's desires into already defined schemas of development" (Olsson, 2009:143). This label of 'lack' is "morally offensive and the injustice of its use causes anger" (Murris, 2016:112). Many people carry childhood injustices (and anger) with them, often unwittingly reacting out of those experiences of injustice and anger until the day they lay down their human identities. Murris believes that especially in the South African discourse context, where child is often referred to as "'poor', 'disadvantaged' and 'attending under resourced schools' the figuration of *all* our children being rich and resourceful has a strong appeal" (Murris, 2016:124). Yet, as Olsson warns, 'competent child' should not become another new hegemonic 'attribute' of childhood – one should rather avoid defining the child at all (Olsson 2009:13) and to Murris the key is "how any inhuman becoming (instead of human being or child) is capable of actively constructing knowledge through materialdiscursive relationships (Murris, 2016:163). Sociologist of childhood, David Oswell argues that instead of asking questions about identity and difference, we should ask questions about children's lives and what they experience to appreciate the agency of children (Oswell, 2013:6). Bronwyn Davies, in her 2017 study (it was first published in 1982) recorded children's own accounts

of what was happening in the classroom and on the playground and what their own interests, desires and questions were about (Davies, 2017:1). Davies talks about the "double world of Childhood" and claims that children belong to their own 'culture' which is different from that of the adult:

> They are also interested to learn what the adult has to tell them about the adult world. At the same time however, they prefer it if the adult can be sensitive to the adult child rules they have already gone to some trouble to learn *and* can be sensitive to the fact that their membership in the culture of childhood is a serious membership… (Davies, 2017:170, 171).

Although a very interesting and respectful account, my problem with 'separate cultures' would be that it creates another dichotomy and again lumps 'child' into a distinct category. There are so many children who will not adhere to or 'fit into' this specific 'culture of child' and then what are they – 'other'?

## 1.7 Indigenous ways of knowing

Incorporating our rich indigenous knowledges (indigenous ways of knowing) into the field of education has been discussed by various South African, Southern African and African scholars over the years: O'Donoghue and Neluvhalani, 2002; Higgs, Higgs and Venter, 2003; Maila and Loubser, 2003; O'Donoghue, 2003; Enslin and Horsthemke, 2004; Mokuku and Mokuku, 2004; Van Damme and Neluvhalani, 2004; Gough and Gough, 2004; Shava, 2005, 2013; Neluvhalani, 2007; Breidlid, 2009; Glasson, Mhango, Phiri and Lanier, 2010; Orlove, Roncoli, Kabugo and Majugu, 2010; Cloete, 2011; Mokuku, Ramakhula and Jobo, 2012/2013; Chanza and De Wit, 2013; Castiano and Mkubela, 2014; Kayira, 2015; Kalenga, 2015.

### 1.7.1 Terminology and renewed interest

Indigenous Knowledge (IK) which is also always indigenous 'environmental' knowledge (since indigenous people[30] never experience themselves as separate from their environments) is understood as "place-based knowledge, rooted in local cultures, and mostly associated with long-settled communities, which have strong ties to their natural environments" (Chanza & De Wit, 2013:205, drawing on Orlove

[30] For a description of the term 'indigenous people', see glossary of meaning in thesis.

et al., 2010). The very term 'Indigenous Knowledge' is a contentious one for various reasons: It is seen to be an unjust representation in relation to formalized Western knowledge systems (Shava, 2013:384) and the living dynamism that is inherent in indigenous ways of knowing is not represented in Western systems (O'Donoghue & Neluvhalani, 2002). Also, the word 'knowledge' implies "clear characteristics and reification as a thing or object", yet when understood as "dynamic epistemological processes of 'in-context knowing'" the concept 'indigenous ways of knowing' is more productive (O'Donoghue & Neluvhalani, 2002: 122). Similarly, educational researchers Lynette Masuku Van Damme and Edgar Fulufhelo Neluvhalani argue that we should rather focus on the *processes* of indigenous ways of knowing (the living dynamism) in educational systems and that distinguishing between 'indigenous' and 'western' as different kinds of knowledge is "ridiculous and counterproductive" (Van Damme & Neluvhalani, 2004:364).

According to Shava (2013) and Chanza and De Wit (2013) the renewed interest in indigenous ways of knowing in the past two decades is the result of having lost faith in Western science as the only solution to climate change and environmental degradation. Environmental education researcher Soul Shava admits that Western science "does not provide all the answers…" and sometimes gives the 'wrong' answers… "like agrochemicals threatening species biodiversity" (Shava, 2013:387). There is another reason for the renewed interest – indigenous people themselves are experiencing IK as "a form of resistance, search for identity and origin, a struggle for freedom from historical marginalization by dominating knowledge discourses" (Shava, 2013:387) – an interest in what wa Thiong'o calls "the right to name the world for ourselves" (Shava, 2013:389).

### 1.7.2 Inclusion and Scientific validation

Despite issues about the term 'Indigenous Knowledges' (IK) its inclusion into mainstream international environmental and developmental discourse officially happened during the 1992 Earth Summit in Rio de Janeiro and was taken up in the Rio Declaration and the Earth Charter (Shava, 2013:385). According to environmental geographer Nelson Chanza and geoscientist Anton De Wit the Intergovernmental Panel on Climate Change (IPCC), a United Nations group that provides authoritative international communication on the scientific understanding of

climate change, "fully recognises IK as a strategy in mitigation and adaptation" since it has been included in its Fourth Assessment Report (IPCC, 2007) in a special section on IK (Chanza & De Wit, 2013: 206). Chanza and De Wit mentions that "[i]t has also been argued that the incorporation of IK in climate change could lead to the development of interventions that are pragmatic, cost effective, participatory and sustainable" (Chanza & De Wit, 2013: 206). The words 'cost effective and 'sustainable' raise some concerns that I hear reflected in Soul Shava's comments on the prominence of IK in many of these 'conventions'. He claims they are

> very instrumental and technicist in that they are perceived as mainly utilitarian in value and as a resource waiting to be extracted, documented or data-based, codified, abstracted, decontextualized, institutionalized, commodified, universalized and widely applied. This restructures and reorients indigenous knowledges into compartmentalized Western knowledge disciplines and somehow paradoxically runs counter to the holistic and process-oriented nature of indigenous knowledges recognized by the same international conventions. This process also reveals the 'scientization' of indigenous knowledges which is how modern global institutions now assimilate indigenous knowledges into their own discourses (Shava, 2013:386).

This 'instrumental' and 'utilitarian' approach to IK that Shava refers to smacks of neoliberalism and capitalism which is known *not* to have 'environmental protection' as core priority (Tuck & McKenzie, 2015:3).

But what are the core priorities of indigenous knowing? Educationalist Rosemary Kalenga explains that the three 'processes' of IK are empirical observations, traditional teachings and revelations. Since traditional teachings include teachings imparted and revealed in dreams, visions and intuitions which "cannot be quantified, measured or observed, by physical means [it] is thus dismissed by Western research" as being 'unscientific' although in indigenous societies "these three sources are considered as equally valid and interconnected" (Kalenga 2015: 3).

Environmental education researchers Annette and Noel Gough make a distinction between "shallow multiculturalism" and "deep inclusivity" and argue for deeply

inclusive approaches in environmental research in South Africa (Gough & Gough 2004:414). This issue seems to have been taken up by researchers in South Africa. For example *The Southern African Journal of Environmental Education* and *Indilinga – African Journal of Indigenous Knowledge Systems* offer evidence of new research methodologies and frameworks for IK in South Africa. Chanza and De Wit argue that "this neo-indigenismo – the belief that indigenous knowledge has something to offer – faces numerous problems, unless it is framed within a robust epistemological and methodological configuration" (Chanza & De Wit, 2013:204). They suggest qualitative research as the most appropriate for IK and phenomenology and case study methodologies for the use of IK in climate science (Chanza & De Wit, 2013:208) and then a "framework of epistemological and methodological paradigms appropriate to IK research can be developed" (Chanza & De Wit, 2013:209). They claim that "failure to fully embrace an appropriate framework" will give rise to the following problems:

> IK can be viewed as unscientific, and therefore easily rubbished; IK may remain untapped, and fail to give practical directions to policy implementation; Generators or sources of the knowledge might remain transmogrified and subjugated; the approach would not be ethical in an African context; and IK could be facing a natural demise (Chanza & De Wit, 2013:209).

I fail to see the problem with 'IK can be viewed as unscientific'. Those who 'rubbish' something because it is not 'scientific' cannot make a contribution in times of climate change and species extinction. I therefore do not share Chanza and De Wit's fear that "unless fully scientificated" (Chanza & De Wit, 2013:204) and "embedded in an appropriate epistemology and methodology" (Chanza & De Wit, 2013:213) IK will not have any value. Rather, I am reminded of philosopher of science, Isabelle Stengers, drawing on Gilles Deleuze:

> In order to resist the figure of the tree, we have first to consider that not everything can exist in scientific milieus, because not everything may have the role demanded by the creation of a 'representation' in the particular scientific sense conferred on it, the role of putting to the test the way it is represented, made present by scientists (Stengers, 2012:3).

Indigenous knowing has a different role to play from knowledge available in 'the West,' its role is not a scientific one – because it is not only a representation of life.

### 1.7.3 Indigenous languages

A contentious issue that Chanza and De Wit did not touch on, is that unsuccessful mother/father-tongue medium instruction has an impact on the re-appropriation of indigenous knowledge in educational environments (Breidlid, 2003:95; Van Damme & Neluvhalani, 2004:366). Since indigenous knowledge is embedded in oral and cultural traditions and when translated into the western tradition of textual research, authors (consciously or not) might be forced to 'perform' their indigenousness as they write their papers (Gough & Gough, 2004:410). They explain this, using an example from the book of South African novelist J.M. Coetzee where the main character in the book addresses a Nigerian author, about Africans writing for the West:

> Whether they like it or not, they have accepted the role of interpreter, interpreting Africa to their readers. Yet how can you explore a world in all its depth if at the same time you are having to explain it to outsiders? It is like a scientist trying to give full, creative attention to his investigations while at the same time explaining what he is doing to a class of ignorant students (Coetzee, 2003:51 as quoted by Gough & Gough, 2004:410).

So that is what Gough and Gough mean with the statement that indigenous writers have to 'perform' their indigenousness as they write.

Educational philosopher Anders Breidlid, although from Oslo in Norway, makes a very important statement in his research on educational policy documents in South Africa and what he says is relevant for chapters 6 and 7 about the language of instruction in South African schools. Breidlid writes:

> Historically, due to the Bantu education system, the mother-tongue instruction was seen by most black people as inferior and as excluding blacks from mainstream society. This historical bias is a major impediment to the successful implementation of mother tongue medium instruction. Our experience from the fieldwork in the Western and Eastern Cape was that there was very little

> understanding of using L1[31] as medium of instruction among black teachers and parents after grade 4. Not even in the rural areas in the Eastern Cape was there a great deal of opposition to the English model among the Xhosa teachers we interviewed. The typical response was that English was a must if one was to succeed in the new South Africa. This 'folk wisdom' is in line with what we observed earlier: the various tools of the dominant group are deemed to be important in order to cope in that world. Even though the emphasis on English is historically determined (at least in relation to Afrikaans), it underlines an important point: the dominant ideology seems to have succeeded in the socialisation process of the school population, even though the data here may seem somewhat contradictory and confusing (Breidlid, 2003:95).

The insistence by South African parents that their children should be instructed in English (although only 8.2% of mother/father tongue speakers in South Africa are English as discussed in chapter 8.2) is still firmly in place[32]. This is very unfortunate when indigenous languages are not seen as good enough for the 'neo-classical elite.' Breidlid quotes South African educational philosopher Neville Alexander (2000:97) when he claims: "[I]t is an indisputable fact that in the post-colonial situation, the linguistic hierarchy built into the colonial system led to knowledge of the conquerors' language becoming a vital component of the 'cultural capital' of the neo-classical elite" (Breidlid, 2003:97). Ironically in this case, the language of the Apartheid Regime oppressors (Afrikaans, an indigenous language) was not the same as the language of the 'conquerors' that Alexander is talking about (which is English).

### 1.7.4 Practical examples

Educational researchers José Castiano and Queeneth Mkabela explore the practicalities of inclusion of 'local knowledge' into the curriculum of one of South Africa's neighbouring countries, Mozambique. The body responsible for curriculum development at national level in Mozambique, the National Institute for Development of Education (NDE) defines local curriculum as "the component of the National Curriculum that corresponds to 20% of the total time allocated for the

[31] L1 medium instruction is 'mother or father-tongue instruction.'

[32] See chapter 7 and 8 for interviews about why children are sent to an English language of instruction school.

teaching of each subject… composed of contents that is locally perceived as relevant for the integration of the child in its respective community" (Castiano & Mkabela, 2014:29). Here 'community' encompasses parents, local leaders, community organizations, children, local government and religious organizations. All these role players can define what should be taught in schools in the 20% of 'local curriculum' time. The reason why this local curriculum was introduced in basic education, was according to the Mozambican Ministry of Education "to educate the future citizens to use the local knowledge in their communities to improve their own quality of life, that of their families, their communities and the country at large" (Castiano & Mkabela, 2014:29). Teachers themselves had to gather the information to be taught in the schools and express and assimilate it into the work plans – a task which requires of the teachers "pedagogical skills…and most importantly, a sense of social responsibility in selecting the contents" (Castiano & Mkabela, 2014:34). An "integration table" was provided by the NDE to the teachers to guide them in the integration of the collected content (Castiano & Mkabela, 2014:34). But what are the challenges associated with this process?

There seems to be many challenges, for example different understandings of the subject 'Music' in the curriculum. In the Western sense 'music' is mostly "isolated or abstracted from its dance and physical energy that is spent when people dance the song" and according to Castiano and Mkabela, that is why local/traditional dances fall under 'Physical Education' or 'Sport' in many curricula and not under 'Music' (Castiano & Mkabela, 2014:33). Dance, which is so much part of indigenous understanding of music, might be classified as an extra-curricular activity. But the main challenge Mozambique faced in introducing this curriculum, according to Castiano and Mkabela, was "to train teachers that are no longer teachers only, but also researchers" (Castiano & Mkabela, 2014:37). Teachers need to conduct interviews in local communities and use mostly oral narratives and information that is not available in written form, which might cause "methodological problems" (Castiano & Mkabela, 2014:37). They explain how the last phase of the implementation of the local curriculum involves official validation by a District Commission but that this final phase has not been satisfactory since "in practice it has been a juxtaposition of the two kinds of knowledge which means it continues to be a 'silent co-existent'" (Castiano & Mkabela, 2014:34). This still keeps IK

knowledge peripheral to the "formal and modern knowledge and values" (Castiano & Mkabela, 2014:37). They elaborate on the kind of competences teachers should acquire in teacher education institutions to deal with this kind of local curriculum. Teachers should be able to:

> reflect on the relation between culture and education; organize different forms of the community involvement in school affairs; define learning competences according to the local contents; collect information in context of oral culture; elaborate a plan for data collection and a questionnaire to undertake interviews at the community level (methodology of the community-based research); select 'relevant' contents to improve the quality of learning and teaching; include the relevant contents according to the different learning objectives in different subject; elaborate 'didactic texts' out of the 'relevant' contents; apply specific strategies of inclusion in classroom situations; and evaluate the local contents according to the competences defined by the 'national' curriculum for basic education (Castiano & Mkabela, 2014: 35, 36).

This is a huge task required from teachers on top of everything else they do. Teachers will be "the centre of this symbiosis between 'universal' and 'local' knowledge and, even more so, the creators of (new) knowledge" (Castiano & Mkabela, 2014:38). Which brings us to a discussion of the hybrid third space.

### 1.7.5 Hybrid third space

Drawing on Bhabha (1994) environmental education researchers George Glasson, Ndalapa Mhango, Absalom Phiri and Marilyn Lanier (2010), and Jean Kayira (2015) discuss 'the hybrid third space' and its implications for environmental education. Kayira explains that the concept of hybridity "challenges the validity and authenticity of any essentialist identity" (Kayira, 2015:115) which is a very western concept [the essentialist identity one] and instead it honours the "in-between-ness of culture and identity" (Kayira, 2015:114). This third space is not only a space of reflection, but rather one of production of the new and of new possibilities, one of inclusion and not exclusion. In conferring meaning together in the third space, we are able to "move away from privileged, authoritative discourse by providing indigenous cultures with improved access to Eurocentric science, while at the same time validating the local

communities' own ways of understanding nature" (Glasson et al., 2010:128). In this way, learning in the hybrid third space means that "crossing cultural borders is a two-way versus a one-way journey" (Glasson et al., 2010:129). This is picked up again in chapter 4.6 on 'crossing borders'. The next section considers the South African curriculum in relation to IK.

### 1.7.6 South African Curriculum

Concern had been expressed that although the new South African curriculum acknowledges indigenous knowledge, ideological tensions in South Africa's Curriculum (2005 in this case) seem to come from "location of indigenous cultures in the midst of a modernist and market driven curriculum" (Breidlid 2003, quoted in Van Damme and Neluvhalani 2004:357). Since then, the South African Curriculum has been revised in 2009 and implemented in 2012. Ideological tension still seems to exist in the curriculum, as is pointed out in chapter 8. The curriculum acknowledges local identities and the importance of place, yet these concepts are situated within a curriculum that espouses neither and is market-driven and modernist. In South African Foundation Phase[33] subject knowledge about the environment is not the most important aspect of environmental education, but rather the nurturing of self-respect and respect for human and earth others. IK with its different knowledge systems of storytelling, place-based- and intra-generational information exchange between grandparent and child might be the perfect place to incorporate indigenous ways of knowing, As Van Damme and Neluvhalani state: "As schools and other educational institutions are institutions of the modern state, situated within communities in which learners' homes and everyday life experiences are based, we argue that the two should engage one another in generative and relational ways that shape ways of knowing that do not create 'schizophrenic citizens' who find no room for what they learn at school in their homes and vice versa" (Van Damme & Neluvhalani, 2004:368). In chapter (8.3), I discuss whether a specifically (South) African indigenous philosophy for environmental education is needed over and above the other indigenous knowledges that have been discussed throughout this thesis (chapters 2, 3, 4, 5 and 6).

[33] In South Africa 'Foundation Phase' means Grade R to Grade 3.

## 1.8 Natureculture and the importance of Composting

I have an ethical-ontological problem with the (now popular in specialist literature) use of the word 'natureculture' which usually implies human culture and excludes the cultures of other species. The argument that 'everything is natureculture' and there is 'no nature out there' becomes a hegemonic, deeply anthropocentric notion that usurps and assimilates and gives humans the right to see their artefacts as part of nature since it arises from their 'naturculture' and with this self-entitlement "humans have crawled or secreted themselves into every corner of the environment" (Bennett, 2010:116). According to environmental researcher Deborah Bird Rose, nonhuman beings have and live by, culture – they have their own foods and ways of finding it, their own ways to communicate, socialize and they have their own ceremonies of courtship or shows of aggression (Rose, 2013:100). Even plants have their own culture in which they thrive and it is not part of their culture to be dug out and re-planted in shopping centres, neither is it part of lion culture to live in zoos. Human culture has overridden the 'natural world' and it is seen as acceptable – after all, we are part of this natural world and it is part of our natureculture to live with plastic even if it ends up in the bodies of animals. We therefore need to be specific when we talk about natureculture. Do we talk about human natureculture or do we talk about the culture of the rest of nature as well, since as Rose reminds us, "It is a multi-cultural world from inside the earth right on through" (Rose, 2013:100). Especially during times of survival this becomes an important issue for all life on earth. A culture that takes into account all that lives and breathes should include everything that living beings primarily need to survive: air, sun, water and other living beings. Human artefacts like plastic, which are part of our environment, are not primary sources for survival. The irony of human natureculture and its effect on the natureculture of the rest of earth's beings became tangible for me during the 2017 Cape Town water restrictions. During these restrictions, humans are allocated a certain amount of water for washing and toilet flushing, but no drinking water is allocated for plants. Since humans were the reason for the drought in the first place, this seems extremely unfair, especially if taken into account how much water is used to sustain the meat industry for human consumption. In human culture children are taught from an early age how to, for example, brush their teeth, but not necessarily

how to keep the tap closed during the process to save water. All of this, takes us to the importance of compost and the urgency of being able to compost well.

## 1.9 Composting well

Compost carries great importance for me in this thesis, both in its materiality and in its function as metaphor of entanglement, hybridity, creativity and hope– the composition of new life within a twirling, unstoppable and uncontrollable vortex of life and death – "welcome to the whirled" – as ecotheorists Jeffrey Jerome Cohen and Lowell Duckert mention in their 2017 book, *Veer Ecology*. For posthuman ecocritic Serpil Oppermann, to compost means "being part of a fertility cycle; whether we acknowledge it or not, as our bodies compost with agents we always live with but don't always see" in processes of "composition, decomposition and recomposition" (Oppermann, 2017:1). It is a kind of "ecological karma" (Oppermann, 2017:1) which steers us away from our own human-centred way of experiencing the world through "transforming sites of decay into vibrant sites of fecund imagination" (Oppermann, 2017:3).

For Haraway "the world does not matter in ordinary thoughtlessness" and a thoughtless person is someone who could not be "a wayfarer, could not entangle, could not track the lines of living and dying, could not cultivate response-ability, could not make present to itself what it is doing, could not live in consequences or with consequence, could not compost" (Haraway, 2016:34).

Deborah Bird Rose, (quoting Bruce Lincoln) reminds us that "flesh and earth... consisting of the same material stuff.... are viewed as alternative moments in a continuous process, whereby one continually is transmuted into the other" (Rose, 2002:318). In the light of this image of continuous transmutation it makes sense that to compost is also "to witness the past impressed upon the future through the vanishing traces of the present" (Oppermann, 2017:7). In this vein, chapter 2 will offer a political reading of a 'history of the present' by mapping different perspectives on nature and shed light on the (in)tensions in this thesis.

## 1.10 (In)tensions

According to Springgay and Truman (2017:1), an (in)tension explores how to create different worlds and imagine new futures through being in the difficult middle of

what is happening in research. They put it like this: “Rather than a refusal of methods, we propose that particular (in)tensions need to be immanent to whatever method is used. If the intent of inquiry is to create a different world, to ask what kinds of futures are imaginable, then (in)tensions need to attend to the immersion, friction, strain, and quivering unease of doing research differently” (Springgay & Truman, 2017:1). It means that (in)tensions are supposed to disturb and provoke, not reflect what is already known. The following ‘(in)tensional’ question is explored in this thesis: How do posthuman environmental philosophies disrupt anthropocentric thinking and inform new ways of doing theory and practice for environmental education in South African schools in the foundation phase? with a sub-(in)tensional question: How do colonial legacies in South Africa still affect environmental education in a primary government school?

These (in)tensional and sub-(in)tensional questions will, together with a posthuman praxis, act as navigational tools throughout the thesis.

## 1.11 Chapters Overview

In this chapter, we dived directly into the trouble and surveyed the scenes of climate change and species extinction in the age of the Anthropocene. We explored the nature/culture divide that is part of the trouble and still seems to be firmly in place in education. Then followed a mapping of the umbrella term posthumanism and its relevance for this thesis. The contentious issues around sustainability education were discussed as well as a history of the present of the theories of early childhood. The relatively new idea of the posthuman child was followed by indigenous ways of knowing and how this impacts on the South African curriculum (or not). The chapter concluded with the ethical and ontological problem with the term natureculture and the importance of the symbolism and materiality of compost and the (in)tensions for this thesis. Issues that were promised to be taken up in the rest of the thesis were: Philosophies with non-dominating relationships to earth and earth others – chapter 2; detail about the disagreement between Jickling and Wals, chapter 8.3; Makang’s ‘living tradition’, chapter 2 and 3; child’s ‘innate’ attraction to the more than human, chapter 4 and 5; Breidlid’s ideas about ‘language of instruction, chapter 6, 7 and 8; interviews about reasons why children are sent to English schools, chapter 6 and 7;

The African Charter on responsibilities of the child in chapter 7.5; Orr's comment that "[a]ll education is environmental education" (Orr, 2004:59) in chapter 8.2; the spiralling diagram in chapter 8 as map for the researcher's journey; the idea of crossing borders, chapter 4.6; whether there is still ideological tension in the curriculum since 2003, chapter 8; whether a specific SA indigenous philosophy is needed, chapter 8.3; and a history of the present on perceptions of nature, chapter 2.

Chapter 2 offers a 'history of the present' by mapping different perspectives on nature. A discussion of names and origins of the word Nature, (2.1–2.3); Spinoza's ideas of interconnectedness and interrelationality (2.4); a way to connect science and philosophy (2.5); and Nature as divisible and porous is discussed in sections 2.5 and 2.6. It also picks up on Makang's 'living tradition' and philosophies with non-dominating relationships to earth and earth others as promised in chapter 1. Section 2.7 touches on the perspective and its role in the good/evil duality and 2.8 and 2.9 explore how Nature reveals itself or is hidden through colonialism. Section 2.10 pauses at early childhood educator Affrica Taylor's proposal of a different way of looking at child and socionature in schools as a 'natureworlds' pedagogy. Section 2.11 discusses Nature as a picture, and coloniality as hegemonic centrism and the chapter concludes with section 2.12 in an interpretation of the dominant forms of political and scientific 'reason' and its impacts on Nature.

Chapter 3 discusses the methodologies/methods/techniques that will be used in this thesis, starting with a critique of traditional methodologies. Diffraction and intra-action as posthuman techniques and the concepts of data, creata or relata are explained. It also explores indigenous research methods and the suggestion (again) of a hybrid third space for research. Section 3.7.3 refers to Makang's living African traditions. Two new 'ethodologies' are suggested, followed by an overview of my research ethics for this thesis.

Chapter 4 and 5 are both pedagogy chapters called 'Commonbreath pedagogies' because they contain agential cuts that focus on breathing earth others, those whose bodies compost well. The concepts will be explained in the chapters. Chapter 4 explores pedagogies of land/place, the so-called 'dimensions' of land/place and ecofeminism in connection to land/place. It discusses new-liberal perspectives, globalization and the decolonization of places and spaces. Rose's ideas of

boundaries as doors, the concept of ecological literacy as well as animism and interculturalims are covered.

Chapter 5 explores Spinoza, Bergson, Whitehead and Massumi's concepts of intuition, intelligence, instinct and 'what a body can do', to explain an 'interspecies pedagogy' and 'interspecies ethics'. It discusses anthropomorphism in children's literature, ecofeminist literary criticism, ecopedagogy and children's ecocriticism. Section 5.6 considers affect pedagogy as crucial to pedagogy in times of species extinction. Section 5.7 gives suggestions of how to meet 'the other' halfway and 5.8 explores the idea of being taught by 'the other'.

Chapter 6 and 7 return to my research sub-(in)tensional question: How do colonial legacies in South Africa still affect environmental education in a school? Chapter 6 explores how specific historical processes (human and nonhuman) have given rise to the physical and biological system of the school of my research at this particular point in "spacetimematter[34]" (Barad, 2007:142). The emphasis is on the agency of the materiality of the place as well as on time and memory especially in connection to our colonial past.

Chapter 7 deals with the practicalities of formal education in a Cape Town school. The 'apparatus' used in my research is briefly discussed. Important issues are the materiality of the school, the way in which the curriculum is practically employed, traces of coloniality in the researcher and intimate, liminal relationships with children that lead to new insights.

Chapter 8 recaptures the gist of each of the chapters in this thesis. It speculates about whether Environmental Education should be introduced as a formal subject in South Africa, and whether a specifically (South) African indigenous philosophy for environmental education is needed. The importance of the concept and practical effects of 'affect' is extended. A multidimensional spiralling diagram is offered to demonstrate plateaus and lines of flight that the researcher experienced as productive ways to start hearing, understanding and breathing with the multispecies "roar which lies on the other side of the urbane, civilized veneer" (Braidotti, 2013:55)

[34]Barad uses the word "spacetimematter" (Barad 2007:142) "to emphasise the way components are produced together in one ongoing movement" (Juelskjar, 2013:755) in other words space, time and matter cannot be separated out.

# Chapter 2 On Nature

> My poor child, do you want me to tell you the truth?
> I've been given a name that does not suit me:
> For I am called Nature, yet I am all art (Voltaire, 1942).

In this quote, French Enlightenment historian François-Marie Auret (nom de plume Voltaire) pretends to be in dialogue with Nature in the section 'Nature', from his Philosophical Dictionary. The ancient Egyptians called Nature 'Isis', they "put a veil on [its] head and said nobody could lift it" (Voltaire, 1942). Here Voltaire touches on another one of the many mysteries about nature that have remained unanswered. The fact that we are trying to understand, to grasp Nature while we are also part of it makes it a very difficult, one might say impossible task. As mentioned in chapter 1.2, Niels Bohr also had the same point to make, as quantum physicist-philosopher Karen Barad reminds us, "[t]his is a point Niels Bohr tried to get at in his insistence that our epistemology must take account of the fact that we are a part of that nature we seek to understand" (Barad, 2007:184). We may have to be content with Nature's answer (via Voltaire) to the philosopher:

> Since I am all that is, how can a being such as you, so small a part of myself, seize me? Be content, atoms my children, with seeing a few atoms that surround you, with drinking a few drops of my milk, with vegetating for a few moments on my breast, and with dying without having known your mother and your nurse (Voltaire, 1942).

Yet, in this chapter I am not going to heed Voltaire's advice, but will again try to lift Nature's veil just a little bit. This is necessary in order to properly address the main in(tensional) question of this thesis: How do posthuman environmental philosophies disrupt anthropocentric thinking and inform a new way of doing theory and practice for environmental education in South African schools in the foundation phase? as well as the sub-in(tensional) question: How do colonial legacies in South Africa still affect environmental education in a primary government school? For, to disrupt anthropocentric thinking and understand how relationships between humans, animals, plants and the material world operate, we need the context offered in this chapter. Criminologist Mark Halsey warns that we need to re-explore taken-for-granted concepts such as 'Nature' because we need to stop the "at times violent

dimensions that go along with speaking and writing the world" (Halsey, 2006:2), we need to stop the "violence borne by way of the slow and largely inaudible march of the categories and thresholds associated with using and abusing Nature" (Halsey, 2006:3).

## 2.1 Naming and unnaming and different schools of thought

Re-exploring Nature does not mean that we should re-name Nature, pin on it a different set of attributes. In her story about Eve un-naming the animals, novelist Ursula Le Guin has Eve accounting afterwards in wonderment: "They seemed far closer than when their names had stood between myself and them like a clear barrier…" (Le Guin, 1987:196). 'Naming' often implies distancing and the beginning of new fossilized thought patterns or 'schools of thought'. This was kept in mind when I drew the diagram in chapter 8 to map my experiences as a researcher. It is not a pattern, not a new school of thought.

Halsey argues that the present "five main ecological schools of thought" cannot account for the "highly complex relationships pertaining between language, power, knowledge and various identities/social roles" (Halsey, 2006:4). He claims there are still hegemonic, rigid underpinnings in most ecological schools of thought: in liberal ecology – irresponsible consumerism; in ecomarxism – capitalism; in ecofeminism – patriarchy; in deep ecology – hierarchy and in social ecology – domination (Halsey, 2006:4). We must always be vigilant for these rigid thought patterns.

In the 'naming' of Nature we need to follow the nature/culture dualism trail back to the Greeks who saw Nature as everything that is not "convention", "nomus", "culture" (Loy, 1995: 9) since this view has influenced and continues to influence Western epistemology and hence how environmental education is conceptualized in schools not solely in the West but also in South Africa, due to its colonial past and present. We need to explore different ways of knowing – the Eastern tradition of Buddhism, the African Myth and Sage traditions, the Proto-Indo-European tradition

[1]as well as current notions of posthumanism underpinned by Spinoza's monist philosophy.

[1] See glossary of meaning

The Greeks from the times of Thales were educated in ancient Kemet (Egypt in 585BC) or influenced by Egyptian ideas (Kamalu, 2012:28[2]). Since the similarities between ancient Egyptian creation myths and other traditional African accounts like those of the Igbo of modern Nigeria is so profound (Oruka, 1990, Kamalu 1998:135 and Kamalu, 2012:28); African creation myths and sage philosophies[3] have their place next to those of the ancient Greeks in a history (of the presence), of the nature of Nature up to the time of this study. Ironically, according to historian and political philosopher Achille Mbembe, it has mostly been taken for granted (and not only by the West) that "things African" is not worth studying since it "does not contribute anything to the knowledge of the world or of the human condition in general" (Mbembe, 2010:654). As with the Egyptian-African, so too do Eastern "religious[4]"philosophies have their place next to the ancient Greeks. There has always been cultural cross-pollination across time and space between East and West. Heraclitus of Ephesus is sometimes called "the Greek Taoist" because his ideas were similar to those of Lao Tzu, the writer of the main Taoist scripture, the *Tao Te Ching* (Capra, 1992:128). They both emphasized that everything continuously changes and that all changes are cyclical (Capra, 1992). Closer to our own time, Western quantum physicist Niels Bohr visited China in 1937 and was "deeply impressed by the ancient Chinese notion of polar opposites" and was said to have maintained "an interest in Eastern culture" from then on (Capra, 1992:175). Religious and Eastern philosophy scholar Ethan Tischler describes a "lineage of scientifically engaged sympathizers and practitioners of Buddhism stretching back into the 19th century which drove this alignment of science and Buddhism" (Tischler, 2014:30) in their search for "a new religion grounded in scientific truth" (Tischler, 2014:38). Although Tischler criticizes "Capra's claim" that the idea of cosmic unity in

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[2] Kamalu's 2012 book has been reprinted in 2016. References used in this thesis will be from his 2012 book.

[3]Oruka distinguishes between a folk sage and a philosophical sage: Both know what the cardinal beliefs and wisdoms of its community is, but the philosophical sage makes independent and critical assessments of what the people take for granted – they reflect on beliefs and wisdom and try to find rationalized evaluation for those beliefs (Oruka 1990:28,29). For more on Sage Philosophy and on the question of whether Sage philosophy contains "real philosophical thought", see Oruka's chapter "Sage Philosophy: The Basic Questions and Methodology" in *Sage Philosophy* as well as Hountondji's *African Philosophy: Myth & Reality* (1983) and Olivier's "On the nature of language – Heidegger and African Philosophy" (2008: 320-323).

[4]Capra prefers to talk about "Eastern mysticism" since Hinduism, Buddhism and Taoism "comprise a vast number of subtly interwoven spiritual disciplines and philosophical systems" (Capra, 1992:23) which makes Eastern philosophy and religion inter-changeable. Yet there are Taoist religious sects that sometimes diverge from original Taoist philosophy.

Buddhism is in “exact accord” with the revelations of quantum physics (Tischler, 2014:41), he *does* believe that a diffractive reading of Karen Barad’s quantum physics and forms of Buddhism could offer “meaningful comparative work” (Tischler, 2014:145–154) in this domain.

We can never lump all philosophical orientations together as simplistically either Western, Eastern, Proto-Indo-European or African/Middle Eastern, but there are some key beliefs about the nature of Nature in African (including the KhoeKhoen and San/Bushman[5] in the Southern part of Africa) and Eastern traditions (which did not follow Plato and Socrates, but in fact preceded them) that can provide valuable insight for a posthuman, decolonizing approach to environmental education.  A study from the Southern part of Africa about the ‘history’ of nature (and therefore of us) needs to take ‘place’ into account. “One lives in a place more than in a time” (Muecke, 2004:9) and I believe that time is deeply connected to place, so the history of African philosophy is essential for a South African study of this ‘nature’.

By looking at the ‘history’ of the nature of Nature as seen from Western, African, Eastern and Proto-Indo-European traditions to inform my in(tensions) in this chapter, I will also be able to address posthumanist geographer Juanita Sundberg’s concern that posthumanist theory “remains within the orbit of Eurocentered epistemologies and ontologies” and that its literature “continuously refers to a foundational ontological split between nature and culture as if it is universal” (Sundberg, 2014:35).  Although I agree with Sundberg that the split between nature and culture is mostly Western in orientation, I believe that posthumanist theory does not remain solely within the sphere of Eurocentered epistemologies and ontologies.  To show this, I will explore how various other philosophical traditions are very much in line with Spinozist and posthumanist thinking when it comes to the nature of Nature and that they avoid the Western nature/culture binary.

This chapter will explore ideas and interpretations of symbols related to the nature of Nature and why it is so difficult to pin it down, as seen by some African philosophers (Paulin Houtondji, Emmanuel Eze, Odera Oruka, Chukwunyere Kamalu, Achille Mbembe and Khoikhoi scholars such as anthropologist Michael de Jongh, as well as the explications of Dogon myths by South African scholar of African philosophy,

[5] See glossary of meaning for Khoekhoen and San/Bushman.

Abraham Olivier). It will explore Eastern philosophies (Ethan Tischler, Fritjof Capra, and David Loy and Western philosophies that are monist and non-dualist (Baruch Spinoza, Gilles Deleuze, Johan Dahlbeck, Rosi Braidotti, Karen Barad, Val Plumwood). The work of social geographers Noel Castree, Derek Gregory, environmental education philosophers Michael Bonnett and early childhood educator Affrica Taylor will also be drawn on. Through the work of all these philosophers and practitioners, anthropocentric thinking and the nature/culture binaries of Western philosophical traditions are hopefully disrupted to better understand the relationships between humans, animals, plants and the material world in Foundation phase education in South Africa.

## 2.2 Assimilation of 'others'

I have explained in chapter 1.8, that I have reservations about the terms 'natureculture' or 'socionature' to describe humanity's inextricable entanglement with nature. I warned that it can be dangerous and problematic if the use of these terms become part of "unexamined habits of mind" (Barad, 2007:802) and inattentive of the relations between culture and power. Gregory Bateson also warns that we become less critical of ideas that have become habit over time (Bateson, 1987). Through incorporating and assimilating 'nature' into human 'natureculture' there is the danger that 'others' become subjects of, what Plumwood calls "incorporation and assimilation" (Plumwood 2002:109 – 111) as in colonial times. More recent examples of incorporation and assimilation of people, took place in 1948 when the National Party in South Africa came to power and citizens had to be classified according to race. What anthropologist Michael De Jongh calls the "forgotten first people" (De Jongh, 2016), like the Khoekhoen and the Hesseqau, had to be assimilated into "Coloured" or "Other Coloured" (De Jongh, 2016:10) for the purposes of the Apartheid regime. Michael Glassco calls it a way to "re-establish the limits of hegemony as a sense of order" (Glassco, 2012:65), in other words incorporation or assimilation can contain contradictions which reproduce the prevailing order as a form of 'appropriation'. Therefore, in the same way that groups of people have been assimilated and incorporated, ideas of nature can be incorporated and assimilated to suit a specific ideology. African philosopher Mogobe Ramose argues that assimilation, integration or even dissolution of one experience into another is shown in how African philosophy arrived at the same

conclusions as Western philosophy, not through reason but through insight, yet conclusions reached through African philosophy are often called 'primitive' and through Western philosophy 'scientific'. He calls it "philosophical racism" (Ramose, 2002:4) and posits that the African philosophy "simply dissolve[s]" and becomes Western (Ramose, 2002:7). Historian Timothy LeCain comments on the irony and hubris of scientists like Crutzen and Schwägerl who are writing about the massive human intellect and its capacity in the Age of the Anthropocene, declaring "Remember, in this new era, nature is us!" (LeCain, 2015:9). LeCain notes that it could be interpreted that the scientists are implying humanity was "unnatural in the past, or at most mere manipulators of their environments. Now, however, human technological abilities are so vast that they have become nature itself" (LeCain, 2015:9). It is easy to see how this kind of attitude could usurp and assimilate non-human nature into human natureculture in a selfish, destructive way.

## 2.3 Origins of the word Nature

Exploring the nature of Nature is not an easy (ad)venture. According to philosopher and cultural theorist Serenella Iovino, not even a translation of the term "physis" (nature) is a simple and uncontroversial matter as will become clear in this section. Iovino draws on philosopher and historian Pierre Hadot[6], who searches for the meaning of the concept 'nature'. He explains that for pre-Socratic philosophers 'physis' signified the composition or proper nature of each thing, other than for nature as a whole. It can also signify birth or the process of birth as well as the process of declining and dying – the form that has appeared, eventually disappears as with everything that lives. The word 'nature' originates from the Latin 'natus' which means 'born' and of course what is born will also always die (disappear from sight). Then there are the origins of 'phaos' which means light and 'phainesthai/phainomena' – appear/appearances which contribute to additional meanings of the word physis (Iovino, 2016: 309, 310). For an explanation of the Greek term phainomenon South African philosopher Abraham Olivier (2008:311) draws on Heidegger's concept of phenomenology in *Being and Time* (2001:28) where Heidegger claims that phainomenon is derived from phaino (casting light) and means the evident, the self-showing. Olivier also points out that the Greeks

[6] See his book *The Veil of Isis*. (Hadot, 2006).

occasionally identified phainomena with "ta onta" – things, beings, which refers to "all kinds of things or beings that allow themselves to be shown to us" and that our closeness and openness to those things and beings enables us to "have them speak for themselves" (Olivier, 2008:311).

The idea of Physis as "arising of something from out of itself" (Heidegger, 1977:10) was taken up by environmental educator Michael Bonnett and called "the self-arising" (Bonnett, 2004:40) in his quest to find that which underlies and informs the central sense of nature that cuts across all societal concepts of the world. This idea of 'the self-arising' to refer to the unknowable, the unpredictable in Nature, is not unlike the Spinozian ideas of Natura naturans and Natura naturata where all there is, is substance and their modes (Spinoza, 2002:58). My only reservation in using this term is that one should understand everything as entangled, interconnected and not really 'arising' only 'out of itself'.

## 2.4 Interconnectedness, interrelationality and Spinoza

For the ancient sages "physis" was a complex concept, at one and the same time "hidden and revealed… intimate and alien, appearing and disappearing through and with all its endless forms" (Iovino, 2016:310). The most important characteristic or essence of the Eastern world view according to physicist and philosopher Fritjof Capra is:

> the awareness of the unity and mutual interrelation of all things and events, the experience of all phenomena in the world as manifestations of a basic oneness. All things are seen as interdependent and inseparable parts of this cosmic whole; as different manifestations of the same ultimate reality… [T]his ultimate, indivisible reality which manifests itself in all things and of which all things are parts… is called Brahman in Hinduism, Dharmakaya in Buddhism and Tao in Taoism (Capra, 1992:141).

This belief in the interrelation of all things and events and phenomena in the world resonated with physicist and new materialist Karen Barad and with quantum physicist Niels Bohr. Barad (2007:199) explains the importance of this: "Bohr's recognition of the social nature of scientific practices" is that "making meanings involves the interrelationship of complex discursive and material practices." (Also

see data becoming ‘relata and creata’ in chapter 3.) According to African philosopher Chukwunyere Kamalu, relationships rather than ‘things’ are important in African thinking – the Busuku[7] for example classify plants according to their role in the “socio-ecosystem” and the name of a plant may be given to another plant if it takes over the same role in the system (Kamalu, 1998:159–160). It is still a very human-instrumental way of ‘naming’ but it does affirm the plant’s relationality.

For Spinoza “natura naturans” which he also understands as ‘God’ (Spinoza, 2002:58) has no beginning or end to its existing, so there is no beginning or end to its acting (Spinoza, 2002:321) and his “natura naturata” seems to be in harmony with the concept “physis” of the ancient sages as “appearing and disappearing through and with all its endless forms” (Iovino, 2016:310). As previously mentioned, to Pre-Socratic philosophers ‘physis’ could signify the composition or proper nature of each thing, in contrast to nature as a whole and here as well, we have another correspondence with Spinoza: “By Natura naturans we understand a being that we conceive clearly and distinctly through itself“ and as for Natura naturata “we shall divide [it] into two, a general, and a particular. The general consists of all the modes which depend immediately on God, [or Nature]” … and “the particular consists of all the particular things which are produced by the general mode” (Spinoza, 2002:58). Natura naturata could therefore be understood as “naturing nature” (Deleuze, 1988:92-93) or ‘nature naturing’ and natura naturans as “natured nature” (Deleuze, 1988:92-93). For Spinoza all the modes are the same in that they are all adaptations of the one substance – mind and body is one and the same thing, “conceived now under the attribute of Thought, now under the attribute of Extension” (Spinoza, 2002:280) where extension means the physical body. An interesting link with Spinoza’s ideas of substance and attributes is the PIE concept of the ‘alloform’. Religious historian Bruce Lincoln, explains that the central concept in understanding Indo-European cosmology is the ‘alloform’ which he defines as alternative and related forms of the same substance. “Death and dismemberment” is one mode of the transferal of substance (Lincoln, 1986:137). In their seminal work on the language and culture of PIE, Indo-European linguistic theorist Tamaz Valeryanovich Gamkrelidze and philologist/ semiotician Vjačeslav Vsevolodovich Ivanov, explain that

[7]The Busuku are one of the seventeen Kenyan peoples of East Africa who speak the Busuku dialect.

> the original unity of humans and the earth, are shared by Semitic and Indo-European tradition. In this connection, the etymological identity of 'human being' and 'earth' in Indo-European is revealing: PIE *dh(e)ghom- means both 'earth' and 'human, person' (etymologically 'earthly, of the earth') (Gamkrelidze & Ivanov, 1995:720).

So the etymological history of the words ‘earth’ and ‘human person’ in PIE is one and the same. They account how, in an Old Icelandic tradition, “the Elder Edda” describes the parts of the universe as having arisen from the body parts of the mythic sacrificial being Ymir:

> The flesh of Ymir became the earth, the bones became mountains, the skull of the rime-cold giant became the sky, and his blood the sea (Gamkrelidze & Ivanov, 1995:720).

The fact that the flesh of a god becomes the earth and the blood of a god becomes water, does not mean that the god is dying – s/he is just being transformed. This god is the world, as Spinoza’s god is Nature. This god is thus remembered in the forms of all other living things and it shows how the cycles of life – birth and death continuously transform living things. According to educationalists Alison Jones and Te Kawehau Hoskins, “it is widespread among Maori today to talk about a river, a mountain, an entire tribe, or an ancestor that lived hundreds of years ago, as yourself: ‘ko au te awa, ko te awa ko au’ (‘I am the river and the river is me’)” and this is not only meant as a metaphor but rather the “identification as the animated embodied river, mountain, or ancestor” (Jones & Hoskins, 2016:79). Spinoza explains (2002:189): “We have already shown that in Nature there is nothing but substances and their modes”. Through this explanation a human being and a chair are only different modifications of God/Nature, but of the same substance, only differing in their different striving for self-preservation or conatus[8]– “Each thing, insofar as it is in itself, endeavors to persist in its own being” (Spinoza, 2002:283). From a Spinozist point of view according to Johan Dahlbeck, “individual things are not distinguished by a difference in kind but by a difference in degree” (Dahlbeck, 2014:4) which leads us to Deleuze’s comment on Spinoza’s philosophy:

[8]“Conatus” expresses Spinoza’s view that each thing demonstrates an inherent propensity toward self-preservation and activity.

> [A]n animal, a thing, is never separable from its relations with the world. The interior is only a selected exterior, and the exterior, a projected interior. The speed or slowness of metabolisms, perceptions, actions, and reactions link together to constitute a particular individual in the world (Deleuze, 1988:125).

This Spinozist relationality of all things can be found in Eastern, African, PIE and posthuman/new materialist thought and could guide us to how we position relationships between humans, animals, plants and the material world differently in Foundation Phase education in South Africa.

## 2.5 Nature: one or more than one?

It seems as if dualism and monism co-existed in the ecological thought of antiquity as well as in Spinoza's philosophy for as Spinoza tells us: "we shall divide [it] into two, a general, and a particular. The general consists of all the modes which depend immediately on God, [or Nature]" and "the particular consists of all the particular things which are produced by the general mode" (Spinoza, 2002:58). For Spinoza all phenomena in the world are expressions of a basic oneness. This is also the essence of the Eastern world view and many African world views. In Odera Oruka's interview with the sage Oruka Rang'inya, he describes God as a fusion of Heat and Cold:

> When I try to have an idea of God, he appears to me as a mixture of heat and cold. When these two merge (fuse) there comes up life and were it not for this, there could be no life in us as well. So God is something like this warmth and coldness which 'brings forth life'. The act of fusion – which brings forth life – is what we call God (Oruka, 1990:133)

Kamalu also refers to the fact that many African cosmologies show that the world at some point emerges from the mythical union of the opposites – e.g. earth and sky and he posits that the "problem" of religion is "to overcome this divine/human polarity through ritual action" (Kamalu,1990:141). This is not really a foreign idea since in most religions (Eastern, Western, African) the reason behind religion is searching for that 'Oneness' with God/Nature that in the West our dualistic thinking has separated us from. In Buddhism which is not strictly speaking a religion (see footnote 4), the

path of meditation is the practice of losing the concept of ‘Self’ and becoming one with the Cosmos. In Taoism, changes in Nature are seen as manifestations of the polar opposites yin and yang. Fritjof Capra explains this as follows:

> For the Western mind this idea of the implicit unity of all opposites is extremely difficult to accept. It seems most paradoxical to us that experience and values which we had always believed to be contrary should be, after all, aspects of the same thing. In the East, however, it has always been considered as essential for attaining enlightenment to go ‘beyond earthly opposites’ (Capra, 1992:126,127).

Capra proceeds to imply that these polar opposites of yin and yang were acknowledged by Niels Bohr in his quantum science concept of complementarity as “the profound harmony between ancient Eastern wisdom and modern Western science” (Capra, 1992:175). According to Capra, Bohr chose as motive for his coat-of arms (for his knighting ceremony) the yin-yang symbol and inscription, ”Contrarias unt complementia (Opposites are complementary)” (Capra, 1992:175). I think Capra might be reading too much into this and I would rather follow Barad’s explanation for Bohr’s theory of complementarity, which is that he tried to find

> a viable reconciliation for the problem of the dual nature of light and matter… a commitment in his practice of science that led him ultimately to adopt a new anti representationalist approach for understanding the nature and role of descriptive concepts, which became the basis for his epistemological framework that he called ‘complementarity’… Bohr was committed to understanding what the science was able to tell us about ‘that nature of which we are a part.’ This is a poignant example of how philosophical stances matter in the construction of scientific theories (Barad, 2007:124).

The logic of complementarity for Barad does at least not force complex Buddhist philosophies “into a common framework” with her physics-philosophy, “preventing the possibility of more challenging modes of engagement” (Tischler, 2014:144).

Philosopher Alfred North Whitehead talks about “the bifurcation of nature” (Whitehead, 1920:26–48) – dividing nature into two. To answer the question of

'what is nature?' Whitehead claims that both sense perception and scientific understanding of what is experienced, is part and parcel of what nature 'is'. What in scientific understanding amounts to colliding, odourless and colourless molecules or imperceptible waves of light and sound, might in sense perception be experienced as a magnificent sunset or a lovely song. Whitehead refers to Locke's attempt to solve the problem of "what the mind knows of nature" and "what nature does to the mind" by constructing a theory of primary and secondary qualities of matter (Whitehead, 1920:27). Primary qualities are attributes of matter that we 'really' do see and secondary qualities are *not* attributes of matter but we see them *as if* they are. Whitehead dryly comments that "It seems an extremely unfortunate arrangement that we should perceive a lot of things that are not there" (Whitehead, 1920:27). Posthumanist Rosi Braidotti sees biologist and philosopher Donna Haraway as another one of those scientists who do not believe that science needs to be incompatible with "humanistic approaches" and that, in Haraway's way of thinking, "the practice of science is not seen as narrowly rationalistic, but rather allows for a broadened definition of the term, to include the play of the unconscious, dreams and the imagination in the production of scientific discourse" (Braidotti, 2006b:198). This is nothing new in the field of indigenous knowledges, but even Australian environmental educator Noel Gough links this with the way we research and educate:

> I thus conclude that critical readings of metafiction and postmodernist fiction – and creative uses of the storytelling strategies associated with these textual forms – should be incorporated into the narrative practices we employ in both performing and teaching educational research (Gough, 1994:48).

The agential cut of science as described by Barad, is not the task of the philosopher and Whitehead explains:

> For natural philosophy everything perceived is in nature. We may not pick and choose. For us the red glow of the sunset should be as much part of nature as are the molecules and electric waves by which men of science would explain the phenomenon. It is for natural philosophy to analyse how these various elements of nature are connected (Whitehead, 1920:29).

Whitehead's insight is not yet part of Western science, for, as indigenous and cross-cultural scholar Douglas Morgan describes, "the heart of the problem lies in the inability of Western science to describe all that occurs in people's experience of the world (the nature of people's 'reality')" (Morgan, 2003:39). Whitehead has indicated how he sees philosophy's role in understanding Nature. But what does Western monotheistic religions tell us about God and creation? Environmental philosopher Val Plumwood has the following to say:

> Monotheisms have long aimed to expel the creative from all but their chosen pinpoint of reverence, and they have been able to conspire together to represent this as the normal orientation of religions. Creationist theory posits god as an external creator concentrated into a single, minimum point of intentionality and agency, a personally-responsive mind who can provide salvation from the mortal estate if properly invoked or placated. But many so-called 'primitive religions', as Vine Deloria (127) points out, have been profoundly different in acknowledging revelations of the sacred as appearing at many points and in diverse spheres. Further, according to Deloria, 'The eastern stream in which Buddhism, Taoism and Confucianism interact develops from forms of animism to the idea of a cosmic order, a way of balance and harmony which brings stability and calm of mind, and peace and right order in society. In this stream, there is little stress on one Absolute being or God.' 'Hinduism, Buddhism and Shintoism lack one other distinction so fundamental for our Christian thinking: the belief in the basic essential difference between creation and Creator' (129 quoting Ernest Benz). … 'Why the compulsive separation, which so many panentheist theologians have rejected? Why not be satisfied with saying: the world makes sense to us and we can operate safely within its rhythms' (130) (Plumwood, 2009:123).

It needs to be mentioned that pantentheistic[9] and process theology within the Christian religions do not separate God as creator and the creation, but this is a very thin trickle within Christianity. Alfred North Whitehead who is quoted extensively in this thesis, explains his panentheistic views in Process and Reality (Whitehead,

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[9] See glossary for Panentheism.

1978:348). It is in this and in the ‘primitive religions’ that we find the wisdom about the interconnectedness and interdependence of all creation as environmental educators Tšepo Mokuku and Chaba Mokuku remark about the commonalities in the Native-American and African world views. They draw on the work of Marimba Ani who believes in “the majority of non-Euro American worldviews, such as the African, Amerindian and Oceanic, as typically spiritual and holistic” (Ani, 1994:102). Ani explains in more detail:

> In the worldview of the Native Americans, [and many African worldviews] all living things share a creator and creative process and, therefore, relate to one another. Their spiritual quest is to determine the proper relationship that people have with other living things. The universe manifests life energies, ‘the whole life-flow of creation’. The person is dependent on everything in the universe for his/her existence. Rather than the determination to subdue nature... ‘the awareness of meaning of life comes from observing how the various living things appear to mesh and to provide a whole tapestry’ (Ani, 1994:102).

These Native American and African worldviews also rely strongly on ‘revealed knowledge’ which is their own kind of ‘sacred science’ (Ani, 1994:99) and Mokuku and Mokuku see strong resemblances between Ani’s ‘revealed knowledge’ and what the Basotho in Lesotho, Southern Africa, call “ho bonts’oa” which means “to be shown” and which takes place “usually in a dream, in the Basotho traditional medical practice, which provides, for example, a plausible account of how the Basotho came to know about 400 listed species of medicinal plants” (Mokuku & Mokuku, 2004:38). Douglas Morgan therefore rightly claims that “Indigenous peoples were used as encyclopaedias for ‘scientific’ and cultural knowledge, allowing the survival of Westerners in environments that were hostile to Western knowledges” (Morgan, 2003:39) and then ironically, negating the ‘scientificness’ of how indigenous peoples came to possess these knowledges.

What consequences does the unity of opposites and the ultimate connection of science and philosophy explored in this section have for how we ‘position’ relationships between humans, animals, plants and the material world ‘differently’ in Foundation phase education in South Africa? It shows that the Western duality and

binary logic of “either…or’, instead of ‘and…and’ (Deleuze and Guattari) is not found in Barad’s new materialism, in Capra’s Taoism or in African and native-American knowledges which therefore seems to be productive knowledges to draw on in early childhood environmental education in South Africa.

## 2.6 ‘Porosity of realms’ and its implications for ‘sustainability’

In African, PIE and other Eastern ontologies there is a “porosity of realms” (Iovino, 2016:314) where the living, the unborn and the dead inhabit the same space. According to Kamalu, in African ontology[10], the earth is commonly seen as “the abode of the ancestors, of which the living are merely the custodians” (Kamalu, 1990:157). The living have a “moral responsibility to maintain the Earth for unborn generations to come and this obviously has positive ecological implications” (Kamalu, 1990:157). One could of course argue that this has humanistic undertones if not seen in context of other African beliefs about their place in Nature. Kamalu’s account gives an interesting perspective on one of the basic principles of sustainability as officially defined in the 1987 Brundlandt report *Our Common Future* namely “inter-generational and intra-generational equity” (Brundlandt Commission, 1987). In African traditional ontology, sustainability does not raise “complex questions of methodology” or “theoretical challenges” in interdisciplinarity or “how to think of processes instead of entities or single substances at the social and symbolic levels” (Braidotti, 2006a:206). In fact, in various African languages the same word is used to refer to both land and people/family/community (Kamalu, 1998:157), not unlike what Gamkrelidze and Ivanov discovered in PIE languages. Environmental educator Chet Bowers notes that in some American Indian cultures, children are raised to be responsible “for the consequences of their actions to the seventh unborn generation” (Bowers, 1997:184). Closer to home and talking about the Khoekhoen and San/Bushman[11] first peoples in South Africa, De Jongh notes that “land was never owned by individuals, or even by the chief: because ownership was communal and thus inalienable, it never could be sold” (De Jongh, 2016:28). The kind of sustainability inherent in African indigenous systems has little to do with the current buzzword ‘ecological sustainability.’ If there

[10] See section 3.7.3: nothing is purely ‘Western’ or ‘Eastern’ or ‘African’. Philosophers like Mbembe (2010) acknowledges his African and Western philosophical roots. Economist Michael Nassen Smith uses the term “African Marxist theory and praxis” (Nassen Smith, 2017:38).

[11] See glossary of meaning for the Khoekhoen and San/Bushman.

is porosity between the realms of the living and the dead, what about the porosity in the animal/plant/mineral/human kingdoms?

Ecocultural theory scholar Stacy Alaimo explains how the discourse around ecological sustainability currently in use, echoes the 'conservation' buzzword that was a common expression at the turn of the 20th century and its tendency "to render the lively world as a storehouse of supplies for the elite" (Alaimo, 2016:169). Politically motivated actions of conservation and sustainability easily turn into missions to conserve humanist and economic privileges, especially when fuelled by anthropocentric fears and accompanying anti-immigration sentiments. The Western idea of sustainability at the end of the 21st century is anchored in the belief that humanity can get nature under control through our own agency, our science and our technology. This is in opposition to Karen Barad's view that

> [T]he human subject is not the locus of knowing, neither is it the locus of ethicality. 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 (Barad, 2007: 393).

Alaimo has a grim view of the discourse of sustainability of the day, which is "cleansed of its association with 'tree huggers', and articulated to a more technocratic, apolitical domain" and is therefore "more palatable for academic institutions, governments, and businesses" (Alaimo, 2016:170), and thus more insidious and dangerous. Yet, Rosi Braidotti embraces the possibilities for the concept of sustainability: "Drawing energy from the thinkability of the future means that our desires are sustainable to the extent that they engender the conditions of possibility for the future" (Braidotti, 2006b:207). She proposes a nomadic philosophical framework for sustainability for the age we are living in: "In order to get there, a nomadic subject position of flow and multi-layeredness is a major facilitator" (Braidotti, 2006b:207). Drawing on both Spinoza and Deleuze she explains that "limits are simultaneously points of passage or thresholds and markers of sustainability. They [the limits] need to be experimented with collectively, so as to produce effective cartographies of how much bodies can take" (Braidotti, 2006a:

217–218). This very embodied way of talking about sustainability is inherent in Spinoza's view of understanding things "adequately" (Spinoza, 2002:278, 279), which is never abstract but always an embodied understanding. Dahlbeck explains this Spinozist understanding of Nature as follows: "…a person striving for an adequate understanding of nature should focus on understanding the causes of changes in his or her particular body since every instance of human knowledge is always a product of the human body" (Dahlbeck, 2014:9). The comparison between understanding the human body and nature is also not unusual in African indigenous philosophy and Kamalu attests, "For each person this cycle of development, conflict and resolution is the pattern of evolution which characterizes a person's striving to unfold his/her destiny" (Kamalu, 1998:104). This cycle is not only restricted to the 'living', for in Braidotti's nomadic philosophy of sustainability, she sees death as the "becoming-imperceptible of the nomadic subject and as such it is part of the cycles of becomings, yet another form of interconnectedness, a vital relationship that links one with other multiple forces" (Braidotti, 2006a: 235). Her view of life and death also resonates with how Kamalu (1990:157) described it earlier, that "the living are only the custodians" of Earth: "Life is passing and we do not own it, we just inhabit it, as a time-share location" (Braidotti, 2006a:211). What Iovino (2016:314) calls the "ontological porosity of realms" in the mythology of the ancient Greeks before Plato and Socrates and of the living, the unborn and the dead in African indigenous ontologies, therefore also seems to be in line with Braidotti's vision of posthumanism today.

How can these perspectives on life and death and sustainability be helpful for how we position relationships between humans, animals, plants and the material world differently in Foundation phase education in South Africa? I think the term 'sustainability' in environmental education should be used with care, always keeping the power relations discussed in this section in mind.

We have discovered another persistent duality in the Western mind, the one of good/evil which for Plato and those who followed him meant that 'good' was that which was associated with human reason, intellect, ideals and spirit (usually male) and evil was associated with "the corrupted world of 'nature' thought of as the domain of emotionality, the senses and the sphere of biological changes, of 'coming

to be and passing away'" (Plumwood, 2002:46) which was also seen as female. In the next section we will explore human perspective and its role in the creations of a good/evil duality.

## 2.7 Human perspective and its role in the good/evil duality

Since humanity is part of God/Nature the human cannot perceive of God/Nature separately from itself (Voltaire, 1924; Castree & Braun, 2001; Plumwood, 2002; Bonnet, 2004; Braidotti, 2006a). When the human talks or thinks about 'Nature' it will always be from a specific (humanly embodied) perspective and that is why for Spinoza, perspective was important: "… perspective was at the center of Spinoza's system" (Morgan, 2002:ix). Perspective is also the crucial issue when things/issues are judged as either good or evil in the bodymind/nature. As Johan Dahlbeck explains:

> From the perspective of nature as a whole, singular events are neither good nor evil in themselves. This is so since singular events and bodies are to be understood as different expressions of the substance striving to persevere in existence at the same time. As any given body will do this at the expense of other bodies – for example, a human being eating an apple will be strengthened in this act, while the body of the apple will clearly be weakened through it – it is merely a matter of a redistribution of power. From the perspective of nature – being the all-encompassing substance – the overall flow of power stays constant even though it shifts internally (Dahlbeck, 2015:3).

This means that from the perspective of Nature (as far as we can try to take that perspective) there is no good or evil – taking away from one substance is giving to another and since they are all One, it is just ebb and flow within one system. How is something to be judged as good or evil when experienced through the body or mind? For Spinoza, "Insofar as a thing agrees with our nature," (that is, helps us persevere in existence or conatus) "it is necessarily good" and "insofar as it is evil for us, it is contrary to us" (Spinoza, 2002:335). According to Spinoza, this is how Nature 'reveals' the nature of Nature to and through the human bodymind. In the next section I will explore how various philosophies and mythologies suggest we 'listen'

to how nature reveals itself through the bodymind. They all seem to imply that an involvement, a special attunement, an attentive listening[12] to and through the bodymind when trying to hear or sense how Nature reveals itself, is necessary. In the words of philosopher Vinciane Despret (2004:130), for example: “The experimenter, far from keeping himself in the background, involves himself: he involves his body, he involves his knowledge, his responsibility and his future. The practice of knowing has become a practice of caring”. But what do we need to listen *for*?

## 2.8 How Nature speaks (reveals itself)

In his study on the links between Heidegger’s understanding of language and the framework of African sage philosophy, South African philosopher Abraham Olivier not only opens a debate on the nature of language but also on the language of nature (expressing the nature of Nature) which I find compelling and pertinent to spend time with in this chapter, because if there is indeed a ‘language of Nature’ we need to try to hear its roar. Olivier explores the sage philosophy of the Dogon people, an ethnic group from the central plateau region of Mali in Western Africa and I am especially interested in how he uses the story of the beginning of language to build on notions from Heidegger. Olivier discusses the symbols used in the story of creation and of language in the Ogotommeli[13] myth to arrive at new meaning. Since debates on language within African philosophy always “pivot on the problem of the cross-cultural classification of concepts” (Olivier, 2008:311) it is useful to look at Heidegger’s understanding of the Greek term for language – *logos* – since it refers to “the phenomenological way beings present themselves from themselves by, or also without, the use of conventional (Greek or German or other European or African) signs and words” (Olivier, 2008:310). Olivier suggests that there is a “signless and soundless way” in which nonhuman nature can speak and he takes it a step further by linking Heidegger’s view on language with African mythology. Even though Heidegger sees in *logos* also “poetic language” (words that move us) as well as art that “brings something into appearance” and “signless and soundless language”, he

[12] Also see ‘attentive listening’ in chapters 3 and 7.
[13] There is controversy about the Ogotommeli sage in Dogon knowledge and the influence of Marcel Griaule on the retelling of it in *Conversations with Ogotemmeli*, (1965). See Van Beek (2004) for a critique on Griaule’s work and Kamalu (1998 and 2016), for critique on Van Beek’s critique on Griaule.

still "favours the human logos to be the means for all phenomena to come to the fore" (Olivier, 2008:314).

A short version of Olivier's account of the story of language (which by no means does justice to his full paper which explores a different subject altogether) follows:

> The God Amma creates the earth from clay in the form of a woman body, who gave birth to the Nummo spirits, who became aware of the earth's nakedness, symbolized by the earth's speechlessness. The 'first word' emerged when the Nummo clothed the earth with the skirt of speech. (This 'first word' that emerged, is not yet a human act but is attributed to the earth, which is not silent anymore. The 'second word' was brought to the world by Nummo spirits and consisted of the art of weaving, the movement of the thread to and fro which also symbolizes the movement of the tongue and the to and fro of oral speech. At this stage speech is still not a human act, but rather it has the technical meaning of weaving together life on earth. The 'third word' was brought into the realm of humans and symbolizes human communication as well as acts of redemption, rejuvenation and reconciliation (Olivier 2008: 314–315).

It is therefore only the 'third word' in this myth that meant human communication as we understand it through language. The Dogon metaphor 'skirt of speech' seems to be the symbolical opposite of the Egyptian Veil of Isis[14] metaphor in which nature is personalized as the goddess Isis and covered by a veil, depicting the obscurity of nature's secrets and the idea that not much can be articulated. Anthropologist and social scientist, Vicky Kirby asks "…if there is no outside textuality, then the differential of language is articulable in/as blood, cells, breathing and so on?" (Kirby, 2014:4). But that is another exploration, another thesis.

Numerous African myths tell of how the first human was fashioned from clay – the Bambuti of the Congo, the Shilluk of Sudan, the Barundi of Burundi, the Banyarwanda of Rwanda and the Yoruba of Nigeria (Kamalu, 1998:163).

Olivier refers to the three 'words' as three forms of language: "natural, technical and human language" where he understands "natural language" to be "the earth com[ing]

[14] See *The Veil of Isis* (Hadot, 2006).

to the fore as speaking clay, giving rise to all kinds of creatures interacting with each other" (Olivier, 2008: 316). As a phenomenon, Nature "knows how to speak for itself," and its speech "precedes and exceeds the human logos" (Olivier, 2008:316). It does not have to be represented by any human being and does not need the perspective of the human being to speak. According to Olivier: "If the core of language is to be a means of self-presentation then we can claim that nature is itself in possession of many different forms of language", which will "differ from human language", "be inaccessible to us" and "have been practiced by creatures long before humans appeared" (Olivier, 2008:316).

The second form of language (still not human) is symbolised in "the technique of weaving" and Olivier draws on Heidegger's "instrumental and the aesthetic definition" of the word technique (Olivier, 2008:317). The "instrumental" definition of technique has to do with the human using nature for its own gains and the "aesthetic definition" is drawn from the Greek "qua poiesis, the art of bringing into appearance" (Olivier, 2008:317). Voltaire's comment at the beginning of this chapter, that Nature is 'all art' is also significant here. Not only are *human* artistic and scientific accomplishments and skills part of this "bringing into appearance" but so is "acts of nature such as the bursting of a blossom into bloom" (Olivier, 2008:317). In this sense there is no difference between the human and nature in their abilities to "bring into appearance" but interestingly, the 'instrumental' definition of 'technique' – human using nature for its own gains – also has a "poetic/aesthetic" technology "depending on how nature is approached" in the sense that it "does not challenge nature, but is rather attuned to it" (Olivier, 2008:317). Examples of this could be the use of solar energy with a clean footprint in contrast to extraction of coal energy with its hazardous consequences for life on earth. Olivier reveals something important here through Heidegger's etymology of "technique as 'poiesis' and language as *logos* which both means 'bringing into appearance' in the sense of revealing ('bringing to the fore') or creating ('bringing forth') phenomena" (Olivier, 2008:317). He claims that nature (physis) also has "logos" in the sense of "poetic technique" which can create and reveal – "bring them to the fore in their own right" (Olivier, 2008: 318). This "in their own right" is a very important aspect of the language of revelation:

> The act of weaving presents a gathering of phenomena into a unity in which elements do not oppose or oppress each other, but are brought afore as equal parts of a unity. This is exactly what the technique of a poetic logos as described above claims to be: the bringing into appearance phenomena in a way that does not challenge them, but is attuned to them (Olivier, 2008:318)

This implies respect for all things – a willingness to let them show/express themselves in whatever way they need to, even if it is radically different from any of the languages in which the human expresses itself. This resonates strongly with Braidotti's "nomadic perspective", and "Spinozist-Deleuzian" ethics (Braidotti, 2006a:117) expressed in terms of "freedom through the understanding of our bondage" (Braidotti, 2006a:118). This implies that there is no real freedom without understanding the fundamental unity of "we are all in this together" (Braidotti, 2006a:119). Braidotti explains how Spinoza's "perspectival ideas" rest on the "interconnectedness of mind and body" (Braidotti, 2006a: 149). Her nomadic perspective based on Spinoza and Deleuzian ideas is also "committed to a variety of possible approaches," it is "taking responsibility without taking over" and it would like to "establish dialogues with social and natural scientists" (Braidotti, 2006a:119). What makes these dialogues so difficult is the fact that consciousness is unable to understand its own connectedness to all things, as also pointed out in chapter 1: "Whereas the body cannot exist in isolation from its surrounding totality, the mind is capable of thinking itself as an autonomous substance" (Braidotti, 2006a:149). Western environmental philosophers like Chet Bowers believes that the "bias of Western humanism" could be transcended by understanding that "ecological systems" are "units of intelligence" as well as "units of survival" (Bowers, 1997:183 drawing on Bateson) and cannot be understood separately from how organisms behave and how natural systems intra-act. Forester and ecologist Peter Wohlleben describes in his chapter on "The Language of Trees" (Wohlleben, 2017:6) how trees communicate through scent, taste, sound waves, chemical compounds and electrical impulses via "fungal networks around their root tips" which "operate like fiber-optic Internet cables" (Wohlleben, 2017:10), a kind of "wood wide web" (Wohlleben, 2017:11). This understanding implies that intelligence is not something that could only be applied to the human animal, as will be further explored in chapter 5.

Back to Olivier's "three words" in the Dogon sage: The "third word" or form of language in the Dogon sage, is "human language" (Olivier, 2008:319). Here Olivier refers to conventional language (words, signs, sounds) but also to Heidegger's "wordless or signless" language with a twist – as symbolised by "the act of playing the drum", language as "gathering people, to let them redeem, reconcile, rejuvenate" and "explore our being-in-nature" as "beings among other beings" (Olivier, 2008:319). The drum as "embodiment of speech" is found in many African cultures according to Chukwunyere Kamalu. For example, the Asante people believe(d) that "both animals and plants possess souls" (Kamalu, 1998:161) and in this kinship with their natural environment, the making of a drum from the Cedar tree is not as simple as chopping off the tree. They would first address the Cedar tree in the following way:

> Spirit of the Cedar tree
> The Creator's drummer announces
> That he has made himself to arise
> As the cock crowed at dawn
> We are addressing you, and you will understand (Kamalu, 1998:161)

Olivier reminds us that "the craftsman also celebrates the animal that provides the skin for the drum's membrane" and that playing the drum brings together all sorts of creatures – "the dead animal, the tree trunk, dancing humans, post-mortal animal and human spirits – in an act of rejuvenation… Thus the drum is per excellence a manifestation and celebration of the language of nature" (Olivier, 2008:319). Every Dogon family had its own drum with its own sound and that played an important role in the communities (Olivier, 2008).

In this section – How Nature speaks/reaveals itself – we discovered how respect for all things – a willingness to let them show/express themselves and to 'speak' in whatever way they need to, will help us to listen attentively and hear the roar of other 'voices' than the human voice. It can provide the opportunity to understand and respond to those voices. The importance of an attitude of interconnectedness and openness to all other beings in understanding nature's speech, was emphasized by the African myth discussed by Olivier; also by the 17th century philosophy of Spinoza;

Eastern Mysticism through the thoughts of Capra and posthumanism through the thoughts of Braidotti. This attitude of respect, interconnectedness and openness to all other beings will be important for how we position relationships between humans, animals, plants and the material world differently in Foundation phase education in South Africa.

## 2.9 The veiled Isis and colonialism

Iovino postulates that nature became unable to reveal itself and was "forced into hiding" through manipulation and estrangement by agriculture and through the conception that the human was the only active agent in the fertility cycles (Iovino, 2016:313). According to Kamalu, (1998) colonialism brought forth a force "which was to break the sacred bond between the African and his/her land" which also led to "other schisms or crises in the African identity" (Kamalu, 1998:167). Ecofeminist Val Plumwood explains how, even before the machine-based era and since at least the Enlightenment in the West, it became standard treatment to define nature as "passive, as non-agent and non-subject, as the 'environment' or invisible background conditions against which the 'foreground' achievements of reason or culture (provided typically by the white, western, male expert) [took] place" (Plumwood, 1993a:4). Is this perhaps a question of 'man' (sic) veiling Isis in establishing his master-identity and his master-culture? It might after all not be a question of "Physis kryptesthai philei" (Iovino, 2016:309) – Nature loves to hide, but rather that man loves to veil/cover/silence nature/woman through taking charge of, instead of listening with care and attention, understanding that we are all interconnected as seen in the previous section. These "blind spots" (or veiling of Nature) were created by "the logic of domination and the structures of dualism still in the dominant understanding of our relationship with nature today" (Plumwood 1993a:194). As such Nature is not allowed to present or represent itself anymore: it has become voiceless. The close bond between human and Nature, the 'listening' to each 'other' the understanding of each other's cycles became obscured. Kamalu recalls how the British land policy was met with "severe resistance" in Kenya during colonization as it was "in direct opposition to indigenous systems of shifting cultivation which involved leaving the land fallow for some time to allow the regeneration of vegetation" (Kamalu, 1998:168). In South Africa, for as far back as 2000 years ago (De Jongh, 2016:xv) the Hessequa Khoekhoen people (sometimes referred to as the

Khoi, San, Khoisan or Bushmen as distinctions between these groups were often blurred – see glossary of meaning) were hunters and gatherers or herders depending on times and circumstances, moving freely over the countryside as historian Michael De Jongh notes: "Like all pastoral nomads, their settlement patterns were continually subject to environmental variables such as resource availability, seasonal fluctuations and the threat of adversaries" (De Jongh, 2016:81). They never saw the land as belonging to individuals as also explained in section 2.6, nor to their leaders – it was communal – and here many misunderstandings occurred. European settlers understood that land was 'sold' to them where the Khoekhoen understood it as being granted the use of (De Jongh, 2016:28). Further cultural misunderstandings occurred during the Moravian missionary activities at the Cape from 1737 and later the London Missionary Society (1843) (De Jongh, 2016:31–43), which had a direct influence on the Khoekhoen lifestyle and contributed to its disintegration. The differences in values and worldviews are described by De Jongh: "Cattle for the Khoekhoen had ritual and social significance, but to the Dutch they were a product with monetary value – something that could be bought and sold" (De Jongh, 2016:43). The Khoekhoen became increasingly dependent upon local administration and settlers for employment (De Jongh, 2016:43–44). According to historians Hermann Giliomee and Bernard Mbenga, "Khoi-Khoi" [Khoekhoen] workers on white farms lost economic freedom as they were mostly paid in tobacco, food and drink (Giliomee & Mbenga, 2007:52). Social geographer Noel Castree remarks that in countries like Kenya indigenous people have for over a century "been forcibly removed from or denied access to traditional territories because conservationists have argued that segregated 'wildlife parks' are required for species protection" (Castree, 2001:9). More recently the organization Survival International urged travelers to boycott Botswana for the way in which it treats its indigenous Bushmen population (Haines, 2016). The Botswana government had been restricting their access to the Central Kalahari Game Reserve where they originally lived, despite a 2006 High Court order that they should be allowed to live on the reserve. Although the government of Botswana asserts that it has removed the Bushmen to protect the game reserve, deposits of diamonds in the reserve had been cited as reason by critics (Haines, 2016). The lingering influences of colonialism is therefore still obvious in so-called 'decolonized' countries where roles and habits of previous oppressors have been taken over by new leadership with ideologies of economic and new-liberal

progress. But what does the 'veiled Isis' and colonialism have to do with how we position relationships between humans, animals, plants and the material world differently in Foundation Phase education in a 2017 South Africa?

For one thing, animal, plant and human spaces are still segregated into enclosures and partitions in post-apartheid South Africa: zoos, aquariums, botanical gardens, private nature- and game reserves, all costly affairs reserved for the rich, ecospheres redesigned and colonized into special zones. Animals and plants lucky or unlucky enough to find a spot in the human zones, are cultivated and trimmed, factory farmed or industrially/corporately agricultured and slaughtered/picked to human needs, ending up in grocery stores without any songs to thank the souls of the consumed. Posthuman educationalists Debbie Sonu and Nathan Snaza describe the depiction of indigenous people and the advent of colonialism in American schools as follows:

> In the area of elementary social studies, the relationship between humans and nature is generally expressed as: once upon a time nature dictated how humans lived, but through evolution, humans came to forget nature through an obsession with themselves. Starting at a young age, children learn that in the past, nature was a curious cultural deity of the environmentally responsible indigenous peoples, but their ways of living were foreign and often the reason for interethnic conflict and disruption in American history. European arrival marked a more modern and civilized way of living, with a belief in land ownership and the rights to extract resources. With it came mercantilism, trade, the movement of goods and services, profit, consumerism, and greed. Nature became waterways for transportation, plots for farming, animals for domestication, plants for harvesting and health (Sonu & Snaza, 2015:265)

Although the assumption that indigenous ways of living is "foreign and often the reason for interethnic conflict" is not pronounced in South African schools, the idea of economic progress and consumerism is very much part of the South African curriculum as well[15].

[15] See chapter 7 for examples from the South African school curriculum.

## 2.10 Child and Socionature

Australian early childhood educator Affrica Taylor proposes a different way of looking at child and socionature in schools and calls it a “common world pedagogy” (Taylor, 2017:1448). The two important notions underpinning this pedagogy are (a) “children’s common worlds are not separated, pure and utopic, but mixed up with all manner of co-existing things” and (b) “humans are not the only ones making or assembling these worlds” (Taylor, 2013: 80). This requires listening that is attentive to the many different voices, the multilingual choir of the world, of the built environment and the human-produced artefacts as well as the many languages in which the human also speaks, in order to understand what nature reveals about itself. This attentive listening, a certain mindfulness about lingering colonial habits (coloniality) will be valuable practices when looking at Foundation Phase Environmental education in South Africa differently. (Ways of addressing coloniality[16] and the nature and socionature divides in schools are also discussed in Chapter 8).

Ecocritic Timothy Morton does not like the word ‘worlds’ though. He argues that ‘worlds’ have horizons and imply distance, bordering systems and hierarchy, are fascist and that “the current environmental emergency requires far more sophisticated mental tools than world concepts” (Morton, 2014:298). He does not like the term ‘more-than-human’ either: “…does it mean more human? Or less? Or outside the human? Or surpassing human trajectories? Instead of trying to figure out who or what is more and less, let's begin with the scientific fact of coexistence” (Morton, 2014:299). Morton also believes that ‘World’ manifests as nature, but that “Nature's disappearance is its essence: when looked for, only discrete phenomena appear such as mountains, beech trees, horses” (Morton, 2014:300). Yet, there are specific (identifiable) ways in which Nature was veiled during the colonization process and is still veiled through lingering coloniality. The next section deals with nature held as a picture and coloniality as hegemonic centrism.

[16]‘Coloniality of power’ (Quijano 2000) refers to a kind of centrism that still lingers in so-called postcolonial countries – a structure of power and control that involves knowledge, cultural systems and systems of hierarchies (Escobar & Mignolo, 2010). This concept is discussed in more detail in chapters 6 and 7.

## 2.11 Nature as a picture and coloniality as hegemonic centrism

Geographer Derek Gregory argues that colonial discourse operates on the dualism between representation and reality to produce a second dualism – that between the colonizer and colonized. He explains that the discourse of domination was articulated through the process of "enframing" where nature is "held at a distance, set up as a picture and treated as a picture, an exhibition" (Gregory, 2001:92). Rosi Braidotti calls this the "primacy of the visual" (2006a:103) or the "primacy of vision" (Braidotti, 2006b:204) – a colonizer-colonized dualism that is clearly 'visible' in classrooms today if we see Man as colonizer (culture) and nature as the colonized ('wild' and in need of being tamed). Children learn 'about' nature, 'looking at' picture books about nature, making animals and flowers out of paper and hardly ever touch, smell or intra-act with real animals and plants. The logic seems to be that if you have seen the picture you have seen it all, the agency of the living is no different from the agency of the human representation of it. This "moral paradox" is what Braidotti refers to as "the compatibility of animals and humans [that] are presumed yet negated" (Braidotti, 2006a:105). Representations of power (nature and 'other' naturecultures as a picture) also have the power to create their own realities, which makes it easy for hegemonic centrism as a lingering coloniality to stay in place. How are these representations of power conceived and discussed in Eastern Mysticism?

This "conceptual construction" of Nature or 'other' as a picture – is unique to humans according to David Loy, author and teacher in the Sanbo Zen lineage of Japanese Zen Buddhism, and he believes it is a way to "express our plasticity" (Loy, 1995:31). In other words, the human in its quest to find something eternal about itself, with which to ground itself, projects thoughts as pictures of something that exists separately from the body in the world. Humanity separates itself from nature, because it finds it disconcerting to see that things that are born, die again. Through separating mind from body, nature from culture, the human tries to find something eternal, that is not just born to die again as happens all around it. This separation "alienate[s]" us from Nature "with all the anxiety it entails" (Loy, 1995:31). Loy describes this alienation as follows: "In response to our anxious alienation from nature, we try to make ourselves real by reorganizing the whole environment (into

'resources') until we can see our own image reflected in everything 'natural'" (Loy,1995:29).

But how do we escape from this 'anxiety' of separation and fear of death of the bodymind according to Eastern mystical traditions? Tischler explains that in Buddhism, the "final remedy for the problem of suffering" is realising that 'I', the self, is just a complex "phenomena that perpetuates itself through the rounds of rebirth" (Tischler, 2014:67). There is in other words no permanent, separate, individual, stable 'self', but like with the rest of nature, there is just ebb and flow, movement from one form into the next "aggregates of the 'individual'" (Tischler, 2014:68). The human being is a combination of changing forces and micro-organisms, just like the rest of Nature of which we are a part. Representations of power and the conceptual construction of Nature or 'other' as a picture therefore has no use and makes no sense from the Eastern mystical perspective. How does posthumanism and agential realism view the permanent, separate, individual, stable 'self' of post seventeenth century science and colonial viewpoints? In Karen Barad's agential realism, observer and observed are inseparably part of a process and Barad is clear about the kind of posthumanism she is interested in: "I am interested in a posthumanist understanding that does not presume the human to be a special system separate from the natural processes he or she observes, but rather one that seeks to understand the emergence of the 'human' along with all other physical systems" (Barad, 2007:339). Therefore, Karen Barad's theory of agential realism does not privilege the agency of the human. It also challenges the notion of discrete objects. Drawing on Niels Bohr, Barad argues that "quantum ontology [is] based on the existence of phenomena rather than of independently existing things" and that "differentiating is a material act that is not about radical separation, but on the contrary, about making connections and commitments" (Barad, 2011:147). Another identifiable way in which Nature is veiled and coloniality is kept in place is through "hegemonic centrism" (Plumwood, 2002:101).

Val Plumwood explains "hegemonic centrism" as a structure where "the One" is set up as primary or centre and then defines "the Others" as "secondary, derivative and deficient" in relation to it (Plumwood, 2002:101). Plumwood exposes the logical structure of centrism which works in the same way to keep nature, certain

naturecultures, women and children in their places as ‘others’. For the purposes of this chapter, I will look at how the model of hegemonic centrism excludes nature in five ways as explained by Plumwood (2002:109–111) since these are also five ways in which the nature of Nature is obscured/veiled. They are: Radical exclusion, homogenisation or stereotyping, backgrounding, incorporation or assimilation and instrumentalism (Plumwood, 2002: 109–111). Radical exclusion of Nature happens when the anthropocentric viewpoint treats nature as radically different from the human with little continuity between them. It emphasizes the so-called differences of ‘lacking mind and lacking agency’ and ignore or hide the commonalities. In chapter 5 we see this emphasis in the form of caricaturization of animals, especially those with more ‘human’ qualities. Homogenisation or stereotyping of nature treats animals, plants and environments as all alike in their lack of consciousness, intelligence or as knowledge bearers, and promotes insensitivity to diversity. It underestimates the complexities of nature. It also presents it as inter-changeable and replaceable. (“A tree’s a tree. How many more [Redwoods] do you need to look at? If you’ve seen one, you’ve seen them all“[17]). Backgrounding and denial of man’s dependency on nature results in ignorance of nature’s survival requirements and so no limits are placed on human goals and enterprises. Incorporation or assimilation of nature takes place when nature is acknowledged and recognized as valuable only to the extent that it is replaced by human order – the intricate order of nature is perceived as disorder and needs to be cultivated. Instrumentalism of nature is the denial of nature’s independence and own agency, reducing nature to raw materials for human use and for the production of artefacts. Instrumentalism distorts sensitivity and knowledge of nature and blocks humility and wonder (Plumwood, 2002: 109–111). These five aspects of the structure of centrism work together to create a distance between the subject and object of knowledge, a mode of knowing that has been critiqued by environmental, feminist and postcolonial epistemologies for a long time (Plumwood, 2002; Alaimo, 2016). These five aspects of hegemonic centrism need to be taken seriously when exploring how we can position relationships between humans, animals, plants and the material world differently in Foundation Phase education in South Africa.

[17] March 1966, attributed to Ronald Raegan, then candidate for governor of California.

## 2.12 Dominant forms of political and scientific reason and its impact on Nature

According to Capra, the goals of science before the seventeenth century were "wisdom, understanding the natural order, and living in harmony with it", which he calls "an ecological attitude" (Capra, 1992:368). This ecological attitude before the seventeenth century would have made "dialogues with social and natural scientists" (Braidotti, 2006a:119), as well as Braidotti's nomadic perspective much easier than it is today. Capra explains how scientific attitudes changed from the seventeenth century "personified" by Francis Bacon and his "vicious, …violent images of nature as female whose secrets have to be tortured from her" (Capra, 1992:368). This is all based on the belief that "an understanding of nature implies domination of nature by 'man'" (1992:368). This patriarchal and anti-ecological attitude of controlling and dominating nature is still inherent in today's science and technology world views and has found its way into the South African Foundation Phase curriculum (see chapter 7 on practical witnessing work in a South African government classroom). In contrast to this, Capra sees the Eastern philosophical traditions expressed by "[t]he Chinese sages of old" as "deeply ecological" – "[t]hose who follow the natural order flow in the current of the Tao" (Capra, 1992:368).

The distortions, illusions and dualisms discussed in the previous sections lead us to the dominant forms of economic, political and scientific reason of today and it will therefore not be surprising to find this kind of reasoning in the Foundation phase curriculum of government schools in South Africa. It will then also not be surprising if the solution to climate change and the basis for environmental education is seen (by dominant thinking) to be in science and technology. For although the modern rationalist-empiricist model is "about power, instrumentalism, individualism and human-centeredness", rationalist science is seen as the "saviour of the environment" (Plumwood, 2002:38) and the solution to climate change and species extinction. Despite this dominant view, US advisor on climate change, Gus Speth confessed in a radio interview, which was written down a year later:

> I used to think that top environmental problems were biodiversity loss, ecosystem collapse and climate change. I thought that thirty years of good science could address these problems. I was wrong.

> The top environmental problems are selfishness, greed and apathy and to deal with these we need a cultural and spiritual transformation. And we scientists don't know how to do that (Speth, 2016)

This confession comes from an unexpected corner and should be alarming for those who thought that science and rational thought can 'save' nature/socionature or that scientific knowledge should form the basis for environmental education in the Foundation Phase in South Africa. According to Harvard solar geoenginer, David Keith:

> One of the main concerns I and everyone involved in this have, is that Trump might tweet 'geoengineering solves everything – we don't have to bother about emissions.' That would break the slow-moving agreement among many environmental groups that sound research in this field makes sense (Keith, Climate Engineering Conference, 91–2 October 2017)[18]

This is a typical result of the belief in science and technology as the only way to solve climate change problems. According to science journalist Kate Connolly "leading researchers and campaigners express concern that geoengineering research could be used as an excuse not to reduce CO2 emissions" (Connolly, 14 October 2017). According to her article in *The Guardian,* one of the strong supporters of geoengineering, Rex Tillerson once referred to climate change as "just an engineering problem" (Connolly, 14 October, 2017). Supporters of these kinds of scientific and technological interventions are often oblivious of the "potentially severe environmental impacts" of these new technologies of geoengineering "on the world's poorest", according to Silvia Ribeiro, environmental campaigner and one of the directors of the ETC Group (Ribeiro, 24 March 2017[19]). Some of the concerns around these techniques involve "stratospheric aerosol injection[20]" which might "reduce the amount of rain from Asian and African monsoons and could have a

[18] Also quoted by Kate Connolly in *The Guardian*, 14 October 2017: https://www.theguardian.com/environment/2017/oct/14/geoengineering-is-not-a-quick-fix-for-climate-change-experts-warn-trump?CMP=twt_a-environment_b-gdneco [10 November 2017]
[19] The ETC Group addresses the socioeconomic and ecological problems around new technologies and their impact on the world's poorest and most vulnerable people (Ribeiro, 24 March 2017). ETC Group Press release available: http://www.etcgroup.org/content/trump-administration-inflates-geoengineers-balloon
[20] See glossary of meaning.

devastating impact on the food supply of billions of people." It could also result in "mass migration of millions of climate change refugees" (Connolly, 14 October, 2017). Ironically, this is reflected in the words of one of visionary fiction writer Ursula Le Guin's, *The Earthsea Quartet* characters, the Master Summoner: "Rain in Roke may be drought in Osskil and calm in the East React may be storm and ruin in the West, unless you know what you are about" (Le Guin, 1993:57). Man playing God needs to know that everything is interconnected and more complex than 'he' may be able to comprehend. Problems of migration and starvation are already with us, without the help of geoengineering. (Also See also chapter 8.5.7 on 'Attentive Listening').

From an ecological way of understanding intelligence, all living systems are intelligent systems (Bowers, 1997:183 drawing on Bateson) and to intra-act with these systems the human need to explore more than its verbal communication skills, but rather, what educational philosophers Bowers and David Flinders call the "hidden patterns of communication" (Bowers & Flinders, 1990:62).

There is always the unknowable and unexpected, the artistic in Nature despite the fact that "the founding texts of modern science demonstrate that the empiricisms of Francis Bacon and other members of The Royal Society was secured by metaphors and myths that were designed to denude the mystique of mother earth in order to open up her orifices to exploitation by commerce" (Janson quoted in Gough, 2014:23). Nature will also be hidden and incommunicable if the human animal does not see itself as part of Nature as an intelligent system that communicates through other means than human language – an ecological way of understanding communication and creativity (Bowers, 1997:184). How we position relationships between humans, animals, plants and the material world will therefore be informed by how we understand nature and our position as part of it. This will also influence how we deal with colonial legacies in South Africa and in the classroom. This chapter therefore forms the basis for the following chapters and for an ecological way of communication and for imagination. Issues that will be addressed again, are the perception that intelligence is something that could only be applied to the human animal (chapter 5), the suspicion that economic progress and consumerism will be very much part of the South African curriculum, coloniality and the socio/nature

divide (chapter 6 and 7), caricaturization of animals to show our difference from them (chapter 5), and finding out if the attitude of control and domination of nature has found its way into the Foundation phase curriculum of the SA government schools. There will be more on attentive listening in chapter 8.5.7. In the next chapter, the technicalities of the research process in this thesis, the research ethics and research formalities will be discussed.

# Chapter 3 From Methodology to Ethodology

## 3.1 On the use of Method

> We may well have to give up the comfort of method, which often seems designed to stifle curiosity as we move from one pre-determined step to another and another (St Pierre, Jackson & Mazzei, 2016: 106).

> …the belief that methods must be selected from existing options and assembled *before* approaching the 'objects' of study is not only a form of *bad science*, it is also deeply implicated in anthropocentric and colonialist politics (Weaver & Snaza, 2016:1).

I intentionally start Chapter 3 on Methodology with two quotes that seem to critique the use of method in research, and I do this to produce something 'new[1]' through differences of opinion and new ways of using 'old' concepts. New, positive metaphors, ecological counternarratives, counterdiscourses (Roberts, 2007:221), and forms of critique that are affirmative, not reactive or judgemental and that do not stifle curiosity, are argued for by many posthuman scholars (Springgay & Zaliwska, 2015; St Pierre, Jackson & Mazzei, 2016:106; Lather, 2016; Sonu & Snaza, 2015; Taylor & Hughes, 2016:7; Weaver & Snaza, 2016:1 and Bunz, Kaiser & Thiele, 2017:15). If method is not to be discarded completely, how do posthuman educational scholars suggest we practice methodology differently? And a theorypractice it is, because entanglement of theory and practice is one of the many important implications of a posthuman praxis. I am cautious of separating methodology and practice into different chapters and will constantly weave method and practice through each other in this thesis, for as Lisa Mazzei warns, "[s]uch a privileging of instants, of separating events into an ordered sequence, relies on a narrating subject who fails to account for simultaneity and relations and also erases life, becoming, that produces those relations" (Mazzei, 2016:155). Many of these

[1] I use the word "new" in this chapter, from now on without inverted commas, in the sense that St Pierre, Jackson & Mazzei describe it: "Whether work is 'new' is always a matter of debate, and scholars doing new empirical, new material work usually begin by addressing that issue and pointing out that the descriptor 'new' does not necessarily announce something new but *serves as an alert that we are determined to try to think differently*" (St Pierre, Jackson & Mazzei, 2016:100; my emphasis).

scholars draw on seminal works by Deleuze and Guattari[2], Karen Barad[3], Donna Haraway[4] and Rosi Braidotti[5]. Deleuze, Guattari and Braidotti, in their turn, draw on philosopher Baruch Spinoza, especially his magnum opus *Ethics*, published posthumously in 1677 and which opposed René Descartes' philosophy of a body-mind dualism.

## 3.2 Diffraction and intra-action

As far back as 1985, biologist and feminist philosopher Donna Haraway wrote that "[t]he evidence is building of a need for a theory of 'difference' whose geometries, paradigms, and logics break out of binaries, dialectics, and nature/culture models of any kind." This quote from *Dictionnaire Critique du Marxism* (Labica & Bensussan, 1985) was reproduced in Haraway's book *Simians, Cyborgs and Women* (1991:129). In the scientific world, representationalism had been challenged in the eighties already, with works by philosophers of science Ian Hacking (1983) and Joseph Rouse (1987). The metaphor of 'diffraction' then surfaced in 1992 when Haraway remarked, "[T]he rays from my optical device diffract rather than reflect. These diffracting rays compose interference patterns, not reflecting images" (Haraway, 1992:229). More than ten years later, physicist and philosopher Karen Barad (inspired by her friend and colleague Haraway), noted that the "representationalist trap of geometrical optics" reflects the same image as between two mirrors facing each other (Barad, 2003:803). It produces nothing new and therefore she argued for "physical optics" as model and a move to "questions of diffraction rather than reflection" (Barad, 2003:803). Now, 25 years later in 2017, diffraction, which was for Haraway a metaphor and for Barad an ontological feature of the world, is gaining traction as a methodology in posthumanism and is used to read one text 'diffractively through another' (Barad, 2007:30[6]) or (inspired by Barad) "plugging in" (Jackson & Mazzei, 2012:1–13) into different fields (transdisciplinary or other) and creating the new through 'diffractive readings' of these fields. The scientific phenomenon of

[2] Deleuze and Guattari are known for advocating rhizomatic instead of arborescent thinking, process instead of final solution and their concepts of assemblages, relationality and becoming.
[3] Karen Barad's agential realism and intra-action are often employed by these theorists.
[4] Donna Haraway talks about diffraction and perspective - no God's eye view or view from nowhere and everywhere, multispecies entanglement, the cyborg and 'staying with the trouble'
[5] Rosi Braidotti's concepts of nomadic theory and bio/zoe power are explored by these theorists – see glossary of meaning
[6] According to Barad, diffraction involves "reading insights through one another in ways that help illuminate differences as they emerge: how different differences get made, what gets excluded, and how these exclusions matter" (Barad, 2007:30).

diffraction in quantum physics, Barad explains as follows: “Crucially, diffraction patterns mark an important difference between waves and particles: according to classical physics, only waves produce diffraction patterns; particles do not (since they cannot occupy the same place at the same time)” (Barad, 2007:81). In her conversation with Dolphijn and van der Tuin, Barad remarks:

> Geometrical optics does not pay any attention to the nature of light. Actually, it is an approximation that gets used to study the optics of different lenses, or mirrors. And you just treat light as if it were a ray (an abstract notion). In other words, it is completely agnostic about whether light is a particle or a wave or anything else (Barad, 2012:50).

Physicists call it the "wave-particle duality paradox" of quantum theory and this has now become “routine to use diffraction experiments to determine different features of matter” (Barad, 2007:83). Diffraction is an encounter, not something that is observed and then represented, or reported on. Barad explains, in fact, “the nature of the observed phenomenon changes with corresponding changes in the apparatus” (Barad, 2007:106). What is an apparatus, as understood by Barad’s quantum physics? She explains:

> Given a particular measuring apparatus, certain properties become determinate, while others are specifically excluded. Which properties become determinate is not governed by the desires or will of the experimenter but rather by the specificity of the experimental apparatus (Barad, 2007:19).

As such, different apparatuses will therefore cause different quantities and qualities to become determinate and some values will always be excluded. Barad argues for a “diffractive methodology” that is “respectful of the entanglement of ideas and other materials in ways that reflexive methodologies are not” (Barad, 2007:29). She suggests a “diffraction apparatus to study these entanglements” and to rethink various concepts:

> to rethink the nature of nature based on our best scientific theories, while rethinking the nature of scientific practices in terms of our best understanding of the nature of nature and our best social

> theories, while rethinking our best social theories in terms of our best understanding of the nature of nature and the nature of scientific theories (Barad, 2007:30).

Barad believes that diffraction apparatuses "highlight, exhibit and make evident the entangled structure of the changing and contingent ontology of the world, including the ontology of knowing" (Barad, 2007:73). Thiele (2014:203) sees diffraction as a "primary relating-in difference" – using difference productively and positively and as relational instead of as an exclusion – and thus valuable for posthuman ethics and therefore for this thesis.

Intra-action is a neologism introduced by Karen Barad in 1996 in her description of Bohr and Heisenberg's difference of opinion on the particle/wave duality of light. As already mentioned, light sometimes behaves like a particle and sometimes like a wave – "obviously the concepts of 'wave' and 'particle' are mutually exclusive: an object is either localized [particle] or it is extended, [wave] it can't be both" (Barad, 1996: 177–178) and it is dependent on the apparatus that measures. The centrality of the wave/particle duality for Barad (and before her for Niels Bohr) is a paradox that needs to be resolved and Barad does it as follows: "'wave' and 'particle' are classical descriptions that refer to different mutually exclusive phenomena and not to independent physical objects" (Barad, 1996:179). The phenomenon is where "matter and meaning meet" (Barad, 1996:179). This is also where a discussion of the idea of 'identity[7]' needs to meet one about intra-action. Barad draws strongly on Vicky Kirby in her discussion of identity. Kirby confesses: "It seems that the subject of the anthropological, the self-present identity of humanness to itself, is the closed container within whose limits the breeching of limits (difference) can be risked" (Kirby, 2014:153). And then, in what Barad references as a personal interview with Kirby, Barad quotes her as follows:

> I don't want the human to be in Nature, as if Nature is a container. Identity is inherently unstable, differentiated, dispersed, and yet strangely coherent. If I say 'this is Nature itself,' an expression that usually denotes a prescriptive essentialism and that's why we avoid it, I've actually animated this 'itself' and even suggested that

[7] See 'Identity' and 'subject' in the glossary of meaning for more.

> 'thinking' isn't the other of nature. Nature performs itself differently (Barad, 2007:184).

It is therefore in an understanding of identity as ontologically "unstable, differentiated, dispersed" that Barad coined her word "intra-action": "I have introduced the term 'intra-action' to avoid reinscription of the contested dichotomy" (Barad, 1996:179). In this thesis, the word intra-action is used with the understanding of fluid 'identities' within the entangled web of agencies as part of phenomena. When scholars are quoted who use the word 'interaction' instead, scholars who were perhaps not aware of the availability of the word 'intra-action', the context and ethico-onto-epistemology[8] of their work will give us an idea of whether they would have used 'intra-action' if they were familiar with it.

## 3.3 An ethical imperative and curiosity accompanied by experimentation

The two conditions for new work that drive scholars to find new concepts and methods as is currently happening in the field of posthumanism, are made explicit in the following quote by educational theorists and practitioners Elizabeth St Pierre, Alecia Jackson and Lisa Mazzei. The two conditions are:

> …an *ethical imperative* to rethink the nature of being to refuse the devastating dividing practices of the dogmatic Cartesian image of thought and, second, a heightened *curiosity and accompanying experimentation* in the becoming of existence (St Pierre, Jackson & Mazzei, 2016:99; my emphasis).

The idea of an ethical imperative, points back to Karen Barad's "ethico-onto-epistemology" (Barad, 2007:90) and suggests that the strong relation between knowledge and being "is a profoundly ethical issue, as is the relation between the human and the nonhuman" (St Pierre, Jackson & Mazzei, 2016:99). When do ethical turns become necessary? According to St Pierre, Jackson and Mazzei (2016:100), it is "when our encounters with the world can no longer be explained or justified by orthodox thinking, when new problems overtake us that demand our attention, our

[8] Ethico-onto-epistemology points to the entanglement of ethics, ontology and epistemology that, according to Barad's agential realism, based on her experience in quantum physics, cannot be separated out.

finest curiosity…" In chapter one, the urgency of a change of consciousness, attitude and practices during rapidly deteriorating planetary conditions and species extinctions was emphasised. This is such a time then, when orthodox thinking cannot solve the "greatest challenge in [humanity's] long and troublesome evolution" and where "nothing short of a fundamental change in consciousness and society" will keep us from "careering towards ecocide" (Marshall, 1995:448). It has become impossible and intolerable to think methodology in orthodox ways, ways that will not help us to imagine or create a more ethical world. We will need "[f]reedom from habits that name, describe" (Mazzei 2016:152) in other words, freedom from methodology in orthodox ways. Haraway reminds us of unorthodox ways of "[s]taying with the trouble" which requires "making oddkin" (instead of babies) requiring us to need each other "in unexpected collaborations and combinations, in hot compost piles" (Haraway, 2016:4). Still expanding the compost metaphor, she postulates "I compost my soul in this hot pile. It matters what thoughts think thoughts. It matters what knowledges know knowledges. It matters what relations relate relations" (Haraway, 2016:34, 35). As such, we must rethink methodology as well.

The new ethical imperative in methodology drives us to be curious about something we have not been curious (enough) about before, something we cannot ignore any longer in an age of climate change and species extinction. This 'something' is aptly described by St Pierre, Jackson and Mazzei as follows: "Nature is agentic, it acts, and those actions have consequences for both the human and nonhuman worlds", and in (their) other words, "[w]e cannot ignore matter (e.g., our planet) as if it is inert, passive, and dead. It is completely alive, becoming with us, whether we destroy or protect it" (St Pierre, Jackson & Mazzei, 2016:101). The fact that matter and our planet are agential, alive and becoming with us should demand our "attention and our finest curiosity[9]" and should be reflected in new methodologies with ethical imperatives – I would like to call them ethodologies. According to Barad, "there is no getting away from ethics on this account of mattering. Ethics is an integral part of the diffraction (ongoing differentiating) patterns of worlding[10], not a superimposing of human values onto the ontology of the world" (Barad, 2010:265). Therefore I

[9] Quoted earlier in chapter: St Pierre, Jackson & Mazzei, and (2016: 100).
[10] The use of "world" as a verb - "worlding", was coined by Martin Heidegger in *Being and Time* (1927) and it is supposed to signify an ongoing and generative action of being-in-the-world.

would like to describe an ethodology as an ethics-driven framework for posthuman research techniques. My ethodologies will not have names that sound like names because I want to be free from "habits that name" (Mazzei 2016:152). In section 3.6 I will discuss my ethodologies and explain the concepts that will accompany them.

## 3.4 Method or methodology? Data, creata or relata?

Drawing on Sandra Harding's work, St Pierre, Jackson and Mazzei (2016:104) explain that the difference between the terms 'method' and 'methodology' can be explained as "methods are techniques for gathering evidence and methodologies are broader, theory-driven frameworks for how projects should proceed." The terms 'gathering evidence' and 'collecting data' sounds humanist and one-sided,[11] in posthumanism one would talk about creating data rather than 'gathering' it. Methods as techniques and practices, seem to be gaining traction in posthuman research.

### 3.4.1 Data, creata and relata

Some scholars have been arguing against the use of the word 'data' (Stainton Rogers & Stainton Rogers, 2001:199; Bendix Petersen, 2003:71 and Kit Petersen, 2014:34) and posit that it should be called 'creata' not 'data' "to draw attention to the constructed nature of data" (Petersen, 2014:34), which always involves the researcher's specific interests and perspectives, data which are never "innocently gathered" (Petersen, 2003:71). Yet, Barad reminds us that "[t]he fact that scientific knowledge is constructed does not imply that science doesn't 'work', and the fact that science 'works' does not mean that we have discovered human-independent facts about nature" (Barad, 2007:40). Barad supplies the word 'relata' to go beyond 'creata' constructed by the researcher to incorporate also the non-human in the research process. As there is no independent 'data' out there, there is also no independent 'relata': "Relata only exist within phenomena as a result of specific intra-actions" (Barad, 2007:465). Somerville (2016:1170) describes the response of the children in her research as "irresistible response to water and stones" which is "non-data" since it did not make any 'sense' – it was all about "senses and bodies" and these senses and bodies themselves were "agentic". I would therefore prefer to

[11] The expressions 'gathering evidence' and 'data collection' has a humanistic ring to it, since data is not something independent 'out there' to collect. It is inextricably connected to the researcher's in(tensions) and to the more-than-human world which influences it with its own agency.

use the expressions creata/relata in this thesis rather than 'collecting data' or 'gathering evidence.'

## 3.5 Posthuman and Indigenous research methods/techniques in a hybrid third space

In chapter 2.5 we noted Douglas Morgan's claim that "Indigenous peoples were used as encyclopaedias for 'scientific' and cultural knowledge, allowing the survival of Westerners in environments that were hostile to Western knowledges" (Morgan, 2003:38) and that it is ironic that while appropriating their knowledge, the West negates the scientificity of how indigenous peoples came to possess these knowledges. He examines the "changing phases" in how indigenous knowledges have been approached, moving from "appropriation to appreciation to accommodation", but maintains that there are still "tensions and challenges for institutions of higher education" (Morgan, 2003:35). Indigenous peoples and people from more "holistic/contextual cultures, have little choice [if they want to be recognized and taken seriously in a tertiary environment] but to participate in research and teaching programs that either devalue, or do not recognize their cultural identities" (Morgan, 2003:36). The word 'accommodation' says it all with its implication of only 'tolerating' (and probably devaluing) something. How can the powerful indigenous and 'more holistic/contextual knowledges' as Morgan calls them, be included in research techniques for hybrid modern city societies in a time of climate change and species extinction where these knowledges are so important, without appropriating or devaluing them?

Louis Botha, indigenous knowledges scholar from Oslo University (but with research experience in South Africa) suggests a mixed methods approach to research: a mix of "conventional qualitative research and indigenous research" (Botha, 2011: 314). The intention for using mixed methods is to "decolonize the areas of collaboration between indigenous and western modes of qualitative research and rewrite and re-right the boundaries between these ways of knowing" (Botha, 2011:314). Botha explains how indigenous epistemologies "acknowledg[e] the interconnectedness of physical, mental, emotional, and spiritual aspects of individuals with all living things and with the earth, the star world, and the universe" (Botha, 2011:314). As explained in chapters 1 and 2, posthumanism with its non-Cartesian, non-

anthropocentric, non-dualistic (and actually non-Western[12]) praxis is in agreement with these indigenous epistemologies as described by Botha. But since indigenous knowledges have been handed down (orally) from previous generations and are embedded in place-based knowledge over centuries, it cannot really be "enabled by benevolent western practices alone" (Botha, 2011:315). That would eventually just be a modified representation by western researchers as a sign of its dominancy (Botha, 2011:315). Botha proposes a "reflective method of creative writing focused upon emotional and relational elements" which also uses "intuition and creativity" to provide an alternative to "empiricist overtones" (Botha, 2011:319). He connects his fieldwork (the "apparently stable events") with "subsequent and current experiences, giving them broader but also shifting meanings" (Botha, 2011:320). Botha seems to use creativity and reflexivity as substitute for the indigenous revealed knowledges of dreams, visions and intuitions with their spiritual undertones. It is how he "re-negotiate[s] the role of spirituality in human inquiry" and then suggests that 'real' indigenous researchers take research further to establish "specifically indigenous methodologies" (Botha, 2011:316).

I would like to suggest that 'revelations through dreams' is not a specifically indigenous experience but a very human (and possibly animal) experience that we all have in common and there is no reason why we cannot all incorporate dreams that we feel were revelationary during our research, as ways of creating creata or relata. Nobody knows what the bodymind can do, as Spinoza already understood, so why should we not sometimes surrender the mind to the bodymind and learn from it? I therefore suggest a hybrid third space[13] as was suggested by Kayira (2015) and others in chapter 1.7.5, with ethodologies that use a posthuman (non-anthropocentric, non-dualistic, non-Cartesian, anti-colonial and to an extent non-Western) praxis and incorporate dreamwork, memory stories and everyday events that are connected to the research creata/relata and in(tensions) of the research work. According to Noel Gough:

[12] Since posthumanism is an affirmative praxis, I regret having to use these negative words to describe it.

[13] Kayira, drawing on other researchers like Bhabha (1994) sees the hybrid third space as the "in-between-ness of culture and identity" (Kayira, 2015:114). This third space is not only a space of reflection, but rather one of production of the new and of new possibilities, one of inclusion and not exclusion – see chapter 1.7.5.

> Doing educational research as 'actors in a story-telling practice' means, in part, seeing fact and fiction as mutually constitutive – recognising that facts are not only important elements of the stories we fashion from them but also that they are given meaning by the storytelling practices which produce them (Gough, 1994:53).

Keeping in mind that fact and fiction could be important partners, we now turn to a section on these proposed Ethodologies.

## 3.6 Ethodologies

I have argued for and explained my rationale for using new methodological options for this specific thesis with its posthuman theoretical framework and which are born from ethical imperatives and curiosity about the agency of matter. I will now discuss some of these ethodological ideas and explain the concepts that accompany them. I will take the plunge and experiment with guidelines from posthumanist theorists and researchers, since I am told, "Put simply, we can't tell someone how to do this new work, how to think, how to experiment…" (St Pierre, Jackson & Mazzei, 2016:106). I am invited "to come as you are and to experiment, invent and create both with what is (already) at hand and by bringing that which might (or might not) be useful, because you don't yet know, into the orbit of research" (Taylor, 2016:18). My ethodologies, are mixes and matches of different posthuman and indigenous methodological guidelines useful for my specific thesis. These guidelines all have the following in common: The disruption of that natureculture binary, a relational ontology and the decentring of the human in relation to the rest of Nature. They will be used to explore and speculate in a relational way about the following 'snatches of life' (agential cuts[14]) in this thesis: Memory stories (chapter 1, 4, 8), dreams (chapter 3, 5), poetry (chapter 8), art exhibitions (chapter 1) interviews and experiences from my radio programme (chapter 1, 4), bits of transcribed video and audio recordings from an 11 month period of encounters at a primary school in Cape Town, South Africa (chapters 2, 3, 6, 7 and 8) conversations with children and teachers during this time (chapters 2, 3, 6, 7, 8,) the National Curriculum Statement of the Department of Basic Education in South Africa, a supplementary document called *Guidelines for Inclusive Teaching and Learning,* Grade 3 Life skills text books endorsed by the

[14] Agential cuts: See glossary of meaning.

Department of Basic Education (Chapters 3, 7) and a transdisciplinary/diffractive use of the non-anthropocentric notions from posthumanism, early childhood education and environmental education as discussed in chapter 1. I do not want to separate methodology from practice, this will only be an introductory chapter, with method-in-practice discussions continued in subsequent chapters. The decision to use dreamwork in my research only came after I had a specifically powerful dream that was obviously related to my research work and it was not a 'methodological' decision taken beforehand. Unfortunately, after I decided to incorporate dreams, I did not have as many as I had hoped for and eventually there are only two dreams incorporated into my thesis.

## 3.7 Ethodology 1: Openness to being woven into new evolving patterns

Curiosity and experimentation about the agency of all matter demands openness from the researcher – a willingness to change, to become anew, to be woven into a new pattern in agreement with the nomadology and rhizomatics of Deleuze and Guattari (1987). Deleuzian scholar David Cole argues that the "position of the researcher is continually rethought" in nomadic analysis and the researcher must accept "that contact with qualitative data fields changes the researcher in accordance with the material flows that are discovered during research" (Cole, 2013:227).

### 3.7.1 Nomadology

Brian Massumi, in his foreword to Deleuze and Guattari's *A Thousand Plateaus*, explains nomadic thought as follows:

> 'Nomad thought' does not immure itself in the edifice of an ordered interiority; it moves freely in an element of exteriority. It does not repose on identity; it rides difference. It does not respect the artificial division between the three domains of representation[:] subject, concept, and being; it replaces restrictive analogy with a conductivity that knows no bounds… It synthesizes a multiplicity of elements without effacing their heterogeneity or hindering their potential for future rearranging (to the contrary). The modus operandi of nomad thought is affirmation, even when its apparent object is negative (Massumi, 1987: xii–xiii).

Nomadic thought as explained in this quote, should be part of an ethodology of 'Openness to being woven into new evolving patterns' in its free movement and

dislike of fixed identities and its affirmative attitude to difference. Also drawing on Deleuze and Guattari's nomadology, Cole extends the idea of nomadic analysis to involve the real and the unreal:

> Nomadic analysis involves a social cartography that extends and plays with the forms of the real. This does make the real unstable and this will be a problem for realists, yet the point is not to take away the grounds for common sense perceptions of the real, but to enable social inquiry to delve into conjoined material flows. These flows cross back and forth between the real and the unreal" (Cole, 2013:225).

Nomadic analysis of moving between forms of real and unreal without taking away the grounds for "common sense perceptions" and "conjoined material flows" (Cole, 2013:225) only made practical sense to me during my 'weaving encounter' with one of the Grade R students as related in chapter 7, as well as when I was trying to make sense of certain powerful dreams related to my research. But how is the potential for transformation of the researcher (being woven into a new evolving pattern) realised in nomadic analysis? According to Cole it relates to "ways in which data affects the researcher and unties them from territorialised notions of information gathering" (Cole, 2013:227). I prefer Cole's other way of describing 'data' though, which is "material flows that are discovered during research" (Cole, 2013:227).

Nomadology also has a tendency towards "deterritorialization[15]" and identifying and amplifying creative "lines of flight[16]" (Deleuze & Guattari, 1987:3) which all point to creativity and the 'new'. For Deleuzian scholars Emma Renold and David Mellor the principle of multiplicity is an integral part of nomadic inquiry and they suggest that this principle can be "enacted through differentiating between finer and finer points in the research – perspectival, linguistic, conceptual or ideological" (Renold & Melor, 2013:23). Therefore, different ways and perspectives of reacting to the research are encouraged if the researcher wants to be woven into new patterns, keeping in mind that even these new patterns are constantly evolving and will never

[15]"Deterritorialization" and "lines of flight" are used interchangeably in Deleuze & Guattari's *A Thousand Plateaus* (1987). Deterritorialization could be described as "an interruption of the norm, a temporary break of the stratification of the control society" (Strom & Martin 2013:222) and "lines of flight destabilize the status quo and interrupt normalizing structures" (Strom & Martin 2013:118).

[16] Lines of flight: See footnote 15 and section 3.7.4.

remain stagnant. Even the 'finer points' are important – those points that Taylor (drawing on MacLure) calls "moments of productive disconcertion" and "rebel becomings induced by data hotspots" (Taylor, 2016:18). Those finer points are sometimes hardly recognizable by the researcher if it were not for attentiveness to a smell, a sound, a hunch… New materialist Jane Bennett proposes following "the scent of a nonhuman, thingly power, the material agency of natural bodies and technological artefacts" and this is how she understands 'following': "(anything, anyone) is always to be following (some-thing, someone), always to be in response to [the] call from something, how-ever nonhuman it may be" (Bennett, 2010:xiii). I felt what she meant during my 'encounter with shoes' experience in chapter 7, however foolish it made me feel to write a whole section of environmental education research on 'some thing' like 'shoes'. But feeling foolish seems to be fine too:

> What method could possibly be appropriate for the task of speaking a word for vibrant matter? How to describe without thereby erasing the independence of things? How to acknowledge the obscure but ubiquitous intensity of impersonal affect? What seems to be needed is a certain willingness to appear naive or foolish (Bennet 2010: xiii).

A premonition of shoes, their agency and feeling naïve or foolish may have been one of those finer points that should have alerted me even before my research started in the school between the mountain and the sea. I had an appointment with the school principal to tell her about my research and ask her permission to 'observe' in her school. Trying to make a good, 'professional' first impression, I wore high heeled shoes which I had to fix with glue the previous evening and which broke again on my way to her office. I arrived at her door barefoot, shoes in hand.

### 3.7.2 Rhizomatics

Deleuze and Guattari's understanding of the rhizome is a vital change from the arborescent image which is tree-like and hierarchical, with dualistic tendencies. The rhizome, like creeping root stalks, is open-ended with no basic or central structure that governs it and it spreads in all directions. Connecting this to my research, means that I will be attentive to all the different 'calls' in my research: the calls from 'any thing', 'any one', 'any being' instead of a hierarchical listening where I have decided

up front what is the most important to 'look out' for. This non-hierarchical listening allows for multiplicity[17] and relationality and non-hierarchical interpretations in theory and practice. For Deleuze and Guattari two of their 'principles' of the rhizome[18] (which they also call "appropriate characteristics" (1987:7)) are cartography and decalcomania (1987:12) where they call for creativity and not mere duplication. They claim, "The rhizome is altogether different, a map and not a tracing" and "[w]hat distinguishes the map from the tracing is that it is entirely oriented toward an experimentation in contact with the real" (Deleuze & Guattari, 1987:12). To be willing to experiment in research and be "in contact with the real" suggests the openness of being woven into new evolving patterns as suggested by Ethodology 1.

For educational theorists Kathryn Strom and Adrian Martin, drawing on Deleuze and Guattari (1987) the inherent linkages in the conceptual framework of rhizoanalysis necessitates "an interpretive understanding of oneself, others, observable events and experiences [that] cannot be isolated into discrete, fixed or static representations" (Strom & Martin, 2013:223). I like teacher educator Hillevi Lenz Taguchi's illustrative description of how a researcher should approach rhizomatic research: She says you,

> put onto your constructed map some of the intensive chattering of various loud and dominant (molar)lines of articulation, in terms of ways of thinking, talking and practising particular ways of knowing. You observe how different forms of chatter harmonize, converge and stretch their root threads into stronger circles of convergence (Lenz Taguchi. 2016:43).

This quote by Lenz Taguchi of "different forms of chatter that harmonize, converge and stretch their roots" are essential for attentive listening as described in chapter 8.5.7. The way in which she describes the relational multiplicity of the rhizome is not unlike the ontologies that shape indigenous research methodologies. According to scholar Shawn Wilson:

[17] See glossary of meaning
[18] Also see section 3.7.4 for these 'principles'.

> An Indigenous paradigm comes from the fundamental belief that knowledge is relational. Knowledge is shared with all creation. It is not just interpersonal relationships, or just with the research subjects I may be working with, but it is a relationship with all of creation. It is with the cosmos, it is with the animals, with the plants, with the earth that we share this knowledge. It goes beyond the idea of individual knowledge to the concept of relational knowledge (Wilson, 2001:177).

Nothing 'new' here for indigenous knowledges in the relational nature of the rhizome and "fluidity between all aspects of self (mental, physical, emotional and spiritual)" according to indigenous knowledges scholar Glynis Rowe (2014:2). Will it be ethical for a white European refugee/settler to adopt the indigenous research techniques of dreamwork[19]) into my posthuman research techniques as I have explained I want to do and will it be ethical for researchers to adopt posthuman research techniques (for example, diffraction) into their indigenous research techniques? Is dreamwork out of bounds for posthuman researchers because it could be considered appropriation of indigenous research techniques? Or could dreamwork be part of nomadic analysis as described by Cole – an analysis that "extends and plays with the forms of the real" as flows that cross back and forth between the real and the unreal" (Cole, 2013:225) as will be discussed in Ethodology 2? The next section will ponder these questions.

### 3.7.3 Dreamwork: appropriation of indigenous research techniques?

Early childhood educator Emily Ashton warns, "Curricular practices that espouse to embed, add-on, or infuse indigenous pedagogical principles to already established settler frameworks are extremely problematical. Ethical, ontological, epistemological and cosmological differences make such inclusions analogous to acts of colonization" (Ashton, 2015:90). She does not mention whether this includes in her view, cases of diffractive readings. African political philosophy scholar Jean-Marie Makang attests, "It is the capacity of adaptation of African traditions that accounts for their survival over time and space…," and he explains, "A tradition survives by adapting itself to new historical situations and most of the time by

[19] Dreamwork is seen as "inner knowing" and one of the "catalyst activities as methods supported by Indigenous ways of knowing within Indigenous research methodologies" (Rowe, 2014:16). Dreams are incorporated into the research as an unconscious guiding force.

learning from other traditions and assimilating from them elements which can contribute to its revitalization" (Makang, 1997:327). He argues that tradition "survives by evolving, not by remaining the same" and that tradition is *not* something "fixed once and for all" or "self-sufficient" and "essentially and absolutely different from other traditions" (Makang, 1997:328; my emphasis). And here, I repeat as acknowledged in chapter 2, I am not trying to imply that all indigenous philosophies and research methodologies, or, all African philosophies and traditions are the same. I am absolutely aware of and in agreement with Makang's argument when he warns:

> Besides stripping African traditions of their historicity, the ethnological discourse is plagued with its ignorance of the diversity that characterizes African people and societies. This results in excessive generalization, whereby African people are considered as forming one single tradition and Africa is perceived as one village where all the African people come from (Makang, 1997:328).

So although *not* all African traditions or indigenous research methods are the same, most of their traditions and methods contain wisdom that from an ethical perspective of inclusion and relation, posthumanist researchers (with philosophical roots that are not purely 'Western' – see chapter 2) should be allowed to learn from. For as Makang aptly avers: "A living tradition, therefore, is neither a repetition of practices and customs of the past, nor a dream of 'the origin' or of a 'lost paradise' but is meant to provide a utopian *model of action*, a *mobilizing* ideal. Such an approach is ethical in perspective" (Makang, 1997:336; my emphasis). This suggests that researchers should be open to be woven into new evolving patterns to make differences matter differently. For Ethodology 1 (openness to being woven into new evolving patterns) to take flight, we need to discuss Deleuze and Guattari's molar lines, molecular lines and lines of flight in more detail.

### 3.7.4 Molar lines, molecular lines and lines of flight

Deleuze and Guattari (1987:528) argued that we are "made of three lines": The molar line, the molecular line and the line of flight. Although I believe in drawing on original sources, Strom and Martin explain Deleuze and Guattari's molar and molecular lines and lines of flight very succinctly and in relation to education. They

say these lines are "systems and practices regulated and represented by the status quo" where the molar lines are "overriding systems or frameworks" that "place limits on what is socially permissible" and molecular lines "reflect molar lines through our actions, words, relationships, and practices" (Strom & Martin, 2013:227). Practical examples of molar lines are "the factory model of public schooling, the efforts and initiatives of corporate interest for educational reform, and the hierarchical structure of school leadership are examples of the molar undergirding schooling today" (Strom & Martin, 2013:227). And molecular lines? According to them, "neoliberalism becomes a molecular line in schools through the encouragement of academic competition among students, the economic disparity between middle/upper-class districts and urban/lower-class districts, and the professionalized status of the educator with a diminished capacity for professional autonomy and decision-making" (Strom & Martin, 2013:227). Lines of flight are escape routes from these molar lines that lead to difference, to the new. Educator Lenz Taguchi posits that the rhizome can "transform and expand" through "the exploration of the deterritorializing flows and possible lines of flight" (Lenz Taguchi, 2016:45).

### 3.7.5 Bergson's duration, intuition and the connection with creativity and dreams

Four of Deleuze and Guattari's 'principles' of rhizomatics are connection, heterogeneity, multiplicity and asignifying rupture (Deleuze & Guattari, 1987:8–15). Rhizomatic *connection* could be between different disciplines, between matter and discourse, different forms of matter, and between different affects. Deleuze and Guattari use Bergson's idea of *multiplicity* which is complex but important since it makes a clear distinction between 'quantitative multiplicity' and 'qualitative multiplicity', which leads us to his idea of duration and intuition. In the translator's preface to Bergson's *Time and Free Will*, Pogson explains,

> Quantitative or discrete multiplicity involves the intuition of space, but the multiplicity of conscious states is wholly qualitative. This unfolding multiplicity constitutes duration, which is a succession without distinction, an interpenetration of elements so heterogeneous that former states can never recur. The idea of a homogeneous and measurable time is shown to be an artificial

> concept, formed by the intrusion of the idea of space into the realm of pure duration (Pogson, 1910:xi).

So this is how Bergson (and therefore Deleuze and Guattari) understands and uses multiplicity (Bergson, 1910:121–123 [sixth impression]; Pogson, 19510:xi [sixth impression]; Deleuze & Guattari, 1987: 506). In Bergson's concept of qualitative multiplicity, he tries to unify two contradictory features: heterogeneity and continuity. A quantitative multiplicity suggests something that can be counted – actual, objective identities represented in space, which differ from each other. Qualitative multiplicities on the other hand "such as a human mood, cannot properly be counted. They are virtual, subjective, and intensive; are experienced in lived time; and differ in kind from one another" (Tampio, 2010:1). This is a difficult concept to put into words, almost impossible, as Bergson himself admitted: "…the idea of a multiplicity without relation to number or space, although clear for pure reflective thought, cannot be translated into the language of common sense" (Bergson, 1910:122) and that is because his concept of multiplicity tries to unify the two contradictory ideas of heterogeneity and continuity. Bergson explains this earlier in his chapter when he says, "We shall see that the verb 'to distinguish' has two meanings, the one qualitative, the other quantitative: these two meanings have been confused, in my opinion, by the philosophers who have dealt with the relations between number and space" (Bergson, 1910:75, 76). So here we need something else, something 'more' than the language of common sense to understand with, perhaps the field of dreams?

According to philosopher Elizabeth Grosz (2005:5), "Intuition is the precise method of discernment available to philosophy in its exploration of these durational becomings" of Bergson and she believes it is "a rigorous philosophical method for an attunement with the concrete specificities of the real" (Grosz, 2005:7). Bergson talks about intuition in terms of "internal duration" (Bergson, 1946:34):

> It grasps a succession which is not juxtaposition, [but] a growth from within, the uninterrupted prolongation of the past into a present which is already blending into the future. It is the direct vision of the mind by the mind, nothing intervening, no refraction through the prism, one of whose facets is space and another, [is] language (Bergson, 1946:34).

But how will we communicate, transmit, convey this kind of intuition? Bergson suggests we use comparisons and metaphors for that which cannot be expressed in abstract "so called scientific language" for if we tried to use abstract language, we would "be giving of mind only its imitation by matter, for abstract ideas have been drawn from the external world and always imply a spatial representation: and yet one would think one had analysed mind" (Bergson, 1946:47, 48). One might argue that metaphors are also abstract and representational. Bergson confesses that even these comparisons and metaphors would never be enough, it would only be "an intermediary image" of which a receding image will "haunt, unperceived perhaps, the mind of the philosopher, which follows him like a shadow through the ins and outs of his thought" (Bergson, 1946:127) and most probably also into his dreams, perhaps to surface later in search of a metaphor. In chapter 8 I explain how a particularly powerful experience when I was around 5 years old, followed me into my adult life and became the reason for this thesis. I will also show in section 3.8.4 how a dream blended the affects and emotions of many years ago with knowledge that is needed for this thesis now.

After my explanation of Bergson's complicated concept of qualitative multiplicity (one of Deleuze and Guattari's "principles of rhizomatics" as described at the beginning of this section) we now move to the fourth principle– *asignifying rupture*. Asignifying rupture is explained by Deleuze and Guattari as "a rupture in the rhizome whenever segmentary lines explode into a line of flight, but the line of flight is part of the rhizome. These lines always tie back to one another" (Deleuze & Guattari, 1987:9). Lenz Taguchi (2016:45) sees asignifying rupture as "actively engaging in a practice of estrangement to get away from taken-for-granted and common sense significations" which also implies responsibility when taking lines of flight (see ethodology 2) since it is still part of the rhizome and still linked to everything else. 'Actively getting away' even for a good reason, implies intent and therefore responsibility.

### 3.7.6 Relationality of immanence, affect, intuition and Guattari's ecosophy

But surely we are not talking here of transcendentalism, in a thesis where immanence[20] is crucial? Bergson answers that "in order to reach intuition it is not necessary to transport ourselves outside the domain of the senses and of consciousness. Kant's error was to believe that it was" (Bergson, 1946:150). How else can we understand intuition?

> We call intuition here the sympathy by which one is transported into the interior of an object in order to coincide with what there is unique and consequently inexpressible in it. Analysis, on the contrary is the operation which reduces the object to elements already known, that is, common to that object and to others. (Bergson, 1946:189)

It seems to me that a little of both is needed – intuition, dreamwork and then metaphors, or comparisons to elements already known, to convey this intuition, this inexpressible. I also believe it is intuition "the sympathy by which one is transported into the interior of an object in order to coincide with what there is unique and consequently inexpressible in it" (see quote above) that during my practical research helped me to "see in Xolela's eyes when she goes over to the imaginary" and to "see she knows I know" (chapter 7.5).

Even in a chapter on methodology, we have to remember that posthuman research "is an enactment of knowing-in-being that emerges in the event of doing research itself" (Taylor, 2016:18) and if we are talking about an ethodology where ethics is central, this ethodology must be "situational, emergent and unique, located in capacity and action, play[ing] out in living bodies as the point of ethical address, and be oriented to practices that are a positive affirmation of life" (Taylor, 2016:18).

How is affect, immanence and intuition linked to each other? Sociologists Rebecca Coleman and Jessica Ringrose (2013:5) believe affect is central in their quest to show "[h]ow methodologies can attend to the affective and/or to 'little experiences'". To educators Stephanie Springgay and Nikki Rotas, (who also draw on Deleuze),

[20] Immanence: Deleuze borrowed the concept of immanence from Spinoza, who used it to describe the world as an attribute to the one substance, God. "The entire Ethics is a voyage in immanence; but immanence is the unconscious itself, and the conquest of the un-conscious" (Deleuze, 1988:29).

affect "is not contained in a body nor attached to a recognizable form, rather it is a relational field, a force that activates becoming" (Springgay & Rotas, 2015:554). Braidotti explains how affect and becoming could be related to memory stories – one of the 'snatches of life' that I use in my thesis. She explains that

> Deleuze's philosophy of immanence rests on the idea of memory as a principle of containment and actualization of a subject's resources, understood environmentally, affectively and cognitively. A subject thus constituted inhabits a time that is the active tense of continuous 'becoming' (Braidotti, 2006a:151).

Understood like this, conventional understandings of subject and time are challenged and we are allowed to "reimagin[e] voice that is no longer bound to instants or places or subjects – no longer susceptible, or at least resistant, to empirical oblivion[21]" (Mazzei, 2016: 152). In any real event, according to Deleuzian philosopher James Williams (drawing on Deleuze's essay *Immanence: a life*, first published in 1995), the two practices of "empirical oblivion" and "latent significance[22]" are at work, "since it is both an event of erasure and a novel reawakening" (Williams, 2010:30). Both processes are necessary, the one to "captur[e] the necessity of actual identities" and the other as the "necessity of expressing the transcendental realm of significance and its potential for intense renewal" (Williams, 2010:30). This intensity that is inherent in memory stories and in some dreams are therefore not representations of an event but their "retur[n] as a power to change and to challenge" (Williams, 2010:30). Donna Haraway (2016:9) explains affect and relationality through the concept of "[p]laying string figures with companion species" where her string figures are "thinking as well as making practices, pedagogical practices and cosmological performances" (Haraway, 2016:14). She translates the string games of the Navaho thinkers ("imperfectly") as among other meanings "'right relations of the world,' including right relations of humans and nonhumans" (Haraway, 2016:14). In South Africa, the /Xam Bushmen spoke of "ringing strings that vibrated inside them and

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[21] Williams explains his idea of empirical oblivion drawn from Guattari's idea of transcendental immanence as follows: "Empirical oblivion means that we can never repeat the same states, either through representations of them as images or as meanings" (Williams, 2010:30).

[22] Latent significance is understood by Williams "not as an identified meaning or value" and "beyond any fixed meaning or representation." It is rather understood as a way to disrupt fixed meaning or representation. It thus "returns as a power to change and to challenge" (Williams, 2010:30).

connected them to the physical and cosmological world[23]" (D.F. Bleek1936: 134), which shows how the 'string' image is used across different Indigenous and Western cultures.

When I described my Ethodology 1 as 'Openness to being woven into a new evolving patterns' I do not pre-determine the *length* of the strings that are being woven. Guattari, in his book *The Three Ecologies* (Guattari, 2000) implies that we need strings *long enough* that they can be woven across "three ecological registers… through the articulation of a nascent subjectivity[24], a constantly mutating socius[25] and environment in the process of being reinvented" (Guattari, 2000:68) as the only way to solve the ecological crisis. Guattari suggested a new theory that could "enunciate new assemblages of existence… collective assemblages of human – nonhuman that 'assemble' to form spaces and modes of being that subvert capitalist trajectories of destruction" (Greenhalgh-Spencer, 2014:324). This theory is his special brand of ecosophy[26] from which I also draw my concept of relationality for this ethodology of being woven into new evolving patterns.

## 3.8 Ethodology 2: Being prepared to Act.

'Being prepared to act' and 'Openness to being woven into new evolving patterns' might sound like contradictory phrases, but the two go together. Openness to being woven into a new evolving pattern does not imply passivity and lack of action. As Lenz Taguchi (2016:53) argues, drawing on Barad (1999) "… it means being responsively engaged in shaping the future in our production of knowledge, because production of knowing is always also a production of reality that has material consequences". Being prepared to act does not only mean identifying lines of flight theoretically, but to 'embark on' those lines of flight, to do the work. Going back to Spinoza and Deleuze's interpretation of Spinoza, educator Lesley Le Grange reminds

[23] See 'String theory' in the glossary of terms.
[24] Philosopher and Guattarian scholar John Tinnell describes Guattari's concept of nascent subjectivity as follows: "Nascent subjectivity: a process whereby thinking emerges immanently in relation with the event, which it perpetually strives to encounter in the manner of a rhizome" (Tinnell, 2012:366).
[25]Guattari also calls "socius", "social relations": (Guattari, 2000:28)
[26] The word "ecosophy" was first coined by Arne Naess (1973) but Guattari's "ecosophy" has a different meaning. Tinnell explains: "Whereas environmentalism (like Naess') attempts to strengthen the bond between humans and the natural environment, which are articulated as two discrete and relatively stable categories, Guattari's ecosophy rethinks this relationship in terms of dynamic assemblages of enunciation without assigning humans, nature or culture a fixed role or place in the production of subjectivity" (Tinnell, 2012:362).

us that apart from Spinoza’s philosophy of nature, he also provided a practical philosophy with the important task of revelation: “Moving from the human condition of passivity to activity is at the heart of Spinozon ethics” and that “a (post)human sensibility involves not only understanding the interconnectedness of all modes, and appreciating that the human animal holds no special ontological place, but concerns a deep awareness of the need to *take action* in respecting and caring for the more-than-human-world” (Le Grange, 2018:883).

It was perhaps a good thing that I was forced by “thingly power” (Bennett, 2010:xiii) to take off my shoes early on in my practical research work and stop caring about the unprofessional impression it might make. Yet, I confessed to a situation where I felt ‘response-unable’ during my practical research (chapter 7) where I felt ‘stuck in my shoes’, a professional burden on my shoulders, knowing that a line of flight is necessary here, but I could not act… Deleuze and Guattari (1987:225) claim, “There is nothing imaginary, nothing symbolic, about a line of flight. There is nothing more active than a line of flight, among animals or humans”. Jane Bennet reminds me “the ethical responsibility of an individual human now resides in one’s response to the assemblages in which one finds oneself participating’ (Bennet, 2010:37). There is no place to hide, no excuse for not taking research practices further than just critique on what has been observed or experienced in and around classrooms. Why do we sometimes experience this incapacity to act, especially since environmental educators Debbie Sonu and Nathan Snaza claim, ”If we are interested in ethical responsiveness, by way of thinking, feeling and acting in/as the world, then we must learn to focus attention on the capacity to act, a capacity that is inherent in all matter and to accept such work as creative, without end and ontologically located” (Sonu & Snaza, 2015:275). So, this capacity to act is inherent in all matter, we just have to focus our attention on it? I will now turn to educational philosopher Sharon Todd, who, in exploring the “pedagogical and transformative aspects of education as a relation” suggests that “such transformation occurs in the liminal spaces between body and spirit” (Todd, 2014: 231) and that “the language of liminality” can give “full weight to the complex processes of human becoming” (Todd, 2014:232). This might shed more light on the researcher’s ability to act or not to act.

### 3.8.1 Liminality and Respect

> In the liminal moment both are equal in the face of this or that encounter with an idea, a creation, comprehension or insight. No longer is there a separation between teacher and student—each learns, each encounters… (Conroy, 2004: 62)

Sharon Todd draws on contemporary philosopher of education James Conroy's idea of liminal imagination in her exploration of the transformative aspects of education. There are important clues in Conroy's suggestions for transformation in classrooms – "both are equal", "no longer is there a separation" and "each learns, each encounters" (Todd, 2014:234–235). Yet, Todd stresses that we talk about "liminal moments" where "categories of students and teachers are suspended", these categories do not disappear, and teachers should actively seek out and prepare possibilities for these moments to happen although they often also "rise up of their own accord" (Todd, 2014:235). This made perfect sense during my practical research work. I found that when I was in classroom situations where "regulatory" roles were strongly in place, I felt less able to act on opportunities for lines of flight that could be transformative, even though I was neither the student nor the teacher. I was most open to new becomings when I felt completely present in my body, without a camera and in the here and now. (See Chapter 7, the hair weaving experience). Time stood still while I was with Xolela and the girls in the 'here and now' of the sand pit, it was as if I had a "direct vision of the mind by the mind" as Bergson (1946:34) describes his qualitative multiplicity. Todd asserts that "the quality of liminality is an understanding of the importance of the here and now for initiating human becoming" (Todd, 2014:235), in other words, present in the body and able to act. What kinds of relationships are required for active transformation during liminal experiences in education? According to Todd (2014:241) there are two important aspects to consider: "Respect for the otherness of the other" and "respect for the other's becoming – a respect for the other's future." In an ethodology, this kind of ethical sensibility between teacher – student, researcher – teacher or researcher – student should be obvious, but anything taken for granted can become an unexamined habit of mind, a thoughtless routine. The relationship should be one of "mediation and exchange":

> Although each bears a different role, they nonetheless are linked through the porosity of the classroom and the practices they engage in within it (such as the texts they read, or the art they create, or the material spaces they inhabit). Such porosity is not about becoming fused or unified, but only works from a respect for the other's becoming (Todd, 2014:241).

Respect for the other's becoming, but also respect for your own becoming is vital in 'Being prepared to Act.' Although not a posthumanist, philosopher of education Gert Biesta (drawing on Hannah Arendt), also believes that if you control how others should respond to your initiatives, you deprive them of their possibility to act, but you also deprive yourself of the possibility to act [and become] (Biesta, 2014: 17, 18). Respect for the other's becoming might also mean "the patience to hang back" (Conroy, 2004:65) as I had to find out during my practical research (chapter 7 on coloniality and the researcher).

### 3.8.2 Creativity and Imagination

Todd (2014:236) points to the role of the imagination, art and storytelling (dreamwork?) in the transformation process: "[T]he liminal imagination functions methodologically to delineate an approach that uses literature, poetry and the arts in order to explore the liminal spaces of existence as central to educational thought." The importance of literature, poetry and the arts for ecological thought is apparent in the movement of ecocriticism[27]. Ecocritic Timothy Clark makes this very clear when he says:

> The idea that the roots of the ecological crisis are to be found in a failure of the imagination, and that literary studies – the human imagination being their home turf – therefore have an important role to play understanding and overcoming this crisis is foundational to most forms of ecocriticism (Clark, 2015:18).

In this quote Clark explains the links between ecocriticism, imagination and environmental education, also recognized by environmental educator Noel Gough. As quoted in section 3.5: "Doing educational research as 'actors in a story-telling

[27] Ecocriticism is an interdisciplinary study where environmental concerns are examined through literary works.

practice' means, in part, seeing fact and fiction as mutually constitutive – recognising that facts are not only important elements of the stories we fashion from them but also that they are given meaning by the storytelling practices which produce them" (Gough, 1994:53). Gough warns against stories in educational inquiry that pose as a kind of "detective fiction", trying to find "*the* 'truth'" about education or certain features of it (Gough, 1994:63). Creativity and imagination will not flourish in this kind of environment.

Art educator and neomaterialist Felicity Colman argues that creativity functions as an "actioning force" (Colman, 2008:69). The importance of imagination for environmental education and for transformative experiences is thus argued for from different disciplines and perspectives. Environmental educator Chet Bowers however warns that "current ways of representing creativity as the expression of the individual's inner self… all repeat the image of the individual worked out in the metaphorical constructions of John Locke, René Descartes and Thomas Hobbes" (Bowers, 1994:162), which makes it a root metaphor for an anthropocentric universe. He suggests ways in which creativity "can be understood and experienced when grounded in a root metaphor of an ecology" (Bowers, 1994:166). This metaphor of an ecology does not separate the human from the impact it has on the environment and its earth others and does not "equate individually centred creativity with progress" nor does it "present the environment as a resource or background for the display of individual achievement" (Bowers, 1994:168). Bowers suggests four ways in which students and teachers could put the way they understand creativity on a more "ecologically responsible footing" (Bowers, 1994:170). He suggests "the use of metaphorical language that represents creativity more in terms of connected and participatory relationships, rather than in terms of individual self-expression and a spectator relationship to the 'products' of the creative act" (Bowers, 1994:170). He also believes there is a need for children to understand the "metanarratives" (Bowers, 1994:170) that have influenced our way of understanding creativity, to challenge established assumptions. The role of creativity should be extended to other areas of the curriculum and not only part of the fine arts, according to Bowers. See chapter 7 for an illustration of how this could be used in environmental education. He believes it should also be extended to areas "like interpersonal communication and use of technology" (Bowers, 1994:171). His fourth suggestion is the experience of

creativity "where transgenerational communication" is prominent, which means that children should be "exposed to art forms that encode earlier ways of understanding relationships" (Bowers, 1994:171), in other words folk traditions of dance, or crafts.

### 3.8.3 Revolutionary purpose of environmental education

One of the problems that teachers and researchers may experience in an ethodology of "being prepared to act" when lines of flight are recognized, is the fact that schools were not originally designed to "promote social change or reconstruction", but rather to "reproduce[e] the norms and values that currently dominate…" (Stevenson 2007:144). As such environmental educator Robert Stevenson believes that contemporary environmental education has "the revolutionary purpose of transforming the values that underlie our decision making, from the present ones which aid and abet environmental (and human) degradation to those which support a sustainable planet…" (Stevenson 2007:145). This is a call to action, especially in the field of (environmental) education. We have to be prepared to act… yet all the while, listening attentively.

### 3.8.4 Attentive/emergent listening and 'the dream'

Listening offers a new way of knowing and it helps the researcher "to hea[r] the world differently," listening induces "respect for alternative non-human sentient voices and [it] nurtures a respect for their habitats" (Weaver & Snaza, 2016:5). This resonates with indigenous scholar Shawn Wilson's words, "knowledge is shared with all creation…it is not just interpersonal relationships, or just with the research subjects I may be working with, but it is a relationship with all of creation" (Wilson, 2001:177, as quoted earlier in this chapter). Posthuman theorists Weaver and Snaza see attentive listening as an important "pathway" back to the natural world "from which humans have banished themselves as moderns" and they claim, "If we would only listen differently, our science would change and so would our worlds" (Weaver & Snaza, 2016 :6). In any ethodology, attentive/careful listening should be inescapably part of the ethodology since attentive listening is an ethical practice. But there are different ways of listening and they are not all equal. This is what early childhood educator, Bronwyn Davies calls, the difference between "emergent listening" (Davies, 2014:21) and "listening-as-usual" (Davies, 2016:76). For emergent listening we must be open to the entanglements of the world (openness to

being woven into new evolving patterns). In chapter 7.3 Advik demonstrates his creativity and urge to experiment, resulting from his attentive listening/(post)human sensibility. Le Grange argues, “A (post)human sensibility is akin to a life of experimentation, of infinite becoming” (Le Grange, 2018:883). Davies describes emergent listening as follows:

> Emergent listening is slow, ethical listening; it requires of us to dwell in the moment of the pause before difference emerges… Not all modes of ‘listening’ afford the listener and the listened-to the emergent possibilities (Davies, 2016:74)

To explain this better, it is necessary to look at her use of Bergson’s (1998) lines of force (life forces in all living matter) and lines of ascent and descent as well as Deleuze’s (1994) idea of difference as continuous movement. Lines of descent are “made up out of more or less automatic repetitions [listening as usual] while lines of ascent take off into the not-yet-known [emergent listening]” (Davies, 2016:76). Emergent listening takes the line of ascent where the “creative, evolution of life, of thought and of being” (Davies, 2016:76) emerges from and emergent listening does not come from the lines of descent where conformity, old habits and pre-conceived ideas of the status quo work. Bergson’s lines of ascent and descent are extended by Deleuze & Guattari (1987) into their concepts of re- and de-territorialization. (Lines of descent and reterritorialization are of a molar kind, while lines of ascent and deterritorialization are of a molecular kind.) Davies uses Deleuze’s (1994) idea of difference “as ongoing differentiation” where we “singularly and as multiplicities go on becoming different” (Davies, 2016:74). These subtle emergent differences she believes open up during emergent listening. Davies concedes that we need both lines of force and that lines of descent are not all bad: they are “often comforting… reduce the chaos of the world… and are necessary for us to interact with the social world” (2016:78), yet, letting go of the “repetitive, stratified status quo” opens up new possibilities and is the capacity that “creative evolution” rests upon (Davies, 2016:78). Emergent listening also confirms our respect for the agency of the child, as political science scholar Toby Rollo reminds us, “Communities that ground relations and the uses of space in the agency of children will always present the most enduring and effective alternatives” (Rollo, 2016a:238). The role of the child and the importance to keep *the agency of the child* in one’s *body*-mind and in the forefront of

educational research so that it does not become an exercise in theory, dawned on me in a *bodily* way after a specifically powerful dream:

> My (perhaps three year old?) daughter was told that I had extremely important work to do and would be going away for three years. But I do not leave the house, I quietly stay at home to work but try to stay out of her sight. She has glimpses of me all the time until she realises that I have never left, I just pretended to be away so that she does not bother me. I woke up feeling her pain at the realisation that she was being left to be looked after by others and found unimportant by her mother (Field notes, January 2017).

I realised that in this dream, I was researching 'child' in a three year PhD study, but also discarding 'child' by being not physically present in her life. I discarded the most important part of my study – 'being and intra-acting with' child – and substituted it for 'theory on' child. This dream does not reflect my situation in 2017, since my daughter is already 22 years old. But the intensity of the feeling I woke up with, reminded me of my protectiveness towards her when she was around three years old and the intensity of it forced me to consider the meaning and importance of this dream, otherwise I probably would have 'let it go'. One of the results of this dream was that I also paid more attention to my relationships and physical intra-action with the cats and plants in my life during the writing of my thesis. Writing 'about' cannot be a substitute for 'living and breathing with'.

Slow, attentive, emergent listening is a pre-requisite for acting and a sense of humility in one's preparedness to act and in remembering that children, animals, matter and the earth have their own agency. Deleuze and Guattari's reminder comes to mind: "But the earth asserts its own powers of deterritorialization, its lines of flight, its smooth spaces that live and blaze their way for a new earth" (Deleuze & Guattari, 1987:445).

Keeping in mind the importance for me of 'breathing with' and recognition of the agency of every thing and every one, I now turn to research ethics, another important part of this chapter on ethodologies.

### 3.9 Research Ethics

> If the protests of children were heard in kindergarten, if their questions were attended to, it would be enough to explode the entire educational system. (Deleuze in conversation with Foucault, in Foucault, 1980:209).

These are strong words from Deleuze implying that the research questions of the researcher are not the only questions or even the most important questions that need to be heard or answered. If we also attend to the questions of the children, as I believe research ethics demands, how will it inform our research questions which I call my in(tensions) as explained in chapter 1? It might demand that we change them once we start our practical research and intra-act with the children's questions. To account for my research procedures, I find inspiration from philosophers like Spinoza, Deleuze, Barad and Braidotti as well as scholars and educational practitioners who draw from their intra-relational and non-representationalist views of ethics. Ethics is not a set of rules imposed from the outside, but something that appears in the intra-actions of the research (Barad, 2007). For as Barad (2010:265) states, "Ethics is an integral part of diffraction (ongoing differentiating) patterns of worlding[28], not a superimposing of human values onto the ontology of the world (as if 'fact' and 'value' were radically other)". Mindfulness of our own entanglements is never neutral, we are always ethically responsible for our intra-actions and relationality without mindfulness is not ethical.

Braidotti believes that representationalism is also not ethical. She rejects the thinkers' (or researcher's) position of having to represent others from the position of self-appointed "arrogant power that intellectuals and scholars award themselves as the guardians of truth" (Braidotti, 2006a:13, 14). Deleuze's demand (in the quote at the beginning of this section) that we should attend to the questions, hear the protests of kindergarten children warns against such 'arrogant power'. The importance of non-representation is emphasized by Deleuze when in conversation with Foucault he states: "In my opinion, you were the first – in your books and in the practical sphere – to teach us something absolutely fundamental: the indignity of speaking for others"

[28] Barad does not use the noun 'world' which refers to something static and unchanging, but she likes to use it as a doing word – 'worlding' – to demonstrate that there is not a world out there, we are part of its performative becoming (Barad, 2007).

(Deleuze, 1972:29, 30). Foucault's influence is also apparent in Braidotti's claim: "I do not think it acceptable, in the age of globalization, to raise any issues related to ethics or to morality independently of considerations of power and power relations" (Braidotti, 2006a:30). Mindfulness in our entanglements and representationalism in the sense of 'speaking for others' is therefore clearly connected to the concept of power, which leads us to the next section.

At this point it is important to say something about my research equipment. I was afforded the use of an audiovisual recorder from the UCT School of Education for my research. Realising with early childhood educator Sylvia Kind that "[w]orking with a camera means engaging with an already troubled material, [since] … In many ways the camera embodies the postcolonial as it comes with a history of voyeurism, othering, and violence" (Kind, 2013:427).

I also acknowledged the research 'dangers' of privileging the visual, so I decided to stay with the trouble (Haraway)[29] , since in posthumanism and new materialism 'the material' is important and human perception is never perceptive enough to take in all the details. The School of Education did not have a tri-pod available and I did not have a research assistant, but since I did not plan to teach or do intervention classes, I thought it would be sufficient to use a hand-held camera. This proved to have its advantages and disadvantages. I knew that using the human eye in addition to the static camera eye awards "primary power" to me, who will be "looking and subjucat[ing] the other who is photographed" (Kind, 2013: 428). To counteract that, I let the Grade R children photograph activity in the classroom when I thought it did not interfere with the teacher's lesson and while hoping that the equipment would be safe in their hands. They looked at their own work through the camera lens or sometimes turned the camera on me. An advantage of the hand-held camera is that it facilitates activation of what Deleuze calls the "third material aspect of subjectivity[30]" – the affect image (Deleuze 1986:56). It is not possible to discuss Deleuze's work on cinema and the movement image (drawn from Bergson's *Matter*

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[29] For Donna Haraway, "staying with the trouble" means to be brave in a mixed-up world of joy and pain, not to expect things to be perfect or horrible. It means to stir up, to calm down and to "lear[n] to be truly present… entwined in myriad unfinished configurations of places, times, matters, meanings" (Haraway, 2016:1).

[30] The first and second material aspects of subjectivity in Deleuze's movement image is the "perception image" and the "affection image" (Deleuze, 1986:64‒65).

*and Memory*) here in detail, but I think it is useful for posthuman research to take note of. The three varieties of the movement image for living images and matter are the perception-image, the action-image and the affect-image (Deleuze, 1986:62–66) which happens "through the operation of framing[31]" (Deleuze, 1986:62). According to Deleuze the interval between perception and re-action (Bergson's "gaps" – Bergson, 1946:154), is only possible "in so far as the plane of matter includes time" (Deleuze, 1986:62). In other words, I, with the camera eye, (see chapter 7.1) will perceive with my "sensory-motor perception" (Deleuze, 1986:64) movement of living and static images (minus that which does not interest me, or, which I am unable to perceive) and select and re-act to it by zooming in on a specific face, a hand, a foot, or a shoe or zooming out to give context to what is happening or perhaps to distance myself from it. In other words, as Deleuze explains it, I will "grasp the 'virtual action' they [the images] have on me and simultaneously the 'possible action[32]' that I have on them in order to associate me with them or to avoid them by diminishing or increasing the distance" (Deleuze, 1986:65–66). Affection is what happens in-between, in this space between virtual action and possible reaction – Deleuze's third material aspect of subjectivity. And as I have referred to in almost every chapter of this thesis, affect is an important aspect of posthuman relational research. I would like to link this 'what happens in-between' Deleuze's virtual action and possible action, to early childhood educator Bronwyn Davies' alternative to "dominant neoliberal narrative[s] in early childhood education" (Dahlberg and Moss, 2014:x). Davies calls it 'emergent listening' (see section 3.8.4): "Emergent listening has this double movement: one thinks differently and one becomes no longer the self one was before. What was there but invisible in the prior situation, that is, its *void,* becomes visible" (Davies, 2014:24). With the hand-held camera, I am therefore enabled to, through emergent listening and an affective pause, act on what affected me, what changed me, and make it visible by zooming in our out, framing my research in a specific way. Although human perception takes away something of the original (through inadequate perception or lack of interest) affect can add to it – mere "movement of translation" becomes "movement of expression" which is motivated/activated through affect (Deleuze, 1986:66).

[31] Framing in this sense is described by Deleuze as "certain actions undergone are isolated by the frame and hence… they are forestalled, anticipated" (Deleuze, 1986:62).
[32] Deleuze calls this reaction "the second material aspect of subjectivity" (Deleuze, 1986:65).

### 3.9.1 Power and mindfulness in research ethics

Mindfulness in our entanglement also means mindfulness of where power may lurk in research procedures. Despite rigorous preparation to comply with the comprehensive ethics requirements of the University of Cape Town for research in South African schools, not all power relations (not even the ones among humans only) can ever be foreseen or accounted for. Power relations arise in the intra-actions with children and teachers that will only come later during the research. Ethics forms, information sheets and consent forms for teachers, parents and children of Grade R and Grade 3, the two Foundation Phase classes I attended for my practical research were drawn up and submitted for approval. These forms are included in the Appendix. Special time and attention went into designing and formulating consent forms and information sheets for Grade R pupils who are not yet literate. Despite this, in Foucault's words, "this enigmatic thing which we call power, which is at once visible and invisible, present and hidden, ubiquitous" (Foucault, 1980:213) made me uncomfortable when children were asked to circle the face that best expressed how they felt about my observation and recording of their classroom life. Children often want to please adults, they want to do the thing the adult will most approve of (Bell, 2007)[33]. Even if the adult tells them the decision is up to them, that the researcher does not mind either way, will the children not feel a subtle sway, will they not read bodily and other affective signs that adults are unaware of, telling them they would like them to circle the smiley face? With the help of the teacher and Xhosa speaking children, the information sheets were orally explained to the Grade R children and they were given time to ask what they did not understand. Yet, when they were asked permission to be photographed or recorded I sensed with some of them that no adult had ever before asked them permission for something. Was it a foreign idea that they had to give permission, or was it inconceivable that one would not want one's picture taken? They seemed baffled and confused by the task of giving permission. This was something I did not foresee – it was something that emerged in the intra-action of the research. I had to be mindful of the power

[33] According to social researcher, Alice Bell, "young children have a particular tendency to want to please adults by agreeing with them or being overly positive in their responses; they may also assume that an adult interviewer already knows all the 'right answers', which can make them nervous of saying something 'wrong'" (Bell, 2007:464).

relations between adults and children and the injustice of seeing child as lacking – "Immaturity has become an umbrella term for a period in a human's life that is *lacking*: lacking cognitive ability, moral responsibility, emotional independency and rationality" (Murris, 2016:112).

Ethical practice as defined by Deleuze and Barad is relational, intra-active – it is a doing. And since action and thought are mutually entangled, each is responsible for the impact of his or her words and actions (Barad, 2007). I also have to listen for that "which cannot yet be said" (Davies, 2014:11), because "responsibility is a matter of the ability to respond, also to the unsaid," it is a responsiveness "to something or a happening that cannot always be seen, but is always present" (Blaise, Hamm & Iorio, 2016: 2). According to Barad the thinking of ontology, epistemology and ethics together through listening for the response of the other, who is not completely separate from what we call the self, is what makes for a world that is "always already an ethical matter" (Barad in interview with Dolphijn & van der Tuin, 2012:69).

### 3.9.2 The researcher

I am an entangled researcher at the school between the mountain and the sea, not an innocent outsider and not a "knower" – someone doing the representing and observing from a distance (Barad, 2003:804). Researching is a practice of engagement: "part of the world in its differential becoming" (Barad. 2007:89), an ontological as well as epistemological condition that arises from the diffractions that occur in my entanglements, my doing, with the area and its school. I live in the suburb where the school is based. I chose this school because I wanted to be close to the materiality of the children's lived experiences (Urban, 2014) for at least the larger part of their school days. I know the smells, the sounds, the sights, the tastes and the feeling when the mist envelopes the whole suburb, closes it off from the rest of the sunny city and leaves it to the sound~~s~~ of fog horns. I know it without romanticising it. I acknowledge my entanglement with and 'affections' for this place, believing with Rotas that posthumanist methodologies are aligned with ecological understandings "that are not embedded in reflective practices, but rather invented with and in environments that affect/effect bodies" (Rotas, 2015:102). For Barad, diffraction, as understood through quantum physics, is not just about interference, but about entanglement – it is a matter of ethico-onto-epistemology. I

am therefore unable to 'get away' – because "[a] delicate tissue of ethicality runs through the marrow of being. There is no getting away from ethics – mattering is an integral part of the ontology of the world in its dynamic presencing" (Barad, 2007:396). I must question my own practices and situatedness (Haraway, 1988) particularly in connection with the settler colonial relations and the historicity of this place. According to Donna Haraway, "[d]iffraction is about heterogeneous history, not about originals (Haraway, 1997: 273). I am also not an original. I am a White, female bodymind, descendent on maternal and paternal sides of the French Huguenots (Du Preez and Le Roux) who arrived as refugees in South Africa around 1688, the result of intolerances of Christian religions in Europe. Forced cultural assimiliation with the local Dutch population was in place and by 1750 no one younger than 40 could still speak French fluently (Giliomee & Mbenga, 2007:60). The Protestant Le Sueur family from Bayeux arrived in the suburb I live in, in 1739.

I am also an Afrikaans mother tongue speaker from the historically hybrid mix of Afrikaner people, a people who might "like all bastards, uncertain of their identity, cling to the concept of purity" as Afrikaans poet Breyten Breytenbach is quoted to say (Jordaan, 1994:461). Despite the primary role of the Afrikaans speaking white South Africans in the politics of Apartheid in South Africa, historian Ken Jordaan claims that "the partial creolization of the Dutch language and its transformation into Afrikaans sprang from an integrated society in which social and sexual relations between the various ethnic groups affected linguistic changes" (Jordaan, 1994:462). He reminds us that the Khoikhoi adapted the Dutch language to their own which marked the beginning of the origin of the Afrikaans language today. Ironically, "official historical writings" on our past consisted of "prevailing myths of purity of race[34] and language" (Jordaan, 1994:462). I am also a child born in Cape Town, who grew up in the presence of the Langeberg mountains and later under the scorching sun of the Little Karoo where I believe ecology awakened creativity. I am also the mother of four children, a concert flute player but a cello lover "and…and…and" as in Gilles Deleuze and Claire Parnet's *Dialogues* to indicate that one is always a multiplicity, a crowd (Deleuze & Parnet, 1977:10). But since I am not a fixed identity, but 'a becoming-with' the children and the materiality of the school, I have been changed and surprised.

[34] Also see Greeff, 2007.

Vicky Kirby, drawing on Barad (Kirby, 2011:76), reminds us "entanglement suggests that the very ontology of entities emerges through relationality: the entities do not pre-exist their involvement." Moments have picked me, affected me, troubled me, disrupted me, made me unsure of how to react, even when it might have been easier and simpler to let them pass by uncontested, to let them go unquestioned and invisible, complying with the status quo. As an 'environmental education researcher,' I drew on more-than-human geographies, questioned what counts as nature and disrupted the romantic views of child coupled with nature (Taylor 2013). I wanted to be a "modest witness" in the sense that Haraway uses "witnessing" as an entanglement of "seeing, attesting, standing publically accountable for" as well as of being "vulnerable to one's own visions and representations" (Haraway, 1997:267). According to Braidotti the "modest witness" is "neither detached nor uncaring, but a border-crossing figure who attempts to recontextualize his or her own practice within fast-changing social horizons" (Braidotti, 2006a:181). My own embodied and embedded presence and perspectives are never innocent. I have taken Duhn's suggestion and "deviate[d] from anthropocentric notions," shifted my frame of analysis "from human-centeredness towards human/nonhuman entanglements" and saw how "completely new and unexpected co-habitations of places become visible" (Duhn, 2012b:102).

In this chapter I have promised to refer to the following issues in subsequent chapters: A powerful experience which followed me into adult life (chapter 8), an example of intuition in my practical research (chapter 7.5), an example of the 'patience to hang back', on coloniality and the researcher, an example of attentive listening in chapter 7.3 and an example of a liminal experience in chapter 7.6.

In the next chapter I will explore posthuman pedagogies that I feel are in line with my ethodologies in this chapter and that will help me with my '(in)tensional' questions in this thesis: How do posthuman environmental philosophies disrupt anthropocentric thinking and inform new ways of doing theory and practice for environmental education in South African schools in the foundation phase?

# Chapter 4 Commonbreath[1] pedagogies for an age of climate change

(for earthbound[2] bodies who compost well)

> These times called the Anthropocene are times of multispecies, including human, urgency: of great mass death and extinction; of onrushing disasters, whose unpredictable specificities are foolishly taken as unknowability itself; of refusing to know and to cultivate the capacity of response-ability; of refusing to be present in and to onrushing catastrophe in time; of unprecedented looking away (Haraway, 2016:35).

In this chapter I discuss posthuman pedagogy that does not look away from "onrushing catastrophe" and that will "cultivate the capacity of response-ability" as suggested in the above quote by biologist and feminist philosopher Donna Haraway. This is in answer to my research (in)tensional question[3]: How do posthuman environmental philosophies disrupt anthropocentric thinking and inform new ways of doing theory and practice for environmental education in South African schools in the foundation phase? How we either open up spaces to learn from, or close down to separate from the learning and teaching experiences with other living beings, should not only be an issue for schools, but also for governments, cities and justice departments. In most schools, teachers and children interact with fragmented habitats and examples of human "dominance and ownership" over other organisms (Gruenewald, 2003b:36)[4] as will be demonstrated in chapter 6 – "Walking a World into Being" in Cape Town South Africa. Anthropologist and social scientist Gregory Bateson claims in his proposed system called Ecology of Mind[5] that living beings do

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[1] I borrow David Abram's term "The Commonwealth of breath" where 'breath' in many oral religions is believed to be "the very source of awareness" and the "wind-mind of the world" (Abram, 2014:311). Abram also talks about the "breathing commons" in which we "renew our participation in the more-than-human community… by telling stories" (Abram, 2014:311). Also see glossary of meaning about breath in the Khoi-San/Bushman beliefs.

[2] Sociologist and science studies scholar Bruno Latour proposed the idea of the "earthbound" at the 2013 Gifford lectures where he sees the Earthbound as humans embedded in, rather than separated from nature as was the Anthropos. Also see Latour's (2014) paper *Agency of the Anthropocene*.

[3] See glossary.

[4] This is illustrated in chapter 6 – Walking a World into Being in Cape Town South Africa.

[5] In Bateson's own words, "…I now localize something which I am calling 'Mind' immanent in the large biological system – the ecosystem" (Bateson, 1987:467).

not only react to energy exchanges but also to information exchanges (Bateson, 1987:467) where he defines 'information' as "any difference which makes a difference in some later event" (Bateson, 1987:38) and 'mind' not necessarily as conscious. In fact, consciousness can only function as part of Mind and is "not limited by the skin" (Bateson, 1987:461). Through these information-exchanges, habits or patterns are re-enforced or disrupted. All organisms respond, learn and communicate as they live, which means that they also teach each other[6] in an ecological community whether that is species-specific or across species. Ecosystems are built by these exchanges of information. learning and difference-making and therefore ecosystems are in themselves pedagogical. Yet, with the legacy of Socrates' comment "I'm a lover of learning and trees and open country won't teach me anything, whereas men in town do" (Socrates in Plato's *Phaedrus*, 1961:479) and Descartes' view of a mechanical universe where non-human organisms are only bolts in a machine, human natureculture has found it difficult to ascribe learning processes across species lines. As discussed in chapter one, we are now able to see the effects of our actions in the ecosystem that we have helped to create and are now experiencing first-hand how other organisms and the ecosystem have been learning, responding and communicating in response to our actions. The ecosystem can change, diversify, regenerate and respond creatively to previous humanistic injustices if we become attentive and sensitive to how we relate to all organisms on Earth. This is why environmental educators Chet Bowers and David Flinders claim that all the common assumptions about the purpose of education, although seemingly diverse arguments, still share some basic Cartesian elements. They all believe in the "reliability of the rational process", see the "individual as autonomous" and see "change as progress" (Bowers & Flinders, 1990:242–246). According to Bowers, "the basic limitations of the Cartesian/liberal paradigm" becomes apparent through these blind spots – blind to the connection between "the ecological crisis" and "cultural beliefs and practices" (Bowers & Flinders, 1990:241). These blind spots to the Cartesian paradigm have serious implications in this time of species extinction and climate change. After all, it was Descartes, Father of the Cartesian paradigm who claimed that through physics, he discovered a practical philosophy that "might replace the speculative knowledge taught in schools":

[6] In chapter 5 I will explain the concept of teaching without the idea of human intent.

> Through this philosophy we could know the power and action of fire, water, air, the stars, the heavens and all the other bodies in our environment, as distinctly as we know the various crafts of our artisans; and we could use this knowledge – as artisans use theirs – for all the purposes for which it is appropriate, and thus make ourselves, as it were, the lords and masters of nature (Descartes, 1985:142).

Unfortunately, as lords and masters of nature we have been ruining 'our kingdom' and now need to be put in our proper place. What kind of world is this 'kingdom' of the human animal?

## 4.1 A hybrid world

What does the Anthropocene landscape look like? There is no pure, pristine Nature out there, we are living in a hybrid world (see chapters 1 and 6) where examples of the relationship between human and other organisms mostly suggest "dominance and ownership" and not "interconnection and reciprocity" (Gruenewald, 2003b:36). Habitat fragmentation caused by urban and business developments isolate remaining habitat available to other than human organisms, which prevents movement of animal and plant organisms across landscapes that were previously connected. This increases their extinction risks according to biologists Kevin Crooks and colleagues (Crooks et al, 2017). Forester Peter Wohlleben calls urban trees, "the street kids of the forest" (Wohlleben, 2017:174). They struggle to find space for their roots in the compacted pavement soil and where forests cool down during hot summer nights, "streets and buildings radiate the heat they soaked up during the day" (Wohlleben, 2017:176). Because of these stresses they often die prematurely. In a cut-up, hybrid world we will have to work with 'cuts' – preferably Baradian agential cuts instead of Cartesian cuts (Barad, 2007:140) with their inherent power-producing distinctions. Agential cuts "materialize within the becoming of the world" (Van der Tuin, 2011:39) and are more relational, fluid and adaptable.

The following incident sensitized me to how differently, attentively and with care we need to intra-act with our hybrid worlds to find instances of connection and affect for other organisms. On Monday, 25 November 2013 I hosted a radio interview in Cape Town with artist Willem Boshoff, (known in art circles as The Druid) for his exhibit

at one of the local galleries. As part of my research for the interview, I went on one of his ‘Druid walks’ in the city bowl. These walks started at 9am at the gallery and the walkers-with, have the chance to experience how the artist finds mystery and magic in the seemingly mundane, life in the seemingly dead, the unexpected in the expected, the beauty in the ugly. The walks lead through areas that could be described as derelict, polluted, neglected, dilapidated, yet the magic and beauty of a tiny flower pushing its way through a crack in the cement (like children living in survival mode – see chapter 6) or a newly sprouting plant floating in a piece of mud inside an old tractor tyre full of stale rainwater and pieces of plastic, was what The Druid called our attention to. “Life lurks in the interstices” (Whitehead 1978, 105) and this attentive, affective walking generated ideas for multispecies living in ‘messy’ places, a way of “staying with the trouble” (Haraway, 2016:1) and of living in the commonworlds[7] of city schools. I realised that, as Fikile Nxumalo also suggests, we need to respond differently to these “things” than to classify them as “garbage, clutter, out of place and ugly” (Nxumalo, 2016:146). The ‘druid walk’ also brought to mind Kate McCoy’s warning that the so-called cleaning up of “polluted urban environments” is often heralded by vilifying inhabitants as polluting and criminal before they are “cleared out through legal and illegal enactments of property law and practice, making way for the next wave of gentrifying settlers who will start anew to care for the ‘abandoned’ environment” (McCoy, 2014:94).

Yet, how do we get away from these examples of human domination and appropriation of environment where “humans have crawled or secreted themselves into every corner of the environment” (Bennett, 2010:116)? What is at stake here is not the matter of the human’s intimate relationship with plastic, but the matter of concern that our plastic is ending up inside fish and birds and other dead and dying animals. In this thesis and in the next two chapters, I make that Baradian agential cut where specific attentiveness is given to the breathing ‘others’ who compost well on earth. David Gruenewald warns, “’[N]ormal’ human development on planet Earth, especially in conventional educational contexts, is most often conceived of as a process separate from the great diversity of nonhuman life” (Gruenewald, 2003b:36,37) while the whole point of environmental education is actually “to foster

[7] Affrica Taylor and her colleagues have established the Common World Childhoods Research Collective – http://commonworlds.net/ Also see chapter 2.10 about their work as well as the glossary of meaning.

more intimate relationships between people and their total environments" (Gruenewald, 2003b:41). As explained in chapter 3, the relation between the human and the nonhuman "is a profoundly ethical issue" (St Pierre, Jackson & Mazzei, 2016:99) and ethical turns become necessary "when our encounters with the world can no longer be explained or justified by orthodox thinking" (St Pierre, Jackson & Mazzei, 2016:100). The following posthuman (and environmental) pedagogies will be discussed as ethical (chapter 3) and appropriate for life in a time of climate change and species extinction: A pedagogy of land/place drawing on work by Abram, Bowers, Gruenewald, Gough, Latour, Ingold, Stengers, Schroder, Duhn, Van Dooren, Rose, Sonu and Snaza, Tsing, Pacini-Ketchebaw, Olsson, Taylor and Giugni, Tuck and McKenzie, McCoy, La Paperson, Nxumalo, Persky and Viruru and others, interspecies pedagogy and affect pedagogy (see chapter 5). A pedagogy of land/place and interspecies pedagogy are both dependent upon affect and imagination, discussed in more detail in chapter 5.6 and the last chapter. They are porous, interpenetrative, seep through to each other and can act as doors or thresholds to each other, as Deborah Bird Rose describes the material give-take between "permeable bodies and permeable places – dialogical synergies between earth and body, place and person" (Rose, 2002:322). Place/land is at the same time also a multispecies/interspecies encounter and affect, learning to be attentive and curious to other voices are crucial aspects of this pedagogy, as expressed also in chapter 6.

## 4.2 Pedagogy of land/place: giving it a name

Although Noel Gough warns that "we could do with some creative unnaming in our work" (Gough, 2008:78), debates on the appropriate name for a pedagogy of land or place have kept environmental education theorists busy. Questions of what should be included in such pedagogies and which philosophical roots are unacceptable in the conceptualization of such pedagogies because of "taken-for-granted interpretative frameworks" (Bowers, 2004:224) and "conceptual baggage (including prejudices and silences)" (Bowers, 2008:326). Terms for place-based forms of education have ranged from the earlier forms of "place-based ecocritical pedagogy" (often involving romantic, wilderness experiences – Garrard, 2010: 234) to, among others, "ecological place based education" (Gruenewald 2003c:7), "educating for eco-justice" (Bowers, 2001:33) "critical pedagogy of place" (Gruenewald, 2003c:3;

Greenwood, 2013:96), “local cultural commons” (Bowers, 2008:331), “land education” (Tuck & Yang, 2012; Calderon, 2014:14; McCoy, 2014: 94), a “ghettoland pedagogy” (La Paperson, 2014:115), “storied land” (Somerville, 2010:336; La Paperson, 2014:127), “storied matter” (as in posthuman ecocriticism[8]; Oppermann, 2016:273), “common world pedagogies” (Taylor & Giugni, 2012:109; Latour, 2005), “postcolonial place pedagogies” (Taylor, Giugni, 2012:116), “geotheorizing” (Nxumalo, 2017a), etcetera. Although both Gruenewald (2004:91) and Bowers criticize Aldo Leopold’s “land ethic” because of his belief in the linear evolution of cultures (primitive to complex) which Bowers deems “a racist way of thinking” and “not supported by historical or cross-cultural evidence” (Bowers, 2004: 227), they disagree on the commensurability of ‘critical pedagogy’ and ‘place-based education’. Gruenewald (2003c:3), (later writing as Greenwood, 2013:96) argues for a combination of the two terms into a ‘critical pedagogy of place’. With this move, he hopes to close the gap between culture and environment. He also aims to decolonise (which involves “access to other ways of being and knowing” (Greenwood, 2013:98)) and “reinhabitate” (Greenwood, 2013:96) – in other words recognize, confront and change colonising practices. Criticizing Greenwood’s term ‘critical pedagogy of place’ as incommensurable (in terms of philosophical roots and framework) Bowers maintains that because critical pedagogy is seen as progressive towards issues of social justice, it is often not questioned by educators in environmental education. He argues that the critical pedagogies of Paulo Freire and John Dewey imply that their approach of critical reflection is the only way to gain true knowledge of the world and they expect it to be adopted globally, ignoring the knowledge systems of other (more ecological oriented) cultures (Bowers, 2008:229). According to Bowers, these critical pedagogues were also “Social Darwinian” thinkers who viewed cultural evolution as moving from simple (savage) to more complex (critical thinking) and they took it for granted that “change is inherently progressive in nature and both ignored the environmental damage of their times” (Bowers, 2008:326). Likewise, Eve Tuck and Wayne Yang (also writing as La Paperson) criticize Freire for his silence on settler colonialism, and for the fact that his theories are reminiscent of Plato’s cave allegory where “thinking man

[8] Oppermann explains the term as follows: “Posthuman ecocriticism expands the material ecocritical vision of storied matter to critically discern the cultural implications of currently emerging posthuman agencies” (Oppermann, 2016:273).

individualistically emerges from the dark cave of ignorance into the light of critical consciousness" (Tuck &Yang, 2012: 20). Bowers also criticizes Arne Naess's Deep Ecology on the basis of its very rational and individualist approach to the expression of philosophy's eight guiding principles[9] (Naess, 1989:37) instead of adopting a cultural and ecological relationality (Bowers, 1997:30). Ecofeminist Val Plumwood rather proposes a "self-in-relationship" than an extended self as in Deep Ecology, and here we can see a link to pedagogies of land and multispecies pedagogies as she proposes that the "relational account of self can usefully be applied to the case of human relations with nature and to place" (Plumwood, 1991:20).

Another incommensurability seems to be between place based pedagogies and land education since some scholars believe place based education does not do enough to identify and resist colonial practices and recognize the obliteration of Indigenous peoples (Tuck, McKenzie & McCoy 2014:16; Calderon, 2014:14; McCoy, 2014: 94). According to Ethnic Studies scholar La Paperson (Wayne Yang) "Indigenous place-based education is land education. Place-based education, from a settler perspective, is far more inclusive – place becomes something everyone can claim, can tell a story about. Place-based education leads to restorying and re-inhabitation, whereas land education leads towards repatriation" (La Paperson, 2014:124).

Place/land is never culturally and politically neutral (Duhn, 2012a, 2012b; Greenwood, 2013; Tuck, McKenzie & McCoy, 2014; Tuck & McKenzie, 2015) and cannot be conceptualized as such, not even in early childhood education/Foundation Phase education where traditionally, 'thorny' issues like climate change and colonialism are kept away from 'innocent children'. Duhn believes the 'innocent children' idea might come from the "romantic legacy" (Duhn, 2012a:20) of childhood and nature under influence of Rousseau. Recognizing injustice and inequality, is part of being attentive to assemblages of life. To pretend children do not notice it if adults do not talk about it, is pedagogically unsound and smacks of what Veracini calls "settler colonialism" that "covers its tracks" (Veracini, 2011:3). What Iris Duhn calls the "politics of inclusion and exclusion which determines who has a right to place and belonging and who does not" (Duhn, 2012b:101) is thus

[9] See Naess, (1989:37) for his eight guiding principles. Ecofeminist Val Plumwood criticizes Deep Ecology as being of Kantian rationalist origin and of making use of rational frameworks without proper historical analysis that have been proven oppressive to nature and women (she adds "in the West" where they do not adequately challenge the nature/culture divide) (Plumwood, 1991: 3).

visible in debates about what current pedagogies of place include or exclude, demonstrating the nature/culture dualism still embedded in educational practices. Bateson's metaphor of an ecology includes humans, other organisms and energy fields in one interdependent and relational system and Eve Tuck and Marcia McKenzie comment on the "irony of using language of ecology without mention of any actual ecosystems" as they experienced it at an educational conference (Tuck & McKenzie, 2015:xv). They found it problematic that in a time of species extinction and climate change, words like "complex ecologies" were used "as a metaphor emptied of its connection to place, land and environment" (Tuck & McKenzie, 2015:xv). Greenwood warns that "[m]uch of the vast literature on place and space entirely disregards the ecological context of culture" (Greenwood, 2013:94).

In the midst of the disagreements, inclusions, exclusions and incommensurabilities around place/land pedagogies, I believe that with the navigational tools of Deleuze and Guattari and Braidotti's nomadism and affirmative critique, which are important aspects of a posthuman praxis, this does not have to end in a double bind. Traditions and philosophies have not always lived up to their ideals in practice (Marxism), yet we are all learning and evolving and finding the similarities that will help us navigate through the differences that matter. Both Bowers and Gruenewald/Greenwood[10], believe in a non-anthropocentric way of relating to place. They believe there are more ways than the rationalist way of understanding the world. Both respect other ways of knowing despite their linguistic altercations: "… ancient peoples might have had a more complex way of understanding energy and information exchanges and therefore developed more ecological responsive forms of culture" (Bowers & Flinders, 1990:246) and "[d]ecolonization involves access to other ways of being and knowing... Places themselves have something to say beyond human voice" (Greenwood, 2013:98). I believe even if they do not necessarily call themselves "posthumanists" we can productively draw on both their suggestions for a land/place conscious pedagogy. Bowers suggests that teachers should encourage students to give "thick descriptions[11]" orally or in writing, of their own cultural experiences in a

[10] Gruenewald started writing under the surname Greenwood later in his career.
[11] Bowers explains "thick descriptions" as involving relationships and culture, "challenging the abstractions that carry forward past misconceptions, prejudices, silences and stereotypes that are encoded in metaphors such as decolonization, critical inquiry, emancipation, individualism, tradition, woman…" (Bowers, 2008:330). In other words, Bowers asks for metaphors to be decoded by bringing in personal experiences which are often silenced or misunderstood.

pedagogy that will strengthen "local traditions of intergenerational knowledge, skills and patterns of mutual support that enable members of the community to be less dependent upon consumerism, and thus to have a smaller ecological footprint" (Bowers, 2008:332, 333). Through these descriptions, a voice is given to differences in thinking and feeling and relationalities – for example intergenerational healing practices and Western consumer medicine, different methods of food production and acquisition. (See classroom discussion of intergenerational healing practices and subsequent interview in chapter 7). These 'thick' descriptions can show how responsiveness to place has to take into account how our race, gender, age and socio-economic status influence how we respond to it.

In the next section I draw on Gruenewald's suggestions (he uses a multidisciplinary framework) for a pedagogy of land/ place through his five dimensions of place to arrive at "a socio-ecological, place-conscious education" (Gruenewald, 2003a:619).

## 4.3 Five dimensions of place

David Gruenewald/Greenwood's frequently-quoted comment is that "[p]laces are fundamentally pedagogical…" (Gruenewald, 2003a:645) which resonates David Orr's, "[a]ll education is environmental education" (Orr, 2004:59). Gruenewald explains his own quote further in his "five different dimensions" through which places teach us. In discussing these five dimensions of place, I want to make it clear that these dimensions are all entangled and relational and not supposed to be experienced as separate from each other in any way. After all, as Gruenewald himself reminds us, "one of the meanings of ecology is that, ultimately, everything is connected" (Gruenewald, 2003a:648). It makes sense that the complexities of cultural and political matters should also be entangled with the more traditional ecological attitudes to place.

Firstly, places teach us perceptually through "multisensory perception of direct experience" (Gruenewald, 2003a:624) – if we involve all the senses, a rich, layered experience of every thing and every being in the environment is able to enter awareness and insist on being heard/felt/smelt and to show its agency. This is in line with how posthuman theorists understand pedagogy – it should relate to location and surroundings in a way that is "alive, vibrant and powerful" (Sonu & Snaza, 2015:274). Gruenewald calls it a "coming back to our senses" (Gruenewald,

2003b:39). This also means noticing the agency, the will to live of trees, plants, worms and weeds in place, how they constantly work against colonial projects of 'cleaning up' and controlling, as Fikile Nxumalo notes in her research in an early childhood forest garden (Nxumalo, 2016:146) and how I described it in chapter 6. We can also draw productively on Anna Tsing's concept of "creative friction" (Tsing, 2005:x) which she explains as "the awkward, unequal, unstable and creative qualities of interconnection across difference" (Tsing, 2005:4) which causes disruptions, change, perhaps lines of flight eliciting dialogue and "unexpected alliances" (Tsing, 2005:12). For Gruenewald, schools as "regimes of bodily control (Foucault, 1977) currently blunt our ability to perceive… limit experience and perception… and [could] stunt human development" because it "regulat[es] our geographical experience" (Gruenewald, 2003a:625). Language of exploitation of nature in schools and curricula where other living organisms and the ecosystem is discussed (see chapter 7 on language in the South African curriculum and text books) are the results of an anthropocentric detachment and lack of sensitivity to "earthly phenomena" (Gruenewald, 2003a:624).

Secondly, places teach us sociologically since places are also social constructions and they teach particular cultural meanings (Gruenewald 2003a:627). Places are conciliated and understood through culture but are also results of human culture (or results of the absence of it). People and their cultures give meaning to what they understand as trees, nature reserves, wilderness, zoos… As Veronica Pacini-Ketchebaw puts it, in a discussion of her forest pedagogies, "stories of deforestation, of colonial damage and human encroachment into the lives of the forest's more-than-human species are the messy stories that children [inherit]" (Pacini-Ketchebaw, 2013:358). 'Place' or 'land' is always experienced by the human as 'natureculture' and the danger is that we take our social space (highways, shopping malls, gated communities) as such a natural part of our rights as human beings that these artefacts of our natureculture become inevitable, totally uncontroversial and legitimate parts of our environment. This unquestioning, unthinking way of interacting with place, space and land is what a pedagogy of land and place should challenge. If teachers and curricula fail to do that, Gruenewald believes "(a) it obscures the connections between education, culture, and place; (b) it releases people from their responsibility as place makers; and (c) it legitimizes the ideology that is embedded in the places we

take for granted" (Gruenewald, 2013:628). In chapter 2 I also discussed this hegemony of human natureculture.

Thirdly, places as products of our culture, teach ideologically since they produce certain "social formations" where power, domination and control become visible and space becomes "hegemonic… not through material force but through material forms" (Grunewald, 2003a:628). An example of these material social formations came in the form of a newspaper article in the Cape Argus of 5 July 2017 with the heading, "Delft kids play in fields filled with rubbish":

> Delft residents fear for the safety of their children as they often play in fields of household waste and rubble. Grandmother Gail Petersen said the "dumping was bad" and "our children have nowhere to play. It is dangerous for them." Another resident, Gamiedah Reading: "It is not a nice place to raise the children. There is no love in this place" (Davids, 2017: 4).

We need to know a little more about the place called Delft, to provide the context.

***Figure 4.1:*** *Fields of rubbish. Henk Kruger/ANA Pictures.*

Delft is a township (see glossary of meaning) near Cape Town airport, about 34 km outside of Cape Town where some of the pupils from the school of my research (chapters 6 and 7) travel from. It was originally constructed in 1987 as a township

for 'Coloured'[12] people and houses were built on the windy sand dunes and sold with government subsidy – informal extensions are now attached to almost every house. According to the 2011 South African census, 51% 'Coloured', 46% 'Black' and 3% 'other' were living there with most people speaking Afrikaans or Xhosa and English as second language[13]. The name 'Delft' came from one of the Dutch colonist farms in the area (named after the city Delft in the Netherlands) and some sections of Delft still have names like The Hague and Eindhoven, both named after the cities in the Netherlands. The world famous South African cardiac surgeon Dr Christian Barnard, who successfully performed the first heart transplant in the world on 3 December 1967, did his heart transplant research on animals at the Delft medical research centre[14]. The reason for all this information here, is to demonstrate how through history and ideologies, power is reflected in the establishment and regulation of the geographical place called Delft. It impacts ironically on those who now live and play there – where trees and grass struggle to grow without irrigation in the sandy, water-scarce place with its gang-related drug trade, crime and unemployment[15]. According to the newspaper article referred to, "open areas in Delft are covered with plastic bags, used nappies, tyres, glass and building rubble. Illegal dumping sites have become a norm in Delft. Children have limited areas to play during school holidays" (Davids, 2017: 4). In contrast, the picture below was taken in a suburb close to the school of my research, where 2 hectares of 'natural space' is privatized, fenced-off and reserved for the few who can afford it.

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[12] In 1950, the South African Apartheid government classified people according to their Population Registration Act no 30 of 1950, into different races. These categories were 'White,' 'Black', 'Indian' or 'Coloured' – categories that are still being used in South Africa.

[13] Weblink: https://census2011.adrianfrith.com/place/199023

[14] See weblink: http://www.publicgallery.nl/delft=here%20sa%20eng.htm

[15] See weblink: https://en.wikipedia.org/wiki/Delft,_Cape_Town

***Figure 4.2*** *Welcome if you have money. Photo by author.*

Fourthly, places teach us politically, since (here Gruenewald draws on feminist and social activist bell hooks[16]) place is also a perspective for contrasting world views. Gruenewald suggests "a theory of place with life on the edge", where teacher and learners could ask together:

> Where are the margins? How have they been constructed? How do they reveal not only multiple forms of oppression, but possibilities for resistance to and transformation of domination? What have they to teach us about an education that can help move us toward more just societies and communities? (Gruenewald, 2003a:633).

See chapter 6 (Walking a world into being) and chapter 7 (Without shoes) for an example of how life on the margins and its alternative perspectives could be productive for discussions about the politics of place even in Foundation Phase environmental education. The excerpt that follows, is a transcript of a video recorded lesson in a Grade 3 classroom. The topic "Insects and their homes" illustrates how pedagogy of place and life on the margins could be used productively to invite dialogue and different perspectives in a foundation phase classroom. As is

[16] American social activist and feminist Gloria Jean Watkins, uses the pen name 'bell hooks' (lower case) to signify that her work is more important than who she is and to distinguish her from her grandmother. One of her books most relevant to this section is *Feminist theory: From margin to center* (hooks, 1984).

explained in chapter 6 and 7, homeless people sleep on pavements next to the school of my research encounter and on lawns near the beach-front of this touristy area. Altercations between school children and pavement-sleepers are sometimes reported at the school, which is probably why the teacher reacted with anger to the child's laughter and ridicule, although there is also irony in the subsequent separation of the child from the group:

> Today we talk about the homes. Some people stay in shacks, as long as it is a home. Some people sleep in the streets or in the caves, under the bridge. [A child laughs and is told to go and sit separately from the group]. We don't laugh at people who do not have homes, because these things happen. Some people really enjoy sleeping there, for them it is a home. You may think how do they cope in winter staying there, but some of them really enjoy staying there because they do not have anybody to go to (Grade 3 teacher, 28 April 2016).

Although no further dialogue emerged from this, as it was a very teacher-centric lesson, there are possibilities for lines of flight and discussions about why these people prefer to live in this area. Did they grow up here but cannot afford it anymore? Do they just enjoy living close to the sea and the mountain, is it the fresh air, the smell, the rhythm of this place that keeps them here? Are people here more generous with food or money donations? How do their lives contrast with those of wealthy holidaymakers they see and hear around them? How do they experience the children who come to this school?

Gruenewald uses Foucault's idea of panopticonism (see glossary of terms) to argue that "privatization" and "gentrification" gives the power to 'make places' to the privileged few and takes "public space" from the many with "other costs associated with control of bodily movements" (Gruenewald, 2003a:630). Also see chapter 6 and 7 for bodily freedom, 'keep out' signs in "Walking a world into being" and section 2.4.5 of this chapter on decolonising places and spaces.

Gruenewald's fifth dimension of place teaches ecologically. He finds it problematic that schools have the goal of preparing pupils to participate in economies that often devastate ecological systems, which means that environmental education as written into curricula standards are often incommensurable with the ecological wellbeing of places (Gruenewald, 2003a:633). Likewise, Sonu and Snaza warn that educators

should carefully scrutinize "how these standards reinforce a dichotomy between human and non-human living and non-living matter… [and work] toward a less anthropocentric understanding of ecology" (Sonu & Snaza, 2015:260). Although climate change and species extinction is a global problem and many might argue that a single global ethic is necessary to deal with it (one of the critiques against bioregionalism[17]), Gruenewald draws on bioregionalism and ecofeminism to support his claim that "ecological issues can easily become abstractions from the immediacy of the places where we live" (Gruenewald, 2003a:633). For environmental educator Noel Gough, places become pedagogical not only through cultural practices of attentiveness to "spirit" of place but also attentiveness to embodied, "obvious characteristics" of place (Gough 2008:72) which imply an active 'being there' – a belief that has taken Gough to places like South Africa for his research. Gruenewald suggests that we should "produce, consume and waste locally" and insist that "human cultures must learn to live within the natural limits of their bioregion" (Gruenewald, 2003a:634). This will help teachers and students to become more aware of and accountable for where their consumables come from, how they were produced and what the impact of the total cycle will be on the ecosystem and the humans who are part of this system. This means living more attentively and taking responsibility for what and how we consume. Dialogue about locally produced foods (why it is important not to buy imported food, or, why it is important to know where your food comes from) should be part of the 'Food Pyramid' discussion in a school curriculum (see chapter 7). In her land education inquiry, educator and scholar of colonial processes, Kate Mc Coy, investigates the effects of colonial monoculture cash crops which in many cases had displaced subsistence farming. This resulted in lack of local food diversity and of food shortages which again shows that land education should include "definition and critique of settler colonialism, its human and environmental impact, and its material and discursive legacy" (McCoy, 2014:83). These five dimensions of place that teach perceptually, sociologically, ideologically, politically and ecologically is of major pedagogical importance for environmental education.

[17] Bioregionalism critique: as discussed by Evanoff, (2007: 141). Also see glossary of meaning.

## 4.4 Ecofeminism and land/place

Like Bowers (section 4.2), Gruenewald also believes that the approaches to place offered by Ecofeminism are sensitive to many different social and ecological predicaments. These approaches can therefore "help provide place-conscious education with a meta-framework that is responsive to the ecological, political, ideological, sociological, and perceptual dimensions of places" (Gruenewald, 2003a:635). It can also help to extend the limited scope of diversity, that educational institutions display through the "economic development patterns that contemporary schooling both implicitly and explicitly embraces" (Gruenewald, 2003a:636). Yet, the legitimacy of ecofeminism in Africa is questioned from a sub-Sahara African perspective by Zimbabwean feminist ethics scholar Fainos Mangena, who argues that although there might be major connections between the domination of women and nature in the West, in sub-Saharan Africa, there is no connection between the oppression of African women and disrespect for nature (Mangena 2014:1, 2). He further claims that value-hierarchical thinking (top-down in value), value-dualisms (oppositional instead of complementary) and logic of domination (why domination is valid) does not make sense in Africana Womanisms who in any event, identify with the word "womanism" and not "feminism" (Mangena, 2014:14). As a result of colonialism, two schools of thought emerged: Black/African Feminists (who adopted Western feminism) and African Womanists (who prefer to conceptualize their experiences in the African context and traditions – like ubuntu/ hunhu[18]) (Mangena, 2014). According to Mangena, womanism refers to human women, and feminism refers to the female of human, animal or plant (which seems to me to indicate that womanism is a more humanist expression than feminism) and that men consider women as "equal in their fight against racism and classism" (Mangena, 2014:13). This last comment was debated in an interesting discussion during and after the opening night of the play "The Fall" written and performed by recent drama student graduates of colour of the University of Cape Town in the wake of the 'Rhodes must Fall' post-colonial protests in South Africa in 2016. In the last chapter about differences between South African and Western perspectives this will be discussed in more depth. Mangena does admit in a 2009 paper that "the African woman's moral point of view is still far from being respected because of the whims and caprices of

[18] Hunhu is the Shona equivalent for Ubuntu. Shona is the language spoken by the majority of people in Zimbabwe (Mangena, 2009:19). For Ubuntu, see glossary of meaning (Mangena, 2009:19).

patriarchy which is camouflaged in the communitarian philosophy of hunhu or ubuntu" (Mangena, 2009:18). But this is not the place for a further discussion of African Womanisms versus ecofeminism. Perhaps it suffices to end with what Sonu and Snaza's believe is "the point of ecology in the pedagogical vein: … the process of creating difference, the evolution of our thought on what is different and the kinds of difference that justify certain kinds of vulnerabilities" (Sonu & Snaza, 2015:274). These vulnerabilities need to be discussed and debated also in Foundation Phase class rooms and everyone should have a right to her/his opinion born from own experience, however short that life experience might be. As argued in section 4.2, I do not believe Foundation phase children should be wrapped in tissue paper and kept away from 'thorny' issues. Drawing on Gloria Anzaldua (1999), early childhood educators Julia Perksy and Radhika Viruru account how teaching children in Texas "borderlands" where "worlds collide" (Persky and Viruru, 2015:127,129), give new insight into the heavy responsibilities in an eight year old boy's 'short' life through a poem of which these are the last lines:

> He tried and tried to get
> It right – gave up and
> Did not speak. Rules were hard to follow,
> Teacher did not understand
> At school he was a little boy –
> At home he was a man (Persky & Viruru, 2015:131).

The fact that the child in this poem has to be a man at home – his father has been taken away – means that his responsibilities and experiences are not that of 'an ordinary' eight year old child. It would indeed be ageist from teachers to believe he is not mature enough to understand 'thorny issues' in classrooms. This eight year old will probably know much more about vulnerabilities and difference than many teachers. Not all children (especially not in Syria or even South Africa) grow up wrapped in tissue paper.

After Gruenewald's fifth dimension of place (the ecological) that asks us to live within the natural limits of our bioregions, the next section concerns itself with new-liberal and global perspectives and decolonization of place and spaces in land/place pedagogy.

## 4.5 New-liberal perspectives, globalization and decolonization of places and spaces

Colonial endeavours still exist and carry their colonial legacies in the guise of new, modern terminology in 'Third World' dialogue and practices. Capitalist growth terms like "spreading democracy" and "opening markets" are proffered as crowning points of civilization while often restricting and blocking environmental movements (McCoy, 2014: 93, 94). McCoy warns however, that environmentalism (and therefore environmental education) is not necessarily without blame here and often disguise these same tendencies in seemingly innocent words. Ecofeminist and ecocritic Greta Gaard criticizes the kind of environmental education that calls itself 'sustainable development' (also see chapter 1 about sustainability education) yet places itself (sustainable education) within a global neoliberal framework and ignores the "unsustainability of endless growth" (Gaard, 2009:326). Chet Bowers confirms this argument when he claims that the language of environmental education becomes a double bind (drawing here on Albert Einstein's description of double bind) which uses "the same mind-set to solve a problem that created it" (Bowers, 2001:142). Bowers blames educators' narrow understanding of the word ecology, who ignore how mind-sets from the Industrial Revolution with ideas of individualism, innovation, growth and progress, limit understanding of climate change to narrow responsibilities of 'recycling'. Bowers believes even the metaphors in environmental language like "restoration", "preservation" and "conservation" carry root meanings from technocratic, neo-Romantic and colonising ideologies ignoring traditions in other, more ecologically centered and intergenerational minded cultures (Bowers, 2001:149). Childhood and ecological sustainability studies scholar Iris Duhn critically engages with the idea of "cosmopolitanism" and "global citizenship" based on a liberal humanist understanding where "traces of the historical and political struggles" of the local land often just vanish from the early childhood curriculum (Duhn, 2014:231). She argues that instead of a humanist understanding of cosmopolitanism and global citizenship, what we really need in early childhood education practice and thought is "new imaginings for planetary futures beyond humanism" (Duhn, 2014:231), which points to the productive use of posthuman understandings of globalization. As La Paperson remarks in his analysis of settler colonialism in a ghetto land pedagogy – settlers

often reinstate themselves as “ecological stewards” and we should be aware that a place-based curriculum could “help write the master narrative of future, green, metropolitan neo-colonies” (La Paperson, 2014:120). For La Paperson, ‘greening’ urban spaces could be a way for settlers to redeem themselves, find their “native self and thus the land again” and “greening the ghetto can mask a neoliberal curriculum of whitening the ghetto with ‘better-educated,’ ecologically ‘responsible,’ global citizens” (La Paperson, 2014:121). It is important to note that in Cape Town, South Africa where my research took place, ‘who owned the land’ differs from land issues in La Paperson’s America. Humans had been living in Africa and South Africa from about 200 000 years ago (Giliomee & Mbenga, 2007:4) and Cape Town was never a homogenous ‘place’. When we go back to the time when the first Europeans arrived, this land was occupied by two indigenous groups of Khoi, the Gorachoqua and the Goringhaiqua who used these shores to graze their livestock (Warden, van Heyningen & Bickford-Smith, 2004:16). Also see chapter 6. Other terms describing the various peoples who occupied space here have ranged from Khoi-Khoi, Khoekhoen, San, Khoisan, Hessequa, Bushmen[19]…and distinctions between them were often blurred. It was said that some were hunters and gatherers and others were herders, but these changed with times and circumstances and nothing stays intact or pure. As historian Michael De Jongh notes, “Like all pastoral nomads, their settlement patterns were continually subject to environmental variables such as resource availability, seasonal fluctuations and the threat of adversaries” (De Jongh, 2016:81). De Jongh argues that “a kind of epistemological violence” has been committed against these peoples on various counts– in terms of documentation by early administrations and governments that excluded Indigenous accounts. This was because of the disintegration of their community life and intergenerational lapses in their oral history so that “hardly any records or even a clear contemporary awareness of their ancestry or origin can be found among present-day descendants of the Khoekhoen” (De Jongh, 2016:10). There were also inter-tribal marriages (and marriages with colonists), diseases brought from Europe and violent conflict with other indigenous peoples that further contributed to the assimilation of lifestyle, language and religious beliefs. In 1950, the South African Apartheid government classified people according to their Population Registration Act no 30 of 1950, into

[19] Also see chapter 2.

different races and those who did not fit into the 'White,' 'Black', 'Indian' or 'Coloured' category, went into the 'Other Coloured' category like the 'Malay' and the 'Griqua'. "They [the first herders and hunter gatherers living on the Cape Town shores] were thus written off or deleted from the conscious awareness of legislators and politicians" (De Jongh, 2016:10). This demonstrates that 'who owned the land' or even 'who are they who owned the land' in Cape Town South Africa does not have an easy answer. In December 2017, a group of four KhoiSan leaders walked from the province of the Eastern Cape to Pretoria and set up camp near the Nelson Mandela statue on the Union Buildings gardens in Pretoria to highlight their land and identity issues. In a memorandum they asked for first nation status. They asked for their language to be an official language and the Land Claim [Act] of 1913 to be scrapped because it was withholding them from making any land claims. They also wanted the 'Coloured' identity to be scrapped. President Zuma did not meet with them for weeks. After a 24-hour hunger strike, the now president of the ANC, Cyril Ramaphosa received the memorandum on 24 December 2017 on behalf of the ANC. Ramaphosa informed them of the passage by the National Assembly of a Bill that gives recognition to the Khoisan community and its heritage and said that the next step would be the submission of the Bill to the National Council of Provinces[20].

See section 2.4.5 on Deborah Bird Rose's borders and bodies as doors to potential connections, for another perspective on history of place.

One of Bowers' (2004: 231) problems with critical pedagogy theorists is that their "uplifting metaphors of 'freedom' and 'emancipation'" should have been framed "within the larger context of ecojustice." Ecojustice is in fact concerned with "environmental racism, the economic and cultural colonization of the South by the North" (Bowers, 2004:231). Instead of universalizing prescriptions for educational reform, educators should rather concentrate on "community-centered alternatives to consumerism" (Bowers, 2001:141). See chapter 7 for how discussions about consumerism could be introduced in the Food Pyramid section of the curriculum. Gruenewald suggests that a "deprogramming" of the psyche should take 'place' where "landscape" is not seen only in human-centered terms based on market

[20] The online newspaper article by African New Agency (ANA) on 25 December 2017 is available on https://www.iol.co.za/news/politics/ramaphosa-reminds-khoisan-that-bill-gives-recognition-to-their-heritage-12531266

relationships but other examples of relationality and interconnection should be used where mastery and possession are not the norms (Gruenewald, 2003b:35, 36). Discussions about the high level of consumerism in the Western Mind and the fact that it is often seen as equivalent to higher social standing and happiness, taking for granted the "psychological stress and waste that accompany it" (Bowers 2004:225), could become part of the curriculum. A land/place pedagogy should make children and teachers aware of the much larger carbon/ecological footprint of 'developed' countries who are fed on consumer media, in comparison to Indigenous, "precapitalist" societies (Ritchie, 2013a:36). 'Third World' countries are often blamed for overpopulating the world in times of climate change, when the one-child families in First World countries with bigger ecological footprints, are ignored for their consumerism.

David Greenwood believes that neo-liberal perspectives on education often "disregard places" since from these perspectives, the main purpose of education is to prepare for the "global economy," yet global thinking can only ever be "statistical" and "shallow" (Greenwood, 2013:94). Gruenewald/Greenwood argues that the absence of place as part of pedagogy in schools is probably because of the strong "standards-and-testing model of institutional accountability" (Gruenewald, 2003a:642) where quality of relationships to human, more than human and places are not testable or seen as valuable in the workplace. Environmental educators who ignore values, become "an instrument of dominant state policies" that "distract people from the goal of developing an ecological conscience rooted in connection to land" (Gruenewald, 2003b:33). Gruenewald further argues that even "a vocabulary for place" is lacking in schools with their focus on "accountability" which "distracts us from places and their power to shape experiential, cultural, ideological, political and ecological orientations toward 'being-in-the-world'" (Gruenewald, 2003a:642). Educational models of development and literacy cannot be "reimagined" if we do not first recover our "shared heritage" (Gruenewald, 2003b:34) – our entanglement with land and the nonhuman world that we have 'cordoned off' from our lives. Apart from attending to the problem of walled-in, fenced-off school structures, Gruenewald suggests more research to arrive at new educational goals, intents and measures for accountability and achievement that would eliminate the "unconsciousness toward

places in schooling" (Gruenewald, 2003a:646) and give value to place conscious education in school systems.

Class discussions about how joint places of animal, plant and human life have made 'space' for the colonization of people, animals and plants into their own, controlled and monitored spaces could be productive to open striated minds and initiate lines of flight. How often do children see animals alive and free-roaming and how often do they see them in supermarkets, on their plates or in fenced-in spaces? Can anyone interact with live, free-roaming animals or is there money-value attached to that?

Environmental educators Noel and Annette Gough point to the very anthropocentric focus of education for sustainable development (see chapter one for a discussion on the terminology and meaning) in which environment is represented with the focus away from human-environment relationships to cultural-economic relationships (Gough & Gough, 2016: 38). This is part of the effect of new-liberalism and globalisation, where economic progress and gain are more important than values and human-animal-land relationships. Attention to place, will give enough examples of how concern for environment and economic progress meet head-on.

The following is an example of a decolonizing practice in early childhood: Fikile Nxumalo uses experiences with preschool children in a forest mountain in Canada to investigate how child-mountain-fracking for fossil fuel extraction and a pipeline could productively be used to refuse "child development perspectives" which exclude children from "settler colonial anthropogenic relations" (Nxumalo, 2017a:2)[21]. Nxumalo's investigation also shows how global, new materialist and colonial ideologies impact on a specific place and on specific people with specific vulnerabilities. She calls the kind of knowing through their mountain explorations "geontological pedagogies that nourish children's relational knowledge-making" and which does not separate children from their environment and make knowledge human-centric and earth/rock/mountain only instrumental backdrops (Nxumalo 2017a:9). Through this interruption, Nxumalo also wishes to challenge "modern humanist views of the world" like the "the individually focused" and "child-centered" perspectives in early childhood education. Instead of centering on the children as the main actors in her stories and the mountain as passive backdrop, she

[21] See section 2.4 and Duhn (2012a) about keeping children 'innocent' from settler colonial histories.

sees the mountain as a presence that reveals, exceeds and refuses "extractive settler colonial relations" and human expectations (Nxumalo, 2017a:2). The age of climate change and species extinction asks for other approaches, posthuman approaches "that emphasiz[e] relationality rather than domination of and separation from the more-than-human world" (Nxumalo, 2017a:2). Nxumalo recounts how educators leave the children free to experience the mountain in their own ways: they pick up rocks, jump or slide from the bigger ones and have their own conversations about how moss grows on it and how the rocks were 'alive' ("eating dirt, drinking rain, growing, helping, thinking") (Nxumalo, 2017a:6), without separating mind from body from spirit as many adults do in their dualistic way of viewing life. Children were encouraged to have conversations also with family members about whether rocks were alive and teachers were wondering whether they should impose more 'scientific' understandings of rocks as children carried these back to the school. They sorted the rocks, making 'museum pieces' out of it and gained geologic-scientific knowledge from books, speakers and other sources, perhaps in the process forgetting about their intimate attentive knowledge in the mountain, the touching and responding, the making up of stories… or perhaps not. Nxumalo recounts how "do not enter" signs, "garbage" and "unexpected human and more-than-human encounters" disrupt the 'innocence' of these mountain explorations and the educators had to decide whether they would engage the children in conversations about the protests and pipeline controversies (Nxumalo, 2017a:7). Educators decided not to influence children with their own ideas, but to ask them what they think and believe, also sending emails to their families to enquire about their conversations with their children on the pipeline topics. Many divergent opinions emerged and they do not engage the issue further (Nxumalo, 2017a:7, 8). Most children (especially those living in cities) do not have the opportunity to go on mountain walks during school hours, yet this account by Nxumalo demonstrates how "creative and embodied pedagogical practices" could bring "already present Indigenous knowledges of mountain-rock worlds" to children, mixing scientific knowing with embodied experience and imagination (Nxumalo, 2017a:10). I imagine how in city classrooms, children could be asked to collect a stone, carry it around with them, tell a story about its life (because knowledge also emerges through affect, as the cognitive and affective are entangled) and finding information about the place in which it was picked up. This is what early childhood educator Margret Somerville posits a place-

responsive pedagogy entails: "(i) our relationship to place is constituted in stories and other representations; (ii) place learning is local and embodied; and (iii) deep place learning occurs in a contact zone of contestation" (Somerville, 2010:326) of which number (iii) takes us to the next section about boundaries as doors.

## 4.6 Boundaries, doors, difference and movements of place

Drawing on the period of Proto-Indo-European[22] myths and beliefs about the nature of the universe and society, environmental humanities scholar Deborah Bird Rose conceptualizes ideas of place as "a partner in dialogue" and the nature of boundaries and difference to develop an "ethics of care" for "settler descended" peoples (Rose, 2002:311). Rose asks the question of whether boundaries exist to keep things out/apart (to exclude) or do they mark difference – opportunities for trade and dialogue? Like the beliefs in many kin-based and PIE societies, Rose also believes that "a boundary is to cross… to connect difference and thus to facilitate interdependence" (Rose, 2002:314). This kind of difference is not based on a dualistic, hierarchical difference that implies 'lack' and 'otherness' as in Western colonial traditions, but it is non-hierarchical, relational and depends on communication, exchange and movement. Rose offers the idea of door/threshold as an important and basic concept in PIE culture and she investigates the "dialogical potential" of the door which on the one hand differentiates and on the other hand connects and she concludes that "its connectivity lies precisely in its liminality" (Rose, 2002:314). Also, for more about liminality and perspective, see chapter 6 – Walking a world into being. The door connects (and differentiates) between inside and outside, all depending on which side you are coming from. Rose draws on PIE customs of family and marriage to conceptualize the metaphor of 'door' that also includes people as doors. In PIE traditions brothers and sisters are doors connecting different clans, facilitating interrelationships and interdependence. Yet all human bodies can act as doors of this kind. In his reflections on the myths and societies of PIE, Bruce Lincoln explains:

[22] Proto-Indo-European people. PIE are described by religious historian Bruce Lincoln as peoples who shared myths and beliefs and whose "languages fall within the Indo-European grouping" (Lincoln, 1986:173). Also see glossary of meaning.

> In the common Indo-European mythic system, as we have seen the human body was understood to be the homologic alloform[23] of the cosmos and vice versa. Thus, speculation on the nature of bodily parts yielded an understanding of parts of the cosmos, and the reverse was equally true, mythic physiology and mythic cosmology being opposites of the same coin (Lincoln, 1986:141).

In this understanding of environment/earth/cosmos, flesh and earth are from the same substance, they are "alternative moments in a continuous process, whereby one continually is transmuted into the other" (Rose, 2002:318, drawing on Lincoln) and life and death flow into each other, in constant movement – similar to the posthuman nomadic subject in life and death. (Also see chapter 2 – the Nature of Nature and the last section of chapter 8.) Rosi Braidotti urges us to rethink posthuman life "beyond the old boundaries of death" (Braidotti, 2013:133) and I want to rethink the transmutation of flesh into earth together with Braidotti's "vitalist notion of death… that it is the inhuman within us, which frees us into life" (Braidotti, 2013:134) and life, as zoe, is also 'death'. Braidotti calls it the 'becoming-imperceptible':

> Death is the becoming-imperceptible of the posthuman subject and as such it is part of the cycles of becoming yet another form of interconnectedness, a vital relationship that links one with other, multiple forces (Braidotti, 2013:137).

This interconnectedness of life and death as explained by Braidotti, is also expressed by Massumi, drawing on Whitehead (1978):

> Everywhere on the continuum, from the human to depths of matter, and passing through everything in between, from wolf cubs to gulls to earthworms, not to mention amoebas, "'life' means novelty" (1978, 104). The novel has no predefined frame: "there is no absolute gap between 'living' and 'non-living'" (1978, 102) (Massumi, 2014:95).

What does a posthuman, PIE concept of bodies as doors or thresholds offer to an "ethics of care" for "settler descended" peoples (Rose, 2002:311), educators and students and why is this relevant for environmental education? According to Rose, understanding the porosity of bodies as doors or thresholds, will bring us into

[23] Alloforms are defined as "alternative shapes, of one another" (Lincoln, 1986:5) and "alternative and related forms of the same substance" (Rose, 2003:318). Also see reference to the alloform in chapter 2.

embodied dialogue with place and also in dialogue with the violent histories that we might want to forget: "blood and bones of massacres, extinct animals, sweat of Indigenous people and settlers, pollution, poison… "

> We and other living things are co-participants in earthly reciprocities of being, becoming, and dying. Far from being distanced from our histories of violence, dialogical interpenetration means that we are intimately and physically connected. Furthermore, we are intimately connected with the pollution, poisons, and death work of ecological damage (Rose, 2013:314).

One could ask how the porosity of bodies as doors or thresholds inform Eve Tuck and Wayne Yang's ethic of incommensurability of settler nativity. An ethic of incommensurability "stands in contrast to aims of reconciliation, which motivate settler moves to innocence" (Tuck& Yang, 2012:35). According to geographer Doreen Massey, "places are processes" (Massey, 1991:29) and just as wealthy global citizens, migrants and refugees cross borders, so do rocks, plants and animals. Nxumalo talks about touching and being touched during a school excursion by seeing a fence (body, threshold?) struggling to contain a forest boundary, carrying 'private property' and 'no stealing' signs. But the fences leak and deer feed on vegetables in the garden (Nxumalo, 2016:143). Seeing places and bodies as always in relational flux, borders and doors as potential connections, we can all look differently at place and at people who cross borders or live/sleep on the periphery of societies. In the next section, the concepts of ecological literacy in place/land pedagogy is explored.

## 4.7 Ecological literacy

Drawing on ecological philosophers Paul Shepard (1982) and David Abram (1986), David Gruenewald (2003b) theorizes that "ecological literacy" (reading the signs of the landscape for its abundance of information) used to be an important part of human development because of its "sense of interconnection with nonhuman others" (Gruenewald, 2003b:33). He argues that the human child is being deprived of that interconnection. According to Abram:

> The intuition that we inhabit a breathing cosmos[24] … is common to the discourse of virtually every indigenous, traditionally oral culture. For in the absence of intervening technologies, the unaided human senses cannot help but encounter the world as a tangle of animate, expressive beings (Abram, 2017:13).

So ecological literacy is one more thing that Western and colonized humans can learn from indigenous traditions. Although Paul Shepard has been connected with developmental psychology and deep ecology (see section 4.2 critique of developmentalism and deep ecology) he agrees with educators like Bowers and Gruenewald that in a society where developmental goals and 'improvement' is key, we are often placed "at odds with the notion of kinship with nature" (Shepard, 1998:5) and that learning from indigenous knowledges which are complex, creative and ecologically advanced does not mean we romanticize indigenous societies, it rather means "a long overdue reconciliation between opposites that are of our own making" (Shepard, 1998:6). He also criticizes 'modern' psychology (and here he includes "eco-psychology" and "environmental psychology") for views of the self "in terms of individual choices about beliefs, possessions and affiliations rather than defining the self in terms of harmonious relations to others – including other species – and in terms of the ecological health of the planet" (Shepard,1998: 27). Although I do not agree with the idea of development into 'human maturity' (see 'values' and 'quality in education' in glossary of meaning), Gruenewald draws on Shepard to point out that "human maturity" only develops when "people experience themselves as one life among many" and that the "human-non-human interconnection" is crucial for that development and to experience a kind of "at-homeness" in the world (Gruenewald, 2003b:35). How, according to Gruenewald can this 'ecological literacy' be developed in a non-indigenous, multicultural urban society? He suggests five ways of developing ecological literacy:

> (a) a more philosophical[25] (and less instrumental) approach to our work, (b) a working theory of development and literacy in education that takes nonhuman otherness seriously, (c) more regular and extended experiences in the natural world in order to nurture relationship with otherness, (d) reinvent 'accountability' in

[24] See Khoi-Khoi and San/Bushmen beliefs in 'breathing cosmos' and 'animate/inanimate beings' – glossary of meaning (Commonbreath, inanimate).
[25] A philosophical approach to education would be to seriously consider what it means to be a human being instead of only considering what needs to be done (instrumentally) so that children are competitive and achieve the goals set by the Education Department.

education, (e) develop in all learners, including ourselves, a sense of at-homeness (Gruenewald, 2003b:33)

This means that teachers should acknowledge the other important kinds of literacies beyond human written and spoken words. Gruenewald's suggestion of more time spent in 'the natural world' sounds like a dualism since we are always already 'in the natural world'. I understand what he means though– children also need to experience places where the signatures, signs and traces of human domination, colonization and exceptionalism is not the only kind of signs to read, they need to learn to read the world also in a more than human language. Examples of Commonworld nature-child experiences in Australian bushlands (Pacini-Ketchebaw & Taylor, 2015) and on wetland walks (Somerville, 2016), Canadian forests (Pacini-Ketchebaw & Taylor, 2015; Nxumalo, 2016) and mountains (Nxumalo, 2017b) are wonderfully productive experiences and examples, but not practical for schools in urban areas where logistics or funds do not allow for these kind of outings, even in cases where mountain and sea are close by. Somerville (2010) proposes a different place pedagogy approach from Gruenewald's which she claims has "elements of postcolonial/poststructural thinking" (Somerville, 2010:342). Her approach has its origins in "feminist poststructural theorising" and it is composed of "stories and other representations" which she describes as "an emergent arts based methodology" (Somerville, 2010:342). She calls it 'emergent' as it cancels out dominant place stories and create new ones in a relational, shared/communal way. This storying (meaning-making) is process based and not worked out in advance. She uses the Deleuze-Guattarian concept of becoming-other (see glossary of meaning) through creative processes of theatre (children becoming wetland-frogs) and an epistemology which "includes all of the technologies that we use to create representations—including language, computers, and paper, but also clay, brushes, paint, fabric—all of the artefacts we use to create" (Somerville, 2010:342). Somerville uses her own experiences with Aboriginal place stories as well as those of intercultural science scholar Barbara Schroder (2006) to argue that place conscious education could be one of the 'places' where Western and Indigenous epistemologies can meet and complement each other (Somerville, 2010: 331). Somerville describes the visit to the "natural, partly artificial" wetlands with the children and the intense, affective experiences of moon over wetland, cool wind, sound of different kinds of frogs, tree

stumps artificially placed into pools and how they "read" signs of fox, wallaby and kangaroo with children taking photos and making digital recordings for a website with stories – "kids making places" (Somerville, 2010:335). After all, an ontology of becoming other, must include our embodied, reciprocal relationships with "objects and landscapes, weather, rocks and trees, sand, mud and water, animals and plants, an ontology founded in the bodies of things" (Somerville, 2010:336) and not only representations thereof.

But what if children cannot access 'actual' wetlands? I suggest the services of a 'tracker' – someone literate in reading the "suggestive scrawls and traces" (Gruenewald, 2003b:40) and trails of insects, birds, butterflies and other organisms who have been able to crawl, fly and trespass the 'keep out' fences of even the most colonized and speciest of schools. It could be a knowledgeable grandfather or uncle. One must "merely pay attention" (Gruenewald, 2003b:40) or just be a "modest witness" (Haraway, 1997:267; Braidotti, 2006a:181). This kind of 'tracking,' once introduced to the children, could be done by them anywhere outside the school terrain after school and could productively be used for further 'storied place' material and emergent art based methodologies as suggested by Somerville. The main thing is to start paying attention to other organisms and species sharing place with humans. See my interview with children during my practical experiences about 'noticing' non-human others in the next chapter. Learning through tracking, through ecological literacy, will also counteract what early childhood educator Liselott Mariett Olsson calls learning that "becomes automatic and forgotten and experimentation that becomes tamed, lifeless and predictable" (Olsson, 2009:6). Similarly, John Weaver's complaints that learning in "primary and secondary education disciplines the student into a state of mediocrity and higher education refines this narrow thinking into refined mediocre taste" (Weaver, 2010: 187). What he means here is that culture and formal schooling "tames the spirit' (Weaver, 2015:187), confines and restricts outlooks and imaginations about the world around us, which become myopic and entrenched by the time the student reaches higher education. The consequences of not even 'noticing' the other, (the more than human) is dire. As David Abram asks: "What is climate change if not a consequence of failing to respect *or even to notice* the elemental medium in which we are immersed? (Abram, 2014:301; my emphasis).

## 4.8 Animism and Interculturalism

Barbara Schroder (2006) explores how dialogue between western and indigenous sciences and the "deep resonances" between place conscious education and the "vision of indigenous education" (Schroder, 2006:315) could be integrated in classroom experiences not through multiculturalism, but through transculturalism. Different from multiculturalism that could be described as a curious look at what is on the other side, inter/transculturalism integrates different concepts of equal value, to produce something new (Schroder, 2006:311) - a kind of intra-action and diffraction process (see glossary of meaning). According to Schroder, the deep connections and sense of inseparability that indigenous peoples experience with their environments, help them to see "technology, education, spirituality, politics and the arts all but different expressions or aspects of the same underlying truths" (Schroder, 2006:309). An example of this would be how indigenous peoples understand Life as cyclical instead of hierarchical and linear. As far as animism is concerned, Schroder claims: "Geographical features, mountains, rivers, plains, etc., are not considered inanimate, but are living beings" (Schroder, 2006:309).

Anthropologist Tim Ingold, contests the accepted understanding of animism as a belief system that attributes life to lifeless things. He explains that it has nothing to do with a certain belief *about* the world but it has rather to do with the context of *being in* this world. To Ingold, 'animacy' is

> a condition of being alive to the world, characterised by a heightened sensitivity and responsiveness, in perception and action, to an environment that is always in flux, never the same from one moment to the next. Animacy, then, is not a property of persons imaginatively projected onto the things with which they perceive themselves to be surrounded. Rather… it is the dynamic, transformative potential of the entire field of relations within which beings of all kinds, more or less person-like or thing-like, continually and reciprocally bring one another into existence (Ingold, 2006: 10).

This environment that is always in flux, reminds me of the underlying movement of 'every thing' in string theory[26] discussed in chapter 1, which claims that matter at the

[26] String theory, first made waves in the early 1970's and has implications across many fields of physics, theoretical mathematics and cosmology. Although it has "failed to live up to its promise as a

subatomic level is composed by “tiny vibrating loops of energy, defined as strings” (Ferrando, 2013a:120). Life seems to be all about movement. Yet, the Holy Inquisition forbid Galileo to talk about an Earth that moves - de-animating the world into a place where only God and Man have agency. This world view of ‘dead things’ as background for humans to act upon, was then taken up by a scientific world view “in which the agency of all the entities making up the world has been made to vanish” (Latour, 2014:13). Sociologist Bruno Latour remarked that the “new Inquisition (now economic rather than religious)” should be shocked to find that, in the Age of the Anthropocene, the earth has at last again become an “active, sensitive”, responsive and animate being (Latour, 2014:3) and is actually moving/changing. Isabelle Stengers refuses to define ‘animism’ since it will be impossible to escape the human urge to categorize and judge and shake off the derogatory colonialist associations with words like ‘animism’ and ‘magic’ which keeps us alone in an insentient world (Stengers, 2012:12). Stengers, (like Ingold (2006:9) who talks about “re-animating western traditions”) suggests that instead of claiming its ‘truth’ or ‘authenticity’ a reclaiming/ recovering/recuperating/resurrecting/ regeneration of animism as that which we have been separated from, is what is needed. Animism as “an assemblage that produces or enhances metamorphic (magic) transformation in our capacity to affect and be affected—that is also to feel, think, and imagine” (Stengers, 2012:12) is exactly what we have been separated from through church and science, although it is still immanent in the ‘uneducated’ child. For place conscious education this seems to imply an openness, attentiveness and curiosity (see chapter 3 on ethodology) to and of the world and its possibility to affect and be affected. It implies that we acknowledge that agency can never be limited to what is already known - we can never know beforehand “what kind of forces and entities will constitute landscapes and worlds with us” (Despret & Meuret, 2016:26) since we are all sharing “the same shape-changing destiny” (Latour, 2014:15). Describing processes of growth and decay, liveliness of rocks, responsiveness of plants, how through weathering of rock and death of lichen, soil is produced in lava cracks, environmental philosophers Thom van Dooren and Deborah Bird Rose (2016:82,83) illustrate the futility of drawing lines between what is ‘dead’ or ‘alive’, what has intelligence and sentience

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way to unite gravity and quantum Mechanics” according to science writer K.C. Cole, it has “blossomed into one of the most useful sets of tools in science” (Cole, 2016:1).

and what not. Rather, they believe that ecological animism should be "grounded in *recognition* as a mode of encounter that 'aims for the greatest range of sensitivities to earth others'…and openness toward the world [and acknowledging that the] world is lively and responsive" (van Dooren & Rose, 2016:83, drawing on Plumwood 2002).

A sense of wonder and astonishment at what bodies can do and the different forms of intentions of matter (Ingold, 2006; Stengers, 2012; Latour, 2014; Abram 2014, 2017; van Dooren & Rose, 2016; Despret & Meuret, 2016) seems to be an important factor in learning to read and experience the world in a more than human language. The re-animation of Western traditions of thought (Ingold, 2006:9, 19) is also suggested through relational imagination and different kinds of storytelling - "storied land" (Somerville, 2010), geohistories and geostories, (Latour, 2014, Nxumalo 2017), storying animist worlds (van Dooren & Rose, 2016), oral stories (Abram, 2011, 2016; Stengers 2012) and posthuman ecocritical stories (Oppermann, 2016). These have to be stories that engage "with the multitudes of others in their noisy, fleshy living and dying" (van Dooren & Rose, 2016:91), stories that can change our experience of the world and our aliveness to it, because creative responses always "lies in the way children vibrate and resonate together with the world…" (Olsson, 2009:5). As van Dooren and Rose attest, celebrating the aliveness of everything through stories is not an easy task and a multidisciplinary one at that (van Dooren & Rose, 2016:85) yet it could be incorporated into every 'subject' in the school curricula as "[a]ll education is environmental education" (Orr, 2004:59). This will be discussed again in chapter 8. Posthumanist researchers in early childhood education (Lenz Taguchi, 2010; Olsson 2009; Dahlberg & Moss, 2014; Davies, 2014) all agree that educational alternatives that have the power to affect, trigger imagination, enthuse and inspire are crucial in education.

A place conscious pedagogy that has been argued for so far, can help children and teachers to imagine other perspectives and other multi-sensorial ways of 'being', not only abstract, human species-specific ways. Abram warns that human wisdom and stories, once written down on paper, cuts it from the land and it becomes an exclusively human project which explains why 'educated' man has become so "oblivious, so reckless in its relations to the animate earth" (Abram, 2014:7). And

Latour (2014:16) urges us to articulate our speech again "in a way that will be compatible with the articulation of Gaia[27]."

I do not suggest that science is an inappropriate way to learn about the world in early childhood education or that wisdom should not be written down. But the kind of science that Descartes proclaimed through which we can become lords and masters of nature (Descartes, 1985:142[28]), is not a helpful science education in an age of climate change and species extinction. Ingold articulates the rethinking of indigenous animism and the re-animation of our ingrained, Western belief system in relation to science as follows:

> If science is to be a coherent knowledge practice, it must be rebuilt on the foundation of openness rather than closure, engagement rather than detachment. And this means regaining the sense of astonishment that is so conspicuous by its absence from contemporary scientific work. Knowing must be reconnected with being, epistemology with ontology, thought with life (Ingold, 2006:19).

Affect, astonishment and the role of stories will be discussed in more detail in chapter 5 since it is an important aspect of place/land and interspecies pedagogies. As mentioned in the beginning of this chapter, the pedagogies discussed are porous, interpenetrative, seep through to each other and can act as doors or thresholds to each other, as Deborah Bird Rose describes the "substance exchange between permeable bodies and permeable places – dialogical synergies between earth and body, place and person" (Rose, 2002:322).

In this chapter I have promised to refer to the following issues in subsequent chapters: Examples of human dominance and ownership over other organisms as demonstrated in chapter 6. Affect and imagination are discussed in more detail in the last chapter. Intergenerational indigenous healing practices and a child interview is part of chapter 7. Chapters 6 and 7 have examples of how life on the margins and its alternative perspectives could be productive for discussions about the politics of place, even in the Foundation phase in environmental education. Chapter 6 has examples of bodily freedom and 'keep out' signs in "Walking a world into being" and there is a reference to biodiversity and the Food Pyramid in chapter 7. In chapter

[27] Gaia – see glossary of meaning and Latour's Gifford lectures on Gaia (2013).
[28] See the end of the first section of this chapter for a more extensive quote.

6, examples will be given of colonization of places and spaces with reference to the indigenous people who first lived in Cape Town when the Europeans arrived.

Although place/land education is also a multispecies encounter, the next chapter will discuss interspecies pedagogy in more detail.

# Chapter 5 Commonbreath[1] pedagogies for an age of species extinction

(for earthbound[2] bodies who compost well)

> There is no manifestation of life which does not contain, in a rudimentary state— either latent or potential— the essential characters of most other manifestations (Bergson 1998:106).

Despite Bergson's insight, in the Cartesian paradigm everything is divided up, cordoned off and split into sections. Finding back our animality might be the key to opening some of these Cartesian-locked doors and learn from our animal kin how "instinctive activity has to wrap itself around changes in the environment" (Massumi, 2015:179). It has become clear that the human animal has been unable to adapt to its changing environment and perhaps it is helpful to take seriously Alfred North Whitehead's suggestion that "[t]he history of *practical* reason must be traced back into the animal life from which mankind emerged" (Whitehead, 1929:31; my emphasis). Whitehead sees 'mentality' as a function of reason and although mentality "in its lower form" is repetitive and does not try to sidestep problems or find new ways of doing things, at a "higher form it brings novelty into the experience" (Whitehead, 1929:26). For Whitehead, mentality as a mode of activity is not separate from the body, it is also not a body-mind issue but rather different aspects of the same process and does not necessarily depend on consciousness (Whitehead, 1929:63). Brian Massumi finds it therefore remarkable that some scientists and theoreticians (only) now maintain "there is improvisation and even problem-solving in animals without brains" (Massumi, 2015:178). (Note that this argument will not be used as 'extending human value to animals because they are in fact so much like us'.) In fact, this higher form of mentality, the ability to learn, is also found in plant life. Peter Wohlleben explains how in an Australian laboratory study on the tropical creeping Mimosa herb, their feathery leaves close when they are touched, but after a while they learn that no harm comes to them from for example

[1] See explanation in the title of chapter 4.
[2] Sociologist and science studies scholar Bruno Latour proposed the idea of the "earthbound" at the 2013 Gifford lectures where the Earthbound are conceptualized as humans embedded in, rather than separated from nature as was the Anthropos. Also see Latour's (2014) paper "Agency of the Anthropocene".

water droplets touching them, so they do not close anymore. This 'lesson learnt' is still remembered by the plant several weeks after the experiment (Wohlleben, 2017:47, 48). From Whitehead's definitions, mentality seems to be closer to instinct than to intelligence which begs the question why instinct has been allocated to the animal realm… and intelligence appropriated as belonging only to the human animal?

## 5.1 Instinct, Intelligence, Intuition and what a body can do

Instinct always responds to a field of relations, not to a specific consideration that could be predicted or singled out, according ethology[3] research (Massumi, 2015:180). The intellect, through its need to analyse however, reconstructs with "stable, given elements" reducing it to elements that are already known to it, "[i]t does not admit the unforeseeable, [i]t rejects all creation" (Bergson, 1998:163). Bergson believes that although some things/ideas only intelligence can look for, it will never be able to find these things/ideas on its own – only instinct could find it, although instinct would never look for it. This should be a good enough reason to combine instinct and intelligence/intellect instead of splitting it up, keeping the door to instinct closed especially in institutions of learning. For Massumi, "instinct is creative by nature" and the human is most in touch with its animality "when we surpass the given in a creative way" and this he calls the "supernormal tendency" because it does the unexpected and is not limited/stuck in certain tendencies (Massumi, 2015:81). Intelligence it seems then, could do with a bit of creativity from the animal realm. Imagination is seen as a quality of *mind* in 'settler culture'. Environmental educators Joe Sheridan and Dan Longboat explain that contrary to how the settler mind understands imagination as of purely human origin (with the settler mind's penchant for exclusively human environments), in the Haudenosaunee/Mohawk tradition, the quality of imagination in its ecological sense, is the coming together of local and cosmological intelligences. This is perhaps an answer to the kind of non-humanist "cosmopolitanism" and "global citizenship" that Duhn asks for as "new imaginings for planetary futures beyond humanism" (Duhn, 2014:231; see chapter 4.4). Sheridan and Longboat recall a time when "all things spoke to all things" (Sheridan & Longboat, 2006:377) before Imagination became an exceptionally human attribute and 'mind' "severed itself from landscape and the

[3] See glossary of meaning.

depths of time… [and] [i]magination became something other than what it is when mind went solo into Cartesian waters and lost sight of mythological shores" (Sheridan & Longboat, 2006:370). They believe this estrangement of the human from nature and the loss of our ecological communication with "the continent's intrasystem community" was also the loss of nature's "opportunity to think through us" (Sheridan & Longboat, 2006:379). This restricts the human animal in its ability to behave ethically. Sheridan and Longboat's argument has important implications for Imagination in children's literature – see section 5.4. Bergson posits that although instinct and intelligence both allow for knowledge it is "acted and unconscious" in the case of instinct and "thought and conscious" in the case of intelligence (Bergson, 1998:145) – knowledge of matter in the case of instinct and knowledge of form in the case of intelligence (Bergson, 1998:149). The two sides of the coin - intelligence and instinct - become even more pronounced and of consequence for pedagogy when Bergson talks about 'comprehension' of life. And 'life' is also Massumi's answer to the question of what a body can do (Spinoza) – it does 'life' - in the form of a verb (Massumi, 2015:183). Intelligence however, does not seem to be able to 'do life':

> Intellect, skilful dealing with the inert is awkward the moment it touches the living. Whether it wants to treat the life of the body or the mind it proceeds with the rigor, the stiffness and the brutality of an instrument not designed for such use. The intellect is characterized by a natural *in*ability to comprehend life. Instinct on the contrary is moulded on the very form of life. Intelligence treats everything mechanically, instinct proceeds organically (Bergson, 1998:165; my emphasis).

The intellect's "natural *in*ability to comprehend life" in the above quote and the "brutality" with which it touches the living is visible in how species extinction at the hand of the human animal is causing disaster for earth and earthlings. Is there a way to breathe sympathy into intellectual endeavours at schools and to awaken through a combination of instinct and intelligence, what Spinoza calls "the third kind of knowledge", the "adequate" knowledge of the essence of things? (Spinoza, 2002:267). For Bergson, unlike for Kant, intuition does not have to be reached by being "outside the domain of the sense and of consciousness" (Bergson, 1946:150), but only needs sympathy to move us to find the inexpressible in the 'other' (Bergson, 1946:189). Through sympathetic communication (and Bergson says instinct *is*

sympathy [1998:176]) between the human and the more than human world we can expand our consciousness into life's creative realm. In her diffractive reading of Bergson and Barad, Iris van der Tuin claims that Bergson's intuitive method is in a sense a "meeting the universe halfway" which is also the title of Barad's 2007 book (Van der Tuin, 2011:31). Van der Tuin deduces from her diffractive reading of the two philosophers, that Barad's onto-epistemology is intuitive. That is because

> it starts from the simple and undivided (entanglement and intra-action), while allowing for the cutting up of this flux or flow in a second instance by the traditional, Newtonian scientist. It thus subscribes to Bergson's claim that one can move from intuition to intelligence, and not from intelligence (snapshots) to intuition (flowing reality) (van der Tuin, 2011:35).

"Coming back to our senses" as Gruenewald calls it (2003b:39), getting in touch with our instinct to cultivate intuition, since we cannot do it through intelligence alone, seems to be of great importance for pedagogy in the time of species extinction. What bodies can do is always part of more complex bodies and what they can do. We cannot know in advance what a body is capable of doing or knowing – in accordance with a Spinoza-Deleuzian cartography which also underwrites Deleuze's approach to ethology (Deleuze, 1988:125). Circulating the communal breath of living organisms through our own bodies, attentively, we might awake the intuition and affect we need to communicate with all things. With an openness, curiosity and wonder of what bodies are capable of, the next section introduces interspecies and affect pedagogy.

## 5.2 Interspecies Pedagogy

Dividing lines between animal and human in Foundation phase government schools cut off physical contact and communication with animals except for representations of animal bodies and animal attributes (see chapter 7). Environmental educator Leesa Fawcett observes that preschool children are on the brink of "knowing themselves as animals, as alive, and then facing life-long instruction into the cultural norms of [becoming] human, complete with particular animal relationships and behaviours specified by each and every culture" (Fawcett, 2002:127). Children at this age enter the school system where the process of socialization into normative

ways of viewing the world begins in full force, a force that Snaza calls the "anthropological machine" (Snaza, 2015a: 21, 25).

In response to my (in)tensional research question[4]: How do posthuman environmental philosophies disrupt anthropocentric thinking and inform new ways of doing theory and practice for environmental education in South African schools in the foundation phase? I explore interspecies and affect pedagogies in more detail in this chapter. I draw on theorists, philosophers and educators such as Bergson, Bateson, Massumi, van der Tuin, Rautio, Fawcett, Despret and Meuret, Atkinson, Warkentin, Duhn, Taylor and Pacini-Ketchebaw, Nxumalo, Gaard, Sheridan and Longboat, Olsson, Hickey-Moody, Timmerman and Ostertag, van Dooren, Kirksey, Münster and Jørgensen.

As mentioned in the previous chapter (but now drawing on Bateson (1987:445)) all organisms respond, learn and communicate as they live, which means that they also teach each other in an ecological community whether that is species-specific or across species. Although there are millions of different species on earth, educators focus on how only one species learns and teaches itself and each other. This keeps Man insensitive, deaf and blind to how other species learn, teach and communicate. As anthropologist Anna Tsing posits: "Species interdependence is a well-known fact—except when it comes to Man. Human exceptionalism blinds us" (Tsing, 2012:144). Fawcett comments on the irony that we overwhelm young children "with animal symbolism" - stuffed animals, animal stories, zoo visits, animal pets, plastic animals and animal allegories, but as soon as they are older, "we encourage them to separate from animals, to disappear animalness from their lives" (Fawcett, 2002:133). This process of separation and 'growing up' is also visible in the older Foundation phase classes and their curriculum – see the example in the next section. Posthuman environmental educator Pauliina Rautio sees interspecies pedagogy/multispecies ethnography as "understanding yourself as a responsive being irrespective of species" (Rautio, 2017:97). Rautio also explains it as

> understanding other beings through exploring and even creating likenesses; a practice of patient mapping of the cultural, historical, societal, discursive and

[4] See glossary of meaning.

> material conditions that might stand in the way. In other words, a practice of becoming intensely aware of the ways in which we habitually perceive and categorise others" (Rautio, 2017:101).

And here I see 'others' as also including children. I understand this as an opening up of ourselves to life around us – not only human life - and to find the likeness, also what we like about them and prepare ourselves to be surprised instead of boxing others into our preconceived notions of what they are (essentialising them).

Although there is a paucity of multi-species/interspecies relationship studies from a political and posthuman viewpoint in environmental education and especially in early childhood environmental education, I am able to draw on a couple of studies to map what work has been done in this area. Since my research took place in a city with cosmopolitan animals and cosmopolitan children, I adapt what could be learnt from these studies to the environment the South African children are part of. As will be clear from chapter 6 and 7, real-life species intra-action at the school of my research, hardly exists, which proves that a more posthuman approach in schools is needed. Before we explore those child-animal studies, section 5.3 briefly examines the idea of interspecies ethics and section 5.4 discusses anthropomorphism and egomorphism in animal relationships and children's literature and section 5.5 provides suggestions for more eco-conscious children's literature.

## 5.3 Interspecies Ethics

Ethics in the Deleuzian sense, according to philosopher of science Vinciane Despret and animal ecologist Michel Meuret, is all about experimentation: "ways of being that raise the questions, what are you capable of, and what might we be capable of together? …What affects you, and whom does your way of living, your manner of being, affect in turn?" (Despret & Meuret, 2016:35). I believe their question 'What affects you and whom do you affect' depends on how much you notice and what you give attention to during your 'modest witnessing' (Haraway, 1997:267). Human-animal relations researcher Traci Warkentin believes "a praxis of attentiveness" can be a more ethical way of relating to other species (Warkentin, 2010:101). She calls it "interspecies etiquette" – a practical application of attentiveness that draws on practical phenomenology to argue that "embodiment enables the expression of ethical comportment toward others" which means that our bodies need to show

empathy with the experience of the non-human in our intra-action with them (Warkentin, 2010:103). Interspecies ethics will therefore include an emphasis and attentiveness to body language – our own and that of the animal/insect involved. Questions of ethics in animal-children relations at schools (how do we get consent from animals to 'experience' them in classroom situations?) might have an answer in Karen Barad's reminder that bodies (human bodies as well) are not in the world but part of it (Barad, 2007:376) as we also become and learn through our interspecies entanglement. She writes, "Ethics is about mattering, about taking account of the entangled materialization of which we are part, including new configurations, new subjectivities, new possibilities" (Barad, 2007:384). It is therefore a 'messy' world (Haraway, Taylor) where there are no upfront answers about ethical relations between human animals and other animals, but rather active participation of something relational. Taking the response-ability for that, is what is important - for allowing these animals to matter to children and children to matter to animals so that it becomes more than avoiding a politics of domination. The following incident from my field notes serves as an example of interspecies ethics and etiquette:

> I see the Grade R children barefoot, kneeling on all fours in a semi-circle in their classroom, attentively, curiously, respectfully watching as the ants from the hole in the classroom are enticed by plates of different tasting foods. They want to learn from them first-hand, see what they prefer to eat. They are open to be surprised by the agency of their co-inhabitants, the ants (Field notes, 2016).

Warkentin's "praxis of attentiveness" (Warkentin, 2010:101) is visible in the attitude of these children. But does this attentiveness disappear as children grow up, as we "encourage them to separate from animals, to disappear animalness from their lives" as Fawcett suggests in the previous section (Fawcett, 2002:133)? During intraviews[5] with Grade 3 children at the school of my research encounters, I asked the following questions: "How do you experience animals, plants and trees in your everyday life? Are they part of your daily experience and if so, in what way?" We struggled with the questions. None of us ever asked or were asked anything like this before. It is not a test. There is not a 'correct' answer. And yes, I think those are really important questions to ask even if they seem awkward: 'Do you notice the other-than-human

[5] I use the word intraviews in the sense that Haraway and Barad understand intra-action: Human bodies are without boundaries and we do not come to the conversation/meeting as two separate, fixed identities. We change each other as we meet and converse.

bodies breathing with you?' Do you understand what attentive listening is? It would have been easier to ask – do you ever experience plastic bags: your lunch box, your school bag, the TV set, your clothes, chairs, cars?

Eyes wander around the staff room, out the window, back in, find hands, find my eyes. I have put the video recorder down to do its own thing on the bird-patterned tablecloth on the staffroom table.

> Child 1: They're our food, we eat them. But you mustn't bother them, if you bother them, they will eat you back. Child 2: No, I don't think about them. Child 3: No, not really. Child 4: I only think about animals, not trees and plants. My stepfather looks after lions in Johannesburg. Child 5: I think animals are eating strangers. No, I have never been bitten by an animal but they scare me because they are strong. Child 6: I sometimes think of animals being killed by people or of trees cut off. Child 7: I would like my mother to take me to the zoo when she has money. Child 8: I would like to go to the Eastern Cape more – that is where my grandmother lives. She has a garden. Child 9: No, I don't think about them. Only when we went to Butterfly World with the school. Child 10: I take pictures of animals and plants when we go on holiday to the Eastern Cape. Child 11: My grandmother in the Eastern Cape has a garden. I feel very proud when I am there. Child 12: I only think of animals when my friends say we must hurt them and I say no. Child 13: I have a garden at home. I use the vegetable pills and then I put it in the ground. I make compost for the garden. I plant vegetables and spinach. We go on holiday to my grandfather's place in the Eastern Cape where they still have the old ways. They have goats and sheep and I like it. I feel different there – with the ancestors. I feel I fit in. Child 14: I sometimes see them on television. Child 15: Sometimes. There is a dog next door to our house, he sometimes poo-poo at our door then we call the neighbour and he has to pick it up. Children must not bother dogs or hit them because they will bite them (From child intraviews, 15 June 2016)

We hear a lot of 'they' and 'us' in these encounters, a lot of non-attentiveness to earth others, where earth others are backgrounds to human experience. We hear a lot of fear, mistrust and unfamiliarity. We need to create opportunities of 'making kin' (Haraway) here. I believe interspecies pedagogy can facilitate care, attention, sympathy (in the instinct sense), cultivate intuition instead of the brutality with which the intellect often deals with 'the other'.

When we explore pedagogies that include other species and early childhood education, the concept of anthropomorphism always crops up. The next section gives an overview of what it is and whether it is helpful or not in an interspecies pedagogy.

## 5.4 Anthropomorphism and displacement of animals in children's literature

Anthropomorphism is "the attribution or projection of human characteristics onto individuals of other species" and is generally seen as being self-centred (Rautio, 2017: 99,100). Biologist and environmental educator Leesa Fawcett reminds us that the Greek word 'anthropomorphos' literally means 'shaped like a man' and that the generally accepted definition "implies a distinct separation between the human and the non-human" (Fawcett, 1989:14). In the Middle Ages, ascribing human shapes or characteristics to a deity, could be called blasphemy. In secular humanism, ascribing human shapes or characteristics to animals and plants, is seen as unscientific. Fawcett believes we formulate what anthropomorphism means according to how we understand our relationship with nature: "Do you see humans as the centre point and then you magnanimously ascribe human characteristics to animals? Or do you see humans in relationship with (historically and bodily), and continuous with nature?" (Fawcett, 1989:14).

Neomaterialist Jane Bennett, finds anthropomorphism to be an important element in vital materialism:

> In a vital materialism, an anthropomorphic element in perception can uncover a whole world of resonances and resemblances – sounds and sights that echo and bounce far more than would be possible were the universe to have a hierarchical structure. We at first may see only a world in our own image, but what appears next is a swarm of 'talented' and vibrant materialities (including the seeing self). A touch of anthropomorphism, then, can catalyse a sensibility that finds a world filled not with ontologically distinct categories of beings (subjects and objects) but with variously composed materialities that form confederations (Bennett, 201: 99).

A touch of anthropomorphism then, together with attentive listening, might sensitize us to the vibrant roar of the non-human world around us. What about scientific

knowledge and anthropomorphism? Pauliina Rautio does not believe that anthropomorphism will confuse children when having to deal with 'scientific knowledge' (see Nxumalo's research with children and bees in section 5.5) and it does not necessarily selfishly "mirrors" the human in other species, but it can help in "opening up to imaginative[6] encounters with [other species] and befriending them" (Rautio, 2013b:450). Drawing on anthropologist Kay Milton, Rautio agrees that what we do is 'egomorphic' rather than anthropomorphic which means that we "use our personal experience, of what it is like to be a living being, to understand others" (Rautio, 2017:100). We construct our understanding of other organisms on first-hand practical knowledge and attributes we discover, through the fact that we are responsive organisms, not through our "human-ness" (Rautio, 2017:100) which I find to be a very persuasive argument. In an earlier study, Rautio proposes that there is both place for anthropomorphism and for "distancing" (using scientific knowledge and a different perspective) as two ways of "meaningful relations in one's non-human environment" (Rautio, 2011:116).

During intraviews with children in Grade R and Grade 3, it became clear that they are often scared of animals that they have never encountered before – lions, snakes, tigers – animals only read about or seen on TV. Fawcett's experience with children were similar: "Many of the children I worked with had learned by age 10 to fear animals and to banish notions of friendship from their storied experiences" (Fawcett, 2002:136). (Also see next section on Fawcett's research with place-specific animals and children.) This imaginative disconnection of place – the misplacement and displacement reminds me of what Sheridan and Longboat call 'aimless imagination': "[u]nfortunately, the disconnected imagination is aimless because it forfeited belonging somewhere" (Sheridan & Longboat, 2006:375). As mentioned before, childhood and ecological sustainability studies scholar Iris Duhn critically engages with the idea of "cosmopolitanism" and "global citizenship" based on a liberal humanist understanding where "traces of the historical and political struggles" of the local land often just vanish from the early childhood curriculum (Duhn, 2014:231). She argues that instead of a humanist understanding of cosmopolitanism and global citizenship, what we really need in early childhood education practice and thought is "new imaginings for planetary futures beyond humanism" (Duhn, 2014:231). The

[6] Also see discussions of imagination in chapter 4.8.

objectification and trivialization encountered in some anthropomorphized and cartoonized stories and TV programmes will not help the child to discover its animal self. According to Timmerman and Ostertag, "the attribution of human physical and social characteristics, accompanied by the cartoonization of animals, goes beyond a healthy recognition of self in other and instead reinforces hierarchies of human over animal" (Timmerman & Ostertag, 2011:68). They draw on Ursula Le Guin to underwrite how these kinds of literature depict "animals [that] exist principally as symbols of human qualities, behaviours, or desires" (Timmerman & Ostertag, 2011:68). Anthropomorphism in children's literature is also mostly a one-way affair – animals are depicted with human characteristics and human children seldom with animal characteristics. Sheridan and Longboat argue that the kind of "reciprocity" and the ability to think "beyond species-specific consciousness" diminished as intra-action with biodiversity wanes (Sheridan & Longboat, 2006:371). What are the repercussion of this loss of reciprocity? Perhaps one of the consequences is what we have today in children's literature – Fawcett calls it "dressed-up animals that speak to children to teach them 'right' ways to be a good human being" (Fawcett, 2002:135). She instead encourages educators to develop children's capacity to "'belong' to their animalness, not in a colonizing, imperial way but in embodied, sensory and imaginative ways" (Fawcett, 2002:135). Sheridan and Longboat account how a Haudenosaunee/Mohawk prophecy of a "dark period" that follows a period of "forgetting animals [which] leads to animals forgetting about us" and thus "the loss of animal guidance" (Sheridan & Longboat: 2006:377). Ecofeminist and ecocritic Greta Gaard believes that because "animals often 'speak' through behaviour, sometimes just observing animal lives can be enough to inform those humans capable of listening" (Gaard, 2009:328). Drawing again on Ursula Le Guin, Timmerman and Ostertag argue that "animals do talk and we do understand them" and that children might have "the greatest capacity to engage and understand [animals]" (Timmerman & Ostertag, 2011:70). They suggest looking at indigenous art and literature for examples of interwoven human and animal forms for a less anthropocentric storying in early childhood literature in consumer and industrial-oriented societies (Timmerman & Ostertag, 2011:68). The following section explores characteristics of the kind of children's literature that could be useful for interspecies pedagogies in a time of climate change and species extinction.

## 5.5 Ecofeminist literary criticism, ecopedagogy and children's ecocriticism

Greta Gaard discusses ecofeminist literary criticism, ecopedagogy and children's ecocriticism (a very under-explored field of ecocriticism) in order to arrive at conditions for a suggested ecopedagogy of children's environmental literature. These conditions seem to respond well to all the calls by theorists and practitioners in the previous section, for "new imaginings for planetary futures beyond humanism" (Duhn, 2014:231). For Gaard, basic environmental literacy implies "bioregional literacy" (Gaard, 2009:326) – also see previous chapter, section 4.3 – which means that animals and other organisms will be emplaced and not displaced/ disconnected and children will have an understanding and experience of animals in their own bioregion. Environmental literacy also implies "cultural ecoliteracy" which explores why unsustainable cultures and their practices are problematic and which draws on sustainable cultures and their practices – for example on indigenous philosophies and stories (Gaard, 2009:326). Gaard further sees environmental literacy as understanding how "human rights and social justice issues are linked to ecological issues" - how "colonialism, imperialism and ruling-class cultures" are in opposition with cultures where there have been "long sustained symbiotic relations with their earth habitats" (Gaard, 2009:326). There are three steps in the logic of oppressive thought: alienation (the myth of a separate self), hierarchy and domination (Gaard, 2009:327). Gaard believes that ecofeminist understandings of children's literature will demand "narratives of connection, community, and interdependence" among human and non-human and it would offer stories of "diverse human-animal-nature communities and participatory democracy" which would leave no space for domination (Gaard, 2009:327). (Also see Val Plumwood's argument in chapter 2, that "the logic of domination and the structures of dualism [is still present] in the dominant understanding of our relationship with nature today" (Plumwood 1993a:194). See also the interview with children from the school of my practical work – section 5.3.

Gaard suggests three questions that should be reflected on when considering children's literature for a time of species extinction. The first question is "who am I?" In a posthuman praxis, we believe that identity is never 'finished' and never 'formed' prior to the relationships that we engage in. Children's literature scholar

Clare Bradford applauds storylines in environmental literature where "[t[he child is constructed as an environmental subject *open to reformulation and change through interaction and empathy* rather than through the fixed and static models of subjectivity" (Bradford, 2003:119; my emphasis). In contrast to that, Gaard cites the Silverstein story "The Giving Tree" as one where an "oppressive vision of human-nature relations" is given which upholds non-reciprocal roles for humans and nature and depicts a boy who never "questions his own identity in relationship to the tree/nature" (Gaard, 2009:327). Yet, critically engaging with this story might make children think – stories are not always examples of how to act – they are often examples of how not to act. The second question according to Gaard, should be whether the narrative "rejects hierarchy in favour of community and participatory democracy" when it comes to responding to ecojustice problems (Gaard, 2009:328). Is the 'problem' created by adults passed on to children for example? Gaard recommends that we should compare this Western "standard adult practice" with indigenous ways of living where responsibility is taken across generations in cultures where "decision-making" is seen as "a 'seven generation' concern" (Gaard, 2009:328). Thirdly, educators should inquire what kind of agency is attributed to the non-human animal. Does it wait for the human child to 'rescue' it or does it have "its own subjectivity and agency?" (Gaard, 2009:330). Gaard believes that an ecopedagogy of children's environmental literature should aid children "to make connections across cultures and across differences" (Gaard, 2009:332) and she offers ways (circumstances/conditions) in which to build these connections: The simple praxis of using recycled paper for story writing, or rather internet sites or sustainable transportation to and from literature classes should be part of one's practice in environmental literature for children. Otherwise there is such irony in Sheridan and Longboat's statement that "the ethics of what should be, became so eroded old-growth forests were felled to print stimulants for the imagination" (Sheridan & Longboat, 2006: 371). We must restore the links between theory and practice. Another way in which to build connections across difference is to teach "about", "in" and "through" the social and natural environment -"about" by looking at current issues, "in" by bringing children in direct contact with their earth others, and "through" by giving children writing practices or group projects "to put knowledge into action" (Gaard, 2009:333). The realisation of our interdependence with everything and everyone around us and the importance of taking action where

needed are other ways of building connections across difference. Environmental educator Kennedy Kanene posits that when learners are not "engaged," (when they are only passive recipients of knowledge and unable to respond in their own terms) it does not translate into environmental action (Kanene, 2016: 52). Although children's emotional connections with a stuffed bunny and a real bunny might be different in degree or kind, both need a place in the child's life and unfortunately in many children's lives the stuffed bunny and the bunny in the book are their only experiences of our wonderfully imagination-stimulating animal kin.

## 5.6 Affect Pedagogy

To arrive at a pedagogy of affect, we need to take into account how Deleuze and Guattari, drawing on Spinoza, define bodies in terms of movement and rest, and ability to affect and be affected (Deleuze & Guattari, 1987: 257[7]). Deleuze maintains that "the unconscious of thought [is] just as profound as the unknown of the body" (Deleuze, 1988:19) and all we experience are the effects of these unconscious and unknowns – joy when our conatus is strengthened or sadness when it is threatened[8]. Affect opens us to these adventures of the unknown and shows a way to experience with our bodyminds (thinking-feeling) which is always a reciprocal event – we effect/affect and are effected/affected by. Deleuze explains how there is a difference in Spinoza's *affectio* [affection] which refers to "a state of the affected body and implies the presence of the affecting body", and his *affectus* which refers to "the passage from one state to another, taking into account the correlative variation of the affecting bodies" (Deleuze, 1988: 49). Image affections/ideas and feeling affects are therefore two sides of the same coin. Affectus is an active process of becoming within the rhizome of becoming (Braidotti calls this the creative process of opening oneself up – nomadic becoming as "positive transformation of the subject" [2006b:145]). When you conceptualize bodies and thoughts according to capacities for affecting and being affected, "many things change", according to Deleuze (1988:124). Brian Massumi also uses his affect theory in the Spinozian sense, arguing that affect and emotion are not the same thing. To Massumi, "[j]oy in the Spinozean sense refers to the intensity of the affective encounter [and the] intensity of joy is not happy or positive emotion [as these] hedonistic distinctions do not apply

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[7] Also see chapters 2 and 3.
[8] See chapters 2 and 3.

to affect, they apply to emotions" (Massumi, 2015:208,209). He posits that affect "is ethically neutral in the normal understanding of ethics… neither good nor bad… [has] no normative value" (Massumi, 2015:209). How then are we to understand Rosi Braidotti's argument that seems to contradict this: "Affectivity is understood as intrinsically positive: it is the force that aims at fulfilling the subject's capacity for interaction and freedom" (Braidotti, 2006b:148)? I believe it is in terms of how Braidotti (and Spinoza) connects affect with human freedom. An interactive affective capacity – human freedom – "is not a neutral move" and "the positivity of this desire to express one's innermost and constitutive freedom can be termed as conatus, potential or becoming" (Braidotti, 2006b:148). For Massumi, also, affect does not negate freedom, it just "redefines" it (Massumi, 2015:214) and here humanities theorist Ruth Leys' criticism of Spinoza and Deleuze-inspired affect theorists, (Massumi amongst others) is relevant. Leys claims:

> whatever differences of philosophical-intellectual orientation there may be among the new affect theorists themselves, and between them and the neuroscientists whose findings they wish to appropriate (differences do of course exist), the important point to recognize is that they all share a single belief: the belief that affect is independent of signification and meaning (Leys, 2011:443).

But Massumi points out that the idea that 'there is no meaning' is a misunderstanding that comes from the body-mind duality: "Affect does pertain to the body, but the body figures here in an extended sense – it is not limited to the brain. It includes modes of activity normally designated as belonging to the mind" (Massumi 2015:210). This means that 'thinking' is "taken out of the interiority of a psychological subject and [is put] directly in the world" so that affect theory in the Spinozist-Deleuzian sense in which Braidotti and Massumi use it, asks for a redefinition of freedom and a "far-reaching re-evaluation of what a body can do" (Massumi, 2015:211).

### 5.6.1 Into the classroom

Social studies philosophers Jennifer Daryl Slack and Christa Albrecht-Crane expand the applications of Deleuze and Guattari's affect theory to include the classroom. They feel that the significance of affect as one of the most important elements of

what happens in a classroom has not been adequately explored (Albrecht-Crane & Slack, 2007). They also note that it is interesting how often Deleuze and Guattari "comment on the capacity of young children to be Spinozists – that is, to live on an affective level lost to most adults" (Albrecht-Crane & Slack, 2007:110). Early childhood educator Jenny Ritchie believes that pedagogies of care and affect should not be something out of the ordinary but "an everyday praxis" in classrooms, a praxis which can be "informed by indigenous worldviews"[9] and which is a response to climate change caused by the human (Ritchie, 2013b:404). This 'not out of the ordinary' that Ritchie talks about is beautifully phrased by Kathleen Stewart when she talks about the 'pull of the ordinary': "The ordinary throws itself together out of forms, flows, powers, pleasures, encounters, distractions, drudgery, denials, practical solutions, shape-shifting forms of violence, daydreams, and opportunities lost or found. Or it falters, fails. But either way we feel its pull" (Stewart, 2007:31). See the attentive listening, the 'pull' of watching ants eating from a plate in the classroom, chapter 7.3, page 216. This experience, this 'pull' of ordinary affects always has more power than what Spinoza calls "hearsay": "For the power which the thing itself gives us is always greater than that which we obtain by way of consequence through a second thing… For more power comes to us from the understanding of proportion itself, than from the understanding of the rule of proportion" (Spinoza, 2002:93). How then can Spinoza's *affectus* productively be employed in classrooms as 'power-of-the-thing-itself'?

According to early childhood educator Liselott Mariett Olsson, Spinoza's concept 'affect' as bodily potential, "seems to present an alternative to treating subjectivity and learning solely through conscious thinking" (Olsson, 2009:55) and she uses this bodily logic through Deleuze and Guattari's concept of "assemblages of desire" (Deleuze & Guattari, 1987:2) with its components of "movements, consisting of flows of belief and desire" (Olsson, 2009:55), which could be produced in early childhood educational settings as "intense and unpredictable experimentation in subjectivity and learning" (Olsson, 2009:56). Olsson sees assemblages of desire as "how desire sets off as a little machinery and takes place in between people [and in between people and animals?]" (Olsson, 2009:55). The connection between desire and 'lack' is of great importance here especially when linked to developmental

[9] See chapters four and five

psychology which, through definitions of children's desires as 'lacks' and 'needs,' developmental psychology "repress and tame children's desires into already defined schemas of development" (Olsson, 2009:143) and "[i]nstitutions try to capture, mould and adapt desires to the content and form of the institution" (Olsson, 2009:144). Instead, in the Deleuze-Guattarian sense desire is not lack nor does it need to be tamed – it is always assembled and productive – "a positive force that creates new compositions" (Dahlberg & Moss, 2009:xxiii). Part of Olsson's assemblage of desire in early childhood education are the ideas of re- and de-territorialization and lines of flight (discussed in detail in chapter three). I would like to go back to Spinoza's idea of 'affectus' as pedagogy. According to media and communications researcher Anna Hickey-Moody 'affectus' is also "pedagogy… a relational practice through which some kind of knowledge is produced" (Hickey-Moody, 2009:273), but this knowledge is not necessarily produced only in schools or institutions of learning – it is part of living life.

### 5.6.2 Material exchanges of affect - 'becoming words'

Hickey-Moody examines theories of affect as posthuman pedagogy using three different media (music, literature and dance) as material exchanges of affect (Hickey-Moody, 2009:273). Here I will specifically discuss her materialities of text, what she calls the "becoming words" (Hickey-Moody, 2009:275) to link it with children's ecoliterature. She deploys Spinoza's idea of 'affectus' as pedagogy – "relational practice through which some kind of knowledge is produced" (Hickey-Moody, 2009:273). The creative media encounter (for example literature) is an encounter with forces that are "not necessarily 'human'" (Hickey-Moody, 2009:274) they are posthuman and they create changes in the form of Spinoza's 'affectus'. You therefore have the following sequence: word – literary affect – bodily affect - and affectus. She explains how, through literary affect which produces sensation, which in turn produces bodily affect through how the reader/listener becomes-ant, becomes-sad, becomes-lonely and then finally the reader/listener understands "in a slightly different sense to the understandings he or she has gained via other means of relation" (Hickey-Moody, 2009:275). Philosopher of education Sharon Todd also

argues that “the way to create better conditions for liminal[10] spaces to emerge in education is for teachers to turn to the qualities of relationality opened up by the arts” (Todd, 2014: 235) which include the imaginative world of picture books. I would like to use an example here from my practical work in the school between the mountain and the sea.

In the Grade R and Grade 3 classes, I found the ‘literature’ books (I would rather call them literacy books) prescribed, available or used in the Grade R and Grade 3 classrooms very developmental, they require very little insight, have no emotional complexity and are often stereotypical and moralizing. Books in use at the school are mostly stories ‘about’ something and the questions teachers ask children about these story books are limited to factual information. These stories are also used to reinforce concepts learnt in maths and literacy classes, which might have its place, except that it leaves out affect and imaginative thinking.

I was curious to see what would happen if the Grade R teacher reads a book that is slightly more complex, and not (obviously) moralizing. It turned out that when she stopped asking questions only about numbers, patterns, shapes and word sounds, the children were able to detect irony and more complex emotional undercurrents. The teacher was also able to change normative reactions and answers by deeper level questioning, for example:

> Teacher: “How do you think he is feeling? Do you think animals have dreams?” (Field notes, 2 June 2016).

She was also able to let them experience with their bodies:

> Teacher: “Pretend to be a snake and slide on the floor. What do you realise about your size and mine when I am standing next to you? (Field notes, 2 June 2016).

This eventually provoked different kinds of answers by the children:

> Child 1: “He needs company. He needs his family.”

[10] ‘Liminal’ spaces as Todd understands it here explore the “existential dimensions of pedagogical relationships between body and spirit [and it] requires a language of in-betweenness, or liminality, that gives full weight to the complex processes of human becoming” (Todd, 2014:234).

And: Child 2:

> “The daddy is not nice to the children or to the animals. He has never seen animals that is why he did not want to be nice to animals” (Field notes 2 June 2016).

While they try to find letter-, number- or pattern- connections to please the teacher, they are not allowed room for the more complex levels of meaning-making in the story. ‘Normalised’ group reactions (like laughing at a close-up of a gorilla’s face)[11] - can be challenged when the children are encouraged to experience how the gorilla might be feeling at this point (for example: Teacher: “How do you think he is feeling? Do you think animals have dreams?” (Field notes, 2 June 2016). These questions ask for attentive listening to the story, not ‘listening as usual’.

The teacher asked them to use their bodies to experience fear or loneliness. (Crawl like a snake and experience the human as huge and scary, crouch like the orangutan and feel its loneliness. Watch a dog dreaming…). The teacher was eventually able to lead the children from looking at, to thinking about, to experiencing. Schools need picture books that affect, arouse imagination and are not moralising, stereotypical or hierarchical, books that go beyond simply denoting what is in the world in a linear unambiguous way to reach those understandings important for responsive living in a multi-species world. According to Hart, Jickling & Kool, (1999:110), ”intuition, insight, deep familiarity, respect, compassion and appreciation and perception” could be productive as material changes of affect in young children. Children should be able to use their imagination and understanding through bodily senses – affect’s “primary characteristic is that it can only be sensed” Dahlberg & Moss, 2009:xxiii).

## 5.7 Meeting the ‘other’ halfway.

In chapter 1 it was established that for a hybrid study of compost, humanism and posthumanism, cross-disciplinary research will be inevitable. Environmental philosophers and anthropologists Thom van Dooren, Eben Kirksey and Ursula Münster remind us again that relational multispecies studies “draw inspiration from the natural science and beyond, bringing diverse bodies of knowledge into

[11] This reaction might possibly be because primates are often caricaturized in literature for its likeness to humans and making fun of them is a way to distance ourselves from this likeness – see chapter 2.11.

conversation and pushing them in new directions" (Van Dooren, Kirksey & Münster, 2016:2). Multispecies/interspecies studies not only involve natural science knowledge but also the histories of human and non-human lives and the living and thinking of indigenous communities and these studies demand, in a time of climate change and species extinction "detailed practices of attentiveness to the complex ways that we, all of us, become in consequential relationship with others" (Van Dooren, Kirksey & Münster, 2016: 3). It is therefore not the study of the human-animal relationships with one given animal, but rather of the multiple ways in which we are all entangled with each other. It also involves mountains and stones and rivers with their own histories and geologic formations, with their "patterns of becoming and entanglement… ways of affecting and being affected" (Van Dooren, Kirksey & Münster, 2016:4). As argued in chapter 4, place/land is at the same time also a multispecies encounter. In section 4.3 on interspecies ethics, it was mentioned that noticing and being attentive are important aspects of interspecies relationships – noticing, immersion and attentiveness. For Van Dooren, Kirksey and Münster "passionate immersion means becoming curious and entangled" (Van Dooren, Kirksey & Münster, 2016:4 and also see chapter 3 – From methodology to ethodology - for the importance of curiosity in research). Another important part of interspecies studies is to confront established and taken-for-granted assumptions about what knowledge is, who has the "expertise, and who is authorized to speak for Nature" (Van Dooren, Kirksey & Münster, 2016:8). The following studies with children, I believe, involve all these important aspects of interspecies studies and although they take place far from South Africa, they demonstrate many of the beliefs, theories and posthuman praxes addressed in this chapter and in this thesis so far.

Environmental educator Leesa Fawcett (2002) explores ideas about 'common' Canadian animals like bats, frogs and raccoons with Canadian preschool and Grade 5 children, not "large, media-popular animals" (Fawcett, 2002:125). These three wild animals (wild in contrast to house pets) are easily found in most urban, suburban, and rural settings in Canada. Actual encounters with these animals in the school environment were supplemented with forms or knowledge that included interviews, stories, and drawings by the children. Fawcett argues that drawings help children to express feelings and concerns that they are not able to do in language yet. Story-telling is something young children are familiar with, it is a way in which they can

“tap a deeper level of attitudinal response” towards the animal and telling their own stories is a less “leading” way to find information than questioning them (Fawcett, 2002:128). She also feels that children’s own stories reveal a “rich, more diverse diet” than the offering of some of the children’s literature available (Fawcett, 2002:135). Fawcett brings to attention the fact that children experience many things still for the first time – that includes embodied animals (not representations of animals). Wild animals are more likely encountered in captivity in zoos and children often rather recognize those as ‘animals’ instead of animals in their own backyards. Fawcett is disconcerted about how many children claim to have seen an animal when it turns out it was only a representation of an animal in a book or on television:

> Relational knowing through direct experience of animals, as characterized in this research, differs qualitatively and sensuously from relationships with animals through indirect experience (e.g., going to zoos, circuses), or through mediated experiences, such as watching nature shows on television. (Fawcett 2002: 126).

The two groups of children in the Fawcett study spent the same amount of time with the researcher (20 minutes) but half of them had multi-sensory experiences with animals while the other half had multi-sensory experiences with a native plant. She found that the half who experienced the animal alive “were much more likely to attribute subjectivity and agency to the animals in their stories” (Fawcett, 2002:134). Fawcett also found that the stories of the younger children (pre-school) afterwards included friendship tales between humans and the animals, while the 10-year-olds had more fearful, negative, culturally normative ideas about the animals and banished ideas of friendship (Fawcett, 2002: 132,133).

In their research, Veronica Pacini-Ketchebaw and Fikile Nxumalo describe encounters between children and wild raccoons, an indigenous animal species in a forest in Canada where the school is located. Through the repeated “boundary-crossing” by these “unruly subjects” in a colonised country, Pacini-Ketchebaw and Nxumalo try to demonstrate that the nature/culture, human/nonhuman divide is untenable in commonworlds (Pacini-Ketchebaw, Nxumalo, 2015:153). They argue that it is important to accept the frictions and uncomfortable situations (health, safety) as part of “learning to inherit the messy and disconcerting space” of commonworld spaces where children, teachers and animals mingle on the

playground (Pacini-Ketchebaw, Nxumalo, 2015:153). Colonization, economic progress and the Enlightenment idea that we are exceptional has separated man from the animal world in the belief that it could change or exceed it (Pacini-Ketchebaw, Nxumalo, 2015:153). The researchers see it as a demonstration in how our lives are entangled, we are not in control of our ecologies, nor able to remove ourselves from our colonial pasts, presents or the 'natural' world. (Pacini-Ketchebaw & Nxumalo, 2015:164).

Pacini-Ketchebaw and Affrica Taylor describe child-kangaroo relations in Australia and child-bear relations in Canada (Pacini-Ketchebaw & Taylor, 2015). They wonder if a child who enacts the kangaroo and hops towards them is entering "into a bodily enacted otherworldly conversation with the kangaroos" (Pacini-Ketchebaw & Taylor, 2015:59). They believe that these commonworld pedagogies need to be enacted (it is not helpful to only look from the outside in) – children need to affect and be affected by the environment where there are no clear boundaries and tightly sealed off spaces. They argue that their pedagogies are "motivated by ethical and political concerns – living together with difference and responding to colonialist and ecological worlds" where everyone has agency (Pacini-Ketchebaw & Taylor, 2015:60).

Early childhood educator Kim Atkinson describes a child-slug-prettydress encounter in a convenient forest space behind the school on Vancouver Island. She has the same concerns that many early childhood educators express (Pacini-Ketchabaw, Taylor, Nxumalo, Giugni, Blaise) of having an idealized notion of child-in-nature when most children in cities (also in beautiful touristy Cape Town - see chapter 6) live in commonworlds. Together with Pacini-Ketchabaw, Taylor and Hird, she argues for the importance of giving attention to our "dependencies and fragilities" (Atkinson, 2015:69) when engaging in multispecies ethics with young children. Ideas about the human animal's importance and agency in the world is appropriately diminished when seen in the context of our dependability on tiny life forms like worms and bacteria. Atkinson accounts how the vulnerabilities of both children and wasps were revealed during a nature walk when a wasp nest was unexpectedly exposed. One of the teachers suggested talking softly and sitting still, (see interspecies ethics) counter to what agitated emotions might have suggested at that

moment (Atkinson, 2015:71, 72). This is also counter to how the teacher handled the bee sting conversation in chapter 7 of the environmental education lesson during my witnessing in a school. Atkinson suggests letting go of the idea that children are 'just playing' when intra-acting with other species but rather that they are "relating" and "responding" (Atkinson, 2015:74) and that they are learning together how to live together even if the adults watching them do not yet understand exactly how. Atkinson accounts how a young child slices open a living mushroom with a twig and reports her inability to stop the child killing the mushroom. We assume he was not going to eat the mushroom. What kept her from stopping him, was the very attentive response-ability in the child's gentle and loving attitude and the way in which he talked to the mushrooms. She sees this 'killing' of the mushroom as a call to attention and to notice these amazing forest species and to get to know them intimately. She does not say whether the child ate the mushroom in the end – which would have been an even more intimate way of knowing it although that is perhaps not usually the reason why humans eat things. (Atkinson draws on Anna Tsing's study on how to love a mushroom).

Early childhood educator Fikile Nxumalo explores "young children's responses to multispecies death" as antipode to big ideas of saviour-children in the age of the Anthropocene, and she draws attention rather to "small interruptions enacted by embodied and affective learning with more-than-human others… [bringing attention] to both the limiting effects and ethical potentialities of everyday pedagogical encounters" (Nxumalo, 2017b:2). Nxumalo accounts how, in a suburban forest in British Columbia, the preschool curriculum included bees during Spring, as a scientific field of study (much like the curriculum in chapter 7 of this thesis) which involved learning about body parts, distinguishing them from other insects and looking at feeding habits. It also involved craft projects, but not engaging with bees on the playground according to safety regulations at the school. In fact, children were discouraged from engaging with bees, in alignment with already-determined child safety regulations (Nxumalo, 2017b:4). Nxumalo attests that in retrospect, the scientific knowledge and the crafts curriculum "is not enough to unsettle children's inheritances of human-centric practices that privilege human mastery or control over more-than-human others" (Nxumalo, 2017b:4). Drawing on entomologist, Robbin Thorp, Nxumalo explains that the indigenous bumble bees contracted parasitic

diseases from bees bred in Europe and transported to North America ("colonial worldings" – Nxumalo, 2017b:5). One of the teachers noticed (and noticing lead to attentiveness, passionate immersion and becoming curious and entangled - Van Dooren, Kirksey & Münster, 2016:4) that an apple tree in the school yard did not flower and bumble bees were fewer, some dead or crawling lethargically on the ground. Once curiosity and concern for the bees took over, children became entangled with their real-life bees even though they still feared the stings. Nxumalo accounts:

> Children began to make offerings to the bees they encountered crawling on the ground outside. Some children built 'homes to try and make the bees feel better', while others kept their distance and watched. Some children picked up some of the still-moving bees and placed them on flowers in the classroom and outside or tried to find the bees' nesting grounds. Some children also prepared, with educators' help, a sugary water to feed the bees – occasionally a bee would respond to the offering and then fly away, to the children's delight. Some responded by covering the dead bees with an article 'to stop them blowing away' and by building a wood 'bridge' so that the bees could 'walk' to the flowers… The children also began to gather and bring the dead bees into the classroom (Nxumalo, 2017b:7).

Educators noticed how the children's ways of caring for the bees were directly linked to their knowledge about why the bees were dying and their child-bee conversations showed an understanding of the "interconnectedness" of bee, soil, flower, water and their own agencies. They learnt to move slowly and quietly when they encountered bees that were still alive – in line with Warkentin's body language in interspecies ethics (section 5.3) - where "bodies need to show empathy with the experience of the non-human in our intra-action with them" (Warkentin, 2010:103). In this study in early childhood education, scientific knowledge interacted with care and ethics, colonial politics, life and death as well as issues of climate change, as a good example of an interspecies pedagogy in a time of species extinction.

## 5.8 Taught by 'the other'?

Snaza and Weaver (2016:9) drawing on Protevi (2009), speculate about what would happen if we should take "the risk of *letting the world speak*" in posthuman research that works with "the unknowability within the unknown" (Weaver & Snaza, 2016:9).

Through human documentation and theories, we are specie-specific in the world, using abstract signs as part of our natureculture. Yet to privilege that above other ways of making 'sense' and learning (for example sensory experience) from an early age, is to take a western science-perspective that often leaves behind or invalidate sensory learning (and instinct). A necessary step to avoid a representation-only approach to animal and plant others, is to trust in the 'child-living-organism' assemblage/entanglements in the world to teach. I am inspired by Rautio's formulation of this:

> We would do well to appreciate also the momentary and the seemingly unguided in education. We would need to trust that some of the interaction between children and the world, seemingly irrational and mostly unreflected, has educational value. This value, arguably unmeasurable, could be thought of as intrinsic and grounding. Most importantly, however, we would have to embrace the thought that teachers – those who invite, guide, support, and steer us – can also be other than human beings (Rautio 2013b:454).

The value of letting children be 'taught' by other species and natural inanimate objects without intervention by human (adults) is also argued for by Postma and Smeyers (2012). Early childhood educator Carie Green has documented research without the adult researcher interfering and questioning children about their experiences by having children wear go-pros so that it does not interfere with their spontaneous animal-environment intra-actions yet give researchers enough material to work with (Green, 2016:277). There is a difference though, between the ethodology of gaining research material and an ethodology of allowing children to learn. Adults doing research work, need to gain understanding about how children learn, discovering why certain methods might work better than others. The child is not interested in that – the child is just living-learning and according to Snaza: "Teaching is thus a letting, a gesture toward a futurity" (Snaza, 2015b:49). We have to 'let them learn', not just teach them.

Early childhood teacher educator Kari-Anne Jørgensen discusses fieldwork with two Norwegian kindergarten groups over a period of ten months (Jørgensen, 2015). The kind of uninhabited fjord island-scenarios from Norway is not the privilege of children living in the urban environments of South Africa, but I do think her research contributes to understanding of environmental consciousness in children – which is

different from talking and teaching 'about' the environment. According to Jørgensen, environmental consciousness is awakened when children have direct sensory experiences in "naturedominated" environments as it connects to their sense of 'wonder' (Jørgensen, 2015:2). Apart from the researcher with pencil and paper, there were no other adults or recording devices present during these outings – the only roles of the educators were choosing locations, transporting children to the same location over a long period of time and giving them time and space to explore freely and ask questions when they wanted to. Jørgensen accounts how the children explored lifestyles of other species, role-playing and inventing games with them, she witnessed how moments of wonder caused children to change their themes and how their imagination constantly inspired new projects. They encountered stranded jellyfish.

> There was a common wondering and reflection on why they had become stranded, and the children acted by taking the jellyfish back to the ocean. When the children were acting as a rescue team in this way, I saw them acting as though they had an environmental consciousness of the animal's ecological needs (Jørgensen 2015:11).

Jørgensen through her research, has shown how play, multi-sensory experiences with places and other species, some ecological knowledge to go with it and the power of wonder and affect, awakens environmental and relational consciousness, which will grow with the children and as explained in the vignette in chapter 8, will return. Because the Spinozan definition that "a power to affect and be affected governs a transition…the felt transition leaves a trace, it constitutes a memory. Consequently it can't be restricted to that one occurrence. It will return" (Massumi, 2015:47). Even if it returns many years later.

In the next chapter, we will ponder my research sub-(in)tensional question: How do colonial legacies in South Africa still affect environmental education in a primary government school? I will explore how specific historical processes (human and nonhuman) have given rise to ecological and social system where my research took place.

# Chapter 6 Walking a World into Being

## 6.1 Time, place and memory

> The geographical location of the school children attend is not neutral. These locations are shaped and coloured by histories of class and race and culture (Dixon, 2011:7).

South African teacher educator Kerryn Dixon's quote aptly summarizes how location is shaped by our history of class, race and culture in a post-apartheid South Africa. Desegregation in the 1990's has led to the movement of many Black children from townships outside previously 'White areas' into schools in those areas with English as language of instruction. This gives rise to complex relationships between the children and the communities they come from, the school and the community around the school. In the previous chapters, I have articulated my conceptual understanding of the field of research for this thesis. This chapter returns to my research sub-(in)tension: How do colonial legacies in South Africa still affect environmental education in a school? Chapter 7 will deal with the practicalities of formal education in a Cape Town school, whereas this chapter will explore how specific historical processes (human and nonhuman) have given rise to the physical and biological system that is the school of my research at this particular point in "spacetimematter[1]" (Barad, 2007:142). Barad links quantum theory to memory when she explains that, "the trace of all measurements remain even when information is erased" and that the world "'holds' the memory of all traces; or rather, the world is its memory" (Barad, 2010:261). Barad also warns that it "takes work to make the ghostly entanglements visible" (Barad, 2010:261). Braidotti explains 'memory' as something "embedded and embodied" in a specific location which becomes "a materialist temporal and spatial site of co-production" and therefore also provides "the ground for accountability" (Braidotti, 2006a:29).

[1]Barad uses the word "spacetimematter" (Barad 2007:142) "to emphasise the way components are produced together in one ongoing movement" (Juelskjar, 2013:755) in other words space, time and matter cannot be separated out.

In ecocritical theory and practice[2], world and text are read together, providing new ways to rethink what has been thought for millennia, crossing "new landscapes with an eye to old charts" and using the "imaginative and physical horizon of our being-in-the-world" (Iovino, 2016: 310). Therefore, if we are attentive to specific locations, the world might reveal its memories to us, because although elusive and ambivalent, ecology is ultimately composed "through histories of interaction, relationality, interconnection, and materiality" (Hayward, 2012:185). This chapter will provide the background to chapter 7 and will address what environmental educators Eve Tuck, Marcia McKenzie and Kate McCoy (2014) hope land education will do which is "to remind people to place Indigenous understandings of land and life at the centre of environmental issues and other (educational) issues" (Tuck, McKenzie & McCoy 2014:19).

I will revisit the posthuman concepts of intra-relational reconfiguring of world[3] (Deleuze & Guattari 1987, Haraway, 2004; Gough, 2010a, Braidotti, 2013, Taylor, 2013, Rautio, 2013b, Greenwood 2013, Sonu & Snaza 2015, Taylor & Pacini-Ketchebaw, 2015b) and diffraction[4] (Haraway 1992, Barad 2007, Dophijn & van der Tuin 2012) as it pertains to the enactment of Environmental Education within this particular school. I will not be "reflect[ing]" on histories, because, as Haraway says, "Reflexivity has been much recommended as a critical practice, but my suspicion is 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" (Haraway, 1997: 237). Rather, in agreement with posthumanist philosopher Kathrin Thiele's notion that in all political agendas it matters profoundly how we theorize, I will equate theorizing with "how we imagine differences, otherness or the commons" (Thiele, 2014:203) and focus on thinking as "an active force with-in-of this world" as suggested by Thiele to "think-practice" this world differently (Thiele, 2014:203). I therefore invite you on a walk, a diffractive, posthuman "walking the world into

[2] What is Ecocriticism? Iovino explains the discipline as follows: "By reading world and text together, ecocriticism tries indeed to re-connect what is real and what is thought, things and stories – especially if by 'world' and 'things' we mean the emergences of physis and the intersections between the human and the nonhuman dimension" (Iovino, 2016: 310).

[3]Intra-relational differs from inter-relational in that subjects and objects do not exist separately before they meet, they emerge in active relationality.

[4] "Diffraction is a mapping of interference, not of replication, reflection, or reproduction. A diffraction pattern does not map where differences appear, but rather maps where the effects of differences appear" (Haraway 1997: 300).

being[5]" as proposed by posthumanist educator Juanita Sundberg, an important practice in the "performative coproduction of knowledge and space" (Sundberg, 2014:39).

## 6.2 Walking the walk

'We[6]' will start our walk on a seaside promenade before 7 am on a crisp winter's morning in late August 2016, within a kilometer radius from the school we want to visit, understanding that sea is part of land (Tuck, McKenzie & McCoy, 2014:4, 8). According to Braidotti "interconnectedness and the argument that 'we' are in all *this* together" is the only perspective from which 'we' can exercise care for everything and everyone (Braidotti, 2006a:119). With the sun already rising earlier in expectation of Spring, 'we' walk across space, time and matterings to produce non-linear historicity, starting on the seaside promenade with the breath of the sea blowing towards us from the Northwest, the direction from where the first ships from the Netherlands' Dutch East Indian Company arrived in South Africa in 1652 to start a halfway-station at the Cape. Three ships blown in by the wind and the windings of history, as Cartesian thought "declares non-human nature *terra nullis,* uninhabited by mind, totally available for annexation" (Plumwood, 1993:192). A posthuman sensibility requires, "limits of affective feeling to be changed" (jagodzinski 2015:126), it requires an immersion that "is not unreality or reality, rather an awareness divided between being conscious enough both to engage an interface and to experience the rapture of the deep" (Hayward, 2012:173). Therefore, with a modest attempt at a posthuman sensibility this touristy promenade is seen with lion and hippo, steenbok and zebra tracks left in the mud (Green, 1964) and the indigenous groups of KhoeKhoen, the Gorachoqua and the Goringhaiqua (called 'Strandlopers' – 'Beach Walkers' in Afrikaans) grazing their livestock (Warden, van Heyningen & Bickford-Smith, 2004:16), suspiciously eyeing the foreign ships entering Table Bay. Are these to be the ships of exploitation or settler colonizers (Plumwood, 1993; Veracini, 2011; Tuck, McKenzie & McCoy 2014:7) and which is worse? The sea birds dive and squeal and eat from the dust bins – a diet much

[5]Sundberg borrows the idea from the Zapatista movement who "theorizes walking as an important practice in building the pluriverse, a world in which many worlds fit" (Sundberg, 2014:39). For a more detailed account, see Sundberg, (2014).

[6]I turn to Braidotti's (2006:119) notion of "we" as that expressed in her phrase "'we' are all in *this* together".

changed since the first ships had arrived. Manicured lawns – walk here, don't walk there. Cycle here, not there. This is a poop scoop area… and David Gruenewald's reminder that "for most people, the experience of most places comes with some kind of 'keep out' sign and a set of property laws to support it" (Gruenewald, 2003a:630).

At least here on the promenade the colour of skins does not necessarily match pre-conceived ideas about socio-economic status. The rich and famous and the down and out can hide in every human skin colour. Whiffs of disembodied words in various languages, local, North African, European, Asian float around - this is after all also one of the tourist meccas of the world. Sociologist John Urry's "sensed and sensing bodies" of tourists are jogging, cycling or walking, their "'sensescapes' mediated by discourse" and cell phones (Urry, 2001:3). There is a salty taste in the air and drops of seawater splash over the wall depending on the passion of the waves. There is other beingness apart from the air breather kinds. Then there is a new smell – bacon, eggs and mushrooms from the open-air foreign film crew kitchens. Film crew 'guards' regulate promenade users (don't walk here, walk there - outside the angle of the camera please) as if the space rightfully belongs to them and their billion dollar budgets. Pram pushing, fitness and brand name addicted locals frown in irritation – this is a regular inconvenience on the promenade. Are the dogs with their paid dog-walkers less troubled by the film shoot spectacle than the dogs with their owners? While owner's-dog is sniffing paid dog-walker-dog's tail, what are the human conversations about? Apart from the odd frown, the space feels relaxed – as if the sea, the open lawns and view of the mountain take away/absorb/inhale some of the aggression and rush of city living. 'Other' locals, the dispossessed, sleeping under pieces of plastic or newspaper, wake up to the film crew shooting movies or advertisements in their sleeping space. Tourists, here for a day or two, might think the dispossessed on the promenade are always Black. They would be wrong. Here 'the other' sometimes appears in all colours of human skin. Will 'we' notice if side by side with these global tourists and 'othered' locals, there are also co-presences of exiles fleeing from famine, prosecution and genocide seeing, touching, hearing, smelling and tasting this particular place? Bacon is a controversial smell on the promenade. There is the Jewish point of smell, the Vegan point of smell and the Constantly Hungry point of smell. According to the results of a General Household

Survey in 2016 released by Statistics South Africa in May 2017[7], 22.2% of South African households have insufficient or severely insufficient access to food. With posthuman eyes and sensibilities[8] 'we' watch as Dutch colonial administrator Jan van Riebeeck and his three ships the *Dromedaris, Reijger* and *Goede Hoop* sail into Table Bay in early Autumn 1652. Were they sick and dying of malnutrition (as was not uncommon for men on VOC fleets sailing between the Dutch Republic and Batavia and as is not uncommon for 'others' in the here and now?) when they were erecting their mud and wooden fort for shelter and defence? Would they fulfil their sole original mandate of establishing a half-way station to provide fresh provision for the VOC[9] fleets or have they come to stay? Only ten years later the young Gorachoqua girl (referred to as part of the Khoi-Khoi people in Giliomee and Mbenga) Krotoa, would be baptized as 'Eva' after having been taken from her family at a tender age to look after van Riebeeck's children (Giliomee & Mbenga, 2007:51). Twelve years after van Riebeeck's arrival Krotoa was married to Danish explorer Pieter van Meerhoff, bearing children who would (ironically, given that the 1948 apartheid laws were enforced by the Afrikaner National Party[10]) become the forebears of many Afrikaans speaking 'White' people in South Africa (Giliomee & Mbenga, 2007:51). The adhan (call to prayer) sounds from the mosque in the Bo-Kaap while the Schul/Synagogue (written 'Shul' in this area) overlooking the sea nods to its Jewish members who walk there on Fridays. It is, as all worlds necessarily are, a world of diffracting and intra-acting, nothing and no one is left untouched and uninfluenced by the other. It is full of the "relational vitality and elemental complexity that mark posthuman thought itself" (Braidotti, 2013:188), an impermanent world in constant change. A piece of the local weekly newspaper blows from the hands of a glue-sniffing 'resident' as he reads on his sleeping bag in the first light of day. This is where he/she sleeps, eats, baths and washes his/her laundry, "[s]haped as an insider and an outsider" (Haraway, 1997:3) while tourist-

[7] Available: (http://www.statssa.gov.za/?p=9922).

[8] As mentioned before, a posthuman sensibility requires of one to change the "limits of affective feeling" (jagodzinski 2015:126) and it requires that one is conscious enough to engage with the 'here and now' yet experience "the rapture of the deep" (Hayward, 2012:173). Posthuman eyes therefore refer to 'seeing' with more than organs, a seeing with a "body without organs" that enfolds past, presence and futures (Deleuze & Guattari, 1987:149).

[9] VOC was the Vereenigde Oost-Indische Compagnie in Dutch: the Dutch East India Company in English.

[10] The Sauer commission appointed by the National Party, advises them to put apartheid laws in place of which most were passed between 1948 and 1953 (Giliomee & Mbenga, 2007:306)

paraglider assemblages ascend from the heavens seemingly unaware of the dichotomies on the ground, with his "situated" (Haraway, 1988:575) perspective and presence.

***Figure 6.1*** *Promenade. Resident sleeping person-grass-tree assemblage and tourist-machine assemblage dropping from the sky. Rhino protection awareness art in the background. Sound of the waves and sea gulls. Picture by the author.*

The piece of newspaper attaches itself around a larger than human-sized pair of glasses, an art project co-financed by eyewear giant Ray-Ban as memorial to Nelson Mandela. From the promenade across the sea, these huge glasses face the island where in the winter of 1964, Nelson Mandela was incarcerated for 18 of his 27 years in prison (Mandela, 1994:371).

***Figure 6.2*** *The Ray-Ban glasses watching Robben Island. Picture by the author.*

On the night of 17 November 2014, the sculpture was defaced with the words "Myopic Art" stencilled on them. The local activist group 'Tokolos' claimed responsibility and in a statement said:

> Tokolos Stencils intervenes in white supremacist corporatist art. Myopic art leads to and is a reflection of a myopic society. But on the master's sunglasses, there is always space to broaden our vision so that we can all see the bigger picture (Joseph, 2014).

The glasses face the island, and as 'we' look 'through' them 'our' thoughts turn to Nelson Mandela and the time he spent there, it all seems so close on a clear day, yet so far. The activist group 'Tokolos' describes the piece as 'myopic art', 'sunglasses' that fail to see the bigger picture they say. This piece of art assumes the form of "glocal[11]" (Braidotti, 2006a:30) art exploitation and the appropriation of black pain by the Ray Ban giant. It seems that here the "intrathriving of text and tissue," (Hayward 2012:183) the materiality and the discursive (glasses and article about myopic art) brings about a "repositioning of the human" (Hayward 2012:183). Discursive matter is showing up differences. Corporate giants and brand producers are making the most of the swirling vortex of global tourism, an "omnivorous producing and consuming of places from around the globe" (Urry, 2001:2). Robben

[11] See glossary.

Island is part of Urry's "dark tourism" (Urry, 2001:2) a place at which tourists can stare and reminisce about and claim, 'I have been there'. Forgotten by many history books and only recently given the attention her complex life story deserves, the Goringhaicona woman Krotoa (fluent in Dutch and Portuguese and an interpreter for the Dutch) also lived, was incarcerated and died on Robben Island on 29 July 1674[12].

'We' detach the piece of newspaper from the sculpture and read the headline: "[Shelley Point] residents' fight for affordable housing continues" (Hirsch, 2016:6). The past is just around the corner. In 1895 inhabitants of diverse backgrounds moved into this seaside suburb and although residents were largely White and middle-class, a large number of Coloured, working class families also moved in with often more than one family living in the same house due to the high rent and shortage of available housing. From 1903 to 1961 under the Native Reserve Locations Act of 1902, all non-white people were removed from the area and although they were constitutionally allowed to return after 1994 there was no affordable housing in the area for them to return to (SAHO: 2011).

The South African Broadcasting Corporation. built in the "little Brazil[13]" style in 1955, waits on the other side of the beach road not far from the art work. It has been waiting and facing Robben Island during and after Nelson Mandela's incarceration on the island. It has also been facing a place (and probably broadcasting about the event) where waves break on the rocks and the shelly beach. From this building, on the night of 19 July 1965 the figure of a woman "a border-crossing figure[14]"? Braidotti, (2006a:181) would have been seen walking into the sea to her own death, looking for an end to her sorrow and to that of the world. The words of 1960's Afrikaans poet Ingrid Jonker still float above the foam - words she wrote as a poem in the wake of the 1960 Sharpeville Massacre and which president Nelson Mandela read during the opening of South Africa's first democratic Parliament in May 1994:

*The Child*

[12] Read more on: (http://www.sahistory.org.za/people/krotoa-eva).
[13] This refers to an aspect of the Southern African architecture of the 1950's and 60's which reflects a Brazilian influence.
[14] Braidotti refers to the modest witness as a "border crossing figure who attempts to recontextualize his or her own practice within fast-changing social horizons" (Braidotti, 2006a:181) which might be an attribute ascribed to the poet Ingrid Jonker. Here I do not pretend to borrow from Gloria Anzaldúa's (1987) *mestiza* or borderconsciousness and take out of context or appropriate her very specific border-crossing experience.

> The child is not dead
> The child lifts his fists against his mother
> Who shouts Afrika! shouts the breath
> Of freedom and the veld
> In the locations of the cordoned heart[15] (Jonker, 1963).

But is there any place for poetry on a posthuman walk, 'our' walking the world into being? Where is the materiality in poetry? Material ecocritic[16] Serenella Iovino answers:

> The Greek poieisis is another concept profoundly rooted in materiality. Its roots are the same of the verb poieo, "I do, I make." Which, again, suggests that, in principle, there is nothing abstract in poieisis. Poieisis is something material, and as such endowed with a form of independent agency. It is not only a human activity, but it relates to everything that is in-the-making (Iovino, 2016:314).

Jonker wrote the poem after a visit to the Philippi police station in Cape Town where she saw the body of a child who had been shot by police while in his mother's arms during a march from Nyangato the police station to protest against the Passbook System. She wrote about the poem in the South African magazine called *Drum*:

> I saw the mother as every mother in the world. I saw her as myself. I saw Simone (Ingrid Jonker's child) as the baby. I could not sleep. I thought of what the child might have been had he been allowed to live. I thought what could be reached, what could be gained by death? The child wanted no part in the circumstances in which our country is grasped… He only wanted to play in the sun at Nyanga. (*Drum*, May1963).

But in a very posthumanist way, we also need to let the poem go, with its own independent agency. Another poet, only thirteen years old when this poem by Jonker was written, grew up near Sharpeville: Motloatse Mothobi. Heeding the warning by Tokolos about myopic art that reflects a myopic society, a society who represents

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[15] See appendix for complete poem

[16] What is Ecocriticism? Iovino explains the discipline as follows: "By reading world and text together, ecocriticism tries indeed to re-connect what is real and what is thought, things and stories – especially if by 'world' and 'things' we mean the emergences of physis and the intersections between the human and the nonhuman dimension" (Iovino, 2016: 310).

and appropriates the pain of others without full immersion in it, it is necessary to turn to the work of proemdra[17] writer Mothobi Mutloatse:

> *Ngwana wa Azania*[18]
>
> a proemdra for oral delivery
>
> From ages two to four he shall ponder over whiteness and its intrigue. From ages five to eight he shall prise open his jacketlike ears and eyes to the stark realisation of his proud skin of ebony. From ages nine to fifteen he shall harden into an aggressive victim of brainbashing and yet prevail. From ages sixteen to twenty-one he shall eventually graduate from a wavering township candle into a flickering life-prisoner of hate and revenge and hate in endless fury. This motherchild shall be crippled mentally and physically for experimental purposes by concerned quack statesmen parading as philanthropists (Mutloatse, 1981[19]).

For education researchers these lines are heavy with responsibilities known and still unknown. What marks are being made on the bodies (Barad, 2007) of children and parents and teachers who are transported from townships around Cape Town into this area? How do teachers remember the places where they teach or parents the places where their children go to school now?

> Teacher: This school is very old. 2014 it was 100 years old. Now 102 years old. In the old days this building was here. You are so lucky and blessed to be in an old building that was used in the olden days. In the old days there were only White children that came to this school.
>
> Children: Yu!

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[17]Using the African oral tradition, a proemdra is a form of Black South African writing of the Apartheid era as an apparently exclusive form of South African literary writing (Zander, 1999a, 1999b). For the difference between a poemdra and a proemdra, see glossary.

[18] Translation: “The Child of Azania” in Sotho – one of the eleven official languages of South Africa. Azania is another word for South Africa, often used in the era of the apartheid struggle. In the full proemdra, four different South African languages among others Afrikaans and Zulu have been used and “thus the African value of co-operation or communalism is sustained” according to Austrian theatre director Horst Zander (Zander, 1999a:493). For more on the poet, Mothobi Mutloatse, also see Chapman (1981:382), and Oliphant &Vladislavic, (1988).

[19] Mutloatse’s complete proemdra is available in the appendix. For an analysis of this specific poem, see (Zander, 1999a:492–495) and (Zander, 1999b: 20–23).

> Teacher: There were no Coloured, there were no Black children, there were no foreigners, only the White children. As the years go, things are changing. Now there are so many children who are coming here. We do not look at the race, we do not look at the colour, we don't look at anything. So that is – things change, maybe in your time again there will be something else… because things they change every now and then. You must thank God that you can come to this school. You see? Right… (Video recording Grade 3 Life Skills lesson, August 2016).

Despite her protests to the contrary, colour *is* important here. The teacher comments on the difference in colour between those children who studied here in apartheid days – White – and those who now inhabit the hallways and classrooms, hallways built long ago so that White children would remain 'inside', protected from all that was 'other', constituted as outside. Whether the children feel 'lucky and blessed[20]' to be at the school, we will not know yet. This is a school that, despite being located in a predominantly White residential area currently has no White children enrolled. Less than 5% of the children enrolled at the school live in the area and 95-98% travel between five and 30 kilometres to get to the school (School Statistics, 2016[21]). 'We' wonder about the exodus of the White children from the school. When did that happen and why? Did the private school that opened in the area in 2003 draw the wealthier (White?) children away with thoughts of possible 'superior education' in a private school and Black and Coloured working and middle classes have replaced them? This also implies that children are separated from their local communities, dispersed all over the city for a 'better' education somewhere else.

> Yes, it was a gradual exodus which started in the early 2000's. Back then, we had 60% white, 20% coloured and 10% black – of the 60% about 20% were foreign nationals – mostly from Eastern Block countries like Czechoslovakia, Romania and Bulgaria – those were people who took up residence in the greater [Shelley Point] area. Most learners moved out after finishing Grade 7, but some transferred out because they moved out of the area. We then observed less new enrolments of white learners. This opened the

[20] In the following chapter, children are asked why they are attending this school.
[21] For more on the demographics of this area, see Fataar, Malan, Fearon and Novacek, (2016).

> door to taking in learners to keep our numbers up and retain teachers as per teacher-student ratio. Our intake increased in learners coming from mainly Khayelitsha and other sub-economic areas. PS: Prior to 1999 the entire WCED staff complement was White with my appointment being the first of Colour. (Handwritten note by teacher, November 2016.)

One of two White teachers at the school says she feels 'accepted' by parents of the children. She also speculates about reasons for the exodus of White children – the lack of team sport at the school because children live too far, school grounds that are tarred so there is no lawn (manicured or other), all speculation, so many factors to take into account.

At the corner of the road along the sea and the one leading towards the hill, 'we' turn away from the touristy promenade towards our 104 year old primary school building where my practical research will take place. The teachers of the two classes I observed for my practical work are not from Cape Town. The Grade R teacher grew up in an 'Indian only[22]' school in Pietermaritzburg during the Apartheid years. Her home language was English, although her grandparents still spoke a little Tamil[23].

> Maths and science were most important in the Indian School in Pietermartizburg where I grew up. If you were not interested in maths and science, no one was interested in you! (Interview, Grade R teacher, 2016.)

She and her sisters loved art, drama and music and her mother made herself unpopular trying to persuade the teachers to give more attention to the more artistic subjects. The Grade 3 teacher grew up in a 'Black only' rural school in the Eastern Cape, also during the Apartheid years, where agriculture was one of the subjects she took up to matric.

> The only thing we grew up looking after were the cows – the horses and donkeys we could ride. The goats and the sheep those are the animals we love because they give us meat. And chickens. We feed them nicely, we look after them because they give us something.

[22] During the Apartheid years in South Africa people were classified as Black, White, Indian or Coloured and each group had their own separate schools (Giliomee& Mbemga, 2007: 347)
[23]Tamil is a language principally spoken by the Tamil people of India and Sri Lanka.

> They are very important in the African culture. But now, don't talk to me about the dogs. Don't talk to me about the cats. We are not into pets (Interview Grade 3 teacher 2016).

The prescribed story books for the school are often about pets – for example, about the beloved dog Spot (see reference to this Eurocentric book in the next chapter). It must be frustrating to work with prescribed books that deal with families who are besotted with their pets if you cannot associate with that kind of relationship with animals.

## 6.3 Places of survival and leisure

The physicality of the walk pulls 'us' back into 'our' bodies – breathing becomes heavier with the walk uphill and once in the busy main road, the tempo of everything seems to change, attacking all the senses. The road is a noisy, densely built and taxi-ridden[24] stretch, with different kinds of music blaring from open taxi windows. Gone is the pristinely cultivated, colonised lawn of the promenade with its suggestive rubbish bins – rubbish goes in here, people walk over there. Here weeds fight for space and life, left by town council to grow as they can. 'We' sense more aggression from sea gulls and people than on the touristy beach road promenade. Empty food packages and plastic papers have the freedom of the street and taxis hoot and shoot past furiously. Smells from Yusra's Halal[25] Kitchen, the African Restaurant and Spice Market and Ming Yuan's Asian Tapas vie for attention. A tiny Cheshire cat morningmoon still hangs above the library building near the school. The recently fenced off library building is more than a building. It plays an important part in the lives of many of the children of the school, as they are taken on class outings to the library, overseen by teacher and librarians. Those with library cards can wait at the library for their transport after school.

> I get up at four in the morning to come to school. After school I cross the road with my teacher to go to the library and then I read

[24] Taxis in South Africa: The minibus taxi industry in South Africa is made up mostly of *1*6-seater commuter Toyota Hi-Ace vehicles which are not always safe or road-worthy. Drivers are known for often overloading vehicles and driving recklessly. It carries over 60% of South Africa's commuters, most of whom are of lower economic class (Sekhonyane & Dugard, 2004). These taxis also provide an infrastructure in SA which makes it possible for underpaid workers commute more affordably to work for businesses that are still often run by on in control of Whites.

[25]Halal foods are foods that are allowed under Islamic dietary guidelines.

> some books until my transport comes. Yesterday I looked up sugar cane on the computer – we are learning about sugar cane (Child interview, 2016)

The library building is a shelter, a pit stop, a waiting space in the days of some of the children. Is it a space that opens up mind-spaces for children in what geocritic[26] Bertrand Westphal refers to as "[t]he real is in the text as the text is in the world" or does it make them feel imprisoned, like "a text of fiction in a universe of paper"? (Westphal quoted in Iovino, 2016:310).

> If you are tired and you want something to pick you up… like, my teacher always reads this poem about books: The more you learn and the more you read the more you go to places. The more you read the more you can go to places. It's a poem. (Child interview, 2016)

Many tourists choose to come to *this* place, not other places. But as the quote introducing this chapter said, a geographical location is "shaped and coloured by histories of class and race and culture" (Dixon, 2011:7) and is never experienced in the same way by everyone[27].

Higher up, two famous mountains beckon with leisurely walks, spectacular views over the bay and exquisitely rare Fynbos[28]. These spaces are almost inaccessible to the children – who will have time to take them there, organize permission forms, vouch for their safety? Muggings are known to happen on the mountain trails and would the children even want to go and see 'spectacular views' if they had the chance? A Grade 3 boy remembers a walk up the mountain with one of the resourceful teachers of the school. He just remembers how tired he was. Some children mention using the huge community park in the area on class outings during exam times. The outdoor jungle gym on the beach front is only mentioned in terms

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[26] Geocriticism according to geocritic Bertrand Westphal is "an exploratory critical practice, or set of practices, whereby readers, scholars, and critics engage with the spaces that make life, through lived experience and through imaginary projections, meaningful" It is also geo-centred instead of ego-centred (Westphal, 2011: xii, xiv).

[27] Here I wish to include animals and plants – all bodies that compost well.

[28] Fynbos: This is an Afrikaans word derived from the Dutch which means a fine-leaved plant. Fynbos refers to a small region of natural vegetation found in the Western-Cape of South Africa and it makes up the tiniest floral kingdom in the world. It is highly threatened by extinction and is one of UNESCO's World Heritage sites.

of week-end outings with family. The bodies are disciplined and schooled by the power of tarred playgrounds, buildings, fences, signs and rules and according to Foucault "power relations have an immediate hold upon the body, they invest it, mark it, train it, torture it, force it to carry out tasks, to perform ceremonies, to emit signs" (Foucault, 1980:25).

> Some mornings I wake up and feel I am worthless, as if I have achieved nothing. But I am a very emotional person. (Personal conversation with dance teacher, 2016).

The flamboyant Uliano of Uliano's Dance School generously provides movement classes free of charge to all the Grades in the school. He lives in one of the fancy blocks of flats on the seaside. On a specific day and time once a week a whole class gathers on the wooden floor of the school hall and on rap, classical music or jazz they run and shout and jump and roll while pigeons fly in and out through the open door where they nest on a raft inside the hall. His complaint about not having achieved anything is drowned and forgotten in the shining, exuberantly happy and free bodies and faces of the children.

Children do not even look up as the first brightly coloured paragliders start their descent from the hill behind the school down to the various beaches in the area. Wealthy tourists have taken to the sky above the school and have become another one of the 'sights' in the area. For the children going to school, it is 7.30am. A teacher says:

> Some of the children arrive here at 6.30am. We have to open the school for them to have a safe place and a place of shelter. They need to use the bathrooms. Some children get up at 4 am. Sometimes they haven't even eaten yet when school starts at 8 (Teacher interview, 2016).

Children in school uniform pop into the corner café next to the school for sweets or chips. They are probably up too early in the morning to have breakfast and parents come home too late to prepare food for school? Who profits from this?

> We should also work on the school image: Children from the school have been caught stealing from the 7Eleven[29] shop on the corner and the Library also had problems with the children (Teacher interview, 2016).

So the power distribution between shop owner and children is not always a one-sided affair. Children examine the Yellow Cell advertising board at the café entrance: "Specials on all cell phones". Food or phone? A young White man hobbles past them on his walking stick. One of the children turns around and distractedly stares after him. Is this the 'seeing' that art critic and novelist John Berger and his co-authors call "a seeing which establishes our place in the surrounding world"? (Berger, J., Blomberg, S., Fox, C., Dibb, M. & Hollis, R. 1972:7). According to Berger "We never look at just one thing; we are always looking at the relation between things and ourselves" (Berger et al, 1972:8). Environmental philosopher David Gruenewald reminds us that "*places are pedagogical*", in the dimensions of "the perceptual, the sociological, the ideological, the political, and the ecological" (Gruenewald, 2003a:623) and Orr says: "All education is environmental education" (Orr, 2004:59). Are children perhaps learning more outside of school buildings than inside?

Urry claims, "assemblages of humans, objects, technologies and scripts" are "hybrid assemblages that can roam countrysides and cities, remaking landscapes and townscapes through their movement" (Urry, 2001:4). It is therefore important to acknowledge the agency of the material as already discussed in chapter 1. In attending to place and land, there is an entanglement of ontology and epistemology (Barad, 2007). In an entangled posthuman landscape children are not learning 'about' things, human and non-human nature but learning to live with them, for "children now live in a complex mixed-up world characterized by high mobility and diversity, digital technologies and divides, blurring boundaries and an increasing awareness to the interdependence of our lives" (Taylor, Blaise & Giugni, 2013:48). Children are confronted by different "worldings" (Haraway, 2008:27); they identify privilege and suffering, they experience choices and obligations, freedom and

[29] By the time I was ready to submit my thesis (end of December 2017) this corner café has been demolished to the ground. A new, fancy block of flats will rise in its place. How will this change the 'worldings' of the children in the school?

restriction, things move slowly or not at all or they move fast. And 'we' are reminded of Deleuze's call to believe in this world, as it is.

> The link between man and the world is broken. Henceforth, this link must become an object of belief… Whether we are Christians or atheists, in our universal schizophrenia, we need reasons to believe in this world. It is a whole transformation of belief… to replace the model of knowledge with belief… But belief replaces knowledge only when it becomes belief in this world, as it is (Deleuze, 2000: 171,172).

This is a tall order – 'we' are not allowed to judge, to make the world fall into our neat categories for making sense of it. 'We' must simply participate and be responsible for 'our' entanglements.

> Some children arrive in survival mode. They are sent here by parents who want them to learn good English. They become efficient travellers at a tender age. They are called Coconuts[30] by some, confused culturally. They learn to fend for themselves in this environment but lag behind in their own. Public transport becomes the place where they become someone else. But children are resilient – they learn to play the fiddle (Teacher interview, 2016).

"They learn to play the fiddle, fend for themselves, are efficient travellers at a tender age" …the teacher echoes Mutloatse's words cited previously that despite being victims they "yet prevail" (Mutloatse, 1981). If, as in Todd's (2014) pedagogical relationality, all relationships are pedagogical in the sense that they occasion one's "becoming" (Todd, 2014:232), even if the relationships do nor rest on an educational intentionality that 'demands' change, they are still pedagogical. Places are fundamentally pedagogical as Gruenewald claimed, since they are "contexts for human perception and for participation with the phenomenal, ecological and cultural world" (Gruenewald, 2003a:645). On this main road, human sense perceptions are constantly challenged and affected. It is impossible not to participate, react and

[30] A racial slur which accuses a Black or Coloured person of 'acting White' or 'trying to be White' – from the fact that a coconut is brown on the outside and white on the inside.

change. There is a constant ‘becoming’ with this entanglement, and the agency involved in this becoming is not only human.

## 6.4 A messy world and a Miss South Africa

‘We’ watch children arriving for school. Some arrive with organised transport, or as they call it ‘my transport’. This means there is either a taxi or bus that is specifically contracted by the parents to take the children to school. The children arrive in groups either on the main road or the roads adjoining it. Some children arrive by general transport – taxis or buses carrying adults to work and the children disembark on their own, often dishevelled and rushed. There are mothers, grandmothers or aunts walking children to school; here and there a car stops and a parent or relative drops a child or two, or three. Children walk past homeless sleepers under newspaper or duvet covers outside their school wall.

***Figure 6.3*** *Homeless residents sleeping near the school. Picture by the author.*

> Is there anything that scares you in this area of the school?
>
> Yes the people who are living on the streets. Some children at school call them names in my language [Xhosa] and then they chase the children (Child interview, 2016).

So ‘the other’ also has agency. The recycle bins on the inside of the school wall glare accusingly at the messy roads on the other side of the wall and sea gulls mingle with children on the school grounds in expectation of a shared lunch during break

time. This is a busy, vibrant, noisy road: Affrica Taylor's "real, messy world of fascinating naturecultures or socionatures that we all embody and inhabit" (Taylor, 2009:15). In Taylor's quest to diffract the two disciplinary fields of new social studies of childhood and human geography, she sees natureculture as the way to re-integrate the "lost" child (Taylor, 2009:14) back into the real world. This 'lost child' is part of romantic nature 'out there' and needs to be brought back to the messy world where they actually live (see chapter 1).

The heading of a page from *The Atlantic Sun*, under which one of the homeless residents is sleeping, reads: "[Shelley Point] residents ready for a fight". On closer inspection it reveals that activists "fighting for affordable housing near the city" (a group calling themselves the Reclaim the City Campaign) had gathered at [Shelley Point High School] to debate the issue (Hirsch, 2016:5). We read that Nkosikhona Swartbooi who attended the debate, claims a feasibility test had been done by the provincial government, proving that 350 units could be built for social housing on an old school site. He is also quoted as saying:

> There are domestic workers in [Shelley Point] living under very harsh conditions and strict rules (such as no visitors). There are so many people waking up at 4am in areas far away just to be at work on time (Hirsch, 2016:5).

Children are also waking up at 4am to be on time for a school where they are taught in English, a language not their own, so that they do not have to become domestic workers living under "harsh conditions and strict rules" and very little pay, all under the unspoken rules of "Anglo-normativity" (Spickard, 2009:6) or "Anglonormativity[31]" (McKinney, 2017:79). It is doubtful that they always understand the extent of their parents' hopes and fears and their reasons for having them travel to a school so far from home.

> My parents sent me to this school because they want me to become Miss South Africa. (Grade 3 interview 2016)

When I asked her why her parents thought this school would help her to become Miss South Africa, she did not know. Across the road from the school wall and the

[31] See glossary.

sleeping homeless person, is Cape Sidecar Adventures, a company catering for exclusive experiences for wealthy tourists in chauffeured sidecar tours. Gruenewald's reminder (drawn from feminist bell hooks) that there are always those who are allowed to enter a place, but who have to return to "the margin", to "the edges" of a town (Gruenewald 2003a: 632) and that some prefer the resistance, the larger perspective of living on the edge. Likewise, anthropologist Deborah Bird Rose in her discussion of place as dialogue, ponders the nature of boundaries – are they there to keep things apart or to facilitate exchange? She believes "its potential for connectivity [also for multi-perspectives] "lies precisely in its liminality" and in the "dialogical potential of the door" (Rose, 2002:314).

## 6.5 The agency of roots, tar, paper and wind

A sleeping resident keeps his belongings in the fork of one of the huge old Ficus trees lining the road next to the school. Underground, their roots are straining to find moving space, cracking and splitting the tarred sidewalk like a huge animal trying to surface. Tree-space is occupied by tar, but the trees occupy the space back with enough agency to 'cause' a newspaper heading: "School's battle with blocked sewer pipes" (Hirsch, 2016: 8). The tree roots choke the ageing pipes and block the school's toilets… Attracted to the loose soil around the wate water pipes, these 'street kid trees' can now breathe and grow and accidently penetrate the pipes. As Wohlleben explains in his chapter on street kid trees: "There is no remedial support for the trees, only for the pipes, which are now buried in especially well-temped-down soil so that the tree roots can no longer find a footing there" (Wohlleben, 2017:176). Opportunistic little 'weeds' sprout in the cracks, sometimes surprising the attentive passer-by with a tiny flower. The newspaper page covering the sleeping homeless person also tells the story of how reverend Alan Storey of the Central Methodist Mission reminded Reclaim the City Campaign members that it had been 50 years since the forced removals of District Six. The paper quotes him saying:

> The consequence of this crime continues as if set in stone. With [this site][32] we have an opportunity to fix a fragment of our broken past. Our city will begin the healing journey from its deadly disease of exclusion and exclusivity. It is also a deadly disease for the

[32] Reference to "[this site]" refers to the old school site where Reclaim the City wants the local government to build affordable social housing units.

> privileged who have access to more than our fair share. For people of economic privilege to live exclusively among other people of economic privilege is a profoundly impoverished existence (Hirsch, 2016:5).

Is the reverend perhaps talking about the fact that this is a suburb in a twenty-first-century nation state narrative demonstrating the power of the notion of place "as a boundaried territory governed by politics of inclusion and exclusion" (Duhn, 2012b:101)? Or is the reverend touching on what postcolonial theorist and educator Gayatri Spivak in her 2012 Kyoto laureate speech said about how the 'good' rich people at Columbia University are as cognitively damaged as the beggars?

It is interesting to note that the reverend has included himself in the group of privileged people who have access to "more than our fair share". He refers to the impoverished existence (Spivak's cognitively damaged rich) of living exclusively among other economically privileged – the result of what Peruvian sociologist Anibal Quijano termed "the re-concentration of the control of power in global capitalism" (Quijano, 2000:574) with its continued coloniality of power[33]. Here we are all missing out, because "the borders that are the thresholds of encounter and connection with other forces" (Braidotti, 2006a:161) are necessary to grow, understand and become. The reverend's reference to an "impoverished existence" because of "exclusivity" (Hirsch, 2016:5) points a finger to the lack of ecological diversity in built environments which according to Gruenewald also causes an impoverished existence.

> Either we can awaken to the significance of places, or we can teach each other, through neglect, a lack of attention. This lack of attention is disturbing because it impoverishes human experience, conceals from view the correspondence between ideology, politics, and place, and potentially leads to biological and cultural extinctions that we may regret (Gruenewald, 2003a:645).

What Gruenewald calls 'lack of attention' is impoverishing both to significance of place and to diversity of people, turning "a deaf ear to the discordant features of social life" (Todd, 2009:216), an inattentive listening. According to Iris Duhn, if

[33] See clossary.

place-based models are properly "implemented" they could produce a cosmopolitanism by "bridging the gap between the political drive for sameness and the fear for difference" (Duhn, 2014:230). That kind of cosmopolitics Duhn believes, "offers the possibility of reimagining place as an open-ended ethical pedagogical *multispecies* encounter, where shared worlds are made" (Duhn, 2017:45; my emphasis).

And with that, the material-discursive newspaper page covering the homeless person is taken by the wind blowing from the sea, channelled by the buildings and playfully tossed up into the air and blown in the direction of the mountain.

It is 8am. The gate to the school on the main road is kept open for a while longer to accommodate late-comers – taxis regularly break down, are pulled over for being un-roadworthy, are involved in accidents or there are strikes causing backlogs in transport from the townships and informal settlements into town. Heart rates are high – the environments 'we' create become more and more taxing – faster, denser, more dangerous – we need the help of technology and biotechnology to survive it, to search faster, to concentrate better and then to relieve the stress. A father drops his two children in front of the school gate. He calls through the wound-down window telling the older girl to adjust her brother's school tie – a nudge to wake the disciplined school body. Then he drives off. For most children there is a long day ahead.

> We have aftercare until 5.30pm for the younger ones. Sometimes the teachers have to wait because the parents or the caregivers have not turned up yet. Some children leave with public transport at around 4. Some loiter in the area or in town if parents work late – there is nothing for them to do at home. There are cases where parents and children never see each other. One wakes up while the other still sleeps or goes to bed when the other is not home yet. (Teacher interview, 2016)

If the environment also teaches and all education is always already environmental, it follows that, in the words of Greenwood[34] "Educational theory and practice that is

[34] David A. Greenwood and David A. Gruenewald is the same theorist. He changed his surname from Gruenewald to Greenwoood.

negligent of the person-place relationship is therefore miseducative and not without consequences for people, culture and environment" [animals, things] (Greenwood, 2013:97). In this chapter I tried to demonstrate how, through posthuman walking, 'we' can be attentive to the place and land that these children are a part of, even if only during their school hours. I have explored here how specific historical processes (human, organism and artefact) have given rise to the physical and biological system that is 'the school' at this particular point in "spacetimematter" (Barad, 2007). 'We' have used 'our' senses and taken into account the physicalities of the walk, the wind and some of what the wind has brought to 'us', the materialities of a pair of huge glasses, a piece of newspaper, a broadcasting corporation building overlooking an island with a history, entangled with poetry of anger and pain all enfolded into past, presence and future of this place. 'We' tried to imagine "differences, otherness or the commons" (Thiele, 2014:203) and have done so in to account for the multiplicity of possible becomings of this place of research. I have answered part of my research sub-(in)tensional question: How do colonial legacies in South Africa still affect environmental education in a primary government school? by providing a detailed account of the environment and historicity within which the school is embedded and embodied (Braidotti, 2013) which sets the 'scene' for the next chapter on the practicalities of environmental education in the classroom of a Cape Town school. On the eve of my official practical research period, I had my second vivid dream:

> I have to present a paper on the Foxtrot. I have done a lot of research on the history and meaning of the dance. I am in a small lecture room full of people and there is a baby I have to take care of during the presentation. Half-way through, someone asks me if I could teach them to do the Foxtrot. I realize to my embarrassment that my body cannot remember how to do the dance (Field notes, Dream, 22 February, 2017).

I decided that this was a reminder that I will have to find *practical* ways to work around a humanist curriculum since it might be a long time before school curricula are free from humanistic frameworks. We have to be able to 'do the dance' not just talk the talk or write the words. The baby in the dream might have been my thesis in the making.

‘We’ have come to the end (or the beginning[35]) of ‘our’ walk. In the next chapter, the researcher enters the school grounds and the principal’s office, without shoes.

[35] As we will always be “re-turning” (Barad, 2014:168) – beginnings and ends are part of multiple processes.

# Chapter 7 Without Shoes

> In the sand pit, the girls start braiding my hair, they love it when it is crimped. Everyone takes a section to braid and the skin on my scalp is pulled and jerked in all directions as the little hands weave, swipe at insects, storytell. I am being woven into a new pattern. Then Arusha starts crying because she did not get 'enough hair'. It dawned on me that I do not have enough hair for all of them (Field notes, 14 September 2016).

It turned out that hair was not the only thing I did not have enough of during my eleven months of practical research in 2016 at the primary city school between the sea and the mountain. In 1662, just ten years after Jan van Riebeeck had arrived in this area of South Africa (chapter 6), Spinoza wrote, "… nobody as yet has determined the limits of the body's capabilities: that is, nobody as yet has learned from experience what the body can and cannot do" (Spinoza, 2002:280). Still relevant in 2016, Spinoza's reminder became a mantra as my admiration and respect increased over the months for what the bodies of teachers and children can do. Despite my own shortcomings in energy, memory, attentiveness, hearing, eye sight and hair, I tried to stay with Donna Haraway's suggestion for a multispecies world "… passing patterns back and forth, giving and receiving, patterning, holding the unasked-for pattern in one's hands, response-ability; that is core to what I mean by staying with the trouble in serious multispecies worlds" (Haraway, 2016: 12). For often, I have held such an unasked-for pattern in my hands, not sure of how to respond or what to do with it.

In Chapter 6, I have partially answered my research sub-(in)tensional question: How do colonial legacies in South Africa still affect environmental education in a primary government school? by providing a detailed account of the environment and historicity within which the school is embedded and embodied. I imagined "'differences', 'otherness' or 'the commons'" (Thiele, 2014:202) to account for the multiplicity of possible becomings in a hybrid world of coexistentialism, a world of Gaia. It set the 'scene' for this chapter on thinking with theory in an environmental education classroom of a Cape Town school. Heeding posthuman educational

philosophers John Weaver and Nathan Snaza's warnings about "methodocentrism[1]" - that it has become time that we "care *less* about our fidelity to existing methods and care *more* about touching, and being touched, by the world" (Weaver & Snaza, 2016:10), I decided to "take the risk of letting the world speak" (Protevi, 2009:21) and find a "pathway of listening" back to the "natural world… a world that is not data, facts of a 'nature' constructed by humans to pretend they are superior to it" (Weaver & Snaza, 2016: 6). Instead, I will let this world speak for itself, I will not speak for it or represent it but listen attentively to all the voices talking to me in all the languages of the world, not only the human ones. I will try not to privilege the visual, since "most educational research is dominated by the need to see" (Weaver & Snaza 2016:5). I will try to stay in attunement with the entanglement – "[w]hat is 'new' is not the human's entanglement – and emergence *from* – a whole host of others, but our attunement to this entanglement" (Weaver & Snaza, 2016:4). Knowledge of this entanglement is therefore not enough, my whole body will need to be affected by it, I will need to 'dance the foxtrot', with all my not-so-young-anymore-senses in order to re-pattern a mind that is probably too set in its ways, not to fall prey to "unexamined habit(s) of mind" (Barad, 2007:802).

Since my research focuses on environmental education in the Foundation Phase, I decided to attend classes in the first and the last grades of the Foundation phase curriculum - Grade R and Grade 3. I have chosen this phase because I suspect that binary categories that exclude others are less fixed in these years and there is a stronger memory of connectedness to a world beyond the classroom and the physicality of learning is important since language is less developed. Less emphasis is put on content knowledge and the separation of subjects in those earlier years, and as such it lends itself to a posthumanist approach. In Grade 3, specific 'periods' are already allocated for Life Skills lessons, whereas in Grade R, the days are less structured and I could attend any time during the school day – it always provided me with valuable insight into child/environment intra-actions. So while my weekly attendance of Grade 3 classes took place during specific Life Skills lessons, times for Grade R visits were more flexible. I spent time with both Grades not only in the classrooms, but also outside on the playground before school or during break time, in

[1] Methodocentrism, as defined by John Weaver and Nathan Snaza, is "the belief that predetermined research methods are the determining factor in the validity and importance of educational research" (Weaver & Snaza, 2016:1).

the school hall during concerts or dance classes, around the swimming pool and in the bathroom. These were good places, good sites to be, for as posthumanist John Weaver attests:

> In schools are where the forces of creative culture and taming forces of civilization meet head-on. And posthumanists are missing this reality, this world of humans and nonhumans interacting daily. They are missing the sites where the tensions of posthumanism and humanism play out (Weaver, 2015: 193).

In missing these sites, we are probably not taking heed of David Orr's comment "All education is environmental education" (Orr, 2004:59). But I was trying to find more – I was also trying to find the places where Weaver's creative human natureculture (the culture of the human) meets creative natureculture (the creative culture of the non-human) head-on – or perhaps not at all in an urban school?

It was not difficult for me to lose "researcher expertise and authority" and become "curious and unknowing" (Lather, 2007:11) or to "break(s) away from audit-culture" and "partner(s) up with the questioning other" (Lather, 2013:635) since I did not feel like an expert or an authority on anything. As I mentioned in chapter 3, on the first day I arrived at the school, I entered the principal's office barefoot, shoes in hand since one broke on my way there. I saw it afterwards as a premonition of the agency of shoes and of not being an expert or authority, but there to learn and experience. And I was intensely curious about what I would find.

## 7.1 The camera eye and I

In chapter 3.9 the use of camera equipment in research situations was discussed at length. Now I experience myself as the human-camera assemblage in a classroom. What are the disadvantages of the hand-held camera? It inhibited the entanglement and the attunement to the entanglement that I wanted to experience with my whole body. Children soon became used to the camera and they seemed to forget about it watching them, but it sometimes inhibited *my* participation. Even though I tried to see my looking as a 'looking with' instead of 'looking at' which "does not subjugate the perceived to the gaze of the perceiver, rather is a looking that echoes a desire to be included in another's field of vision" (Kind, 2013:436), I still felt restrained by the

'equipment'. Detachment of the agency of the camera is impossible, the camera and I will be intra-acting with each other and our environment. In her study on photography with children, Sylvia Kind describes how one of the pre-school children who were exceptionally fond of and interested in horses, reacted when they were taken outside to take pictures of a real horse:

> Nina is unusually silent while at the stables. I sense a mixture of fear, awe, intrigue, and affinity with the horses. Outside by the metal fence that separates us from the lone and enormous horse, I watch her as she moves close, moves back, stands still, and considers the animal. Her gaze moves between the horse and the other children behind her. She takes very few photos and mostly watches (Kind, 2013:434)

Nina's reaction made sense to me: If you are really in awe, you do not want to be taking photos or videos, you just want to be-with-it. That is also the reason why I sometimes left the camera behind when I wanted to experience with my bodymind alone, without the man-machine component. And without the "primacy of the visual" (Braidotti, 2006a:103). During interviews I felt it would be voyeuristic to put the camera in the child's face and I put it on the table to take its own images – often only of hands or feet of the talking child. I did not always look 'through' the camera in the classroom, but kept it on my lap, focused on the happenings and only zoomed in or out once something drew my attention to it. Once, I forgot to turn the camera off and in its cover, it recorded my footsteps down stairs and the surround-sound of my participation on the school terrain. Afterwards I remembered more of what I experienced than when the camera was turned on visual.

I decided to be led by what Maggie MacLure calls "data that glimmers and glows with that Deleuzian 'affective' component" (MacLure, 2013:661) and Davies and Lather's "emergent listening" (Lather, 2007:11; Davies 2014:24) and that is what I will present you with in this chapter. I will not present the encounters chronologically in the usual 'chrónos[2]' sense of time of Plato or Aristoteles. For educational philosopher Walter Kohan, "each conception of childhood presupposes a

[2] Kohan explains Plato's chrónos as "the moving image of eternity (aion) that moves according to number" and Aristotle's definition as "the number of movement according to the 'before and after'" (Kohan, 2015:56).

concept of time" and for him, the conception of childhood as "a stage of life" is a conception that "presupposes a chronological concept of time" (Kohan, 2015:56). I will rather present my encounters in this chapter according to Heraclites' 'aion[3]' conception of time, which Kohan describes as follows:

> There is another dimension of living time more akin to a childlike form of being (aion), non-numbered. In relation to this kind of time, a child is more powerful than any other being. In aionic life, childhood does not statically exist in one stage of life – the first one – but rather goes through it, powerfully, as an intensity or duration. In this fragment a nonchronological, aionic experience of time emerges and, together with it, a nonchronological concept of childhood. Childhood may here be understood, not only as a period of life but as a specific strength, force or intensity that inhabits a qualitative life at any given chronologic time (Kohan, 2015:57).

I will stay in this powerful realm of the child, "childing" (Kohan, 2015:57) from one intensity that draws me to the next, making connections between encounters that glow for me. Posthuman environmental educators Debbie Sonu and Nathan Snaza refer to this attitude as the "reverse of what has always been familiar in education: for the adult to return to a child-like openness with the materiality around us" and a "responsiveness to ever new situations as we are exposed to them" (Sonu & Snaza, 2015:261). In his philosophical discussion of 'play' philosopher Sybrandt van Keulen calls his view of play "a specific reciprocal relationship… a relationship in which powers are brought to swing and thus play with each other" (Van Keulen, 2017: 103). And so we will move from hair on heads, to shoes on feet. I will call it the encounter with shoes.

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[3] Kohan uses the following quote from Heraclites' Fragment 52, to explain his "different relationship between the child and time" with the use of the" time-word" aion: "Time [aion] (is) a child childing (playing); its realm is one of a child" (Kohan, 2015:57).

## 7.2 The encounter with shoes

***Figure 7.1*** *Children's shoes at school of research. Picture by the author.*

> Respect for everything and anything, you start with that. That is what it is about Rouxnette – clothes, shoes, a piece of paper. It is so simple, but it starts there (Teacher interview, 16 May, 2016).

The Grade R teacher (we will call her Sumaya) grew up in an 'Indian'[4] school in Pietermartizburg, during the Apartheid years in South Africa, with English as language of instruction (Teacher interview, 16 May 2016). She remembers that maths and science were the only subjects considered to be of importance – those subjects that were seen to best equip children to compete effectively in a global economy. For science and environmental educators Paul Hart, Bob Jickling and Richard Kool it is clear that "environmental education is more than science education" (Hart, Jickling & Kool, 1999:109) and that environmental educators should be challenged to "reach beyond science-based approaches to this field" and include understandings such as, "intuition, insight, deep familiarity, respect, compassion and appreciation and perception of the sacred in the world" (Hart, Jickling & Kool, 1999:110). Fortunately, with a mother who was always in the garden, hands in the soil, touching things, cultivating and whispering to plants, and thinking about how to re-use artefacts in ten different ways, Sumaya learnt respect and interest for 'environment,' without being 'taught about' it, just through being

[4] During the Apartheid years in South Africa people were classified as Black, White, Indian or Coloured and each group had their own separate schools (Giliomee & Mbemba, 2007: 347)

with her mother and enjoying her company. When asked what she understood by 'environment', the Grade R teacher defined it as "more than just what we were given – environment is more the state of nature, the man affected space we live in. How we relate, communicate with and our effect on nature is what I see it as" (Teacher interview, 19 May, 2016).

But what if a Grade R teacher did not have these childhood encounters with soil and plants and respect for all matter? Perhaps we can all start with shoes, (or the lack of it) – something that unexpectedly influenced my sensibilities towards environmental education in schools.

Hoping to find endearing bird-child-insect-plant-soil images/sounds/smells during the first month of my research, I was puzzled by the effect the shoes of the Grade R class had on me. It was like Haraway's "unasked-for pattern" (Haraway, 2016: 12) – it wanted to say something to me but I was not sure what. It demanded attention from the moment the classroom was opened in the morning. The room smelt of shoes that had sweaty and dusty feet in them for a while. The carpet off-cut on which the children sat, was old and full of stains and had already absorbed the smell of feet. Even the Grade R prayer song reminded me of shoes: "I have a roof above me and a warm place to sleep. I have food on the table and shoes on my feet... "

In South Africa, all government schools demand that children wear uniforms as from Grade 1. But in Grade R, they are still allowed to come to school in "civvies[5]". Most children only have one pair of shoes for winter and one pair for summer. So the shoes almost become part of the body – the one piece of 'clothing' that hardly changes throughout the year, their summer sandals the thin veneer that protect the feet from the soil where they get onto buses or taxis early in the morning from the townships[6] of Khayelitsha, Gugulethu, Langa… to where they get off in a busy city main road. In this school, Grade R children are allowed to be with or without their shoes during school hours, except when there is a formal gathering in the school hall. Each has a pigeon hole in the classroom for books and one outside for extra clothes,

[5] The word used by children in schools for clothes other than the school uniform. They have special days on which they are allowed to wear their ordinary clothes to school, often with a small fee payable that goes to a charity or the school fund.
[6] Townships in South Africa were established during the Apartheid era on the outskirts of cities, segregated areas for so-called non-white people, mostly underdeveloped and still in 2016, seen as providing inferior education.

lunch boxes and shoes. On the carpet in the classroom, there are bare feet or shoed feet or socked feet in winter and in the sand pit some children even forget to take off shoes. This reminds me of philosopher Asja Szafraniec's comment on 'skin': "Clearly, skin is not simply a continuous layer of tissue where impressions from the environment accumulate, but rather a selective barrier permitting economic exchange of information, including the emergence of information to the outside…" (Szafraniec, 2017:163/164).

> I wait for them in the sand pit. They come flying down the stairs, Batandwa and his friends are taking a short-cut by sliding down the wide handrails – on bums, on tummies, on backs and the surge in energy matches the surge in sea gull calls. The excitement is catching – I feel it too. More and more birds are swooping low over the playground in anticipation of lunch box scraps, the children seemingly oblivious to them. Shoes are kicked off, kept on or neatly placed on the bench next to me (Field notes, 1 March, 2016).

There are three Grade 6 'monitors' on duty to supervise the Grade R's during break time. When the bell rings after break, they help put shoes back on, but some shoes are left behind as children rush back to the classroom. The monitors collect the shoes and take them to the classroom.

The abandoned shoes get a special place in the classroom. The children chorus-thank the monitors by name for having looked after them and for bringing back the shoes. It becomes obvious that abandoning clothes or shoes or any piece of material that the child is responsible for, is not acceptable. Sumaya holds up one of the telescopes they made the previous week from carton rolls and plastic tops. Someone has left his/hers lying around and did not put it in their files to take home. Now it is squashed and one of the tops is missing. Who does this belong to? The responsible child has to find a new top, repair the carton toy and put it in his/her bag. The owners of the shoes are asked to take better care of their clothes – the materials closest to their bodies. As quoted before, Sumaya said, "Respect for everything and anything, you start with that. That is what it is about Rouxnette – clothes, shoes, a piece of paper. It is so simple, but it starts there." Will educators be able to nurture understandings such as "intuition, insight, deep familiarity, respect, compassion and appreciation and perception of the sacred in the world" (Hart, Jickling & Kool,

1999:110) – in other words will we be able to care for our earth others if we do not care for our own shoes?

I remember my own affective and creative attachment to inanimate objects as a four or five year old. I had a drawer in the kitchen with plastic and wooden toys and these toys had a life of their own – I made up stories about them to myself inspired by the feel and smell and look of these objects. These imaginative stories created a bond between me and the toys. And so I wondered… what if we use the child's imagination to create bonds. What if they could tell the story of their shoes, the story of what they go through together? As Braidotti says, "… there is no doubt that 'we are in this together'. Any nomadic philosophy of sustainability worthy of its name will have to start from this assumption…" (Braidotti, 2006a:35/36).

## 7.3 The ant who was not useful

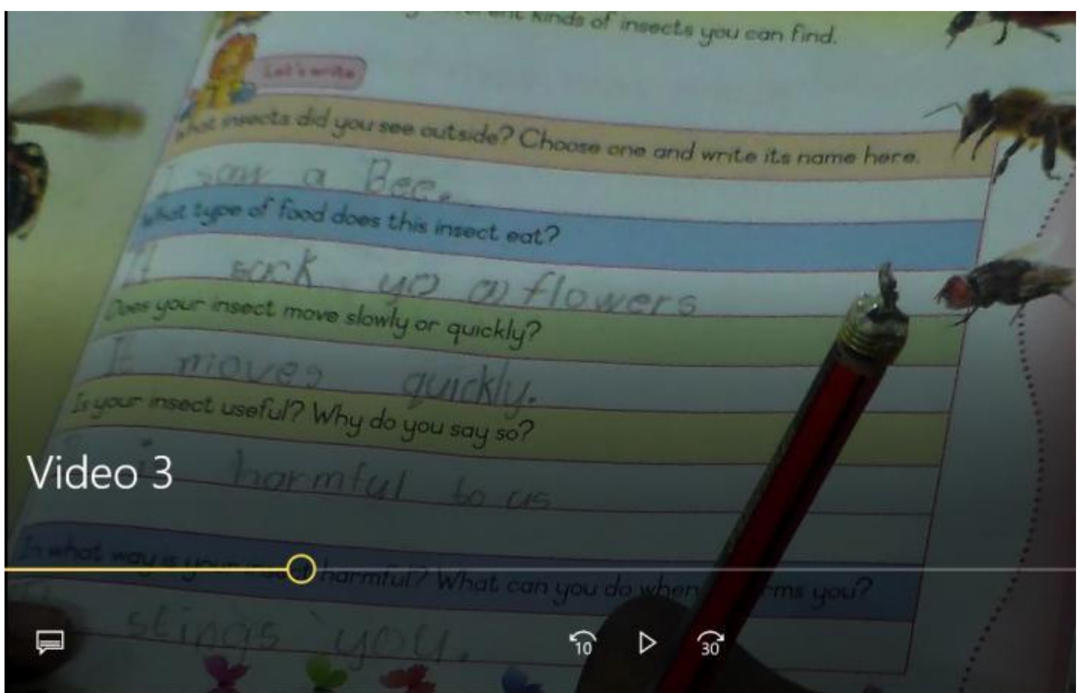


***Figure 7.2.*** *From Grade 3 work book. Bees are harmful to us because they sting.*

In a section of the Grade 3 workbook the following questions are asked: "What insects did you see outside? Choose one and write its name here. What type of food does this insect eat? Does your insect move slowly or quickly? Is your insect useful? Why do you say so? In what way is your insect harmful? What can you do when it harms you?" (Department of Basic Education, 2015:47). These questions are found

in the Grade 3 Life Skills Rainbow Workbooks, with its fifth edition published by the Department of Basic Education (DBE) in 2015. Two Life Skills lessons are on insects. Cross-legged on the carpet in front of the teacher, the children have their first introduction:

> Teacher: So who can tell me what are the insects? Are they just like human beings? Children (in a chorus): No… Teacher: Do they eat food? Children: No… Teacher: Do they cook? Children: No… Teacher: Do they walk? Children: No… Teacher: Do they walk? Children: Yes. Teacher: Ok. They talk? Children: No. Do they sleep? Children: Yes… Teacher: Do they have homes? Children: Yes. Teacher: Someone said no – someone said they do not have homes… Teacher: They come to school? Children: No. Teacher: Are they here at school? Children: Yes… no… yes… no…. Child 1: …the goggos[7] teacher… they come in the classroom…Teacher: …and then they write like the goggotjies[8]… (Children laugh.) Teacher: Yes, so they are there but you cannot see them they are not visible to us now, but if you go outside and look for insects you will find them (Transcription of classroom lesson 21 April 2016).

The second lesson was more 'scientific':

> Teacher: Now tell me what are the insects. Teacher Rouxnette does not know what insects are, you tell her… Pheelo: It is an animal that has six legs and is divided into three parts. Teacher: Does anyone want to say something he did not mention? Thando? Thando: It is a very small animal. Teacher: It is a veeeery small animal. Maybe on that mat where you are sitting on that mat there is an insect. Children move up quickly, giggle, pretending to be scared. Teacher: It's a very small animal with? Children: Six legs. Teacher: And what? Children: Divided into three body parts. She writes it on the board. Teacher: Very good children, let's give you a big hand. (They applaud themselves). Teacher: Right, that's an insect. Is a spider an insect? Children: No. Teacher: Why not? Children:

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[7] 'Gogga' is derived from the originally Khoikhoi word 'xo-xon' and taken up in the Afrikaans language. It is a term which refers to slithering and creeping creatures and is now a house-hold name in many South African indigenous languages. It is used by children to describe an insect, especially a scary one. It does not have a positive connotation.

[8] 'Goggotjie': The suffix 'tjie' in Afrikaans is used to indicate the diminutive form.

> Because it has eight legs. Teacher: There's my big cardboard spider. (She shows the spider that was cut out and put on the wall) Teacher: Insects are very small animals with six legs and they are divided into three body parts. What are these body parts? Children and teacher together in chorus: The upper body, the lower body and the head. So the antennae is on the? Head. And the eyes are on the? Head. So there's a head, there's an upper body and a lower? Body. Right. And then there are the legs. We know that insects are the animals with six legs. No more than six legs, not ten legs not two legs. And some of them they don't have wings and some they got wings (From transcript of classroom lesson, 21 April 2016).

The teacher also discusses the harmful- or usefulness (for humans of course) of certain insects, like bees:

> Now tell me… which insects are useful for us? They are very useful to us as human beings (From transcript of classroom lesson, 21 April 2016).

Children identify bees as useful because they give honey. The teacher explains that you could dissolve honey in hot water and drink it to when you have a cold. And they pollinate flowers so that we can have fruit.

> Teacher: Right, which insects are harmful to us? (Children mention mosquitoes that cause malaria.) Teacher: What are other insects that are not good? (They talk about flies that carry germs and cause disease.) Teacher: And what else is harmful to us? The bees! The bees!" (From transcript of classroom lesson, 21 April 2016)

Although the teacher tells the children that bees only sting when they are provoked – because they think we want to fight with them – the effects of bee stings are emphasized. Children are given a chance to account their experiences with bees. One of the girls offers the information that "when they come to you it means they say 'hello,'" but she is ridiculed. The teacher warns that the 'hello' will end in tears. The bottom line to the lesson about the useful and harmfulness of the bee is:

> Teacher: So when you see a bee, run away, run away (From transcript of classroom lesson, 21 April 2016).

Discussion of the model of hegemonic centrism as explained by Val Plumwood was discussed in detail in chapter 2. According to Plumwood Nature is excluded (obscured, veiled) in five ways, of which "radical exclusion" (Plumwood, 2002:109 – 111) is one. This anthropocentric viewpoint treats Nature as radically different from the human with little continuity between them and it emphasizes the differences instead of the commonalities, finding the non-human lacking in mind and agency. The classroom discussion on insects concentrated on the differences between humans and insects: They are not 'just like us', they don't cook, they don't talk, they don't come to school and they don't write. Finding commonalities, on the other hand, might bring us closer to Haraway's solution of "making kin" in a time of system collapse: "I think that the stretch and recomposition of kin are allowed by the fact that all earthlings are kin in the deepest sense, and it is past time to practice better care of kinds-as-assemblages (not species one at a time)" (Haraway, 2016:103). After all, Haraway explains that the word 'relatives' in British English originally meant 'logical relations" and not "family members" (Haraway, 2016:103), all the more reason to see the commonalities instead of the difference in our relatives, the insects. Instrumentalism, one of Plumwood's aspects of hegemonic centrism as discussed in chapter 2, is also apparent in the phrasing of the teacher's question of what the insects are 'useful for'.

During later analysis of my video footage of this classroom lesson, I found signs of the effect that Deleuze's "virtual action" (the sound and image of the encounter) had on me and my reaction to it – "avoid[ing] them by diminishing or increasing the distance" (Deleuze 1986:65-66). I did not feel comfortable during the lesson and the camera was used as mask between me and the encounter, almost as if I wanted to prove my response-inability in the situation, not unlike the cameraman filming a murder instead of preventing it.

The refrain-like, chorus-answers of the class to questions like "do they eat food, do they cook, do they walk, do they talk, do they sleep, do they have homes, do they come to school…" reminded me of the playground chants the children love to participate in – a trance-like chanting of words while they play: For example during playtime on the climbing frame (1 March 2016) they were chanting something that sounded like, "Tai-tai-aaaijjj" over and over while clapping and jumping on the

climbing frame in a growing assembly of bodies waiting their turns to use the rings to swing from. The only deterritorialization or line of flight out of this "territorial refrain" (Hickey-Moody, 2013:90) happened when someone accidently gets hurt and the chant stops for a moment. Hickey-Moody draws on Deleuze and Guattari when she calls the production of art contingent on "its opening up to chaos; a line of deterritorialization that opens up a territorial refrain and connects it to other spaces (rhizome) and other cultural melodies" (Hicky-Moody, 2016a:262). Also using the Deleuzian concepts of molar and molecular, Coleman and Ringrose ask how one could "disrupt… de-territorialize… carve out the 'conditions of possibility' for movement out of the repetitive molar norms that striate space and denies the body movement" (Coleman & Ringrose 2013: 134). What will disrupt these refrain-like questions about the ants? An accident? An imaginative answer? What deeply disturbed me was the trance-like answers to questions about our kin during a time of species extinction:

> Teacher: Do they eat food? Children: No… Teacher: Do they cook? Children: No… Teacher: Do they walk? Children: No… Teacher: Do they walk? Children: Yes. Teacher: Ok.

The teacher also missed the senseless/thoughtless "No" answer to the "Do they eat food?" question. To Haraway "the world does not matter in ordinary thoughtlessness" and a thoughtless person is someone who could not be "a wayfarer, could not entangle, could not track the lines of living and dying, could not cultivate response-ability, could not make present to itself what it is doing, could not live in consequences or with consequence, could not compost" (Haraway, 2016:34) (chapter 1.8) and we do not want future generations of thoughtless humans. What 'we' need (in Braidotti's sense of 'we') are future generations of attentive listeners, who will pay attention "to affect, entanglement and rupture; and affective ecology in which creativity and curiosity characterize the experimental forms of life of all kinds of practitioners, not only the humans" (Haraway, 2016: 68) and in thoughtless, refrain-like answers there is no creativity or curiosity about insects or anything/anyone else. The repetition of the question "Do they…?", where 'they' encompasses all 'insects' (because 'they' have 6 legs) suggests what Plumwood calls "homogenisation" or "stereotyping" of nature - treating animals, plants and environments as all alike in their "lack of consciousness" (Plumwood:2002:109-111). It promotes insensitivity

to diversity and it underestimates the complexities of nature. Use of the words 'goggo' and 'goggotjies' is part of our South African culture when referring to insects, but it is also part of the "hegemony of words". In Afrikaans special words for animals dying ('vrek') or eating ('vreet') or having sex ('paar') indicate their inferiority to humans, the way in which animals are viewed as 'objects,' not beings. Animal rights advocate Carol Adams warns: "We don't realize that the act of viewing other as an object and the act of believing the other *is* an object are actually different acts because our culture has collapsed them into one" (Adams, 2018:xxxi). And habits do not only stick, they spread: Environmental educator Chet Bowers warns against language that reproduces "the teacher's taken-for-granted thought patterns" (Bowers, 2001:142). The diminutive form of 'gogga' - 'goggatjies' - and the image of these insects coming to school and writing like children, make the children laugh at the ridiculous image of insects 'like humans'. But there is also an expectation of the fear which insects will induce:

> Teacher: It is a veeeery small animal. Maybe on that mat where you are sitting on that mat there is an insect. Children move up quickly, giggle, pretend to be scared.

What is the effect of these "taken-for-granted thought patterns" (Bowers, 2001:142) that the teacher invokes? In chapter 2 a discussion of the controversial term, biophilia[9], as having "both positive and negative affiliations" with nature (Kahn, 1997:53) emerged as "a valuable interdisciplinary framework, for investigating the human affiliation with nature" (Kahn, 1997:2). In this case, whether the jury is out on whether fear of nature/insects/spiders is "genetically determined" (Kahn, 1997:2; Bixler & Floyd 1997:443; Seligman & Hager, 1972:465) or "shaped by experience, learning, and culture" (Kahn, 1997:2) it is obvious that reinforcing the idea of insects as scary, will not "transform negative affiliations with nature into, ultimately, a life-affirming orientation" (Kahn, 1997:54). Although Piaget's developmentalism drawn on by Kahn is not part of my posthuman view of child[10] and even if it is true that

[9] Biophilia is a concept coined by E. O. Wilson in his book *Biophilia* (1984) which refers to the human instinctive urge to affiliate positively or negatively with other forms of life. This idea gave rise to research and debate across many disciplinary research fields such as sociobiology (Kellert & Wilson, 1993), environmental psychology (Ulrich, 1993), conservation biology (Kellert, 1993; Kellert, Black, Rush & Bath, 1996), environmental studies, (Orr, 1993) and environmental education (Kahn & Friedman, 1998).

[10] See *The Posthuman Child* (2016) by early childhood educator Karin Murris.

human phobias “are largely restricted to objects that have threatened survival (Seligman & Hager, 1972:465), I find it of no use to scare (urban) children or drawing on their fears of insects/animal predators in developing a relationship with the more-than-human. During informal conversations with the Grade R and Grade 3 children about what scares them at school or at home, insects, snakes and predators like lions kept surfacing even if they had no previous negative experiences with them. Butterfly World Tropical Garden[11], is a 1000m2 “luxuriant paradise” with “free flying exotic butterflies” raised on breeding farms in Costa Rica, the Philippines, Malaysia and China that imports 300 pupae per week which will emerge as butterflies in their greenhouse. It is a popular school educational outing for primary school children in the Western Cape and I have taken my own children there in their pre-primary years. Yet, some children mentioned that they had “bad dreams about butterflies” or were “scared of butterflies” after this experience. I remember that one of my four children intensely disliked the experience of butterflies underfoot and everywhere around him. Though well-intended, this kind of outing easily becomes another example of the instrumental use of nature (butterflies) in the name of educational experiences for children which “distorts sensitivity and knowledge of nature and blocks humility and wonder” (Plumwood, 2002: 109-111).

In this classroom lesson ‘about’ insects, they are represented as

> very small animals with six legs and they are divided into three body parts… the upper body, the lower body and the head with… the antennae…on the? Head. And the eyes are on the? Head. And some of them they don’t have wings and some they got wings (Transcript of classroom lesson, 21 April 2016).

This is what environmental educators and new materialists Debbie Sonu and Nathan Snaza call “a kind of representationalism bent on factual knowledge and extraction from literal text” (Sonu & Snaza, 2015:273). The ‘fact’ that ants use their antennae to communicate with each other (mentioned in their work books) could have elicited a more interesting conversation, even an imaginative story-telling session. So perhaps here, the prescribed work book will come to the rescue: At the end of this lesson, the children must answer the following questions in their work books:

[11] For more information: www.butterflyworld.co.za.

> What insects did you see outside? Choose one and write its name here. What type of food does this insect eat? Does your insect move slowly or quickly? Is your insect useful? Why do you say so? In what way is your insect harmful? What can you do when it harms you? (Department of Basic Education, 2015:47).

During a subsequent lesson the children are sent outside to research. They must try not to be too noisy since it is not break time yet. Could this perhaps become an encounter where thinking and doing is shifted "toward a praxis of knowledge creation, not repetition mimicry, or closed solution" (Sonu & Snaza, 2015:272) or perhaps one of those rare occasions where "it is the child that has much to teach the adult about a new materialist experience in the world"? (Sonu & Snaza, 2015:271). I might even encounter what I was looking for: instances where Weaver's "creative culture" (Weaver, 2015: 193) meets creative Nature head-on, where the "self-arising" (Bonnet: 2004:40) more-than-human, meets the self-arising human. For Barad reminded us, "We have to meet the universe halfway, to move toward what may come to be in ways that are accountable for our part in the world's differential becoming. All real living is meeting. And each meeting matters" (Barad 2007: 353).

It was a cold, gusty April morning but I felt excitement about what I might discover with the children on the school playground. I took the camera with me outside since I knew this was an important opportunity despite the fact that holding the camera constrained me. The children took their work books with, to write their answers in it, something I thought might constrain *them.* The playground is mostly covered with tar, with some beds of soil for shrubs, flowers and trees. Two huge old tree trunks that have collapsed or were cut down, are still kept in their beds of soil. There are also sand pits for the younger children and potted plants next to the staircase at the front entrance and on the sides of the main building. The energy levels change dramatically - the children run to the first potted plant, all gathered around the one pot. Sea gulls mistakenly believe it is break-time and noisily dive down to collect their scraps of food. The children run to the fallen tree trunks and spot some ants next to the jungle gym. They tell me they have seen a bee inside the fallen tree trunk. Apparently there is a bee hive high up near the roof nook close to the school administrator's office and they have been told not to throw stones or disturb the bees. The children see ants eating potato chips near the jungle gym. They write it down in

their books. They find the questions as to whether their insects are moving "quickly or slowly" confusing since it depends… on whether the insects *want* to move quickly or slowly… yet, one of the children discover red ants who definitely seem to move faster than the black ones. The children find three different insects on the playground: a wood boring beetle on the fallen down tree, one bee (a controversial find since only some children saw it and the others claim it was not there) and many ants who seem to eat mainly potato chips. The teacher arrives outside and asks them to write about one insect only. The children become quiet as they all write in their books. Those who are done, stand in a row with the teacher, waiting to go back into the classroom while others are still exploring or writing.

> Teacher: Now they have a good understanding of insects. They read about it, they have seen it… Thando, we speak English, nè? (Transcript of video, 28 April 2016).

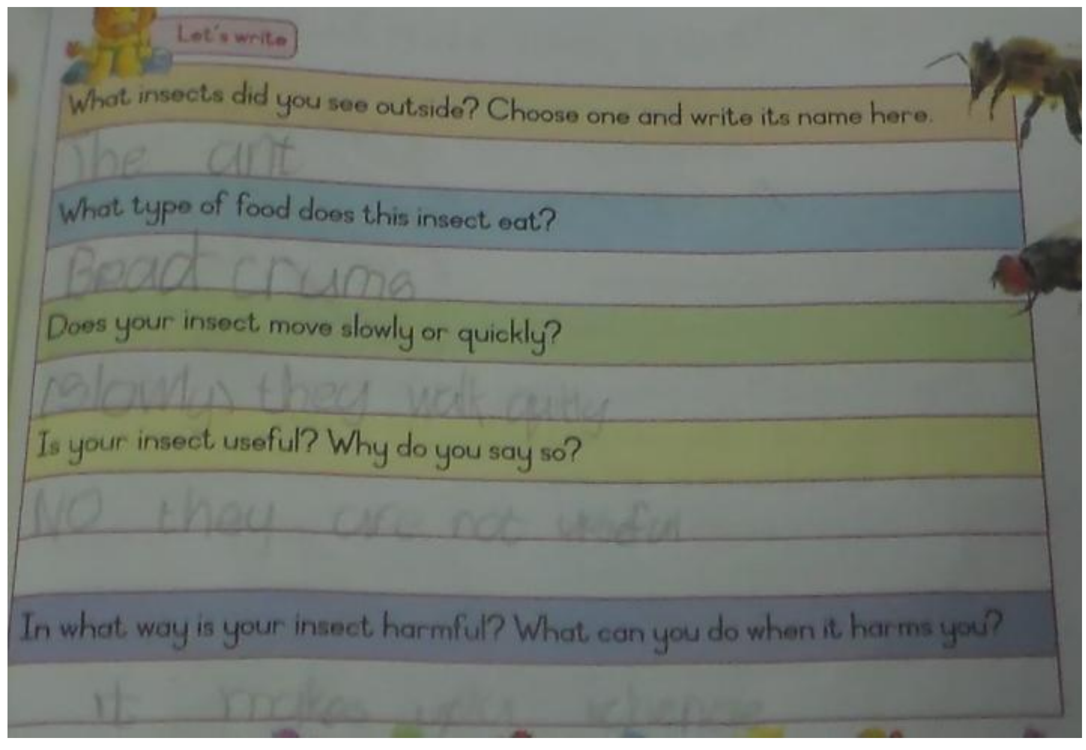
I notice Advik sitting with his back against a netball pole. He has drawn the mouthpiece of an ant at the bottom of the page where it says: "Now design and draw your own insect and give it a name". A very nice creative exercise, extending creativity to other areas than art classes as suggested by Bowers in his four ways of putting creativity on a ecological responsible footing (discussed in chapter 3.8.2) but since it is marked 'Fun' in the work book, it is probably not seen as important, so the teacher does not ask them to do this specific exercise. I ask Advik how he knew to draw it so well – did he see it now outside or in a book? He says he saw just now how an ant was holding a bread crumb in its mouth. Creative natureculture meeting creative nature? Advik has been practising attentiveness as explained in Ethodology 2 (Chapter 3.8.3). Attentive listening is "emergent listening" (Davies 2014:21) in stead of "listening as usual" (Davies 2016:76) and through attentive listening Advik became creative, not merely tracing or duplicating (Deleuze & Guattari 1987:12) which is one of the exercises that the children were asked to do later (see appendix 7 – Drawings). Advik is often doing his own thing, not tempted to fit in or join the crowd. He was the only child in the class who did not go on the Butterfly World outing and it was not a question of money – it would have been paid for him if it was. In a subsequent lesson though, they had to copy the life cycle of a chicken from

their work books on to a piece of paper[12]. The children move back into the classroom and the teacher congratulates them on their good behaviour. She complains that some children wrote in their books that ants eat chips. One or two children insist "but they did…" The teacher tells them that this lesson does not end here.

> Teacher: For you it is not an ending. Google, observe, find out more. Now give yourself a hand (Transcript of video of classroom lesson, 28 April 2016).

Despite the teacher's efforts to tell the children about the usefulness of bees, some seem to remember only that they sting. I see the following answers their work books which plays an important part in the Grade 3 classroom: Bees eat leaves, they are not useful because they bite you and then you have to run away. Bees "suck up flowers, move quickly, is harmful because they sting us and we have to go to hospital". Ants do not appear to be useful at all: "Ants eat chips, move slowly but walk quickly, are not useful because they make us itch. Ants eat ant food or bread crumbs and are not useful because they pucks [sic] you". These conclusions that the Grade 3 children came to, is a far cry from the fact that "soil inhabitants like ants and worms hold together the planet's food system" (Greenpeace Africa, 12 July 2016). How do we interpret this lesson on insects, with all the good intentions of the teacher? There are various views that might shed light in understanding classroom practice in its teacher-centered or child-centeredness.

[12] See appendix


Let's write

What insects did you see outside? Choose one and write its name here.

The ant

What type of food does this insect eat?

Does your insect move slowly or quickly?

Is your insect useful? Why do you say so?

NO they are not useful

In what way is your insect harmful? What can you do when it harms you?

***Figure 7.3*** *"The ant who was not useful" from a Grade 3 work book.*

On the one hand environmental educators who explored research on children, with children and by children find that unfortunately "… children are not often positioned as researchers who can bring valid and new views or voices to educational practice and policy", (Barratt Hacking, Cutter-Mackenzie & Barratt, 2013:456) and these environmental educators encourage methods of research by children in environmental matters. South African environmental educator Lesley Le Grange warns however, "… the teacher's role in 'managing' the risk involved in the education process is crucial" (Le Grange, 2013a:111).

According to Danish environmental educators Monica Carlsson and Bjorne Bruun Jensen:

> It is often admitted that knowledge does not necessarily lead to action (read changed behaviour) and other means must therefore be used. Many attempts at action orientation are characterized by the fact that efforts are made to influence pupils directly – outside the "knowledge component" as it were – and thus students are not necessarily allowed to make up their own minds and decide on the intended behavioural change (Carlsson & Jensen, 2006:238).

Carlsson and Jensen believe that a precondition for children's participation should be "that those with power – the adults – are willing to delegate power to the children since… children are often held in a position between being included and excluded in the research exercise" (Carlsson & Jensen, 2006:243). They draw a distinction between real (genuine) and symbolic (token) participation. Real participation has two components – one is "directed toward pupils' critical reflections" where children are believed to be able to identify and solve problems individually or in a group. The second component is the new identification of values, "which can be seen as a reaction to the moralistic approaches that often dominate environmental education, where certain values, knowledge and actions are presented as given or natural, and alternative perspectives are ignored or left out" (Carlsson & Jensen, 2006:244). Symbolic/token participation understands environmental knowledge as something that is "passively transferred" and it becomes "an environmental behaviour modification approach where students are expected to adopt predetermined environmentally friendly lifestyles and behaviour…[and] the aim of the actions is prescribed by external institutions and organisations" (Carlsson & Jensen, 2006:244). This symbolic participation and the passive transferal of knowledge in most neoliberal schools should not really come as a surprise. According to environmental educator Robert Stevenson the discrepancies between contemporary philosophy of environmental education where "problem-solving and action-oriented goals" are advocated and the traditional purposes of schools as "conserving the existing social order by reproducing the norms and values that currently dominate environmental decision making" (Stevenson, 2007:139) should be expected. Stevenson posits that this kind of dominant practice in schools "emphasize the passive assimilation and reproduction of simplistic factual knowledge and an unproblematic 'truth'" and that it puts "demands on teachers to maintain order and control, and teachers' presuppositions about knowledge and teaching" (Stevenson, 2007:140). This means that contemporary environmental education will have the huge (and revolutionary) task of transforming values.

Another ant encounter that glowed, another intensity that drew, was an encounter with ants who 'live' in a hole in the Grade R classroom.

***Figure 7.4*** *Experiment with ants. Picture taken by Grade R teacher.*

A paper plate with different kinds of food is left for the ants: something sweet, something sour, something salty and something bitter. After a while the ants have made their decisions. Children and teacher can now make their own observations of the preferences of the ants as demonstrated by how many of them are gathered around the sweetness.

## 7.4 Food and the relational links to climate change

Although beans and nuts are mentioned in *CAPS* and the work books as being part of the protein group, no specific mention is made of vegan or vegetarian lifestyle options as far as protein is concerned. In the book *Top Class*, it is mentioned that the mopane caterpillar are eaten by some people and that it is a good source of protein and fat (Boucher, 2013:27). In a diverse society it is important to erase negative

stigmas attached to certain eating habits, especially if they have positive implications for environmental sustainability. In the DBE workbook, under the topic "Animals that help us", the following sentence is hiding on page 53: "We also get meat from animals. But many people do not eat meat because of their religion or because they think it is wrong" (DBE, 2015:53). Unfortunately, there is no suggestion that it should be discussed further or why it could be wrong apart from religious reasons. This is the perfect opportunity to introduce other reasons (for example that methane gas released by cows raised solely for human consumption, that acres of land or liters of water is used to feed cows to sustain our cow eating habits, the dire living conditions of factory farmed animals etc.) What happens in practice when "Healthy Eating Habits" is discussed without more guidelines, is the following:

> Teacher: Proteins. Where do we get proteins, in which food? In which food do we get proteins? Anerudo? Don't look there. You look in my face. In which food do you get proteins? Meat, any meat né, you're not saying pork and pork and sausage and what and what and so forth…
> Children: Fish
> Teacher: Fish
> Children: Eggs
> Teacher: Eggs.
> Teacher: Are you shouting at me? Oh, I see some are shouting at me.
> Teacher: So we get proteins from fish, if you eat fish you get proteins stop doing that mama, and then if you eat meat, bacon, pork, what-what-what-what. Also you eat eggs. Do you eat eggs? Nice breakfast, your mommy takes you to Wimpy[13], Wimpy makes a delicious breakfast for you and Mommy will order for you it is only R35. And on Mondays, you know on Mondays you get two plates. Hm? At the Wimpy. Of breakfast. OK what other food group do we get? Khazimla? (Field notes, 14 April, 2016).

[13] Wimpy is currently (2017) the third largest fast food franchise in South Africa according to the Business Tech website: Available: https://businesstech.co.za/news/lifestyle/173585/the-biggest-fast-food-franchises-in-south-africa-in-2017

The ‘Wimpy breakfast’ reminds me of David Greenwood’s warning that “awareness of self and other in relation to place…can be blocked through public pedagogies such as media-sponsored consumer culture” (Greenwood, 2013:97) and of Fikile Nxumalo, Veronica Pacini-Ketchabaw and Mary Caroline Rowan’s critique of neoliberal and colonial aggregations when interrogating eating and feeding operations in early childhood education (Nxumalo, Pacini-Ketchabaw & Rowan, 2011:195)

For children in the class who do not eat meat, fish or dairy, it sends the message that they are not getting any protein at home. Perhaps if more emphasis was placed on alternative sources of protein in the text books, teachers will need to discuss them.

As mentioned in chapter 4, on bioregional practice, conversations about food should also be linked to local economies and ‘seasonal’ foods. Eating only seasonal food means that a limited variety of foods will be available to the consumer. The class could debate their reasons for making which choice.

## 7.5 Coloniality and the researcher

The African Charter on the Rights and Welfare of the Child (ACRWC 1990, entered into force 1999) stipulates six responsibilities of the Child according to its Article 31 of The African Charter on the Rights and Welfare of the Child as documented in chapter 1.5. These responsibilities have been ‘simplified’ into nine responsibilities with their “accompanying rights” in the Grade 3 Life Skills text book prescribed by the Department of Education and used by the school where I do my practical work (Boucher et al, 2011: 16). On this specific morning in early March, the children are again sitting cross-legged on the carpet in front of the teacher while they are reading page 15 - the nine “Rights of children” under the heading: “In 1996, the United Nations Convention on Children’s Rights made children’s rights legal. These are some important rights.” On the next page they have the heading “Children’s Responsibilities. Each right has an accompanying responsibility” (Boucher et al, 2011:15, 16). (I find it conspicuous that Article 6 of the UNCRC has not been included – “Survival and development: Children have the right to live. Governments should ensure that children survive and develop healthily”. This article could

become a line of flight for conversations about the right to be born on a liveable planet with breathable air). The specific right that the teacher is addressing, is supposedly Article 14 under the UNCRC[14] and article 9 of the ACRWC[15]:

> **UNCRC Article 14** (Freedom of thought, conscience and religion): Children have the right to think and believe what they want and to practise their religion, as long as they are not stopping other people from enjoying their rights (UNCRC, 1989).
>
> **ACRWC Article 9**: Freedom of Thought, Conscience and Religion
>
> 1. Every child shall have the right to freedom of thought conscience and religion.
>
> 2. Parents, and where applicable, legal guardians shall have a duty to provide guidance and direction in the exercise of these rights having regard to the evolving capacities, and best interests of the child (ACRWC, 1990).

In the Grade 3 Life Skills text book these two articles are simplified as follows: "Children have the right to be proud of their heritage and beliefs" (Boucher et al, 2011:15) and the accompanying responsibility is "to respect each other's origins and beliefs" (Boucher et al, 2011:16).

> As the cross-legged child on the carpet, who participated with such energy and zest, raising her hand enthusiastically throughout the lesson so far, is made to stand up in front of the class, hand covering part of her face, I feel an intense rush of emotion, a mix of horror at what is taking place, shame that I am sitting here recording it and guilt that I am not going to save the child from what I can see is coming.
>
> The children giggle.
>
> Teacher: A-a – you silly, you don't listen, you don't wait for your turn – we said children they have a responsibility to listen. Stand up. (Ndiliswa stands up). Right. So if you look here, Ndiliswa has got

[14] UNCRC: United Nations Convention on Children's Rights. From now on used as UNCRC.
[15] ACRWC: African Charter on the Rights and Welfare of the Child. From now on used as ACRWC.

> these cuts here on her face. (She brushes gently with her fingers over the child's cheeks where the scars are. Children are now quiet, watching the two of them). You don't have to come and make fun of Ndiliswa because she has these marks here. It is a belief that they believe in – in her family. And I know why they cut here. It is because maybe she had a problem with her eyes so they believe that instead of going to the hospital and say you can't see, you find it difficult, they cut here and Ndiliswa can see. Is that correct? (Ndiliswa whispers, 'Yes, teacher.') Yes. Thank you very much my angel you can sit down now (From transcript of video recording, 9 March 2016).

Ndiliswa's beautiful, smooth skin has been scarred by cuts on her right cheek. She had no right to prevent these marks on her body. Article 7 of the ACRWC is about Freedom of Expression: "Every child who is capable of communicating his or her own views shall be assured the rights to express his opinions freely in all matters and to disseminate his opinions subject to such restrictions as are prescribed by laws" (AWRWC, 1990), did not save her and neither did article 8 of the same charter about Freedom of Association: "Every child shall have the right to free association and freedom of peaceful assembly in conformity with the law" (AWRWC, 1990). Then there is also Article 21: Protection against Harmful Social and Cultural Practices: "Parties to the present Charter shall take all appropriate measures to eliminate harmful social and cultural practices affecting the welfare, dignity, normal growth and development of the child and in particular". Is the one right not violating the other right by calling it a responsibility? As someone who grew up in an Afrikaans household, I know that 'respect' often means 'obedience' as Murris also noted: "My experience in teaching ethics to large groups of student teachers at two different African universities shows that – for my sample of South Africans at least – 'respect' means 'obedience'" (Murris, 2016:84). But then doubt floods me: Am I misreading what I experience here? In "Decolonization is not a metaphor", Eve Tuck and Wayne Yang ask if a "focus on decolonizing the mind, or the cultivation of critical consciousness, as if it were the sole activity of decolonization; to allow conscientization to stand in for the more uncomfortable task of relinquishing stolen land" is not just another "settler move to innocence" (Tuck & Wang 2012:19). In other words, am I in a position to 'judge' what I am seeing/experiencing here? Do I

have the right to comment on how "The Rights and Responsibilities of the Child" is being taught in a Grade 3 classroom in South Africa? What right do I have to feel nauseous on behalf of the child – representing her feelings in my body when I do not really know anything about her? Perhaps the teacher was doing her a favour by putting a stop to others teasing her. I was confused and for days unable to write down what I had experienced. After some weeks of pondering this, I decided I needed to have a diffractive talk with the child to find out if she experienced it the way I did and imagined. How else would I know if I did not ask her? I wanted to wait until the children got to know and trust me a bit more.

About three months later, on 2 June 2016, the chance presented itself to talk to Ndiliswa.

I wanted to find a relaxing, outdoor place to talk informally to the child to find out if she experienced the incident as traumatic, but it is too noisy on the playground and her friends might be curious as to what we are talking about, so I ask the teacher if we can talk in her classroom during break. I ask permission for her to eat in the classroom while I set up my laptop. I forward it to 6 minutes after the beginning of the video, just as the teacher was discussing the "responsibility to respect others' origins and beliefs".

Ndiliswa sits at a desk with the laptop in front of her. I record the recording of the lesson with her watching herself as she is made to stand up in front of the class by the teacher. She is experiencing the whole event again.

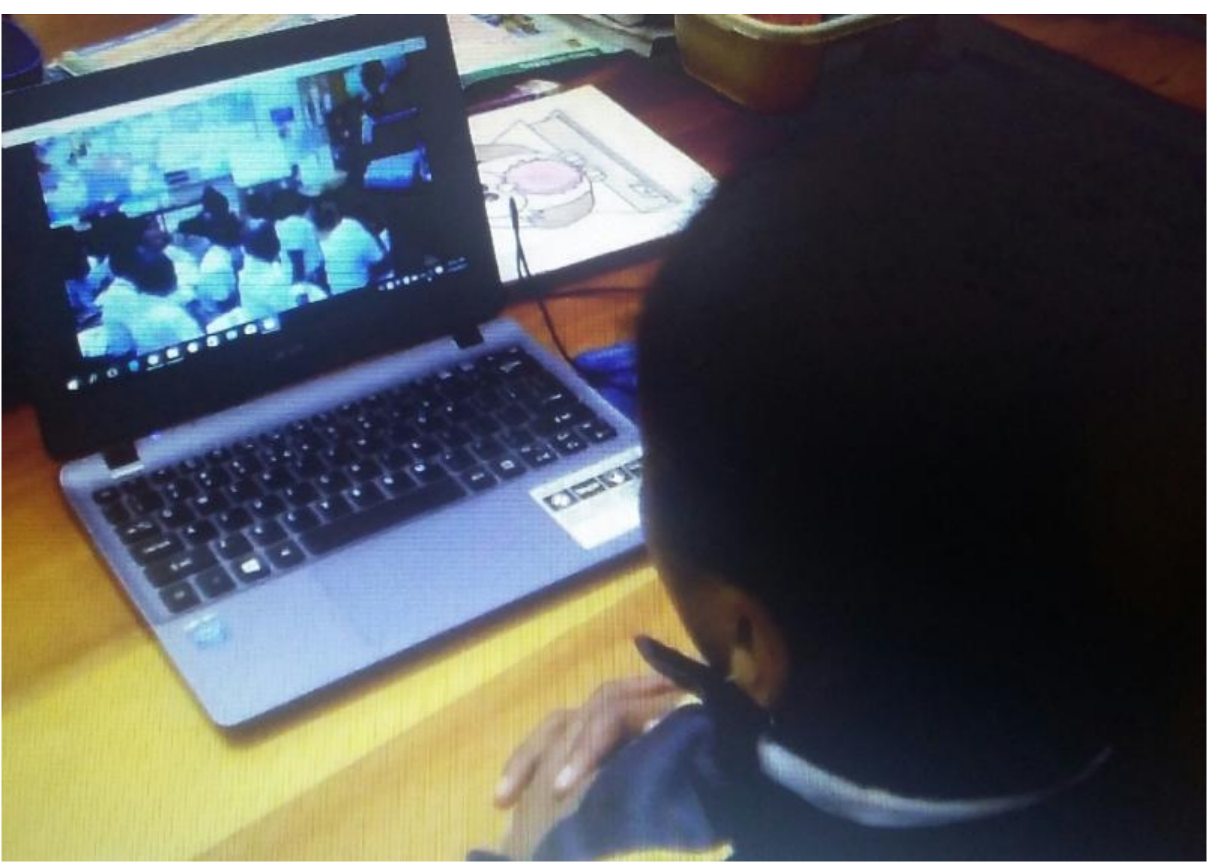


***Figure 7.5*** *Ndiliswa watching herself on video. Picture by author.*

Ndiliswa watches in silence. At the end of the clip, I put the camera on the table and keep the sound of the video camera running but do not hold the camera in her face. I feel it would be inappropriate and invading. I see afterwards it recorded her hands as she was talking to me.

> Me: OK, this is all I wanted you to see. So you remember that day?
> Ndiliswa: Yes.
> Me: You were talking about rights and- and-…
> Ndiliswa: Responsibilities.
> Me: And she was trying to show that we have to have respect for your-…your family and- … and
> Ndiliswa: and their culture.
> Me: So how did you feel when she asked you to stand up?
> Ndiliswa: I was feeling like… I was nervous because others… because I was new in the school and the other children would laugh at me. (Hands folded in front of her, both hands moving slightly as she speaks.)

Me: Are you new at this school?!

Ndiliswa: Yes.

Me: I did not know that. When did you start here?

Ndiliswa: In… I can't…

Me: This year?

Ndiliswa: Yes. I came this year.

Me: Oh. And were they laughing at you because of the marks on your face?

Ndiliswa: But… yes. Some of the children they will just be talking about me like they say oh look at that girl she has these scratches on her face.

Me: Hm.

Ndiliswa: And I did not like that.

Me: No, of course not! And was it better after the teacher talked about it?

Ndiliswa: Yes.

Me: Now they accept… now they don't do that anymore? (She looks me in the eyes throughout our conversation, a serious and confident look.)

Ndiliswa: Yes.

Me: OK so you think it was a good thing that the teacher asked you to stand up.

Ndiliswa: (Silent for a while)… because she was telling the class that they must not make fun of my culture because it is my own… at home.

Me: Yes. Yes. And it has nothing to do with them… it is not your fault that you have scars on your face it is part of the family tradition.

Ndiliswa: Yes.

Me: And, ehm, Ndiliswa if you have children one day, if you have a little girl, will you make these marks on her face?

Ndiliswa: (With no hesitation at all) Yes.

Me: Why?

Ndiliswa: Because it is my father's culture and I have to believe in it.

Me: OK. And do you believe in it? Do you think it makes the eyes better?

Ndiliswa: Yes.

Me: Why did they think there was something wrong with your eyes?

Ndiliswa: Because when I was in Grade 1 in the other school, I couldn't see properly and I had to sit in front, in front of the board because I couldn't see and the other thing that I remember is that my teacher said that my mother must buy me spectacles but my mother said no, she mustn't have spectacles, she must just go to Eastern Cape then they will do her father's culture and then my eyes can get better. (She has now unfolded her hands and just rubs them while she talks.)

Me: And did it work?

Ndiliswa: Yes.

Me: So you don't need glasses and you can see properly now?

Ndiliswa: Yes.

Me: That is amazing. In what school were you before you came here? (Less movement with hands now.)

Ndiliswa: In [Crown Hill Primary] in Mitchell's Plain.

Me: OK. And did people make fun of you there as well or not?

Ndiliswa: No.

Me: OK. So how old were you when they made these marks?

Ndiliswa: I was five or six years old… around there….

Me: OK. And… and so you don't mind having these marks on your face?

Ndiliswa: I don't mind at all! (Very confidently and sincerely.)

Me: That's wonderful. Thank you. Thank you so much.

So although she was nervous when the teacher asked her to stand up (at least here I read her body language correctly) she felt that the incident had a positive outcome. The children do not tease her anymore. I did not know that she was new in the school which is why it puzzled me that the teacher had to talk about something the children must have gotten used to by then. She accepts her father's family tradition, believes in it and will even do the same thing to her daughter one day. I have been looking at the situation from an outsider perspective, found it horrible and projected that onto the child. She seems happy, well-adjusted and participates energetically in class activities. This might change when she becomes a teenager but for now she does not feel violated, or she might have internalised dominant discourses (Foucault). Yet, I had to "actively resist [my] own interpretation toward a different

subjectivity… a subject position not previously experienced" (Lather, 2016:126, drawing on Jackson & Mazzei, 2012:133).

Why is a section on the rights of the child important in a thesis about environmental education? Ecojustice educator Richard Kahn (2010), Tyson Lewis and Richard Kahn (2010) and Martusewicz, Edmundson & Lupinaccic (2011) argue that unjust social behaviours and oppression are linked and as Sonu and Snaza (2015:263) formulates it, "essentially interconnected to the mistreatment of other life forms in that they stem from the same fundamentally violent way of thinking". Yet, Sonu and Snaza argue that although these social justice theories are more helpful than the "reduce, reuse and recycle" slogans of environmentalisms (Rotas, 2015:91) it is still not the answer to the problem. The posthumanist, new materialist position as also argued for by Karen Barad (2007) is that "extending social theory to include non-human species and materiality; would not be enough to have an ethical concern for the environment that remains at its core the property of human sovereignty" (Sonu & Snaza, 2015:266).

In this section, which has been "taking account of marks on bodies" and "differences that matter" (Barad, 2007:140), it has been demonstrated how a body is always "a body in relation to forces we cannot predict, control, or directly sense" and that students could never be "object[s] of teaching" and teachers could never be "the harbinger[s] of knowledge" (Sonu & Snaza, 2015:264).

## 7.6 Weaving with slugs

I end this chapter with the hair-weaving encounter that introduced it. I did not realise it at the time, but the encounter was of momentous importance to me as a body-mind researcher and later also symbolically for my chapter on methodology. It was a hugely affirmative encounter, one of the key notions of Rosi Braidotti's posthuman nomadic ethics. She sees these conditions of renewal, for overcoming negativity as follows:

> "[Conditions for renewal] have to be generated affirmatively and creatively by efforts geared to creating possible futures, by mobilizing resources and visions that have been left untapped and by actualizing them in daily practices of interconnection with others.

> This project requires more visionary power or prophetic energy, qualities which are neither especially in fashion in academic circles nor highly valued scientifically in these times of coercive pursuit of globalized 'excellence'" (Braidotti, 2013:191).

Sitting in the sandpit with the girls, like a grandmother, a mother, a sister or a cousin as if in a bedroom or kitchen, doing each other's hair, I was "becoming with" as Patti Lather, drawing on Jackson and Mazzei (2012:133) describes it, "in ways not already coded" and again, as in my experience with Ndiliswa, I had to "actively resis[t] [my] own interpretation toward a different subjectivity… a subject position not previously experienced" (Lather, 2016:126).

The sense of community, of physical closeness, transgenerationality and familiarity despite differences in age and cultures brought a 'sensing' of meaning, through a voice without organs (Mazzei, 2013a) - in Xolela's non-stop account of the slugs in their kitchen. 'Voice' ripples and purls as we weave hair and become different. I know her story is based on what happened in the classroom: The Grade R teacher had brought a slug to school the previous day, one she had found in her kitchen while washing lettuce. She had brought it in a shoe box so the children could carefully look at it and talk about it. She was going to put it back in the garden that evening. Xolela easily transitions between the real and the imaginary but she keeps close eye contact with me through strands of hair and I can see in her eyes when she goes over to the imaginary and I can see she knows I know. We are both amused as I make sounds of surprise and awe. She talks about the slugs in her kitchen that ate up all her green apples (a whole stack of them). She accounts how she waited until they were all asleep and then she softly put them outside in the garden without waking them up.

"Sense and nonsense walk together hand in hand. Answers and solutions are never really interesting, goals serve nothing if they are not anchored in the exact present moment" (Olsson, 2009:5). I am also reminded of Sharon Todd's comment that "… in Irigaray's metaphor of touch, it is in one's contact with another in the here and now through which the future opens up" (Todd, 2014:242). She claims:

> Thus, immanent to the quality of liminality is an understanding of the importance of the here and now for initiating human becoming.

> Secondly, the separation of teacher and student perhaps does not so much disappear, as Conroy seems to suggest, but is rather, in my view, recast in a new register where the categories of teacher and student are suspended; it is more that the opportunities for becoming—and not the roles as such— become more equal in liminal encounters. Thus, the metaphor of liminality seeks to bring into our field of awareness the deeply personal aspects of becoming which are always connected to our living in the present moment, beyond—or perhaps in spite of—the regulatory roles we occupy in classrooms (Todd, 2014:235).

So to be present and to pay attention will be important here as Xolela seamlessly transitions between fact and fantasy, her eyes twinkling naughtily as she tells me how she softly put the slugs outside in the garden without waking them up. She is leading me in an "unchoreographed dance" (Strom & Martin, 2013:230): From reality into the imaginary and back, her eyes the guiding light into realms of possibility, without us ever losing 'touch' with the here and now.

In this chapter I have again used my research (in)tensional question: How do posthuman environmental philosophies disrupt anthropocentric thinking and inform new ways of doing theory and practice for environmental education in South African schools in the foundation phase? to find answers by thinking with theory, experiencing relations with body-mind and being woven into new patterns in and around classrooms of the school between the sea and the mountain. In the last chapter, I will draw together the changes in my understanding of (environmental) education that were facilitated through my in(tensions), practical work for this thesis, dreams, memories and other experiences during the production of the thesis and suggests ways in which we can enable children and teachers to hear something of the roar of life beyond the 'species walls'.

# Chapter 8 Breathing in the Roar…

> The roar which lies on the other side of the urbane, civilized veneer that allows for bound identities and efficient social interaction is the Spinozist indicator of the raw cosmic energy that underscores the making of civilizations, societies and their subjects (Braidotti, 2013:55).

Rosi Braidotti's affect for a specific sentence from Mary Evans' *Middlemarch* (1973) inspired her to draw this parallel between the sounds/breath that emanate from the more-than-human and our ability (sensitivity) to hear it and circulate it through us – which is also the sensibility to overcome anthropocentrism.

In this chapter I would like to draw together the changes in my understanding of (environmental) education that were facilitated through my In(tensions), practical work for this thesis, dreams, memories and other experiences during the production of the thesis and suggests ways in which we can enable children and teachers to hear something of the roar of life beyond the 'species walls.' I will explain this through four 'plateaus[1]' with suggested lines of flight, which I will try to make visible through a multi-dimensional spiralling diagram in the last section of this chapter. In the first section, I will recapture the gist of chapters 1-7. In section 8.2 I will discuss the need (or not) to include a subject like Environmental Education in government schools in South Africa. In section 8.3 I will consider whether a specifically (South)African indigenous philosophy for environmental education is needed, drawing on various (South)African theorists. In section 8.4 1 will use a vignette to demonstrate the effect of affect in early childhood and 8.4.2 will re-engage with Spinoza, Deleuze and Guattari's affect theories. In section 8.4.3 we move into the classroom with affect, using educators' applications of these theories and in section

[1] I use the word 'plateaus' here in the sense of Gregory Bateson's reference to it: Gregory Bateson uses the word "plateau" (1987:120) to indicate how in Balinese culture, a plateau of intensity instead of a culmination point to an intensity is fostered, quite different from the Western idea of growth and development. Deleuze and Guattari also takes this up and explain that a plateau "is always in the middle, not at the beginning or the end" and it is "any multiplicity connected to other multiplicities by superficial underground stems in such a way as to form or extend a rhizome" (Deleuze & Guattari, 1987:2). According to Brian Massumi, a plateau is reached when a "heightening of energies is sustained long enough to leave a kind of afterimage of its dynamism that can be reactivated or injected into other activities, creating a fabric of intensive states between which any number of connecting routes could exist" (Massumi, 1987:x).

8.4.4, I discuss one of Anna Hickey-Moody's material exchanges of affect – specifically literature. In section 8.5, I explain my research experiences with a spiralling diagram and lines of flight and section 8.6 hails a new cycle of life.

## 8.1 Recapture

Chapter 1 set the scene for the 'trouble' that we are in in the Anthropocene and pointed to various reasons why we might be in this trouble – mainly because of the Cartesian nature/culture divide. It surveyed the emerging non-dualistic ideas of posthumanism as a possible way to, while staying with it, also show us a way out of the trouble. Sustainability versus environmental education as terms were discussed and the hidden power relations in it explored. We pondered the present theories of childhood and the implications of working with Posthuman child as well as indigenous ways of knowing and the contentions involved. My ethical and ontological concern about the term natureculture was explained. In this chapter the disagreement between Jickling and Wals referred to in chapter one will be discussed, whether a specifically SA indigenous philosophy is needed and a spiralling diagram will offer guidance for how to hear the 'roar of the commonbreath'.

Chapter 2 offered a 'history of the present' by mapping different perspectives on nature and attempt to connect science and philosophy through Whitehead's work as well as indigenous ways of knowing and it touched on how Nature reveals itself or is hidden through colonialism. In this chapter, we look again at caricaturization of animals to show our difference from them and expand on attentive listening in chapter 8.5.7.

Chapter 3 covered the methodologies/methods/techniques used in the thesis and my research ethics. In this chapter I will share a powerful experience which followed me into adult life (the vignette).

Chapter 4 and 5 were both pedagogy chapters called 'Commonbreath pedagogies' because they contain agential cuts that focus on breathing earth others, those whose bodies compost well. Chapter 4 explored pedagogies of land/place, new-liberal perspectives, globalization and the decolonization of places and spaces and ideas of boundaries as doors, the concept of ecological literacy as well as animism and interculturalisms.

Chapter 5 explored Spinoza, Bergson, Whitehead and Massumi's concepts of intuition, intelligence, instinct and 'what a body can do', to explain an 'interspecies pedagogy' and 'interspecies ethics'. It explored anthropomorphism in children's literature, ecofeminist literary criticism, ecopedagogy and children's ecocriticism. Section 5.6 considered affect pedagogy as crucial to pedagogy in times of species extinction. Section 5.7 gave suggestions of how to meet 'the other' halfway and 5.8 discussed the idea of being taught by 'the other'.

Chapter 6 returned to my research sub-(in)tensional question: How do colonial legacies in South Africa still affect environmental education in a primary government school? The emphasis was on the agency of the materiality of the place as well as on time and memory especially in connection to our colonial past.

Chapter 7 dealt with the practicalities of formal education in a Cape Town school. Important issues were the materiality of the school, the way in which the curriculum is practically employed, traces of coloniality in the researcher and intimate, liminal relationships with children that lead to new insights.

## 8.2 A formal subject?

Contrary to what one might expect, environmental educators do not all agree that it is necessarily a good thing to have environmental education as a formal school subject. David Gruenewald declares that "to abolish Environmental Education completely may be the only way to save it from being co-opted and weakened by the dominant discourse as merely another fragmented content area to be covered and assessed if there is time" (Gruenewald, 2004:83). Environmental educators Bob Jickling and Arjen Wals although long-time friends, have different opinions on environmental education /education for sustainability. Jickling argues against sustainable education (see chapter 1) since "education *for* any cause is not true education, [education] should strive to prepare minds to create new ideas, not follow a doctrine" (Jickling & Wals, 2012:49; my emphasis). Wals, on the other hand argues that "education is only useful when we reflect on what kind of education and for what purpose" (Jickling & Wals, 2012:50). If what is needed in these times of climate change and species extinction is "doing things that haven't been done before," I agree with Jickling that we should not be content with "aiming for the perceived, and by now somewhat tired, 'wisdom' of sustainable development when more powerful ideas are

needed" (Jickling & Wals, 2012:51). Gruenewald 2003(b) warns that although the links between Environmental Education and 'achievement' might make it attractive as formal subject in schools, the goals of achievement orientated education are in opposition with the goals of Environmental Education. Furthermore, he argues that any practice that could vaguely be connected to definitions and goals in the Tbilisi Accord (UNESCO, 1997) could be termed "doing Environmental Education" (Gruenewald, 2004:74). This is confirmed by Lesley Le Grange about the South African situation where "teachers are expected to include these [environmental] concerns in learning programs, which are essentially a compilation of learning activities and … [it] is in this context that some officials in the national and district education departments claimed that 'environment is in the curriculum'" (Le Grange, 2013a:111). During my practical research it was clear that 'environment in the curriculum' was of less importance than maths and English. It is the kind of subject 'in the curriculum' that easily becomes the one in which learners write in and read from their work books while teachers complete other urgent tasks outside or inside the classroom. As is apparent in chapter 7, there were not many instances where Weaver's creative human natureculture (the culture of the human) could meet creative natureculture (the creative culture of the non-human) head-on, especially not in the Grade 3 classroom. The "classic examples" of "doing" environmental education as Gruenewald calls it (Gruenewald, 2004:74) are often once-off overnight environmental camps in Grade 6 or some 'outdoor experience' once a year, perhaps a recycling club. In South Africa the subject "Life Skills was brought into schools to help children acquire the necessary life skills that they might not be privileged enough to acquire at home. An important and necessary subject one would think, but in practice it is neglected and scorned upon as it is not considered as important as subjects like maths, physics and literacy. It is very likely that the same low status will be given to Environmental Education in South Africa if it was to become a formal subject. According to Le Grange:

> The expansion of neoliberalism has been strongly felt in South Africa. Since 1994 we have witnessed both the commercialization and privatization of government assets and the state is actively putting in place tighter systems of inspection and control. In relation to education, for example quality assurance has become a favourite

> term in many of the education policy documents (Le Grange, 2013a:110).

Furthermore, researchers Mphemelang Ketlhoilwe and Kennedy Kanene concluded after their extensive research on environmental education and its syllabus in schools in Botswana that a "dominance of prescribed syllabus content" and a "technocratically designed syllabus" (Ketlhoilwe 2007:180) resulted in a failure "to transform the perceptions and attitudes of students towards responsible and action oriented environmental stewardship…" (Kanene, 2016:36). Turning environmental education into an official government school subject might have other disadvantages. According to Le Grange

> It needs to be acknowledged that education might be viewed by governments and corporate elites as intrinsically dangerous since it implies at its best the development of a person's capacity to think critically, evaluate options, assess value, understand the differences between forms of knowledge etc. These attributes do not make people easy to govern, nor do they tend toward creating mindless consumers (Le Grange, 2013a:110).

I agree with Le Grange. Instead of taking the risk of indoctrination by official school curricula we need teachers who know where and how to find the spaces for lines of flight in the everyday curriculum of every subject in schools (Le Grange, 2013a:113), spaces to talk about renewable energy for example:

The DBE workbook for Grade 3 (DBE, 2015:10-11) covers different types of pollution (also in Boucher et. al., 2013:47-48) but no possible solutions are given. No mention is made of the solar energy initiatives in South Africa and the fact that the cost of solar power supplied to ESKOM (the electricity Supply Commission of South Africa) is presently (7 March 2017) at an average of 65c per kWh (kilo-watt-hour) which is on par with existing coal, however 'new coal' will be more expensive, predicted at about R1.15 per kWh. Solar energy is becoming cheaper as coal is becoming more expensive. Yet, solar energy is not mentioned in any of the workbooks for Grade 3.

I propose that instead of a formal subject in government schools in South Africa, teacher education institutions should incorporate environmental consciousness

education into every single school subject – maths, science, language, biology, even sport. It is of utmost urgency that teacher education should move away from instrumental and Cartesian pedagogies to posthuman and decolonised ones. Because nothing and no subject is unrelated to the fact that we are living in "Catastrophic Times" (Stengers, 2015:19). Bateson scholar Chet Bowers believes that if we ignore Bateson's root metaphor of an ecology, environmental education will "leav[e] intact the other areas of the curriculum that inculcate the values and beliefs that equate progress with exploiting the Earth's natural resources" (Bowers, 1997:176). I would like to add to educator David Orr's comment: "All education is environmental education" (Orr, 2004:59) 'or it should be'. We are part of an interconnected biosphere and by how we teach, no matter which subject, children get the message that either they are part of the 'natural world' or they are not.

## 8.3 A specifically (South)African indigenous philosophy for environmental education?

It has been argued by many theorists that we need to "move away from an industrial development model of society (which has produced environmental problems and risks) [and find] inspiration in studying the ecosophies of aboriginal and indigenous people" (see chapters 4 and 5). We have already discussed various productive Indigenous beliefs and traditions in this thesis, but the question here is whether there are specific indigenous knowledges from Africa and Southern Africa which might help find answers to "environmental challenges facing the southern African region" (Le Grange, 2015:304). Chapter 1 provided an overview of indigenous knowledges in Africa, Southern Africa and South Africa (1. 4) with the indication that this chapter (8.3) will debate whether a specifically (South)African indigenous philosophy for environmental education is needed over and above the other Indigenous knowledges from other parts of the world that have been discussed so far (chapters 2, 3, 4, 5, 6 and 7). Globalization, new-liberal perspectives, colonial endeavours as a kind of neo-colonialism and its impacts on colonized or 'Third World' countries have been discussed in chapter 4.5, but some theorists feel that we need a "counter-hegemonic approach as a frame of analysis" that has its roots in Africa (Kayira, 2015:108). The concept/philosophy/tradition of ubuntu/hunhu/botho/umunthu (see glossary of meaning for the various African languages these words refer to) has been discussed as a specifically African

(Southern)African belief system/tradition that could inform (environmental) education in South Africa and elsewhere (Venter, 2004; Higgs, Higgs & Venter, 2003; Enslin & Horsthemke, 2004; Ramose, 2009; Murove, 2009; Metz & Gaie, 2010; Le Grange, 2012a, 2012b, 2015; Dolamo, 2013; Kayira, 2015). This concept (only referred to as ubuntu in this thesis) means 'humanness' understood in a communal context of relationality and reciprocity where ancestors and future generations are all part of the community. Drawing on Metz and Gaie (2010), Le Grange posits that "ubuntu means that our deepest moral obligation is to become more fully human and to achieve this requires one to enter more deeply into community with others" (Le Grange, 2015: 304). This is a very anthropocentric (and not posthuman) way of seeing our moral obligations. Le Grange (2015:306) refers to ukama as a broader concept of ubuntu which means interconnection to the cosmos, to the whole 'natural' world and all 'natural' entities and claims that it is therefore not anthropocentric (Murove, 2009; Ramose, 2009; Le Grange, 2012a, 2012b, 2015; Dolamo 2013; Yakira, 2015).

Philosopher of education, Penny Enslin and philosopher of science Kai Horsthemke argue though that the concept of unbuntu is not unique to Africa. It has "a long and profound tradition of humanist concern, caring and compassion, also prominent in western thought" and it is also "speciesist" (Enslin & Horsthemke, 2004:548) – not taking into account Le Grange's 'ukama' argument. They further argue that the "staggering incidence of genocide, dictatorships and autocratic rule, corruption, sexism (and practices like clitoridectomy), heterosexism and homophobia and, indeed, environmental degradation (and connected with this, human suffering) on the African continent" belies this tradition of Ubuntu in Africa (Enslin & Horsthemke, 2004: 549). But this might be like rejecting Christianity on the grounds that some people wage wars in its name, or, as the 'quote' that is popularly attributed to Gandhi illustrates the point: "I like your Christ; I do not like your Christians. Your Christians are so unlike your Christ.[2]" They accuse so-called "Africanists" of ignoring the fact that many African individuals prefer to "shift identities, sometimes to the point of

[2] This quote from http://www.washingtontimes.com/news/2014/dec/31/gandhi-glimpsed-christ-rejecting-christianity-fals/ was attributed to Ghandi but this has been contested. A CBS documentary from 1967, mentioned this quote almost 20 years after Gandhi's death. There is no film footage of Gandhi actually saying this, it was only retold by a narrator on film. But whether Gandhi said this or not, it is making the point that you cannot (always) reject a philosophy/religion on grounds of what some interpreters do with it.

exit" (see chapter 1, footnotes on Afrikaner artist and chapter 2) and to "ascribe to all a distinctive cultural identity" ignoring especially "urban youth" (Enslin & Horsthemke, 2004:551).

Le Grange on the other hand argues that the philosophy of ubuntu can serve as framework "for all policies and practices aimed at responding to the pressing environmental problems facing the southern African region" and that it has already been "taken up in several policies (including educational ones)" in South Africa (Le Grange, 2015:307). Le Grange finds it highly suitable as an ecophilosophy in that it unites past, present and future generations through the idea of "inseparable oneness with the ancestors" (Le Grange, 2015:306) especially in its meaning of ukama which is oneness with the animal world as well. Through the idea of 'totemism' in 'ukama' there is a "strong tendency to give a human soul to animals, to plants, to nature as such, a tendency which is at the very root of the most beautiful blossoms of poetry, a feeling that there is a community of substance between various forms of life" (Le Grange, 2015:306, quoting Junod, 1939). From a posthumanist point of view, I would argue that there is no need to give a 'human soul' to animals, plants or 'nature as such' since as Makang attests in some indigenous African worldviews, animals and plants have their own souls (chapter 2.8). Le Grange also sees an ecophilosophy of ubuntu as "consistent with the platform principles described by the deep ecology[3] movement" (Le Grange, 2015: 307). According to ecofeminist Val Plumwood, Deep Ecology is based on the idea of identification of self with nature and this erasure of any distinction does not address any of the problems earth faces. See glossary for her discussion of the 'three different selves' in Deep Ecology in Plumwood (1991:13-15).

Philosopher Robert Sessions posits that deep ecologists need to "communicate more clearly what they mean by things like 'unity' and 'Self-realization'" otherwise their inconsistency lead ecofeminists to claim that they are still trapped within dualistic thinking and in "seeking unity nature becomes an abstract and glorified 'other' with which one becomes unified in some kind of self-transcending love" (Sessions, 1991:103). Ecofeminists do not escape unscathed either, since Sessions believes

[3] See the eight principles of Deep Ecology as listed in the Glossary of Meaning.

“[t]he real challenge to ecofeminism” is “to articulate notions of community that include, in a comprehensible way, nonhuman nature” (Session, 1991:104).

Taking note of the different views on ubuntu as an ecophilosophical framework for environmental education in South Africa, I am reminded of Ferrando’s (2013a:26) statement that posthumanism “may arise” when “the voices of subjectivities who have been historically reduced to the realm of the ‘Other’ have been regained” and that posthumanism can only become “receptive to the nonhuman and be open to unknown possibilities” once it has “acknowledge[d] the whole human experience” (Ferrando, 2013a:187). The inequalities, injustices, hegemonies and subjugations in the human social realm exist even in spaces where we should be “equal in [our] fight against racism and classicism” (Mangena, 2014:13) and I would like to add hopefully also against ageism[4], ableism[5] and sexism in the name of ubuntu. This became obvious during the opening night of the play ‘The Fall’ written and performed by graduate drama student of UCT in the wake of the ‘Rhodes Must Fall’ post-colonial protests in South Africa in 2016. It was evident during opening night (Baxter theatre, 11 October 2016) that many gaps needed to be bridged as students related their experiences during the play and afterwards in the discussion sessions. There were disagreements and conflict between the outlook of a younger generation of women and the attitudes of the older generations of men and women on topics such as sexuality and the patriarchy of sexism. The racial discourse that the Rhodes Must Fall movement and the play opened up, also revealed race-based and gender-based (including homosexual and transsexual) discrimination in Black and ‘Coloured’ societies in South Africa that prevented the movement to proceed ‘as one’.

A posthumanist praxis for environmental education in South Africa does not draw on ‘Western’ traditions, but incorporates indigenous knowledges and can open up what Kayira (2015:115) and Glasson et al. (2010:126), all drawing on Bhabha (1994), call the hybrid “third space” of inclusion where ‘and… and’ is fostered rather than ‘either /or, us/them’ since posthumanism is a praxis of mediation[6]. This ‘third space’ should include discussions about orally transmitted knowledges that are often lost because of lack of generational transfer (see Shava 2005 on Zimbabwe’s wild and indigenous

[4] Ageism is prejudice or discrimination on the grounds of a person's age.
[5] Ableism is discrimination in favour of able-bodied people.
[6] It is because of the diffractive and affirmative position of posthumanism that it can be a praxis of conciliation and arbitration between different points of view.

food plants and Finnish philosopher-linguist Tove Skutnabb-Kangas about the Saami people and ecological knowledge inscribed in their word for “salmon spawning-bed”, (Skutnabb-Kangas, 2009:9,10)). Environmental researcher Soul Shava reminds us that indigenous food plants “are adapted to withstand adverse local conditions” and could be “major food source[s] during times of famine” (Shava, 2005:80).

South-African educator Elsie Cloete explains how knowledge about the environment is lost through use of English only at the cost of indigenous languages and the knowledge it contains. The English notion of “wilderness[7]” is a colonial word and an idea which does not make sense in Africa. In the Shangaan language of Xitsonga there are 24 different words for different categories of landscape which are completely lost to English speakers. One example of one of these words is “Marhimakule” which means “outfields – where people dig for tubers (phomwe) in drought years” (Cloete, 2011:43). In her 2011 study, Cloete mentions that only 8.2% of mother tongue speakers in South Africa are English[8], yet the language is the principal medium of communication and education (Cloete, 2011:41). In chapter 5 of this thesis it has been argued for translanguaging[9] (Lagabaster & Garcia, 2014:557; McKinney, 2017:163) or inter-language teaching in South African classrooms and Cloete confirms the importance thereof where indigenous knowing is concerned: “In multilingual classrooms there is an additional need to incorporate a critical and self-conscious dimension to inter-language teaching[10] about the environment where the embedded wealth of indigenous knowledge is brought to the fore” (Cloete, 2011:48).

Research by science, geography and agricultural educators Tšepo Mokuku, Likengkeng Ramakhula and Mantoetse Jobo in a primary school in Lesotho, explains how a peer tutoring approach using a Native American tradition of story sticks becomes pedagogically productive as a place-based research method in the school yard (Mokuku, Ramakhula & Jobo, 2012/2013). Children walk around on the school

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[7] Of this colonial ‘wilderness’ experience, Elsie Cloete professes to the fact that “In precolonial and to some extent colonial times in Africa, humans and non-human animals have occupied, to varying degrees, the same spaces. For instance, there is no concept of ‘wilderness’ in isiZulu. For the closest translation one needs to use the word ‘indle’ – the space just outside a hut or a kraal where one goes to relieve oneself” (Cloete, 2011:44).

[8] See McKinney’s work on “Anglonormativity” (McKinney, 2017:84).

[9] It is believed that the word ‘translanguaging’ was first coined by Welsh educational researcher Cen Williams in his 1995 unpublished thesis.

[10] See creative suggestions in chapter 6.7.5

grounds and identify objects like animal hair, seeds, rocks, leaves or pieces of plastic that trigger memories. They collect it and tie it to the stick to later account their stories (Mokuku, Ramakhula & Jobo, 2012/2013:184). This is an example of indigenous knowledge skills that could be valid across continents and not necessarily rooted in Africa. I agree with South African environmental educators Maila and Loubser that Indigenous knowledge systems, just as environmental education processes "involve an interdisciplinary, integrated and active approach to learning, as a vital element of all levels and programmes of education and training" and here they draw on the 1995 South African White Paper on Education (Malia and Loubser 2003:278, 279). Unfortunately, White Papers do not necessarily ensure anything in practice. In the first draft towards the 2017 White Paper on Science, Technology and Innovation - "an inclusive development through science and innovation"- of May 2017 (drawn up by the Department of Science and Technology - DST - in South Africa) the word 'indigenous knowledge' is mentioned 4 times (DST, 2017:1, 21, 21, 63). Yet it is mentioned superficially and noncommittal in sentences like, "The country is rich in natural resources, biodiversity and *indigenous knowledge*" (DST, 2017:1; my emphasis) or as listed among other innovation enablers such as… "Human resources with diverse skills, qualifications and value-adding know-how, including *indigenous knowledge* holders; researchers; intellectual property (IP) managers; commercialisation experts; entrepreneurs and technopreneurs; innovation management mentors and coaches; as well as, technically skilled professionals" (DST, 2017:2; my emphasis). It is alarming that the headings and content of "Environmental Sustainability" and "Climate change and Energy" only take up one and a half pages of the 83-page document. All sustainability is framed in metaphors of growth and expansion, completely in opposition to Epistemologies of the South[11]: "This [the support of SDG[12]'s] will require South Africa to enhance environmental sustainability and reap the benefits of the green economy. These furthermore offer opportunities for firm growth, exports and inclusive growth" (DST, 2017:12). The section on "Climate change and energy" is even less encouraging:

[11] Epistemologies of the South is a theoretical framework that was proposed by Bonaventura de Sousa Santos (2014) as a non-Western way of looking at the world and one of the most important aspects of Epistemologies of the South, is "moving beyond development and the economy" (Escobar, 2016:28).

[12] SDG: Sustainable Development Goal

> Global primary energy demand is expected to increase by 37% between 2012 and 2040. This means that alternative energy sources will have to be established for the African continent, including hydrogen fuel cells and solar technologies.
>
> Transportation will be the second largest consumer of energy in 2040. While car numbers are projected to expand with a growing global middle class, fuel efficiency improvements should mean on a slight increase in energy demand for cars. Commercial transport – including aircraft, ships, trains and trucks – will account for virtually all the growth in transportation energy demand. *Most of this demand growth will be met by oil* (DST, 2017:12; my emphasis).

Most of this demand growth will be met by oil, since Africa's first electric car design project, the Joule, supported by the then South African minister of Science and Technology, Mosibudi Mangena under president Thabo Mbeki (Mangena, 2015:261-271) was closed down after president Jacob Zuma came into power in 2008 and minister Mangena, member of the AZAPO[13] party, was forced to resign (Mangena, 2015:275). At the moment solar energy is struggling to find the promised support from the government (Steyn, 2017) who is trying to invest in Russian nuclear energy and/or a Russian oil company under a cloud of corruption allegations (Jiko & Wa Afrika, 2017). According to Steyn "Renewable energy companies have been prevented from doing more in South Africa because the state's procurement programme, worth about R60-billion a year, has stalled" (Steyn, 2017:1).

So, no – I do not believe a specifically (South) African indigenous philosophy for environmental education is needed. Only a posthumanist praxis as a 'post' to the idea of the human as a Western, white heterosexual male as well as a 'post' to hierarchical constructs based on anthropocentric notions, yet *without new* hegemonic 'politically correct' exclusivist thought patterns. A posthuman praxis is also dynamic, nomadic and reconciliatory in its belief that "all matter is vibrating energy" (Ferrando, 2013a:189). We now move to what I believe to be one of the crucial

[13] AZAPO: Azanian People's Organisation is an organization that grew from Steve Biko's Black Consciousness Movement (Mangena, 2015:9)

ingredients for a posthuman praxis in a time of climate change and species extinction and a concept that has been relevant throughout this thesis: Affect.

## 8.4 Affect

Vignette:

> We lived in a town called Swellendam - nestled against the Langeberg Mountains in the Western Cape of South Africa, lush and green during most months. Plants and trees, grass, rain, the earth, animals and birds were important parts of my daily life. They were not lifeless objects to me, they had distinct smells, they were good to touch, they had feelings, they communicated and had strong emotional affects/effects on me. The trunk of a tree offered consolation in distress, the colour of new moss in front of my miniature mud house brought huge excitement and my rescued baby crow who kept pecking my heels when I couldn't find locusts fast enough brought indignation. But I also sensed "beings" that I could not see in the forest. The 'forest' might just have been a small dense wooded area with ferns and undergrowth, but to me it was huge. My mother translated these nature beings that I sensed into 'nature fairies and gnomes' with magic wands from picture books, beings that you 'can sometimes see at midnight in a forest, but mostly not'. I made carton houses for them outside my window and enticed them with little plates of chocolate vermicelli and maize flour mixed with a little water, to come closer to me. To this day, the smell of a carton box and damp, raw maize flour still elicits feelings of excitement associated with those days. Even though I never saw the nature beings, I believed in them, knew they were there.
>
> Then my father took me to the forest at midnight. He and my mother had a disagreement about the ethics of telling children stories about fairies, gnomes, tooth fairies and Father Christmas. He thought that once children grow up and realise these beings do not exist, they will also not believe in a God, so he wanted to stop this 'illusion' before it gets out of hand. I was five years old. That night, just before midnight he woke me up, put some gumboots and a warm coat on me and took me to the 'forest' where the fairies and gnomes lived. His intention was to break the news that they do not exist. We

did not see fairies and gnomes at midnight that night. But I knew it was because he was there. They do not like adults (Memory story)[14].

Little did I know then that these experiences and these affects would one day lead to the writing of a thesis on Environmental Education. Because as Brian Massumi, claims, there is a Spinozan definition of affect taken up by Deleuze that is not cited often: "It is that a power to affect and be affected governs a transition… the felt transition leaves a trace, it constitutes a memory. Consequently, it can't be restricted to that one occurrence. It will return" (Massumi, 2015:47). Even if it returns many years later. As part of my 'data[15] collection' for a Master's in climate change communication, I transcribed and translated main television news bulletins from four languages and four different South African TV channels over a period of six weeks during the seventeenth United Nations Conference of the Parties (COP) which was held in Durban, South Africa in 2011. I scrutinized images from news bulletins in three indigenous South African languages as well as in English. Children under the ages of 12 were often used as political pawns by politicians, business people and activists to advance their causes. The children seemed empty-eyed, unaffected, mouthing slogans about saving the earth. It made me wonder to what extent young children are still affected, awed and inspired by their breathing environments. I am afraid that if they are not affected, awed or inspired, we have little chance of developing the kinship that Haraway finds so crucial for continued human life on earth.

As also discussed in chapter 5.6, various educators have emphasized the importance of affect in (environmental) education. The mobilization of affective response seems to be a very powerful force, a force that might overcome anthropocentrism even when we thought it was not possible.

[14] My father has the annoying habit of keeping everything. Thanks to this habit, I am able to include my letters to and from the earth beings in appendix 7 (Letters) of this thesis. Letters 'from' the fairies and gnomes were written mostly by my mother but in this example by my father. I recognized his handwriting and his allusion to a political party at the time. The words were written with the end of a match stick dipped in lemon juice. When it is dry and held above a candle flame, the letters magically appear, giving the illusion that fairies wrote it using their magic writing skills.

[15] I use the word 'data' here since at that stage of my life, I did not know about 'relata' and 'creata' and what I used *was* in fact data.

## 8.5 Lines of flight

***Figure 8.1.*** *Multi-dimensional affect spiral, spiralling with lines of flight and movements as 'quantum leaps[16]' between orbitals and not as linear movement.*

As stated in the beginning of this chapter, I would like to draw together what changes in my understanding of (environmental) education were facilitated through my In(tensions), practical work for this thesis, dreams, memories and other experiences during the production of it and suggest ways in which we can open up spaces for children and teachers to hear something of the roar of life beyond the 'species walls' by looking at four plateaus with suggested lines of flight, which I have tried to make visible through this multi-dimensional spiral diagram that is supposed to be constantly spiralling. Keeping in mind what Deleuze and Guattari says: "But a line of becoming has neither beginning nor end, departure nor arrival, origin nor destination…a line of becoming has only a middle" (Deleuze & Guattari 1987: 293) this is no model. We can start in any circle in the spiral and move in any direction,

[16] Barad explains that in the quantum model of physicist Niels Bohr, "an electron that 'leaps' from one orbital to another does not travel along some continuous trajectory from here-now to there-then. Indeed, at no time does the electron occupy any spatial point in between the two orbitals" (Barad, 2007:182). But she also explains that quantum leaps are not really jumps, since the electron disappears from one place and ends up in another "without being at any point in between" (Barad, 2007:432). For more about how the 'quantum leap' points to the indeterminate nature of existence, see glossary of meaning.

the way electrons jumps from one orbital to the next. Each plateau and line of flight indicates an action, not a theoretical concept even though nouns are used to make it more concise. I have chosen the plateaus of Affect, Agency, Affirmation and Attentive Listening with lines of flight of Imagination, Liminality, Communication, Respect and Intuition as most productive in my opinion for enabling us to hear something of the roar of life beyond the 'species walls'. It is important to understand that these qualities are relevant for relationships to humans and non-humans, they are not species-specific.

### 8.5.1 Affect as plateau.

Affect has been discussed in chapter 5, in this chapter and in every other chapter in the thesis. To affect and be affected (as verbs) is not something that happens at will. You cannot decide you are going to affect or be affected although you can be open to it and you can create the conditions that might facilitate it. You have to be open to change and to be changed – "open and patient for its return activity" (Massumi, 2015:ix). To affect and be affected in a conscious way, you have to live in the moment and in your body, not elsewhere in your mind. Affect involves a change in capacity – affect changes you, not only for now but also for the next time when you affect and are affected – it is full of potential and alternatives, even if it is unpredictable and indeterminate. To affect or be affected we consciously need to be open to differences around us and not only to sameness. Affect carries hope in it – in fact, Massumi says "I guess affect is the word I use for 'hope'" (Massumi, 2015:3).

### 8.5.2 Imagination as line of flight

To imagine more, to imagine differently, is a line of flight to be used by the affected to move to new complexities of life, new encounters. Language should be a resource and not a barrier in the flight of imagination[17]. Imagination is mostly fostered in environments where we feel safe and have time to imagine. I am not suggesting that huge imaginative breakthroughs have not occurred under stress or the intensity of life and death situations. But those are not the ideal classroom situations for various reasons. Imagination and affect often go together. You imagine you are your own shoes carrying you through the day, helping you to 'get there', they are walked on, kicked out, thrown about and left around. Imagining their intimate entanglement

[17] Also see chapter 6.7.4.

with you, might affect you and it might have a future effect on your shoes. But imagination and creativity does not stop with the human world and the human culture, as is often imagined. This is why "reductive materialism identified with science" cannot persuade creationists of the idea of 'natural selection' because reductive science has robbed nature of its creative attributes – it has become 'only matter' – the intention, intelligence and creativity in nature and evolution have disappeared from it and therefore 'nature' needs an 'external designer' (Plumwood, 2009:120):

> Suppose that instead of splitting and denigrating the intelligence of the non-human world and attributing creation to an external deity or driver, we began to try to see creativity and agency in the other-than-human world around us (Plumwood, 2009:124).

This world that Plumwood supposes can also be a 'Whatiftheworld' in(tension) like the gallery in chapter 1. Imagining more and differently might be another door, another line of flight to such a 'Whatiftheworld'.

### 8.5.3 Agency as plateau

Educationalist David Oswell argues that the child's agency (like anyone else's agency) is the "capacity to make a difference" (Oswell, 2013:6) and not a "labelling of a possession of power" (Oswell, 2013:7). By understanding children as stable fixed identities instead of always becoming, teachers are limiting their own and the children's thoughts about what children are able to do as knowledge-creators. Rose (2013:97) remarked about Val Plumwood that she was always concerned "with paths (toward others) rather than answers (about others)". Understanding encounters in the classroom as situations where 'transfers of knowledge' need to happen, at a distance from the real world, as a reflection of the real world or just corresponding to it, is to ignore the agency of the child in the construction of new knowledge and her/his "present-becoming" (Deleuze and Parnet, 2007: 23). Oswell encourages us to look for the "different, complex and multiscalar articulations of children's agency" (Oswell, 2013:7) around us. Timmerman and Ostertag (see chapter 5.4) remind us that children might have "the greatest capacity to engage and understand" (Timmerman & Ostertag, 2011:70) the non-human world – adults have much to learn from them and Olsson (2009:5), remarks that a creative response always "lies in the

way children vibrate and resonate together with the world…" (see chapter 4.8). According to Isabelle Stengers, (2012:12) animism[18] as "an assemblage that produces or enhances metamorphic (magic) transformation in our capacity to affect and be affected – that is also to feel, think, and imagine" (Stengers, 2012:12), is exactly what we have been separated from through church and science, although it is still immanent in the 'uneducated' child. Children see themselves as part of the world and sense that the world is alive and animated and not a static backdrop to their lives, but they unlearn that as they grow up and become 'educated'. Images of child as 'immature' and 'lacking' close down their potential becoming, take away a feeling of agency and vitality. In a discussion between Deleuze and Foucault, recorded in March 1972 and later published, Deleuze remarked: "Children are submitted to an infantilisation which is alien to them. On this basis, it is undeniable that schools resemble prisons and that factories are its closest approximation" (Foucault, 1977b:210). Also as quoted in chapter 3.9, "if the protests of children were heard in kindergarten, if their questions were attended to, it would be enough to explode the entire educational system (Foucault, 1977b:209). How much has changed in classrooms since 1972? Only when a child has the self-confidence and belief that s/he too has agency in the world are they able to experience the world in all its relationality. Acknowledging the agency of the living, breathing world around them and this world's ability to also teach, is crucial in an age of climate change and species extinction.

> In re-animating, we become open to hearing sound as voice, seeing movement as action, adaptation as intelligence and dialogue, coincidence and chaos as the creativity of matter. The difference here is intentionality, the ability to use an intentional vocabulary. Above all, it is permission to depict nature in the active voice, the domain of agency (Plumwood, 2009:25, 26)

Acknowledging that nature/the world and children are all in the domain of agency opens us up to take new lines of flight… which brings us to liminality.

[18] See chapter 4.8 for more on animism.

### 8.5.4 Liminality as line of flight

A space of hierarchy-free liminality where teacher and child 'become-liminal' provides lines of flight to different relationalities. Teacher educator Sharon Todd draws on Luce Irigaray and James Conroy to advance her argument that liminal moments are pedagogical in that through those threshold moments, we "shift the borders of our self-understanding" (Todd, 2014:232). These are moments when teachers and learners are equal beings as they stumble upon interesting thought/feeling/viewpoint/experience and each learns from the other without the hierarchical teacher-child separation. I experienced the hair-weaving encounter in chapter eight as such a liminal encounter. How and when do these liminal moments happen? Todd explains that they "rise up by their own accord" although they could be increased by a teacher's willingness to 'let go', to "hang back" and for "cultivating their own and others' imagination … [also through] the arts" (Todd, 2016:235). This in-between state or threshold where child and teacher are equal in their curiosity and wonder about life can serve as line of flight to grow together.

### 8.5.5 Affirmation as plateau

Rosi Braidotti uses Deleuze's potestas (repressive power) and potentia (positive power) to explain the effects that our actions might have in the world and to argue for "more empowering modes of becoming" by "re-casting critique as affirmation" (Braidotti, 2009:45).

She believes negativity blocks, arrests and rigidify possibilities to relate to and to grow with and through others (Braidotti, 2009:50). Affirmation should again be seen as a verb – a positive relating to, a trying to understand otherness and an accepting of the fact that we are all interrelated and that we are all "in this together" (Braidotti, 2009:45). Isolation, separation and 'making other' of people, animals, ideas that are not 'like us' is part of why other species are not able to survive on the planet and why the most vulnerable among humans are not able to breathe, eat or survive in times of climate change. Inclusivity through allowing difference instead of assimilation[19] is what affirmation is about. Which leads us to communication as a line of flight.

[19] See chapter two for more on assimilation.

### 8.5.6 Communication as line of flight

The willingness to see communication (through the mode of language) as a *resource* and not as a *barrier*, is crucial. But, communication is not limited to language and to the use of multi-languages/translanguaging in classrooms. It also includes body language and inter-species communication, because as Rose remarks, quoting from Graham Harvey, "the world is full of persons, only some of whom are human" (Rose, 2013:96). Rose talks about 'experiencing' communication which happens only when you open yourself up "to others as communicative beings" (Rose, 2013:97). Also see the concept of 'ecological literacy' in chapter 4 and the way stories open us up (chapter 5) and "leap across imaginative realms, to connect, to empathise…" (Rose, 2013:106). Humans are not the only ones who are intelligent, purposeful, who communicate or pay attention – there is a world full of multiple purposes and multiple cultures. In a sentient world, says Rose, the earth speaks, it speaks earth language and it is never a monologue, it is always relational:

> It seems that if communication is to occur, people have to learn to understand many, many other creatures, paying attention, for example to the multitude of creature languages—the sounds, smells, and behaviour, the flowering trees, the seasons, and the comings and goings of birds, insects and other creatures, and the silences too (Rose, 2013:105)

This kind of communication, that we sometimes see among children or children and animals who do not understand each others' languages, is the kind of communication that becomes a line of flight across differences, creating the new, affirming that we are and want to be 'in this together'.

### 8.5.7 Attentive Listening as plateau

Attentive listening to what? According to Isabelle Stengers it is not only our "capacity" for listening, but also "the art of paying attention" that is important and this entails that you do not decide beforehand what it is that you are going to pay attention to – you do not separate that which "must be taken into account" from that which "may be neglected" (Stengers, 2015: 62). And this is relevant for listening to humans and to non-human 'others.' The context for Stengers' 'art of paying attention' comes from her book *In Catastrophic Times* where she warns of the risks

of not paying attention, not listening attentively and only hearing the voice of development and growth. She calls it "the coupling together of Entrepreneur, State, and Science" where "ruining the Indian peasant smallholders" might be the necessary risk and price involved for "heroic innovation" (Stengers, 2015:66). Also see chapter 2 on geo-engineering and its risks to already marginalized peoples.

What Stengers means is that selecting what you *want* to hear is rather a closing down and not an opening up to all the possible voices and kinds of voices. The art of attentive listening also lies in 'shutting up' sometimes, in 'stop formulating words' for experiences. Tim Ingold, waking up from a dream, had these lines in his mind:

> Often in the midst of my endeavors
> Something ups and says
> "Enough of words,
> Let's meet the world" (Ingold, 2015:vii).

Attentive listening is a way of meeting the world half-way. When we do not listen attentively to human and non-human others, we become insensitive to our dependencies and interconnections as part of the ecosystem and results in its and in our destruction. Rose asks, "How do we learn the attention that would enable us to admit earth 'words' into our lives" (Rose, 2013:105) and one of the answers is definitely to stop talking. Listening attentively according to Blaise, Hamm & Iorio (2016:5) "is about taking the first step in witnessing and it occurs in the present, not in some far-off abstract future". That means being in your body and not in your thoughts. I think another way to hear something of the roar of life beyond the 'species walls' is to realize that humans are only a tiny part of the speaking world.

### 8.5.8 Respect as line of flight

Respect is never based on fear. Respect is not obedience. It is not blind faith in tradition. It is also not only a cognitive matter of believing someone has 'worth' and therefore should be respected. According to Plumwood respect should not be based on "duty or obligation any more than the most important elements of friendship are" but it should rather be "an expression of a certain kind of selfhood and a certain kind of relation between self and other" (Plumwood 1991:7). Understanding respect in this way, helps to get rid of all hierarchical ideas about respect. Sharon Todd,

drawing on Luce Irigaray argues that we need “a respect for the otherness of the other and a respect for the other’s becoming… for the other’s future – a becoming that is ‘not yet’” which means that we “allow the future to be open-ended” (Todd, 2014:241). Plumwood rejects the “self-indulgent ‘kindness’ approach that reduces respect and morality in the protection of animals to the satisfaction of the carer's own feelings” (Plumwood, 1991:5) or, like some Animal Liberation movements who “extend the ethical community minimally [only] to those most like humans” (Plumwood, 2009:115). Plumwood, like myself, prefers a “larger, less humanised community… with an ethic of respect and attention [that needs] no stopping point” (Plumwood, 2009:115). No stopping point, as was well formulated by the Grade R teacher at the school of my practical work as quoted in chapter 7, when I asked her about fostering care for the environment with the very young:

> Respect for everything and anything, you start with that. That is what it is about Rouxnette – clothes, shoes, a piece of paper. It is so simple, but it starts there (Teacher interview, 16 May, 2016).

It starts there and it has no stopping point. Which takes us to Spinoza’ ‘highest knowledge’ – intuition.

### 8.5.9 Intuition as line of flight

Intuition is Spinoza’s “third kind of knowledge” which according to him, proceeds from an “adequate idea of the formal essence of certain attributes of God to an adequate knowledge of the essence of things” (Spinoza 2002:267). It sounds complicated, yet according to Bergson: “What we have behind the heavy mass of concepts of Cartesian and Aristotelian parentage, is that intuition which was Spinoza's, an intuition which no formula, no matter how simple, can be simple enough to express” (Bergson, 1946:132). Bergson links the concept of intuition with his idea of “internal duration” which he understands as “a growth from within” and a continuous past-into-present-into future – a direct vision of the mind by the mind” (Bergson, 1946:132). Bergson also calls intuition “the sympathy by which one is transported into the interior of an object in order to coincide with what there is unique and consequently inexpressible in it. Analysis, on the contrary, is the operation which reduces the object to elements already known, that is, common to

that object and to others” (Bergson, 1946:189). Intuition therefore allows us to go beyond what is known to a direct understanding of what is.

In lieu of a conclusion (to borrow from the title of Massumi’s last chapter (Massumi, 2015:204), or as an “inconclusion” as Gough calls the last paragraph of his 2008 paper (Gough, 2008:84), I leave you with my spiralling diagram 8.1 as a map of my experiences.

## 8.6 Prologue

My father’s attempt to convince me that ‘earth beings’ do not exist, did unfortunately (for him) not work. But his fear that I will not believe in a God one day, was also unfounded. When I was 16, I wrote the following three prayers, a little awkwardly translated here from my native tongue into English:

*Prayer of an Atheist*

Save me from Thy non-existence that
mechanically, turns this planet round and round
and ends it scientifically-accurately;
mercifully, after one battery life.

*Prayer of a Nihilist*

Deliver me from this illusion
let my brain be still, let me return
to the eternal rest and ultimate truth
of Thy nothing.

*Prayer of a Pantheist*

O God protect me when on the seventh day
I’m forced to leave your spacious house and enter their small jail
and see how they callously shrink you
to shapes of human flesh and blood

I still experience Life as sacred and most churches as jails. After Val Plumwood died in 2008, Deborah Bird Rose accounted how, when they were standing around

the open coffin, a big butterfly settled on Val's body and stayed for a significant time. Then it flew up and disappeared into the nearby forest. Rose felt it was how the "communicative life of earth" keeps us in its awareness (Rose, 2013:93, 94). "Sometimes the shape I'm in won't let me go…" croons singer-songwriter Townes Van Zandt (McCormack 2015:89). But it will, eventually, because we are all shape-shifters. And with hope that pulses even through still lives[20], life will begin, again.

[20] See memory story, chapter 1.1.

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# Appendix 1 Glossary of Meaning:

This is a glossary of meaning for words as they are used in this thesis and not as used in a dictionary.

**Com-post-humanism:** A combination of the words compost, posthumanism and humanism in the title of this thesis.

**2016 UCT Author-date Reference Guide: based on the Harvard referencing style:** This is the reference system used in this thesis. Example: Van Wilgen, B.W. 2009. The evolution of fire and invasive alien plant management practices in fynbos: review article. *South African Journal of Science.* 105(9–10):335–343. For four or more authors, in-text reference is first name plus et.al. and in die Reference list, the names of all the authors to a maximum of eight should appear.

**Use of quotation marks in this thesis:** Too many quotation marks complicates reading. Yet, I find that the convention to transcribe the work of other scholars 'in your own words' often diminishes or changes the original meaning, which is a dishonour to their work. There is always a 'best' way of saying something. For that reason, I prefer to quote other scholars and seminal philosophers rather than to transcribe them in my own words even though I know it might make reading more cumbersome. As Vicky Kirby attests, "The struggle to make a difference is a parasitic enterprise…" (Kirby, 2014:5).

**A**

**Affect:** To educators Stephanie Springgay and Nikki Rotas, (who also draw on Deleuze), affect "is not contained in a body nor attached to a recognizable form, rather it is a relational field, a force that activates becoming" (Springgay & Rotas, 2015:554). As explained in chapter 5.6: To arrive at a pedagogy of affect, we need to take into account how Deleuze and Guattari, drawing on Spinoza, define bodies in terms of movement and rest, and ability to affect and be affected (Deleuze & Guattari, 1987: 257[1]). Brian Massumi also uses his affect theory in the Spinozian sense, arguing that affect and emotion are not the same thing. To Massumi, "[j]oy in

[1] Also see chapters 2 and 3.

the Spinozean sense refers to the intensity of the affective encounter [and the] intensity of joy is not happy or positive emotion [as these] hedonistic distinctions do not apply to affect, they apply to emotions" (Massumi, 2015:208,209). He posits that affect "is ethically neutral in the normal understanding of ethics… neither good nor bad… [has] no normative value" (Massumi, 2015:209). See chapter 5.6 for more on Affect.

**Agential cut:** Quantum physicist Karen Barad explains that the agential cut is in contrast with the Cartesian cut which separates subject and object (Barad, 2007:333). Since there is "no outside to the universe" and there is also "no way to describe the entire system… description always occurs from within: only part of the world can be made intelligible to itself at a time, because the other part of the world has to be the part that it makes a difference to" (Barad, 2007:351). This does not mean that what is on the other side of this cut is separate from us. The 'agential cut' "enacts a causal structure among components of a phenomenon in the marking of the 'measuring agencies' (effect) by the 'measured object' ('cause'). It is in this sense that the measurement can be said to express particular facts about that which is measured; that is, the measurement is a causal intra-action and not 'any old playing around'" (Barad, 2007, 140).

**Anglonormativity:** Anglo-normativity (Spickard, 2009:6) or "anglonormativity" (McKinney, 2017:79). This is the idea that a white, English speaking person is the norm of what is the ideal. Everyone else is deemed inferior.

**Animate/Inanimate**: The Western way of thinking about animate/inanimate is very different from the indigenous way of thinking about it. Anthropologist George Bertrand Silberbauer suggests that the Khoisan do not make any underlying distinction between human and non-human or animate and inanimate, all 'things' are basically similar (Silberbauer, 1981:132). Also see chapter 4.8 on Animism and chapter 5.4 on Anthropomorphism.

**Anthropocene**: 'The Age of Man.' The term 'Anthropocene' has been used by Russian scientists in the 1960's, but in the sense that we use it now, it was first used by Eugene Stoermer and popularised by atmospheric chemist Paul Crutzen. In *Science* (January 2016) it was suggested that the era since mid-20$^{th}$ century should be recognised as the epoch of the Anthropocene (Waters, Zalasiewicz et. al. 2016). The

age of the Anthropocene implies that humans have become a geophysical force that wrought significant stratigraphic changes in the structure of the earth, operating from within nature. The term Anthropocene has become a conversation about the place of the human in the web of life. Historian and ecologist Jason Moore, drawing on Voosen 2012, calls it "an argument wrapped in a word" (Moore, 2017:594).

**Apparatus** as used by quantum physicist Karen Barad: Barad explains how she, preparing for her experiments and working with impressive old equipment in a laboratory, for the first time, started to consider the "physicality of apparatuses and the ideas they embody" (Barad, 2007:xi). She explains:

> …rather, there is something fundamental about the nature of measurement interactions such that, given a particular measuring apparatus, certain properties become determinate, while others are specifically excluded. Which properties become determinate is not governed by the desires or will of the experimenter but rather by the specificity of the experimental apparatus (Barad, 2007:19).

As such, different apparatuses will therefore cause different quantities to become determinate and some values will always be excluded. Barad argues for a "diffractive methodology" that is "respectful of the entanglement of ideas and other materials in ways that reflexive methodologies are not" (Barad, 2007:29). She suggests a "diffraction apparatus to study these entanglements" and to rethink various concepts: "to rethink the nature of nature based on our best scientific theories, while rethinking the nature of scientific practices in terms of our best understanding of the nature of nature and our best social theories, while rethinking our best social theories in terms of our best understanding of the nature of nature and the nature of scientific theories" (Barad, 2007:30). Barad believes that diffraction apparatuses "highlight, exhibit and make evident the entangled structure of the changing and contingent ontology of the world, including the ontology of knowing" (Barad, 2007:73).

**B**

**Becoming-with**: Donna Haraway explains her concept of 'becoming-with' as follows: "all the actors become who they are in the dance of relating, not from

scratch, not ex nihilo, but full of the patterns of their sometimes-joined, sometimes-separate heritages both before and lateral to this encounter. All of the actors are redone through the pattern they enact" (Haraway, 2008:314).

**Behaviourist theory of learning**: Behaviourist theories of learning involve "punishments and rewards" and child is perceived as a "blank slate to be written on or as an empty vessel to be filled" (Wals & Dillon, 2013:253). This theory focuses on observable behaviour without taking into account independent mind activity. It sees learning as nothing more than gaining new behavioural patterns.

**Biophilia**: The biophilia hypothesis suggests that there is an instinctive bond between human beings and other living systems. Edward Wilson defines biophilia as the urge to affiliate with other forms of life (Wilson, 1984). For more on Biophilia, see Wilson, Edward O. (1984). *Biophilia*. Cambridge: Harvard University Press as well as the final chapter in the *International Handbook of Environmental Education Research,* (Wals et al 2013) about connections between biophilia and videophilia.

**Biopower:** It means having power over other bodies. Foucault, who wrote extensively about power, defines biopower as, "an explosion of numerous and diverse techniques for achieving the subjugations of bodies and the control of populations" (Foucault, 1978:140). According to posthuman philosopher Rosi Braidotti, the "central discrepancy between Foucault's notion of biopower and contemporary posthuman structures has to do with the dis-placement of anthropocentrism" (Braidotti, 2013:117). She argues that "the bio-genetic structure of advance capitalism reduces bodies to carriers of vital information, which get invested with financial value and capitalized" (Braidotti, 2013:117). Also see her notion that bio-power "involves the management of dying" (Braidotti, 2013:119).

**Bioregionalism.** This is the belief that ecological and geographical limits should confine human activity and not political considerations. Bioregionalism takes account of the ecology, culture and economy of a specific place and try to make 'place' sustainable and diverse in contrast with homogenizing effects of globalization and insist "that human cultures must learn to live within the natural limits of their bioregion" (Bowers, 20013a). According to environmental philosopher Richard Evanoff, in bioregionalism, "[i]t can further be expected that different cultures

occupying differing geographical regions ('niches') and interacting with them in varying ways will develop different forms of knowledge, values, social organization, and technology" (Evanoff, 2007:150).

**C**

**Capitalocene:** Historian and ecologist Jason Moore says it is "the 'age of capital' – the historical era shaped by the endless accumulation of capital" (Moore, 2017:596) and explains 'Capitalocene' as "a system of power, profit and re/production in the web of life" (Moore, 2017:594). Moore expands: "I would go so far as to say that an unusual combination of productive and necrotic violence defines capitalism… it drives extinction" (Moore, 2017:597) and "capitalism is premised on the separation of Humanity and Nature" (Moore, 2016:600). Also see *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (Moore, 2016).

**Carnivoristic attitudes:** My own definition: Like with sexism or racism, carnivoristic people with carnivoristic attitudes are oblivious to other ways of seeing/being/eating. An example of a carnivorist is a person who, despite being in the food industry, is oblivious of the fact that vegans do not use butter, milk or eggs in their food. This, despite the fact that vegans are usually much more serious about what they eat than the regular carnivore who might eat anything put in front of them. This is an example of what Val Plumwood calls "hegemonic centrism" as a structure where "the One" (the carnivore) is set up as primary or centre and then defines "the Others" as "secondary, derivative and deficient" in relation to it (Plumwood, 2002:101) and therefore not important enough to find out more about for example their eating habits.

**Cartesian:** Cartesianism is a philosophical and scientific system developed by René Descartes before 1643. An important part of this philosophy is the distinction between mind and body.

**Cognitivist theories of learning:** Cognitivist theories of Learning comes from the ideas of Piaget. They are developmental in nature. According to environmental educators Arjen Wals and Justin Dillon, in these theories "[t]he point of development affects what can and what cannot be learnt" (Wals & Dillon, 2013:255). Criticism of

cognitive learning theories is that “children are capable of ideas and ways of thinking much earlier than Piaget’s theories suggest” (Wals & Dillon, 2013:253).

**Coloniality: “**Coloniality of power” (Quijano 1992, 2000) refers to a kind of centrism that still lingers in so-called postcolonial countries – a structure of power and control that involves knowledge, cultural systems and systems of hierarchies (Escobar & Mignolo, 2010). This concept is referred to in chapter 6 and 7. “Coloniality of power is one of a set of related concepts of coloniality describing a fundamental element of modernity and which can be applied to describe a global condition of coloniality. Coloniality of power takes three forms: systems of hierarchies, systems of knowledge and cultural systems” (Escobar & Mignolo, 2010).

**Commonbreath.** In my use of this word**,** I borrow from David Abram’s term “The Commonwealth of breath” where ‘breath’ in many oral religions is believed to be “the very source of awareness” and the “wind-mind of the world” (Abram, 2014:311). Abram also talks about the “breathing commons” in which we “renew our participation in the more-than-human community… by telling stories” (Abram, 2014:311). For archaeologist Chris Low,

> There is a sense in which people working together are bound together in moving air and, furthermore, that wind is deliberately shared in actions of mutual support. At other times again, wind is diminutized climatic wind or God-breath, ‘the same but different’; at other times still, its meaning and role overlap with arrows, shadows, and personal smell essence. The multivalent sensual quality of wind and its boundary-crossing powerful nature give it a ‘good to think with’ status among the more and less inchoate ideas of these recent hunter-gatherers (Low, 2007:88).

**Commonworlds:** Australian early childhood educator Affrica Taylor proposes a different way of looking at child and socionature in schools and calls it a “common world pedagogy” (Taylor, 2017:1448). A term used by early childhood educators Veronica Pacini-Ketchabaw, Affrica Taylor and Mindy Blaise, borrowed from Latour (2005) “to reassemble all of the constituents of our worlds – including nonhuman life forms, forces and entities – within a radically expanded conceptualization of the social” (Pacini-Ketchebaw, Taylor & Blaise, 2016:150).

After all, as Haraway said, “nature is, strictly, a commonplace” (Haraway, 1992:296).

**Cosmopolitics**: This is the belief that all human beings belong to the same community, sharing the same morality. According to Latour’s and Stengers’ understanding of cosmopolitics as a theoretical perspective, it focuses on the interconnections of human and more-than-human encounters seen within its largest boundary, which is the cosmos. (Latour, 2004a; Stengers, 2010). According to Iris Duhn, it “provides a tool for critical engagement with challenges that affect all inhabitants of this planet and ultimately opens possibilities of an imagination of Earth as agentic” (Duhn, 2017:47). How are human-animal relations framed within cosmopolitanism as a theoretical perspective? Duhn explains that “…cosmopolitics challenges anthropocentric practices that render animal-others as out of place in cities, because it de-centres humans and asks of us to pay attention to how we are interconnected with more-than-humans in our daily urban life. This means that cosmopolitics firstly aims to challenge a sense of human entitlement and human exceptionalism” (Duhn, 2017:50).

**Creata:** Scholar Kit Petersen (2014:34) argues that ‘data’ should rather be called ‘creata’ “to draw attention to the constructed nature of data” which always involves the researcher’s specific interests and perspectives, data which are never “innocently gathered” (Eva Bendix Petersen 2003:71).

**D**

**Dark Ecology**: This concept was introduced by Timothy Morton in his book, *Ecology Without Nature* (Morton, 2007). Morton, who explores the intersection of object-oriented ontology and ecological studies, argues that we need to attune ourselves to the complex reality of our ecological situation and not use simplified logics. It is exactly this simplified logic that led to the Age of the Anthropocene. Morton explains, “We should be finding ways to stick around with the sticky mess that we’re in and that we are making, thinking dirtier, identifying with ugliness, practicing ‘hauntology’ rather than ontology” (Morton, 2007:188). He also criticizes ‘Deep Egology’, saying that “Deep ecology buries its dead too fast. (Morton, 2007:188).

**Deep Ecology:** The phrase 'deep ecology' was coined by the Norwegian philosopher Arne Naess in 1973. According to ecofeminist Val Plumwood, Deep Ecology is based on the idea of identification of self with nature and this erasure of any distinction does not address any of the problems earth faces. She discusses three different selves in Deep Ecology: Indistinguishable Self, Expanded Self and Transpersonal Self. The first gives no attention to different needs of different entities (Plumwood, 1991:13) the expanded self (through empathy) "becomes an enlargement and extension of egoism" and the transcended or transpersonal self on the other hand deems inferior any particular land-based or kin-based relationships and attachments. Plumwood claims: "Deep ecology does not question the structures of rational egoism and continues to subscribe to two of the main tenets of the egoist framework-that human nature is egoistic and that the alternative to egoism is self-sacrifice" (Plumwood, 1991:15). Everyone and everything is incorporated into this Self and denied any difference. She discusses three different selves in Deep Ecology: Indistinguishable Self, Expanded Self and Transpersonal Self. The first gives no attention to different needs of different entities (Plumwood, 1991:13), expanded self (through empathy) "becomes an enlargement and extension of egoism" and the transcended or transpersonal self on the other hand deems inferior any particular land-based or kin-based relationships and attachments and deep ecology again sees 'reason' as superior to everything else (Plumwood, 1991: 14). Plumwood claims: "Deep ecology does not question the structures of rational egoism and continues to subscribe to two of the main tenets of the egoist framework – that human nature is egoistic and that the alternative to egoism is self-sacrifice" (Plumwood, 1991:15). Everyone and everything is incorporated into this Self and denied any difference (Plumwood, 1991: 14).

**Diffraction:** The production of difference is embedded in the 'diffraction' metaphor of biologist Donna Haraway, later built on by physicist Karen Barad and this time not only as metaphor. The scientific phenomenon of diffraction in quantum physics (as used by Barad) is explained as follows: "Crucially, diffraction patterns mark an important difference between waves and particles: according to classical physics, only waves produce diffraction patterns; articles do not (since they cannot occupy the same place at the same time) (Barad, 2007:81). Barad argues for a "diffractive methodology" that is "respectful of the entanglement of ideas and other materials in

ways that reflexive methodologies are not" (Barad, 2007:29). Thiele (2014:203) sees diffraction as a "primary relating-in difference" (using difference productively and positively and as relational instead of as an exclusion) and thus valuable for posthuman ethics.

**Denaturisation**: Educators Annette and Noel draw on Nancy (2007) who termed denaturation "the exhaustion of the world through globalisation [which] signals retrospectively a historical process of rupture" (Gough & Gough 2016: 33).

**E**

**Ecofeminism:** According to environmental educator Annette Gough, the term 'ecofeminism' was "coined in 1974 by Françoise d'Eaubonne" (Gough, 2013:381) and she urged women to "lead an ecological revolution to save the planet" which would ask for different relations between men/women and human/nature (Gough, 2013:381 drawing on Merchant 1996).

**Ecotechnologies**: Philosopher Jean-Luc Nancy explains how, through representation of nature, something 'produced' by man, becomes the new nature of Man's making. 'Weather' for example is reproduced, not by looking through the window but by searching on a smartphone. For Nancy (2000:135) ecotechnologies imply the following divisions: "the division from rich from poor, the division of the integrated from the excluded and the division of North from South." Ecotechnology is therefore also a way of denaturation.

**Ecoscene:** The Ecoscene is a post-Anthropocene period proposed by environmental educators Wals, Weakland and Corcoran which is a "geological epoch during which Earth enters a long relatively stable period where life on Earth is in a state of a dynamic equilibrium and homo-sapiens lives by a so-called flat ontology, recognizing that all species are exceptional" (Wals, Weakland & Corcoran, 2017b:73). They acknowledge that we are not nearly there yet but suggest that "energy and innovation" should be "paired with some kind of planetary consciousness and underpinned with values and ethics that move Earth closer to the post-Anthropocene" (Wals, Weakland & Corcoran, 2017b:73). Also see chapter 1.4.

**Earthbound:** Sociologist and science studies scholar Bruno Latour proposed the idea of the 'earthbound' at the 2013 Gifford lectures at the University of Edinburgh https://www.giffordlectures.org/lectures. (The Gifford lectures is a lecture series held every year in Scotland since 1888, dealing with religion, science and philosophy). Latour conceptualized the 'Earthbound' as humans embedded in, rather than separated from nature as was the Anthropos. Also see Latour's (2014) paper "Agency of the Anthropocene". Latour explains,

> I have chosen Earthbound - 'bound' as if bound by a spell, as well as 'bound' in the sense of heading somewhere, thereby designating the joint attempt to reach the Earth while being unable to escape from it, a moving testimony to the frenetic immobility of those who live on Gaia. I know I should not state things this starkly: Humans and Earthbound should be at war. Contrary to Earthbound, Humans are not to be completely trusted because you never know where they go. Earthbound, on the other hand, are sensitive and responsible, not because they possess any supernatural qualities, but because they belong to a territory and because the delineation of their people is made explicit by the state of exception in which they accept being placed by those they do call enemy (Latour, 2013: 15, 16)

**Ecopedagogy**: Ecopedagogy has links to developmental psychology and deep ecology/ecopedagogy – see criticism by ecofeminists and Bowers in chapter 4. Proponents of deep ecology offer an eight-tier platform to elucidate their claims:

> The well-being and flourishing of human and nonhuman life on Earth have value in themselves (synonyms: intrinsic value, inherent value). These values are independent of the usefulness of the nonhuman world for human purposes.
>
> Richness and diversity of life forms contribute to the realization of these values and are also values in themselves.
>
> Humans have no right to reduce this richness and diversity except to satisfy vital human needs.

> The flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of nonhuman life requires such a decrease.
>
> Present human interference with the nonhuman world is excessive, and the situation is rapidly worsening.
>
> Policies must therefore be changed. These policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present.
>
> The ideological change is mainly that of appreciating life quality (dwelling in situations of inherent value) rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between big and great.
>
> Those who subscribe to the foregoing points have an obligation directly or indirectly to try to implement the necessary changes.
>
> These principles can be reduced to three simple propositions:
>
> Wilderness and biodiversity preservation
>
> Human population control
>
> Simple living (or treading lightly on the planet).

Næss, A. 1973. The Shallow and the Deep, Long-Range Ecology Movement. *Inquiry* 16: 95–100.

**Ecocriticism**: Material/Posthuman Ecocriticism is explained by ecocritic Serpil Oppermann as follows: "The conceptual argument of material ecocriticism is that matter is endowed with creative expressions, manifesting as storied matter. Storied matter in the posthuman moment exhibits itself in matter's overlapping biotic and abiotic components transmitted through technoscientific practices that seek to graft the technological onto the biological" (Oppermann, 2016:274).

**Ecological Posthumanism**: This term is best described by Karen Malone when she says that ecological posthumanism is "an ongoing process to consider how to take

research that has been developed using humanistic/child-centered methods and attempt to accomplish an ecological posthumanist re-reading" (Malone, 2017:171).

**Ecosophy:** The word "ecosophy" was first coined by Arne Naess (1973) but Felix Guattari's 'ecosophy' as used in his book *The Three Ecologies* (Guattari, 2000) has a different meaning. Tinnell explains: "Whereas environmentalism (like Naess') attempts to strengthen the bond between humans and the natural environment, which are articulated as two discrete and relatively stable categories, Guattari's ecosophy rethinks this relationship in terms of dynamic assemblages of enunciation without assigning humans, nature or culture a fixed role or place in the production of subjectivity" (Tinnell, 2012:362).

**Ecotheory**: Ecotheory is a combination of ecology, philosophy, anthropology, sociology, literature, feminism, sustainability studies, environmental justice, queer theory and various related fields that try to understand of the entanglement of humans and nonhumans. Ecotheorist Jeffrey Jerome Cohen sees ecotheory as a way of "Striving to better frame ethical, historical and cognitive relations to the world, especially at a time of anthropogenic climate change and global crisis" (Cohen, 2016). Available: http://www.inthemedievalmiddle.com/2016/06/veer-ecology-welcome-to-whirled.html

**Empirical oblivion**: Philosopher James Williams explains his idea of empirical oblivion drawn from Guattari's idea of transcendental immanence as follows: "Empirical oblivion means that we can never repeat the same states, either through representations of them as images or as meanings (Williams, 2010:30).

**Entanglement:** This refers to the relationality and connection of everything with everything else. As Karen Barad says, "Existence is not an individual affair" (Barad, 20017: ix). According to early childhood educator Candace Kuby, **"**entanglement, an idea from quantum physics, is the newness produced when parts come together as a whole" (Kuby, 2017:9). What is quantum entanglement then? According to Barad, "Entanglements, like superpositions, are uniquely quantum mechanical - they specify a feature of particle behavior for which there is no classical physics equivalent. In essence, the notion of an entanglement is a generalization of a superposition to the case of more than one particle" (Barad, 2007:270). Barad maintains that quantum

experiments “illuminate the very nature of superpositions and their relationship to the so-called entanglement of states, which physicists now believe lies at the heart of all quantum phenomena and a great deal of ‘quantum weirdness’" (Barad, 2007:83). (Also see ‘intra-action’ in this glossary).

**Environment:** When asked what she understood by ‘environment’, the Grade R teacher defined it as “more than just what we were given – environment is more the state of nature, the man affected space we live in. How we relate, communicate with and our effect on nature is what I see it as” (Teacher interview, 19 May 2016). I thought this was a good description for how I see ‘environment’ in this thesis.

**Environmental Ethics**: Ethics should always already be ‘Environmental ethics’. Ecofeminists like Val Plumwood, has always insisted that immanent relationships with nature and not abstract and disconnected ideas of what she calls masculine ethics should be part of an environmental ethics of care (Plumwood, 1993b:288). According to geographers Bruce Braun and Joel Wainwright “discussions over ethics assume nature to be a pregiven category, they fail to recognize the ways in which relations of power are already present. Or, to say this differently, environmental ethics, by framing the matter in terms of human relations to nature, often fail to take into account the cultural politics of nature” (Braun & Wainwright, 2001:42). It is therefore important to take care that the power of ‘culture’ involved in environmental ethics, also includes the culture of the plant and the animal.

**Epistemology:** Epistemology is the theory of knowledge – it is the study of the nature of knowledge.

**Epistemologies of the South**: Epistemologies of the South is a theoretical framework that was proposed by Bonaventura de Sousa Santos (2014) as a non-Western way of looking at the world and one of the most important aspects of Epistemologies of the South, is “moving beyond development and the economy” (Escobar, 2016:28).

**Ethico-onto-epistemology:** Ethico-onto-epistemology points to the entanglement of ethics, ontology and epistemology that, according to Barad’s agential realism, based on her experience in quantum physics, cannot be separated out. (Barad, 2007:90)

**Ethics and Morality?** The difference between ethics and morality is that morality is usually a set of rules from the outside whereas ethics happens in the entanglement and intra-action of real-life situations. In ethics, difference makes a difference. Also see 'environmental ethics'.

**F**

**G**

**Gaia**: The Gaia hypothesis was first formulated by scientist and environmentalist James Lovelock in the 1960's when he was working for NASA to try and detect life on Mars. It is also referred to as the Gaia theory or the Gaia principle. The Gaia hypothesis is explained by Lovelock and evolutionary theorist and biologist Lynn Margulis as follows:

> the total ensemble of living organisms which constitute the biosphere can act as a single entity to regulate chemical composition, surface pH and possibly also climate. The notion of the bios- phere as an active adaptive control system able to maintain the Earth in homeostasis we are calling the 'Gaia' hypothesis. Hence forward the word Gaia will be used to describe the biosphere and all of those parts of the Earth with which it actively interacts to form the hypothetical new entity with properties that could not be predicted from the sum of its parts (Lovelock & Margulis, 1973:3).

They recognize that there is a "fundamental problem" with the "formal recognition" of a concept like Gaia which lies in recognizing "an unfamiliar living association" – of "recognising life itself" (Lovelock & Margulis, 1973:3).

**Geoengineering/climate engineering:** Geoengineering is the intentional, large-scale technological manipulation of the Earth's systems, often discussed as a techno-fix for combating climate change and global warming. The following description comes from a briefing for delegates at the Convention on Biological Diversity (CBD) for Geoengineering and COP 13 in Cancun, Mexico in 2016. It says geoengineering:

> refers to a set of proposed techniques to intervene in and alter earth systems on a large scale – particularly to climate system manipulations as a 'technofix' for climate change. These

manipulations may include so-called solar radiation management (SRM) as well as other earth system interventions under the umbrella of carbon dioxide removal (CDR). Geoengineering can be land-based interventions, interventions in the oceans, or interventions in the atmosphere. Geoengineering schemes impact the global commons and will have transboundary effects (2016, COP13 briefing). (Available: http://www.etcgroup.org/sites/www.etcgroup.org/files/files/final_geoengineering_brief_cop_13_web.pdf [20 March 2016]

**Glocal**: Characterized by both local and global considerations.

**H**

**Hauntology:** This refers to a condition of severance between the temporal, historical and ontological and there seems to be no sign of the origin. It is like seeing a ghost that is not necessarily present, or absent, or alive, or dead. Barad had much to say about this condition, being interested as she is, in quantum realities. She calls it a "thinking with and through dis/continuity – a dis/orienting experience of the dis/jointedness of time and space, entanglements of here and there, now and then, that is, a ghostly sense of dis/continuity, a quantum dis/continuity" (Barad, 2010:240). She draws on philosopher Jacques Derrida, who describes it as follows: "To haunt does not mean to be present, and it is necessary to introduce haunting into the very construction of a concept. Of every concept, beginning with the concepts of being and time. That is what we would be calling here a hauntology. (Derrida, 1994:161).

**Hyperobjects**: Timothy Morton's book by the same title (Morton, 2013) explains hyperobjects as entities that are so huge in scale (on a temporal and spatial level) that they are outside of human understanding. He claims about hyperobjects that "The more data we have about hyperobjects the less we know about them – the more we realize we can *never* truly know them (2013:180) which seems to me like a rather hopeless view of what we can do about the hyperobject of 'climate change'.

**I**

**Ideology** and curriculum – the relationship. Educationalists like Anders Breidlid believes that the "relationship between ideology and curriculum is problematic" (Breidlid, 2003:84) which is because "dominant ideology has the function of obscuring from the subaltern classes the 'real' state of their own lives and exploitation" (Breidlid, 2003:85). What is worrying therefore, is that in South Africa, "concepts of educational quality are significantly influenced by the research orientations and trajectories of the World Bank, UNESCO and other large multinational research organisations, and by the research trajectories and interests of donor organisations, valuable as these may be (Lotz-Sitsika, 2013: 33, 34).

**Identity**: As mentioned in chapter 1, in posthumanism 'identity' is not seen as something fixed but entangled and always emergent in relationships – like Deleuze and Guattari's "lines of becoming" (Deleuze & Guattari, 1987:239). See glossary for 'subject' to view Vicky Kirby's ideas on the "crisis of identity" when she talks about "subject" (Kirby, 2014:153).

**Immanence:** Deleuze borrowed the concept of immanence from Spinoza, who used it to describe the world as an attribute to the one substance, God. "The entire Ethics is a voyage in immanence; but immanence is the unconscious itself, and the conquest of the un-conscious" (Deleuze, 1988:29).

**Implicit curriculum:** This refers to the fact that the child much more in the classroom that what is in the curriculum. Bowers calls it "collateral learning" – in that "the implicit curriculum encompasses much more of what we have already discussed in relation to the classroom as an ecology of ideas" (Bowers, 1990:203).

**Index of Linguistic Diversity:** (ILD). This index becomes interesting when we study biodiversity and plurilingualism together. Finnish philosopher and linguist Tov Skutnabb-Kangas, combines her work with biodiversity, which becomes very relevant for the environmental researcher. In her keynote address of the 2009 Bamako International Forum on Multilingualism in Mali, Skutnabb-Kangas gives an "optimistic realistic linguists estimate" as well as a "pessimistic but realistic researchers estimate" of the oral languages that might be left on the planet by the year 2100: Optimistically half will disappear and pessimistically only ten percent of today's oral languages will be left "as vital, non-threatened languages" (Skutnabb-

Kangas, 2009:9). Skutnabb-Kangas explains that in a study looking at diversity of languages and species from 1970 to 2005, the results showed that

> when the Index of Linguistic Diversity (ILD) is superimposed on the Living Planet Index (which uses species diversity as a proxy of biological diversity) the results are remarkably similar, leading us to conclude that the world has lost 20-25% of its biocultural diversity over the period 1970 – 2005 (Skutnabb-Kangas, 2009:9).

**Indigenous Knowledge (indigenous knowing):** As mentioned in chapter 1.7.1, Indigenous Knowledge (IK) which is also always indigenous 'environmental' knowledge (since indigenous people[2] never experience themselves as separate from their environments) is understood as "place-based knowledge, rooted in local cultures, and mostly associated with long-settled communities, which have strong ties to their natural environments" (Chanza & De Wit, 2013:205, drawing on Orlove et al., 2010). The concept therefore defines knowledge that is from a specific location and often intergenerationally and orally transferred. This is important from a climate change perspective since wisdom have been acquired over long periods of time and throughout changing environments.

**Indigenous People:** Although the prevailing view today is that no formal universal definition of the term 'indigenous people' is necessary since it will never satisfy everyone, the characteristics that apply under international law or by the UN include the following descriptions: "Residence within or attachment to geographically distinct traditional habitats, ancestral territories, and their natural resources; maintenance of cultural and social identities, and social, economic, cultural and political institutions separate from mainstream or dominant societies and cultures; descent from population groups present in a given area, most frequently before modern states or territories were created and current borders defined; and self-identification as being part of a distinct indigenous cultural group, as well as the desire to preserve that cultural identity" (Source: IPCC 2007b:876 in Chanza & De Witt, 2013).

[2] See "indigenous people".

**IPCC**: The Intergovernmental Panel on Climate Change, is a United Nations group that provides authoritative international communication on the scientific understanding of climate change.

**(In)tensions:** In(tensions) according to Springgay and Truman (2017:1), explore how to create different worlds and imagine new futures through being in the difficult middle of what is happening in research. They put it like this: “Rather than a refusal of methods, we propose that particular (in)tensions need to be immanent to whatever method is used. If the intent of inquiry is to create a different world, to ask what kinds of futures are imaginable, then (in)tensions need attend to the immersion, friction, strain, and quivering unease of doing research differently Springgay & Truman, 2017:1).

**Intra-action**: As explained in chapter 1.7, Karen Barad coined the neologism intra-action in her 1996 work and explains it as “the mutual constitution of entangled agencies” eschewing the idea that there are separate, pre-determined agencies before the entanglement takes place as is assumed in the term ‘interaction’ (Barad, 2007:33).

**Intuition:** Intuition is Spinoza’s “third kind of knowledge” which according to him, proceeds from an “adequate idea of the formal essence of certain attributes of God to an adequate knowledge of the essence of things” (Spinoza 2002:267). It sounds complicated, yet according to Bergson: “What we have behind the heavy mass of concepts of Cartesian and Aristotelian parentage, is that intuition which was Spinoza's, an intuition which no formula, no matter how simple, can be simple enough to express" (Bergson, 1946:132). Bergson links the concept of intuition with his idea of “internal duration” which he understands as “a growth from within” and a continuous past-into-present-into future – a direct vision of the mind by the mind” (Bergson, 1946:132). Bergson also calls intuition “the sympathy by which one is transported into the interior of an object in order to coincide with what there is unique and consequently inexpressible in it. Analysis, on the contrary, is the operation which reduces the object to elements already known, that is, common to that object and to others” (Bergson, 1946:189).

**IPCC**: The Intergovernmental Panel on Climate Change, is a United Nations group that provides authoritative international communication on the scientific understanding of climate change.

**K**

**Khoekhoen and San/Bushman**: This is one of the terms describing the peoples who occupied the land when the first Europeans arrived at the Cape coast in South Africa. Other terms are, Khoi-Khoi, San, Khoisan, Hessequa, Gorachoqua, Goringhaiqua and Bushmen. Distinctions between the them were often blurred. It was said that some were hunters and gatherers and others were herders, but these changed with times and circumstances. The term 'Khoekhoen and San/Bushmen' is used in the thesis to indicate this inclusivity except when other terms were specifically used by the historians referred to.

**L**

**Latent significance:** Latent significance is not yet apparent but able to become active. It is understood by philosopher James Williams "not as an identified meaning or value" and "beyond any fixed meaning or representation." It is rather understood as a way to disrupt fixed meaning or representation. It thus "returns as a power to change and to challenge" (Williams, 2010:30).

**Line of becoming:** Deleuze and Guattari's reference to a line of becoming implicates movement and relationality and not fixed identity: "A point is always a point of origin. But a line of becoming has neither beginning nor end, departure nor arrival, origin nor destination; to speak of the absence of an origin, to make the absence of an origin the origin, is a bad play on words. A line of becoming has only a middle" (Deleuze & Guattari, 1987:239). They also refer to a "haecceity" as a line of becoming: "A haecceity has neither beginning nor end, origin nor destination; it is always in the middle. It is not made of points, only of lines. It is a rhizome. The proper name fundamentally designates something that is of the order of the event, of becoming or of the haecceity" (Deleuze& Guattari, 1987:263, 264).

**Line of flight:** A line of flight signifies a deterritorialization where fixed habits (territorializations, stratifications) are broken. Yet, lines of flight are still part of the

rhizome and “these lines always tie back to one another” (Deleuze & Guattari, 1987:9). The segmented, habitual and rigid lines of thought and habit that we are caught up in can temporarily be broken by ‘lines of flight’ according to philosophers Deleuze and Guattari and these lines of flight imply the creation of something new.

**M**

**Matter**: What underlies all matter? As mentioned in chapter 1.2, “the most basic indivisible objects underlying all matter are strings – vibrating, one dimensional loops or segments of energy” and “string theory's radical hypothesis is that particles arise from the resonant oscillation modes of strings” according to physicist Lisa Randall (Randall, 2006:283). Particles (matter) arise from one underlying string and its vibrations – relations become objects.

**Misopedy**: Misopedy appears to be an even older form of social and political hierarchy than European xenophobic traditions such as race, asanti-Semitism, Islamophobia, or Negrophobia according to political scientist Toby Rollo. (Rollo 2016b:2). The idea is that animal child progresses to human adult, which becomes part of European civilizations stories of the barbarians growing from cultural ignorance to enlightenment (European civilization). During older epochs, adults were released from hard labour as well as care of children through forced child labour which created material wealth and excess. According to Rollo, “The wealth and leisure time established in part by child labour in ancient Greece as in Modern Europe was devoted to the cultivation of religion, art, philosophy, politics, and science” (Rollo, 2016b:5).

**Metacommunication:** This is communication about what and how something is communicated (body posture, pitch of voice, gaze, pauses, laughter, body gestures finger pointing. It is in a sense looking at the bigger picture and is also important in multispecies relationships – see chapter 5.

**Monism**: A monistic theory does not create dualities and makes no distinction between concepts like Matter, or Mind or God. As a doctrine it implies that only one ‘Supreme Being” exists, but in a monistic ontology like those of Spinoza, Deleuze and Guattari it is a multi-faceted being which could be called Nature or Life.

According to Rosi Braidotti, "monistic posthuman philosophy is of great assistance to think through [these] challenging new historical conditions" (Braidotti, 2013:118).

**M-theory:** This is a 'fundamental' network theory which incorporates different string theories and supergravity as "different approximations" of this fundamental theory (Hawking & Mlodinow, 2010:116). According to Hawking and Mlodinow, "no one seems to know what the 'M' stands for but it may be 'master, 'miracle' or 'mystery'" (Hawking & Mlodinow, 2010:117). The laws of this 'miracle' theory "allow for *different universes* with different apparent laws…" (Hawking & Mlodinow, 2010:118).

**Multiplicity:** The word 'multiplicity' in this thesis is connected with Deleuze and Guattari's meaning and use of 'multiplicity' in A Thousand Plateaus (Deleuze & Guattari, 1987). A multiplicity in their understanding is an assemblage of assemblages that are all interconnected and self-organizing, like a rhizome. Multiplicities are also dynamic and always changing. Multiplicities give us multiple ways of expressing themselves – multiple languages. According to Deleuze and Guattari: "A multiplicity has neither subject nor object, only determinations, magnitudes and dimensions that cannot increase in number without the multiplicity changing in nature (the laws of combination therefore increase in number as the multiplicity grows) (Deleuze & Guattari, 1987:8).

**N**

**Nascent subjectivity:** Philosopher and Guattari scholar John Tinnell describes Guattari's concept of nascent subjectivity as follows: "Nascent subjectivity: a process whereby thinking emerges immanently in relation with the event, which it perpetually strives to encounter in the manner of a rhizome" (Tinnell, 2012:366).

**Nature:** I would call nature everything with bodies that compost well for life on earth: Soil, trees, plants, stones, animal and human bodies, air, sun, water, bacteria. We could also call nature everything that living beings primarily need to physically survive. Plastic and other human artefacts that are part of our environment are not primary sources for survival and do not compost well. If we asked Spinoza, he

would say, "… in the infinite understanding of God no substance can be more perfect than that which already exists in Nature" (Spinoza, 2002:40). And if we asked Whitehead, he would say,

> For natural philosophy everything perceived is in nature. We may not pick and choose. For us the red glow of the sunset should be as much part of nature as are the molecules and electric waves by which men of science would explain the phenomenon. It is for natural philosophy to analyses how these various elements of nature are connected (Whitehead, 1920:29).

Another one of Spinoza's insightful quotes: "Since there can be nothing to Nature contrary to her laws and all things happen in accordance with her fixed laws, so that definite effects are produced by definite laws in unalterable sequence, it follows that when the soul conceives of a thing truly, it will proceed to produce in thought those same effects" (Spinoza, 2002:17). For more, see chapter 2.

**Natureculture**: The reason why nature and culture are written as one word, is to indicate that humans are always part of nature and so is their culture. There is no dualism and the one is not above the other. In relational environmental theories a flat ontology where human qualities are not at the centre of the relation, which means that nature-culture, body-mind and intellect-affect are given equal value. See chapter 1.8 for my reservation about it.

**Neocolonialism:** In neocolonialism, economic, political and cultural pressurization is used to control or sway a government to abide by rules of other countries (mainly the West). This often happens in newly independent countries.

**Neoliberalism**: This is the dominant global governance system in place in the West and it promotes 'free-market' conditions. These conditions "prioritize corporations and economic growth over considerations of social equity or environmental protection" (Tuck & McKenzie, 2015:3). Little attention is given to the relationship between neoliberalism, capitalism and environment. Social geographer Noel Castree found that "the majority of the critical literature on neoliberalism was disproportionately focused on issues other than environmental ones (Castree, 2001:4).

**Neomaterialism (New Materialism):** Rosi Braidotti and Manuel de Landa started using these terms in die mid 1990's. Many movements in different fields are critical of anthropocentrism and claim that many nonhuman processes have self-organizing powers. New materialism is now a popular name given to these movements.

**Nomadic theory:** This is also the title of Rosi Braidotti's 2011 book. A nomadic theory describes a life in flux, an always-becoming and always entangled with others. It is not a new metaphor for the human condition but rather a tool for examining situated encounters.

**O**

**Ontology**: This is the philosophical study of the nature of being or becoming – of how we think things 'are'.

**Object Oriented Ontology:** (OOO). Although posthumanism and OOO both theorize ways of thinking without the dualist structures of nature/culture, OOO uses a 'no subjectivity' ontology which necessarily results in representationalism. See chapter 1.3 for more.

**P**

**Panopticonism**: This is a power situation where everyone is policing themselves. Foucault describes it like this in his book, *Discipline and Punish*: He says that panopticonism

> "induce[s] in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power. So to arrange things that the surveillance is permanent in its effects, even if it is discontinuous in its action; that the perfection of power should tend to render its actual exercise unnecessary; that this architectural apparatus should be a machine for creating and sustaining a power relation independent of the person who exercises it, in short, that the inmates should be caught up in a power situation of which they are themselves the bearers" (Foucault, 1977:201).

**Pantentheism:** This word is a composition of the Greek terms 'pan' (all), 'en' (in) and 'theism' (God). God and the world is therefore in inter-relation. "Panentheism seeks to avoid either isolating God from the world as traditional theism often does or identifying God with the world as pantheism does" (Culp, 2017:1). (Available: https://plato.stanford.edu/entries/panentheism/)

**Pantheism**: Pantheism identifies God with the universe in an ontological manner, with Nature, with Life and sees everything as a manifestation of God.

**Pedagogy**: This refers to the method and the way in which children are taught, often used in academic language as a theoretical concept.

**PIE**: Proto-Indo-European. History of Religions scholar Bruce Lincoln speak of PIE in terms of "shared tradition: a body of myths, ritual practices, thought about the nature of the universe and of society that is preserved in the literatures and oral traditions of the various peoples whose languages fall within the Indo-European grouping. (Lincoln, 1968:173). According to environmental humanities scholar Deborah Bird Rose, people who may be called PIE, "appear in the archaeological record about 9000 years BR where BR stands for *Before the Present; the present is conventionally located at 1950 A.D. They appear to have been tribal from that time until about 3500BP" (Rose, 2003: 313).

**Pluralinguilism** (and biodiversity): Pluralinguilism is the ability to be competent in more than one language or being able to switch between languages according to the situation. The importance of pluralingualism in connection to biodiversity is not so widely understood. As mentioned before, Finnish philosopher and linguist Tove Skutnabb-Kangas's views on plurilingualism has been used and drawn on by many educational scholars and combined with work on biodiversity, it becomes very relevant for the environmental researcher. South African environmental educator Lesley Le Grange sums it up aptly in one short sentence: "[L]oss of indigenous languages could diminish our ways of knowing" (Le Grange, 2013a:109). This means that by killing linguistic diversity we are also killing knowledge of how to maintain biological diversity since there is a causal relationship between linguistic /cultural diversity and biodiversity.

**Poemdra:** A poemdra is performance poetry or a form of storytelling in which poetry, performance and movement is combined.

**Posthumanism:** Posthumanism decentres the human as the main/most important on the hierarchical scale of beings. It also takes the agency of matter into account and the fact that everyone and everything is entangled and relational. See chapter 1.3.

**Proemdra**: This is a new and exclusively South African genre (some would say nongenre) It is an attack on Western literary views and standards as well as on Western South African politics.

**Praxis:** In the field of philosophy, it refers to applying or practising ideas or theories instead of just philosophising about them.

**Q**

**Quality** (in education): Like 'value', the concept of quality in education is also not a neutral concept and "cannot accommodate issues such as diversity and multiple perspectives, contextual specificity and subjectivity" (Moss, Pence & Dahlberg, 1999:6), nor does it "recognize a multilingual world and, in so doing, denies the possibility of other languages" (Moss & Dahlberg, 2008:6). One of the principles mentioned in the South African *CAPS* is:

> …providing an education that is comparable in quality, breadth and depth to those of other countries (DBE, 2011:4,5).

Comparable in what sense? What is the criteria for "quality, breadth and depth" of a curriculum? South African scholar in Critical Methodologies and Environmental Education and Sustainability, Heila Lotz-Sisitka, suggests three intersecting educational discourses/traditions that could reframe educational *quality*. According to her:

> Educational institutions, particularly in Africa and in other developing-country contexts, are also poorly resourced to conduct locally relevant educational research, with the consequence that the knowledge that is produced about education tends to follow the logic and dominant conceptions of education and *quality as produced in the West, or North,* where educational research capacity

> is far higher. Knowledge producers influence the knowledge that is produced, and it is not difficult to identify that our concepts of educational quality are significantly influenced by the research orientations and trajectories of the World Bank, UNESCO and other large multinational research organisations, and by the research trajectories and interests of donor organisations, valuable as these may be (Lotz-Sitsika, 2013: 33, 34; my emphasis).

Currently quality in education in South Africa therefore seems to be measured by what research orientations and trajectories of the World Bank, UNESCO and other large multinational research organizations see as 'quality in education'.

**Quantum leaps:** According to Karen Barad, in the model of physicist Niels Bohr, "an atom is a 'tiny solar system' with a central nucleus surrounded by a discrete set of concentric electron 'orbitals.' The electrons are observed to 'jump' - "from one discrete orbital (i.e., energy level) to another" (Barad, 2007:162). But she also explains that quantum leaps are not really jumps, since the electron disappears from one place and ends up in another "without being at any point in between" (Barad, 2007:432) so this electron does not "travel along some continuous trajectory from here-now to there-then" it is never in any point between the two orbitals. (Barad, 2007:182). But according to Barad, what really makes this quantum leap 'queer' is that "there is no determinate answer to the question of where and when they happen. The point is that it is the intra-play of continuity and discontinuity, determinacy and indeterminacy, possibility and impossibility that constitutes the differential spacetimematterings of the world. Or to put it another way, if the indeterminate nature of existence by its nature teeters on the cusp of stability and instability, of determinacy and indeterminacy, of possibility and impossibility, then the dynamic relationality between continuity and discontinuity is crucial to the open-ended becoming of the world which resists a causality as much as determinism. (Barad, 2007:182)

**Quantum superposition:** According to this approach to quantum theory, also called "alternative histories" the universe does not have "just a single existence or history but rather every possible version of the universe exists simultaneously in what is called a quantum superposition" (Hawking & Mlodinow, 2010:59).

**R**

**Rhizome:** A rhizome is a tuber (like a ginger root) that spreads and in various directions, horizontally, rather than linear. According to Kuby: "Within the large field of poststructuralism, the scholarship of Deleuze and Guattari, specifically the rhizome, helps educators to conceptualize life, inter/intra-actions, and educational practices as unbounded and as rhizomatically producing or becoming in a material world" (Kuby, 2017:9).

**S**

**Stratospheric aerosol injection:** This is one of the geoengineering techniques that claims to possibly have an effect on and limit the impacts of climate change − those due to rising levels of greenhouse gases. These sulphides are then injected into the stratosphere through use of artillery, aircraft or balloons.

**String Theory**: String theory is explained as a theory of physics in which "particles are described as patterns of vibration that have length but no height or width – like infinitely thin pieces of string" Hawking & Mlodinow, 2010:186). Interestingly, the notion of threads of connection also plays a part in the world of the Khoisan shaman. They speak of "ringing strings that vibrated inside them and connected them to the physical and cosmological world. The strings snapped at death and the ringing ceased (Low, 2007, 76, 77).

**Subject:** A subject is simply the person or thing that is being discussed. Yet, in academic scholarship there is talk of a 'crisis of the subject'. According to Vicky Kirby:

> [T]he vast amount of scholarship devoted to the crisis of 'the subject' never specifies that it is concerned with the identity of the *human* subject. It is so obvious that 'the subject' means, in fact, 'the human subject' – that is, 'the interpreting subject' – that it goes without saying. Although human identity underpins what we mean when we say 'the subject' the exact nature of this identity is not included in the crisis of identity. For it is the unified subject of humanity who interrogates 'the subject' and who decides the limit of the question's calculation. It seems that the subject of the

> anthropological, the self-present identity of humaneness to itself, is the closed container within whose limits the breeching of limits (difference) can be risked" (Kirby, 2014:153).

**T**

**Traditional Ecological Knowledge:** (TEK). Linguist, Tove Skutnabb-Kangas, explains that TEK is a "prerequisite for human life on earth" since it is "encoded in the small languages of Indigenous/tribal/local people/s [and] killing languages hastens the disappearance of the knowledge about how to maintain biodiversity." She gives an example of this kind of encoding from the Finnish Saami people and salmon spawning grounds:

> Finnish fish biologists had just 'discovered' that salmon can use even extremely small rivulets leading to the river Teno, as spawning ground. Pekka Aikio, then President of the Saami Parliament in Finland (personal communication, 29 November 2001) told that the traditional Saami names of several of those rivulets often include the Saami word for "salmon spawning-bed". This is ecological knowledge inscribed in indigenous languages (Skutnabb-Kangas, 2009:9, 10)

**Township:** As a result of the 1950 Group Areas Act, South Africans were racially segregated and 'Black' and 'Coloured' townships were established around towns and cities. On the sandy plains surrounding Cape Town, townships like Delft, Langa, Crossroads, Gugulethu and Khayelitsha were constructed with illegal squatter camps rapidly expanding around it. Also see: (http://www.sahistory.org.za/article/group-areas-act-1950)

**U**

**Ubuntu,** (in Nguni languages of isiZulu, isiXhosa, isiNdebele and isiSwati)**, hunhu** (Shona language), **botho** (the Sesotho languages Sepedi, Setswana and (Southern)Sesotho), **umunthu** (Chewa language of Malawi) all have the same meaning in the various African languages (Ramathate 2013:1; Le Grange, 2015: 304; Mangena, 2009:19). Ubuntu means 'humanness' but is understood in a communal context of relationality and reciprocity: ancestors and future generations are all part

of the community. Drawing on Metz and Gaie (2010), Le Grange posits that "Ubuntu means that our deepest moral obligation is to become more fully human and to achieve this requires one to enter more deeply into community with others" (Le Grange, 2015: 304). Ubuntu could therefore be seen as anthropocentric when not related to 'ukama'.

**Ukama:** Ukama is a broader concept of ubuntu which means relatedness to the cosmos, to the whole 'natural' world and all 'natural' entities (Le Grange, 2015:306).

**V**

**Values** (in education): The South African DBE declares that the CAPS document "gives expression to the knowledge, skills and values worth learning in South African schools" (DBE, 2011:4). 'Values' is a word with many meanings though – we have after all a capitalist market that assigns *monetary* 'values' to nature. South African environmental educator Lesley Le Grange emphasizes the importance of language in Environmental Education and warns that if 'value' in education is understood as an economic transaction "it dilutes education processes to technical concerns of efficiency and the effectiveness of such processes, neglecting questions concerned with the content and purpose of education" (Le Grange, 2013:109, drawing on Biesta, 2004). In Apartheid South Africa, 'values' was a ubiquitous word in the discourse of the right wing (Jonathan Jansen quoted by Carrim & Tshoane, 20000:4) and according to Anders Breidlid (2003:92) the subsequent "allergic reaction against everything that smacks of values is unfortunate" since it is a reaction against the rightist fundamentalists who have appropriated the domain of 'values' which have as a result been "demonized" and became a "taboo or even untouchable for progressives" (Also see chapter 1.3 where Haraway warns that the 'left' does not want to touch certain issues because it smacks of the 'right').

This is a pity, since "discourse on values and (even) morality are not alien to more progressive circles" (Breidlid, 2003:92). Breidlid warns that values are "very much linked to the notion of rights" and that in the new Manifesto (2001) the "ocean-wide divide between values and rights is not maintained" (Breidlid, 2003:92). Carrim and Tshoane in fact claims that "the discourse of 'values' implicitly, and at times,

explicitly, re/displaces the discourse of 'rights'" (Carrim & Tshoane, 2000:5) and of course, therefore, vice versa.

**W**

**Worlding:** Worlding is the noun world turned into an active verb indicating that the world is always ongoing. It was first used by Heidegger in his book, *Being and Time* (Heidegger, 1927). Donna Haraway often uses the word 'worlding', for example: "Species interdependence is the name of the worlding game on earth, and that game must be one of response and respect" (Haraway, 2008:19).

**X**

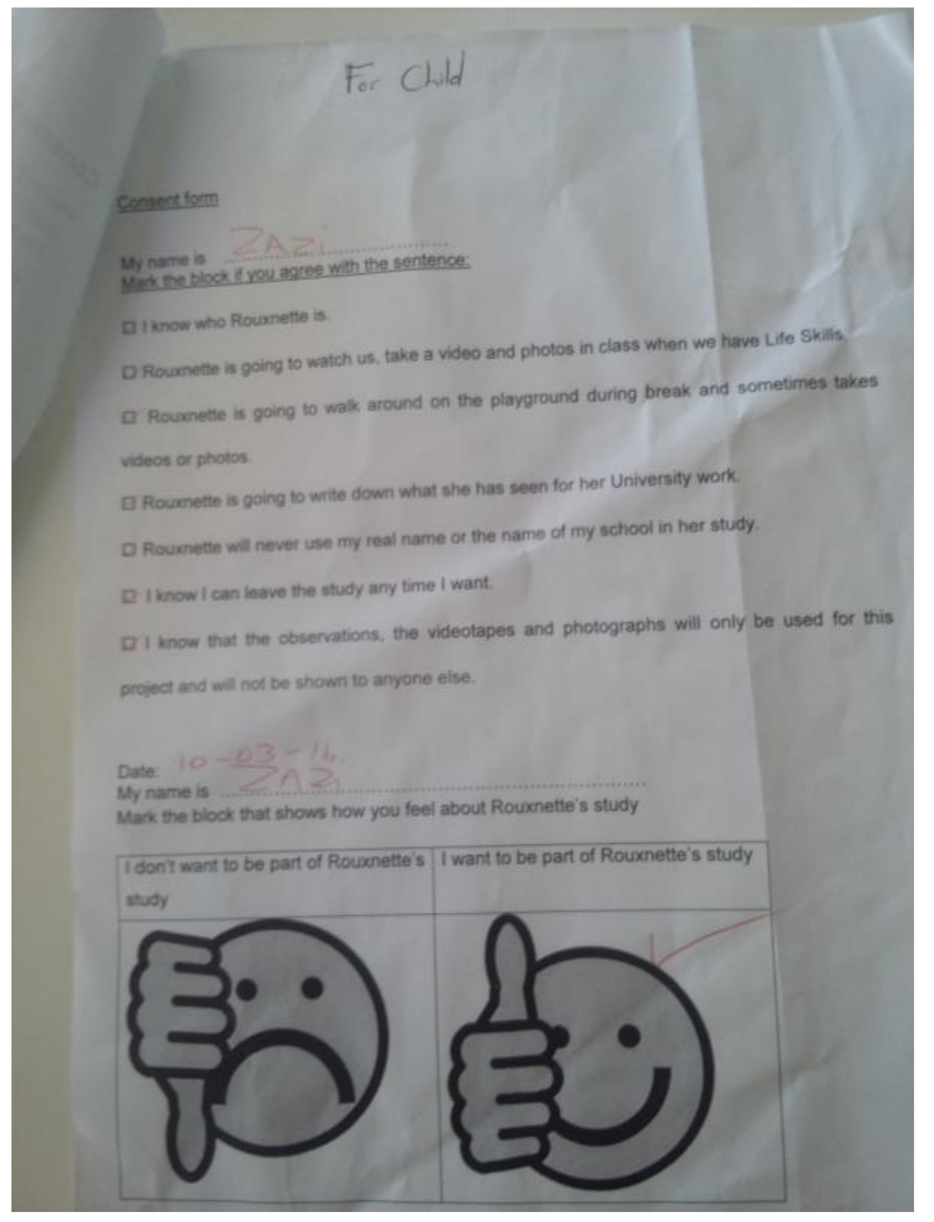
**Y**

**Z**

**Zoe power:** Rosi Braidotti sees zoe power as a move beyond anthropocentrism and calls it "expanding the notion of Life towards the non-human or *zoe*" (Braidotti, 2013:50).

# Appendix 2 Research Ethics Consent and Information Forms

**Consent form 1 Grade R - children**



For Child

Consent form

My name is ZAZI...........................
Mark the block if you agree with the sentence:

☐ I know who Rouxnette is.

☐ Rouxnette is going to watch us, take a video and photos in class when we have Life Skills.

☐ Rouxnette is going to walk around on the playground during break and sometimes takes videos or photos.

☐ Rouxnette is going to write down what she has seen for her University work.

☐ Rouxnette will never use my real name or the name of my school in her study.

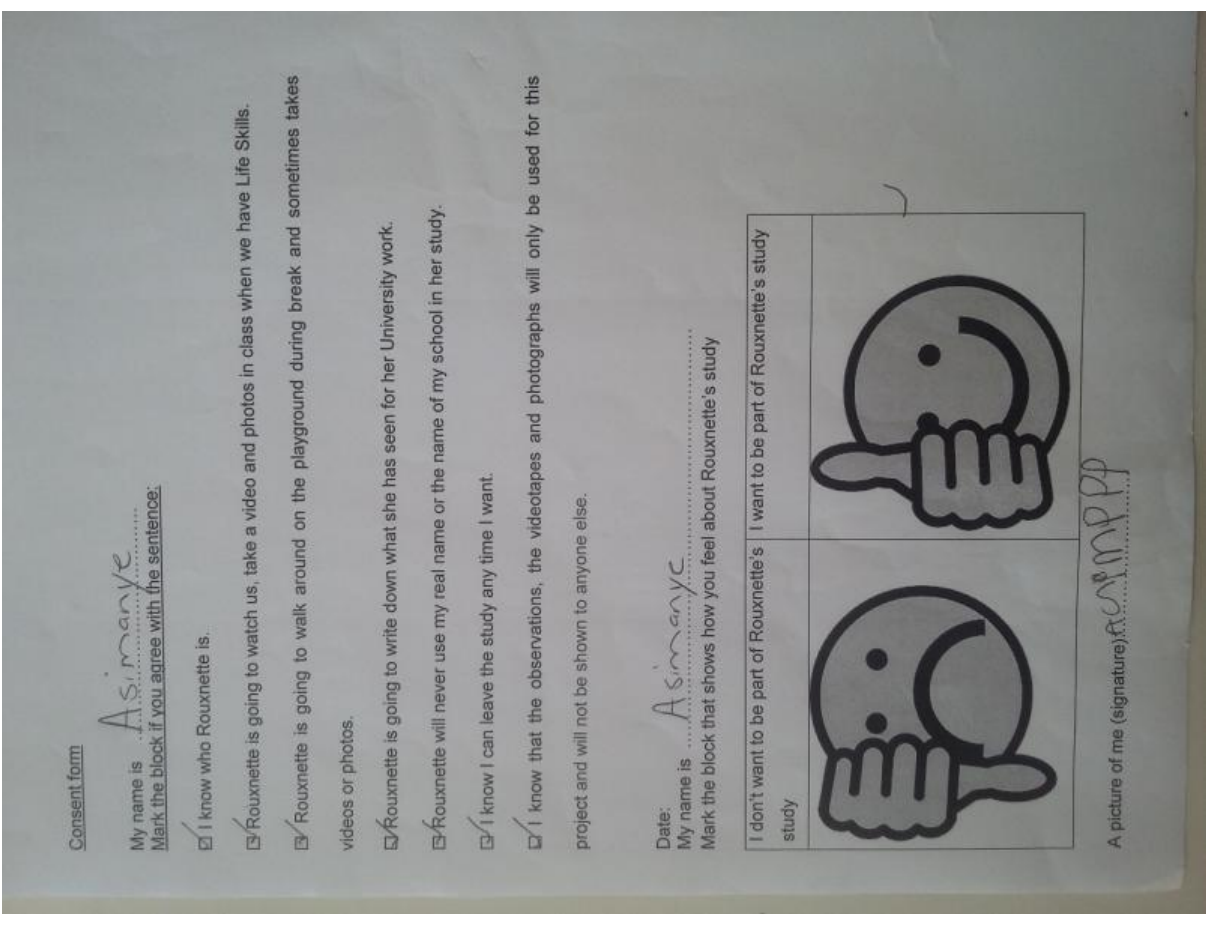
☐ I know I can leave the study any time I want.

☐ I know that the observations, the videotapes and photographs will only be used for this project and will not be shown to anyone else.

Date: 10-03-16.
My name is ZAZI...........................
Mark the block that shows how you feel about Rouxnette's study

| I don't want to be part of Rouxnette's study | I want to be part of Rouxnette's study |
| --- | --- |
| | ✓ |

**Consent form 2. Grade R – children.**



Consent form

My name is Asimanye

Mark the block if you agree with the sentence:

☑ I know who Rouxnette is.

☑ Rouxnette is going to watch us, take a video and photos in class when we have Life Skills.

☑ Rouxnette is going to walk around on the playground during break and sometimes takes videos or photos.

☑ Rouxnette is going to write down what she has seen for her University work.

☑ Rouxnette will never use my real name or the name of my school in her study.

☑ I know I can leave the study any time I want.

☑ I know that the observations, the videotapes and photographs will only be used for this project and will not be shown to anyone else.

Date:

My name is Asimanye

Mark the block that shows how you feel about Rouxnette's study

| I don't want to be part of Rouxnette's study | I want to be part of Rouxnette's study |
| --- | --- |
| | |

A picture of me (signature):

**Information letter 1 – parents.**

**INFORMATION SHEET PARENTS**

25 February 2016

Dear Parent

My name is Rouxnette Meiring and I am a doctoral student in the School of Education at the University of Cape Town.

I am doing research on Environmental education in the Foundation Phase and the title of my thesis is **Environmental Education in a Foundation Phase classroom in South Africa.** I am trying to find out if there is something new to be learnt for environmental education in the Foundation Phase in South Africa, since our planet is really in danger and we need to do something about it. In order to do that I need to investigate how the Foundation Phase Life Skills curriculum is taught in a classroom. The observation will involve video recording and sometimes photography which will only be used for memory purposes in my study. I also need to observe how children interact with their environment during break time, so I will also use videotape and photographs outside on the playground, also only to be used for my own study purposes.

The reason why I have chosen your child's class is because I want to observe the first and the last grades in the Foundation Phase. I was wondering whether you would mind if your child is part of this study? Your child will not be advantaged or disadvantaged in any way personally, although there will be long-term educational benefits for research of this kind for all children in South Africa. S/he will be reassured that s/he can withdraw her/his permission at any time during this project without any penalty. There are no foreseeable risks in participating and your child will not be paid for this study.

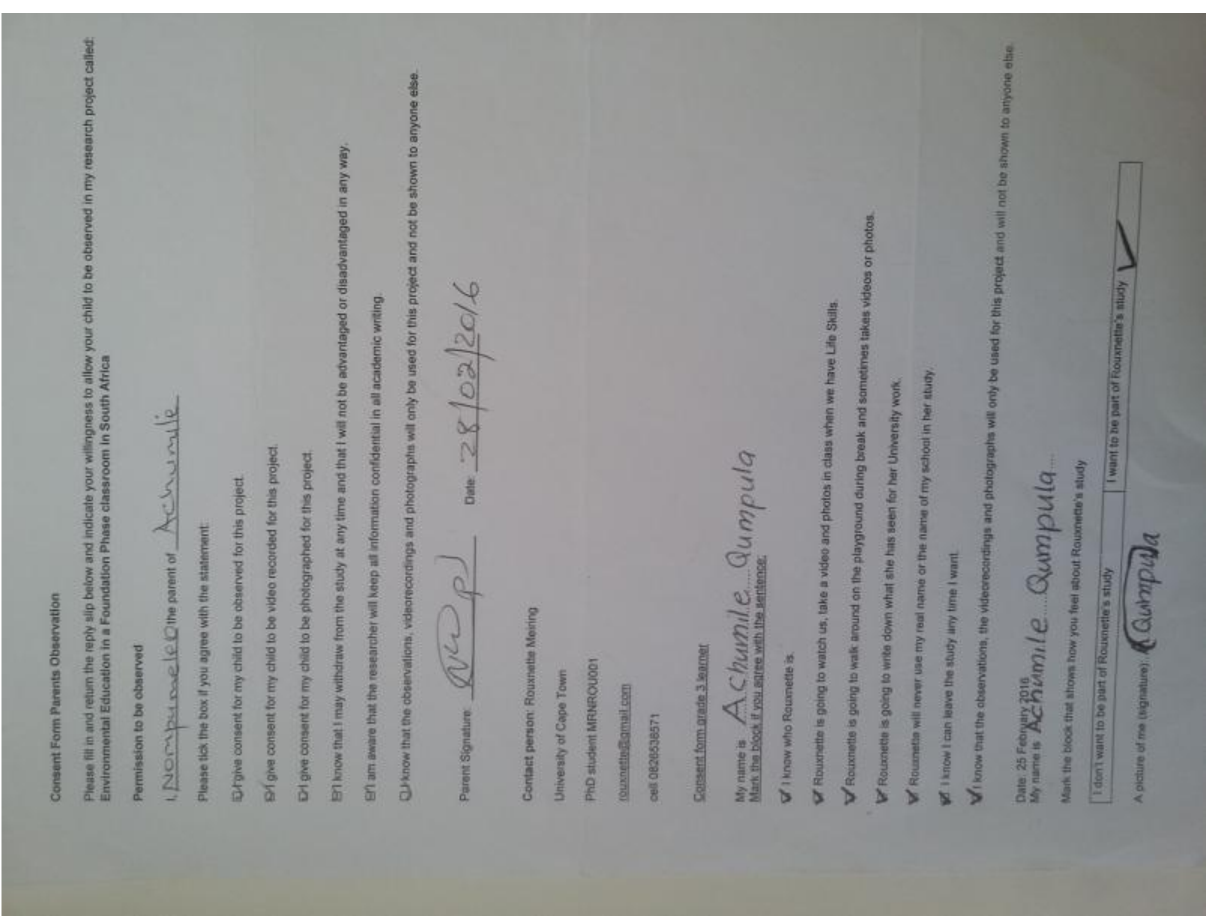
Your child's name and identity will be kept confidential at all times and in all academic writing about the study. His/her individual privacy will be maintained in all published and written data resulting from the study. All research data will be kept safely and password protected.

Please let me know if you require any further information.
Thank you very much for your help.

Yours sincerely,

Rouxnette Meiring
University of Cape Town
PhD student MRNROU001
rouxnette@gmail.com
cell 0826538571

## Consent form parents



**Consent Form Parents Observation**

Please fill in and return the reply slip below and indicate your willingness to allow your child to be observed in my research project called:
**Environmental Education in a Foundation Phase classroom in South Africa**

**Permission to be observed**

I, Nompumelelo the parent of Achumile

Please tick the box if you agree with the statement:

☐ I give consent for my child to be observed for this project.

☑ I give consent for my child to be video recorded for this project.

☑ I give consent for my child to be photographed for this project.

☑ I know 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 know that the observations, videorecordings and photographs will only be used for this project and not be shown to anyone else.

Parent Signature: [signature] Date: 28/02/2016

**Contact person:** Rouxnette Meiring

University of Cape Town

PhD student MRNROU001

rouxnette@gmail.com

cell 0826538571

Consent form grade 3 learner

My name is Achumile Qumpula
Mark the block if you agree with the sentence:

☑ I know who Rouxnette is.

☑ Rouxnette is going to watch us, take a video and photos in class when we have Life Skills.

☑ Rouxnette is going to walk around on the playground during break and sometimes takes videos or photos.

☑ Rouxnette is going to write down what she has seen for her University work.

☑ Rouxnette will never use my real name or the name of my school in her study.

☑ I know I can leave the study any time I want.

☑ I know that the observations, the videorecordings and photographs will only be used for this project and will not be shown to anyone else.

Date: 25 February 2016
My name is Achumile Qumpula

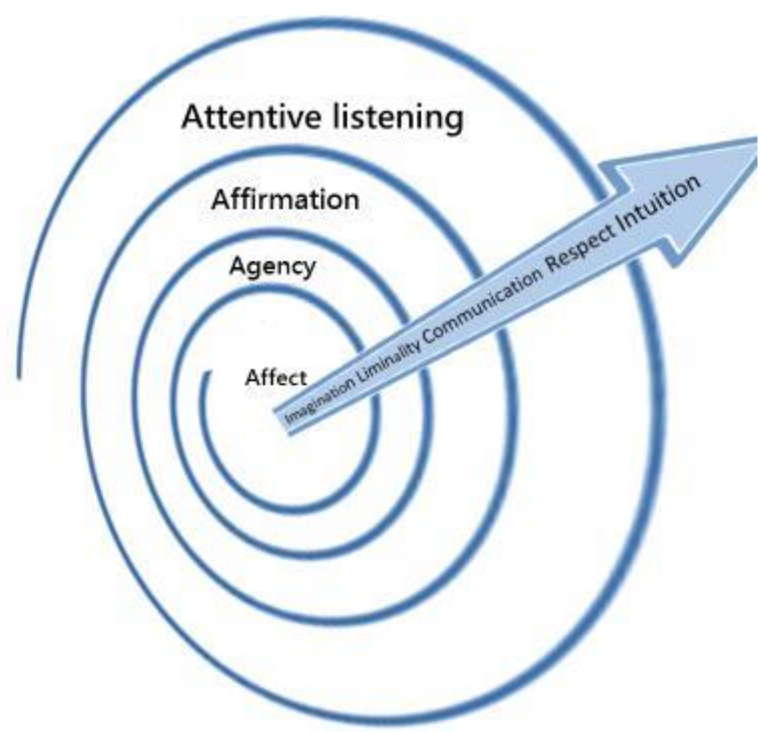
Mark the block that shows how you feel about Rouxnette's study

| I don't want to be part of Rouxnette's study | I want to be part of Rouxnette's study ✓ |
|---|---|

A picture of me (signature): Qumpula

## Appendix 3 Graphs

**Diagram 8.1. Multi-dimensional affect spiral, spiralling with its lines of flight and its movements as 'quantum leaps[1]' between orbitals and not as linear movement.**




[1] Barad explains that in the quantum model of physicist Niels Bohr, "an electron that 'leaps' from one orbital to another does not travel along some continuous trajectory from here-now to there-then. Indeed, at no time does the electron occupy any spatial point in between the two orbitals" (Barad, 2007:182). But she also explains that quantum leaps are not really jumps, since the electron disappears from one place and ends up in another "without being at any point in between" (Barad, 2007:432). For more about how the 'quantum leap' points to the indeterminate nature of existence, see glossary of meaning.

## Appendix 4 Pictures

(All pictures taken by author unless stated otherwise)

**Picture 4.1 Cape Argus of 5 July 2017. Delft kids play in fields filled with rubbish. Henk Kruger/ANA Pictures.**

**Picture 4.2 Welcome if you have money.**

**Picture 6.1 The glasses watching Robben Island.**

**Picture 6.2 Promenade. Resident sleeping person-grass-tree assemblage and tourist-machine assemblage dropping from the sky. Rhino protection awareness art in the background. Sound of the waves and sea gulls. Picture by the author.**

**Picture 6.3 Rhino awareness art on promenade**

**Picture 6.4 Homeless man doing his laundry on the promenade.**

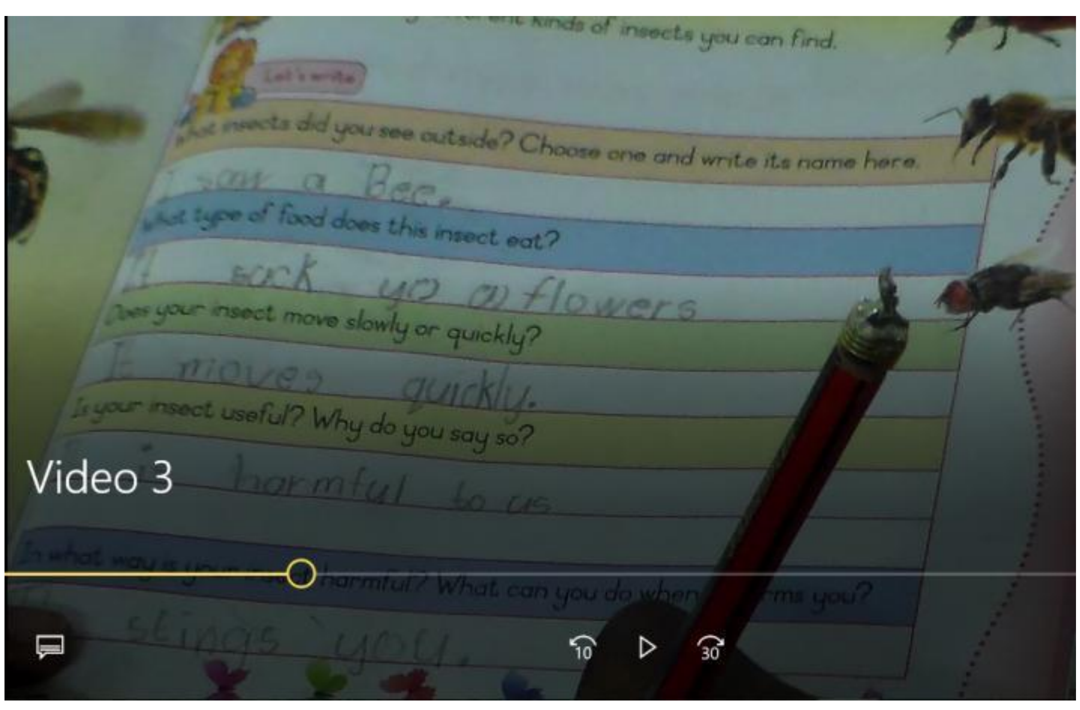
**Picture 6.5  Walking a World into Being.**

**Picture 6.6  Bird on the promenade**

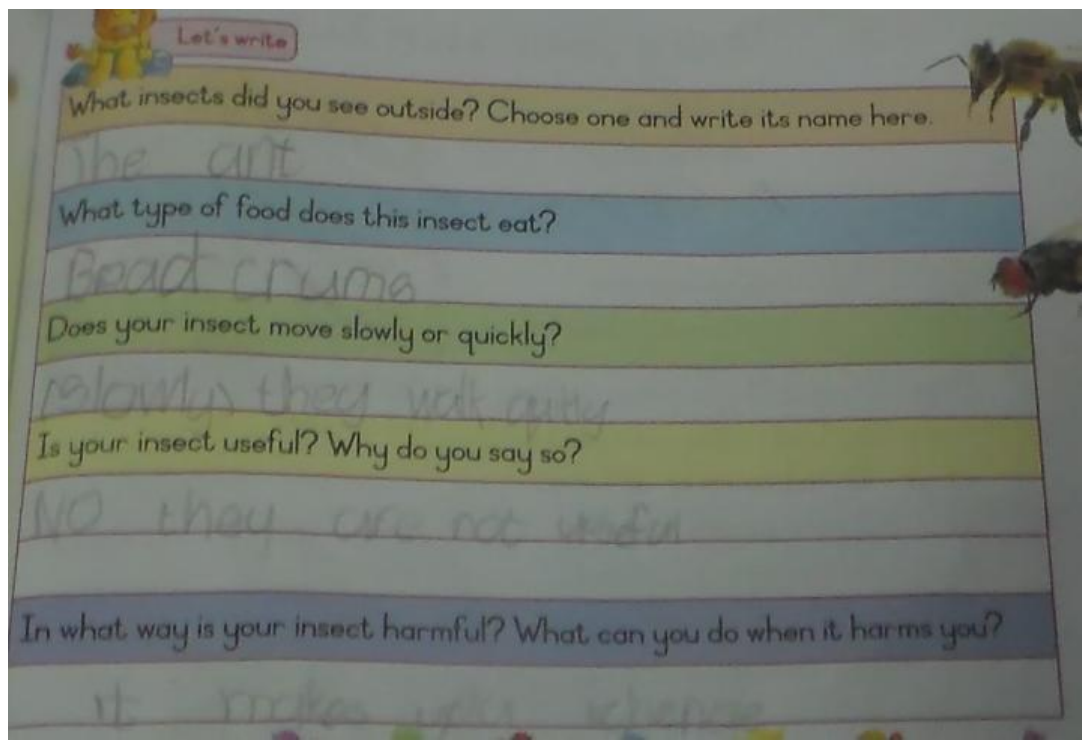
**Picture 6.7  Homeless people sleeping near the school.**

**Picture 7.1  Encounter with shoes.**

**Picture 7.2 From Grade 3 work book. Bees are harmful to us because they sting.**

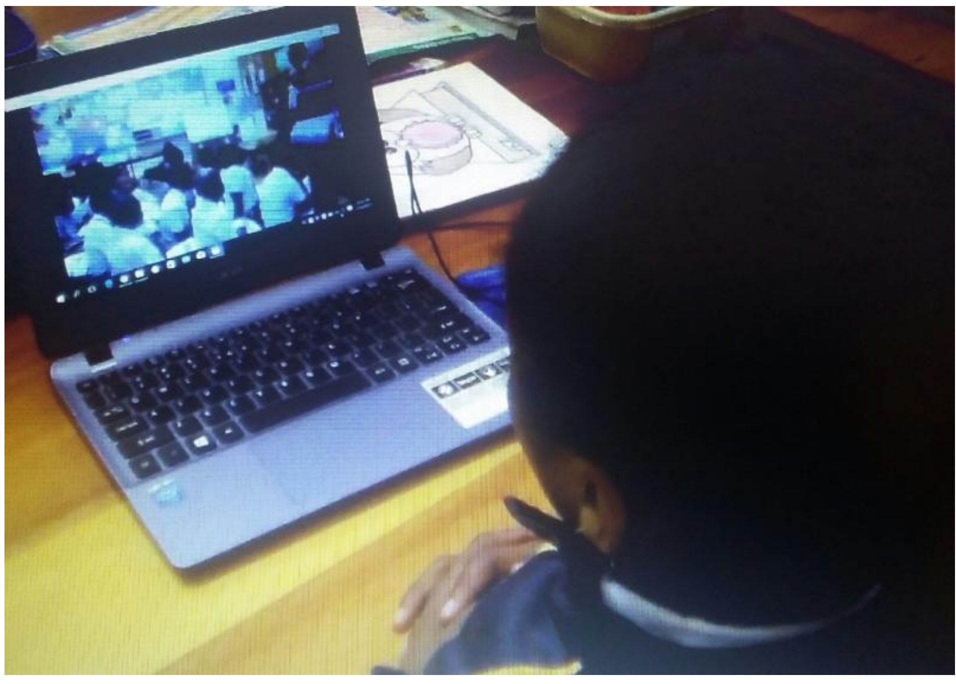



**Picture 7.3 The ant who was not useful. From the Grade 3 workbook.**



**Picture 7.4  Experiment with ants. Taken by the Grade R teacher.**

**Picture 7.5  Ndiliswa watching herself on video.**



# Appendix 6 Poems.

## Poem 6.1

*The Child*

The child is not dead
The child lifts his fists against his mother
Who shouts Afrika! shouts the breath
Of freedom and the veld
In the locations of the cordoned heart

The child lifts his fists against his father
in the march of the generations
who shouts Afrika! shout the breath
of righteousness and blood
in the streets of his embattled pride

The child is not dead not at Langa nor at Nyanga[1]
not at Orlando nor at Sharpeville[2]
nor at the police station at Philippi
[3]where he lies with a bullet through his brain

The child is the dark shadow of the soldiers
on guard with rifles Saracens and batons
the child is present at all assemblies and law-givings
the child peers through the windows of houses and into the hearts of mothers
this child who just wanted to play in the sun at Nyanga is everywhere
the child grown to a man treks through all Africa
the child grown into a giant journeys through the whole world
Without a pass[4] (Jonker, 1963)

---

[1]Langa and Nyanga are both townships in Cape Town. Langa is the older township – in 1948 Black migrants were forced to settle in Nyanga as Langa became too populated.
[2]Orlando is a township in the urban area of Soweto in the city of Johannesburg and Sharpeville is a township between two large industrial cities in southern Gauteng in SA, known for the Sharpeville massacre in March 1960 when the police fired at demonstrators.
[3]Philippi is a township close to Cape Town.
[4] "Without a pass" in this poem refers to nomadic circumstances of many Black people during the apartheid years. Slaves at the Cape had been forced to carry Passes since 1709. The Natives Act of

**Poem 6.2 Proemdra by Mothobi Mutloatse 1981: Ngwana wa Azania.** From In *A Century of South African Poetry.* M. Chapman. Ed. Johannesburg & Cape Town: A. D. Donker/Publisher.

**Mothobi Mutloatse**

**Ngwana wa Azania**

*a proemdra for oral delivery*

- The future of the black child, the recalcitrant Azanian child in South Africa, is as bright as night and this child, forever uprooted, shall grow into a big sitting duck for the uniformed gunslinger.
- From ages two to four he shall ponder over whiteness and its intrigue. From ages five to eight he shall prise open his jacket-like ears and eyes to the stark realisation of his proud skin of ebony. From ages nine to fifteen he shall harden into an aggressive victim of brainbashing and yet prevail. From ages sixteen to twenty-one he shall eventually graduate from a wavering township candle into a flickering life-prisoner of hate and revenge and hate in endless fury. This mother-child shall be crippled mentally and physically for experimental purposes by concerned quack statesmen parading as philanthropists.
- This motherchild shall be protected and educated free of state subsidy in an enterprising private business asylum by Mr Nobody. This motherchild shall mother the fatherless thousands and father boldly the motherless million pariahs. This nkgonochild shall recall seasons of greed and injustice to her war-triumphant and liberated Azachilds. This mkhuluchild shall pipesmoke in the peace and tranquillity of liberation, and this landchild of the earth shall never be carved up ravenously again and the free and the wild and the proud shall but live together in their original own unrestricted domain without fear of one another, and this waterchild shall gaily bear its load without a fuss like any other happy mother after many suns and moons of fruitlessness in diabolical inhumanity.
- This gamble-child of zwêpe shall spin coins with his own delicate life to win the spoils of struggle that is life itself. This child of despair shall shit in the kitchen; shit in the lounge, shit in the bedroom-cum-lounge-cum-kitchen; he shall shit himself dead; and shall shit everybody as well in solidarity and in his old-age shall dump his shit legacy for the benefit of his granny-childs: this very ngwana of redemptive suffering; this umtwana shall but revel in revealing off-beat, creative, original graffiti sugar-coated with sweet nothings like:

*re tlaa ba etsa power/re-lease Mandela/azikhwelwa at all costs/we shall not kneel down to white power/release Sisulu/jo' ma se moer/black power will be back tonight/release or charge all detainees/msunuwakho/down with booze/ Mashinini is going to be back with a bang/to bloody hell with bantu education/ don't shoot – we are not fighting/Azania eyethu/masende akho/majority is coming soon/freedom does not walk it sprints/inkululeko ngoku!*

- This child born in a never-ending war situation shall play marbles seasonably with TNTs and knife nearly everyone in sight in the neighbourhood for touch and feel with reality, this child of an insane and degenerated society shall know love of hatred and the eager teeth of specially-trained biting dogs and he will speak animatedly of love and rage under the influence of glue and resistance.

---

1952 forced Black South Africans to carry documents which included a photograph, place of birth, employment records, tax payments and criminal records to be able to monitor their movements. It was illegal to move around without this Pass and "offenders" were arrested. For more, see Cameron, 1986.

**continued**

- This marathon child shall trudge barefooted, thousands of kilometres through icy and windy and stormy and rainy days and nights to and from rickety church-cum-stable-cum-classrooms with bloated tummy to strengthen him for urban work and toil in the goldmines, the diamond mines, the coal mines, the platinum mines, the uranium mines so that he should survive countless weekly rockfalls, pipe bursts, and traditional faction fights over a meal of maiza that has been recommended for family planning.
- This child of raw indecision and experimentation shall sell newspapers from street corners and between fast moving cars for a dear living breadwinning instead of learning about life in free and compulsory school, and shall provide the capitalistic country with the cheapest form of slavery the labourglobe has ever known and the governor of the reserve bank shall reward him with a thanks-for-nothing-thanks-for-enriching-the-rich kick in the arse for having flattened inflation alone hands-down.
- This child of the tunnels shall occasionally sleep malunde for an on-the-spot research into the effects of legalised separation of families and he shall find his migrant long-lost father during a knife-duel in a men's hostel and his domestic mother shall he ultimately embrace passionately in a cul de sac in the kitchen in a gang-bang.
- This child of concrete shall record and computerise how the boss shouts and swears publicly at his heroically shy father-boy and how the madam arrogantly sends his mother-girl from pillar to bust. He shall photograph how the superior doctor addresses his enkempt mother in untailored talk as if mother-stupid had conceived a baboon-child.
- This observant child shall taste its first balanced meal in an i.c.u., and in the very intensive care unit shall he be revived to further life and misery and mal-nutrition in this immensely-wealthy land to loosen up the bones down to their perforated marrow.
- This child of the donga shall watch in jubilation and ecstasy and ire as its godforsaken, godgiven home called squatter camp is razed through its permission down to the ground by demolishing bulldozers lately referred to as front-enders.
- This child of nowhere shall of his own free will join the bandwagon and ravaza its own Botshabelo to lighten the merciless soil conservationists' burden for a place in the sun of uncertainty, he shall show absolute respect for his elders with a hard kierie blow across the grey head and shall be unanimously nominated for a nobel peace prize for his untold, numerous contributions to human science at a local mortuary.
- This child born into a callous and too individualistically-selfish society shall be considered sane until further notice by psychopaths masquerading as men of law. He shall be an unmatched hero with an undecided following, having paralysed parents and preachers alike with his frankness and willingness not only to whisper nor speak about wanting to be free but to bloody well move mountains to be free!
- This child of evictions shall sleep in toilets while its off-spring cross the borders for possible m.t.
- This child of rags to rags and more rags to riches school uniform tatters shall

**continued**

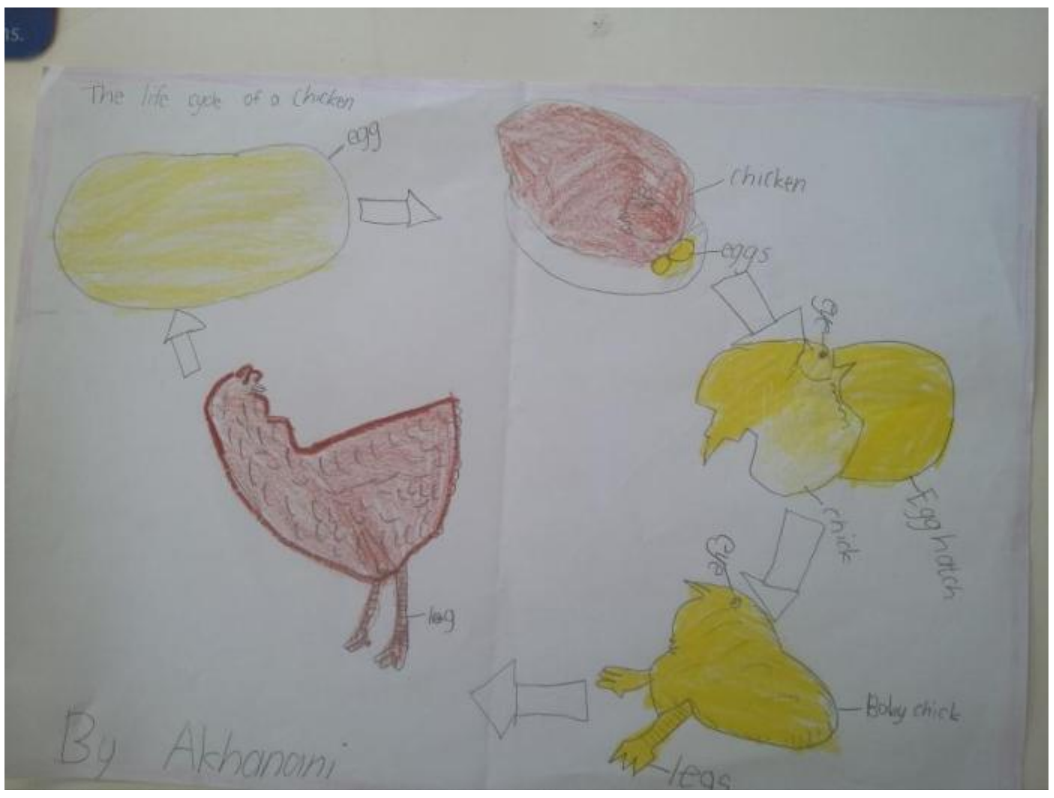
quench his thirst with dishwater in the suburbs and also with methylated spirits in the deadendstreet camps to communicate with the gods.

- This child shall breastfeed her first baby before her seventeenth birthday and be highly pleased with motherhood lacking essential fatherhood. This child of uneasiness shall trust nobody, believe in no one, even himself, except perhaps when he's sober. This ghettochild shall excel in the pipi-olympics with gold and bronze medals in raping grannies with every wayward erection and eviction from home resulting from ntate's chronic unemployment and inability to pay the hovel rent.
- This growing child of the kindergarten shall psychologically avoid a school uniform admired telegraphically by uniformed gunfighters of maintenance of chaos and supremacy. He shall smother moderation good bye and throttle reason in one hell of a fell swoop, and the whole scheming world shall cheer him up to the winning post with its courage in the mud and its heart in its pink arse. This child of dissipation shall loiter in the shebeen in earnest search for its parents and shall be battered and abused to hell and gone by its roving parents when reunited in frustration in an alleyway.
- This child of bastardised society and bastard people-in-high-office and colour-obsession and paranoid of communism and humanism, shall break through and snap the chain of repression with its bare hands, and this child, with its rotten background and slightly bleak future shall however liberate this nuclear crazy world with Nkulunkulu's greatest gift to man: ubuntu.
- This lambschild shall remind the nation of the oft-remembered but never used ISINTU:

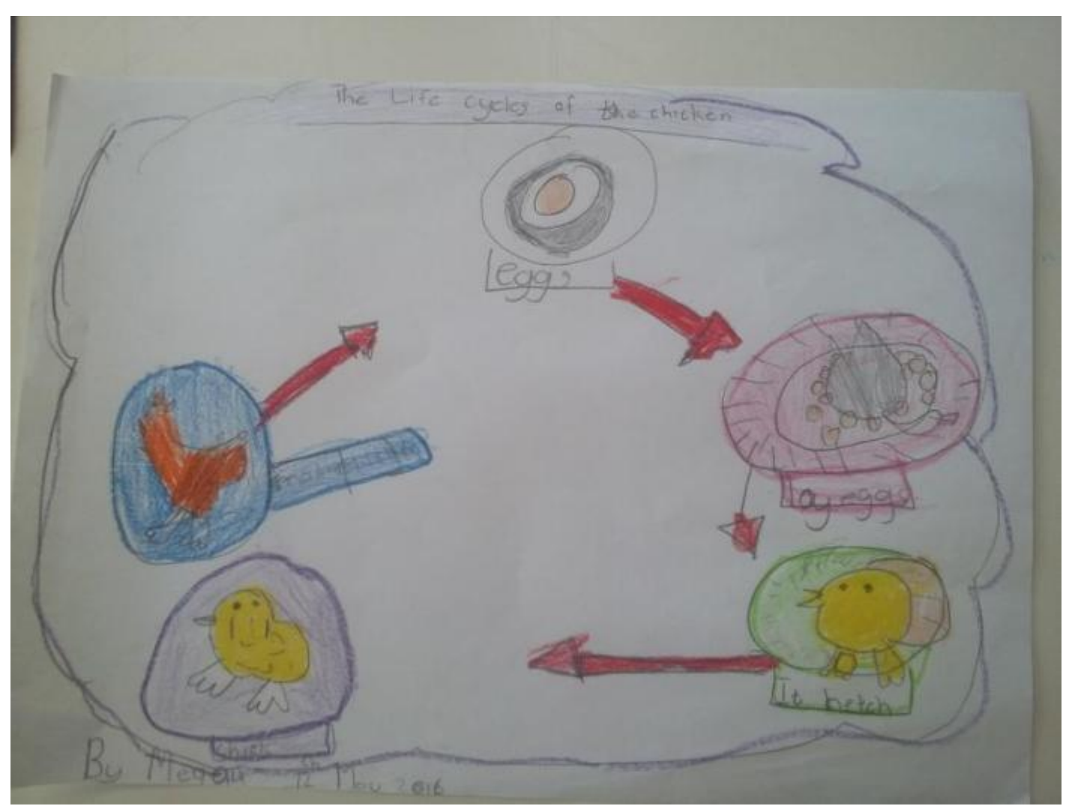
*Mangwana o tshwara thipa ka fa bogaleng.*

# Appendix 7 Drawings

**Drawing 7.1 The Life Cycle of the Chicken. Copied by child from Grade 3 work book (DBE, 2015:52).**

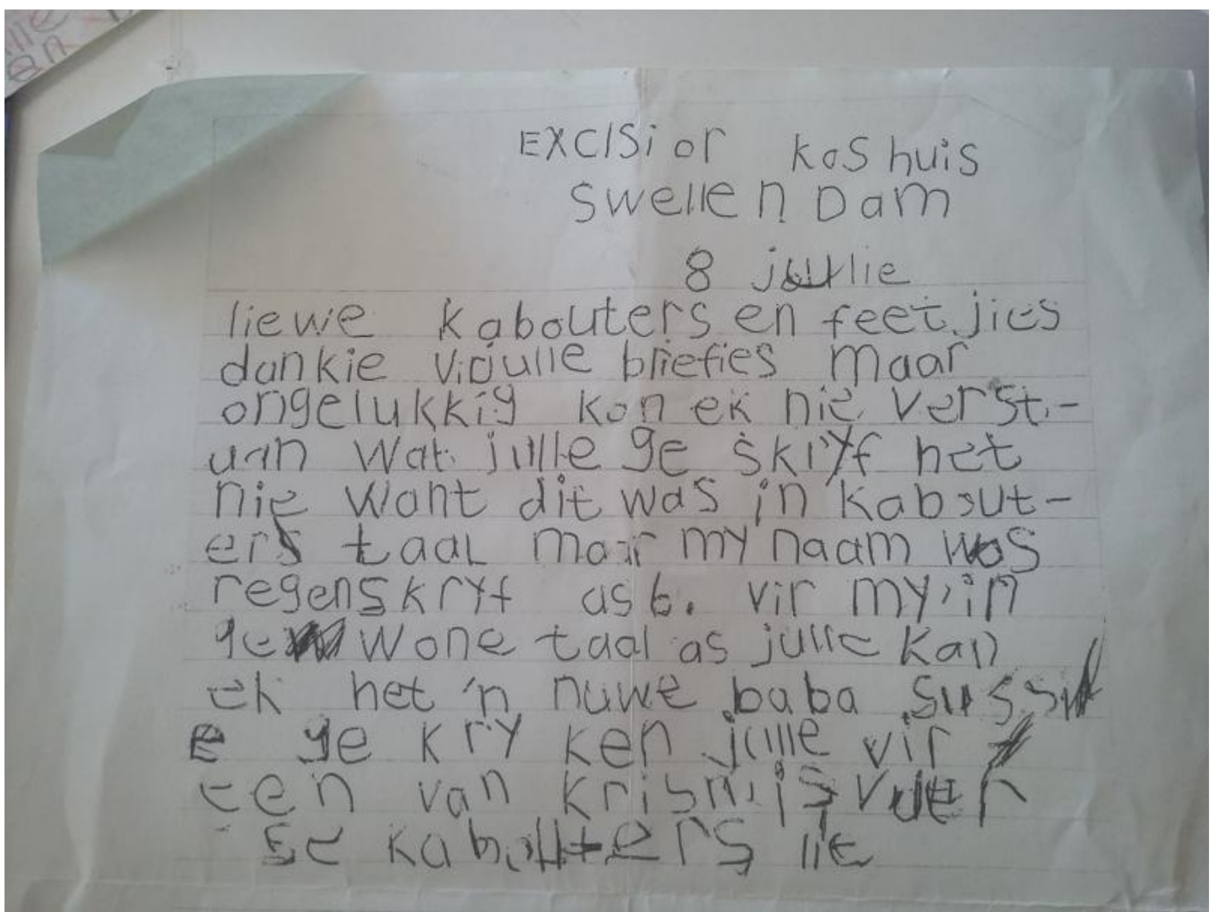



**Drawing 7.2 The Life Cycle of the Chicken. From Grade 3 work book (DBE, 2015:52).**



# Appendix 8 Letters

**Letter 8.1. Letter by 5- year old me, written in 1968 to fairies and gnomes in reply to letters written by my mother.**



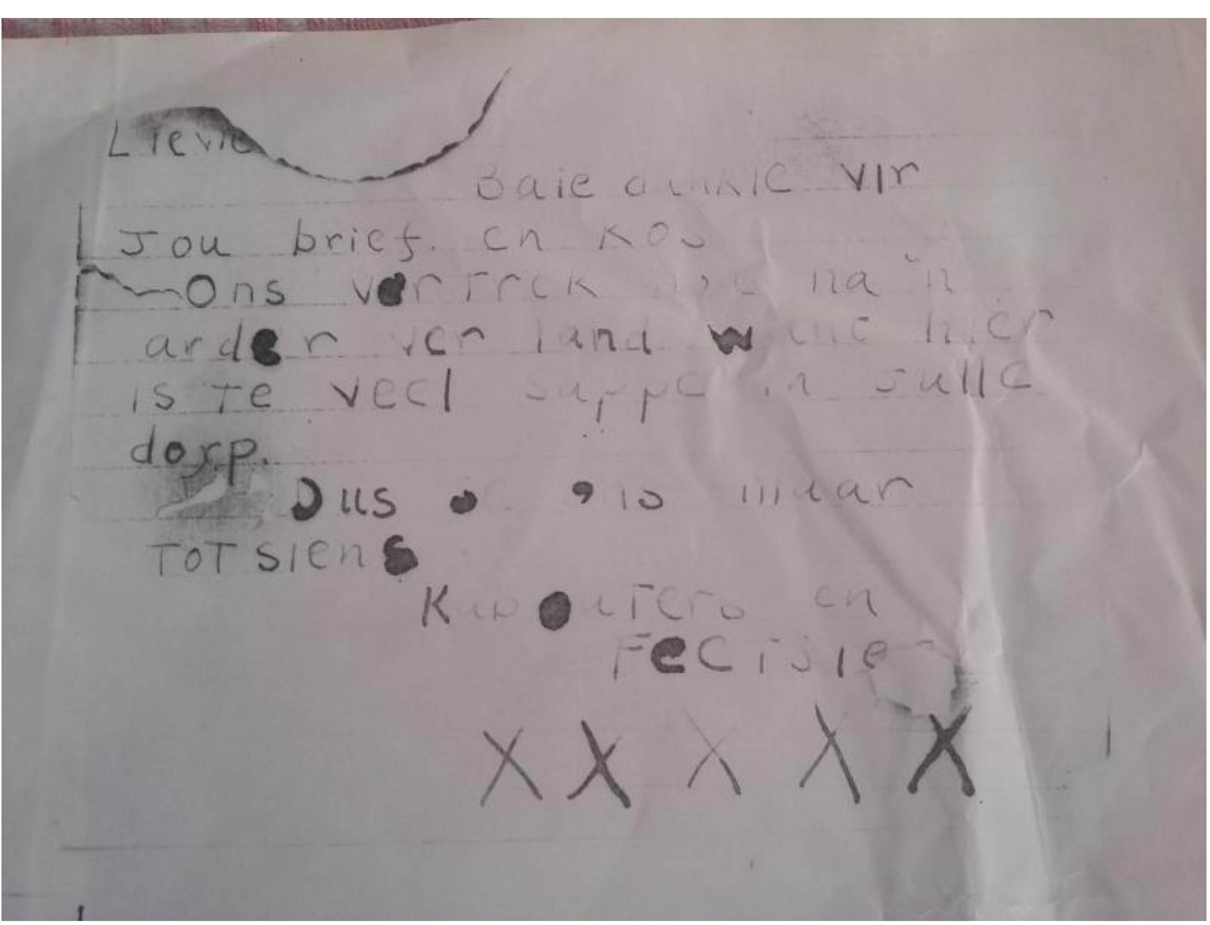
EXCISior kosHuis
Swellendam
8 julie
liewe kabouters en feetjies
dankie vir julle briefies maar
ongelukkig kon ek nie verst-
aan wat julle ge skryf het
nie want dit was in kabout-
ers taal maar my naam was
regenskryf asb. vir my in
gewone taal as julle kan
ek het 'n nuwe baba suss-
e ge kry ken julle vir
een van krismisvader
se kabouters lie

Translation

Dear Gnomes and Fairies

Thank you for your letters but unfortunately, I could not understand what you wrote since it was in Gnome language, my name was written correctly though. Please write to me in ordinary language if you can. I had a new baby sister. Do you know one of Father Christmas' gnomes?

**Letter 8.2. Letter from fairies and gnomes (earth beings) written by my father in 1968.** Written in lemon juice and then held above a flame to make letters visible.



Lieve [illegible]
Baie dankie vir
jou brief en kos
Ons vertrek [illegible] na 'n
ander ver land [illegible] hier
is te veel [illegible] in julle
dorp.
Dus [illegible] maar
Tot siens
K[illegible] en
Fee[illegible]
XXXXX

Translation:

Dear Roekie

Thank you for your letter and food. We are leaving for another, far-away country because there are too many (name of political party) in your town. So we have to say good-bye. Gnomes and Fairies.