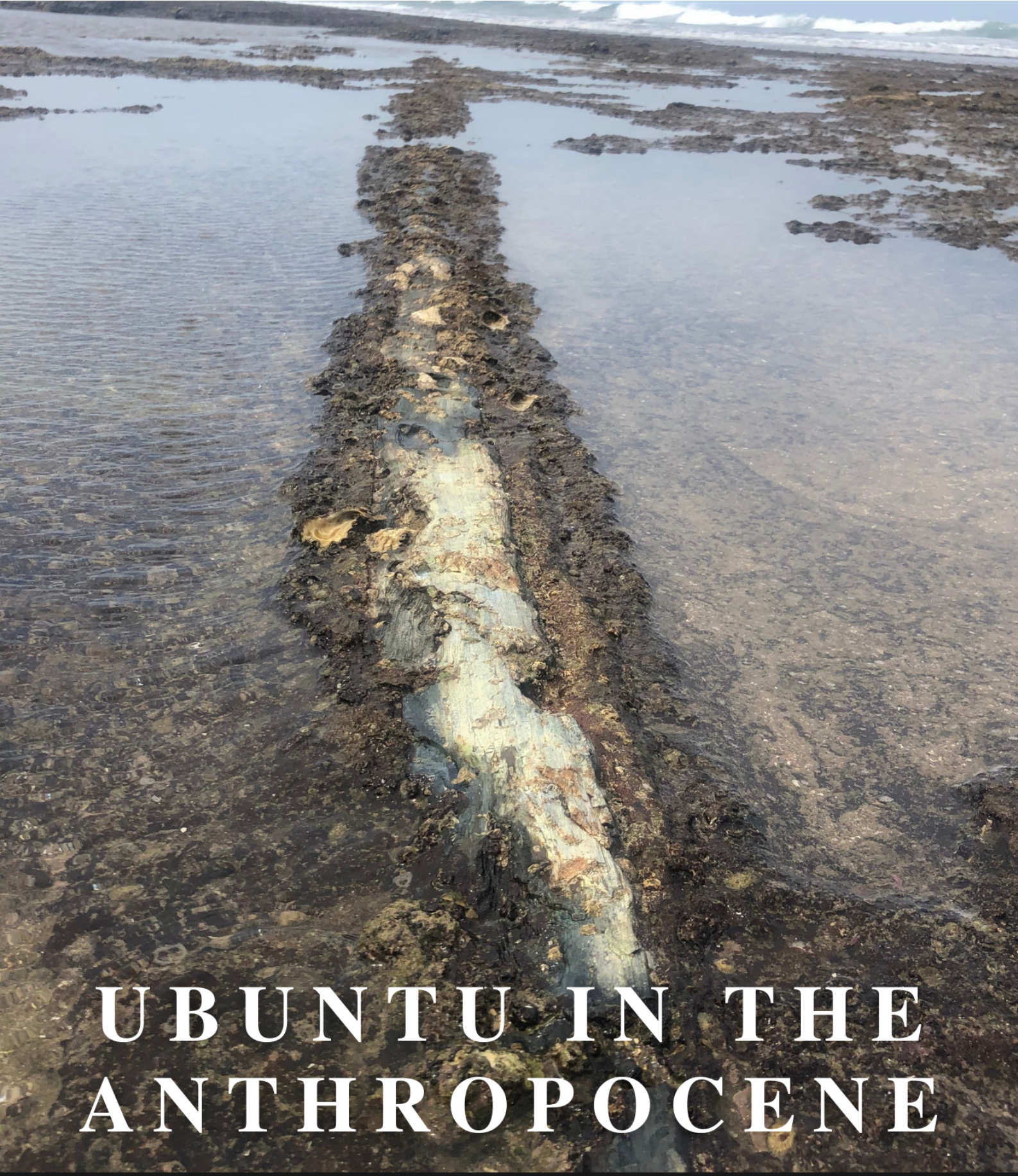

UBUNTU IN THE ANTHROPOCENE

Towards an African Cosmotechnics

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"We therefore have to shift away from the dreams of mastery. In other words, a new understanding of ontology, epistemology, ethics and politics has to be achieved. It can only be achieved by overcoming anthropocentrism and humanism, the split between nature and culture. The human no longer constitutes a special category that is other than that of the objects. Objects are not a pole opposed to humans. At the heart of the efforts at reframing the human is the growing realization of our precariousness as a species in the face of ecological threats and the outright possibility of human extinction opened up by climate change."

Achille Mbembe (2016)

"We have always been consigned to responding from the place where we ought not to have been standing."

Ato Quayson (2002)

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Summary

Humanity is standing at the precipice of the Anthropocene. Through our particular way of relating *technologically* to the Earth, we have begun crossing planetary boundaries to which we cannot return. The *Anthropocene* serves as a conceptual tool through which we attempt to make sense of our precarious position at this precipice. Discourses surrounding the Anthropocene reveal that the way in which we relate to the Earth is ontologically Enframed as to render it, as Heidegger argues, *standing reserve*. How then can we orientate ourselves differently? The research question that will be addressed concerns how an African approach, particularly that of Ubuntu, could serve as a technodiverse reframing of our relation to the Anthropocene and its technologies. In order to address this question, the study will commence by exploring notions that are central to the way in which we relate to the Anthropocene as well as how this relation is interpreted philosophically.

Yuk Hui suggests an intercultural philosophy of *cosmotechnics* that allows for the dismantling of this hegemonic Enframing. Localised cosmologies provide counter-narratives to this enframing, which seeks to separate nature and culture, humanity and the Earth. In this thesis, Ubuntu will be explored as one such localised counter-narrative. Through a reframing of the Anthropocene as Anthrop*oi*cene, notions such as ontology and autonomy are re-interpreted in ways that re-orientate humanity towards an interconnectedness with each other and the Earth. An Ubuntu ontology of the Anthrop*oi*cene therefore allows us to tread more carefully on the precipice. This recentering concerns not only the way in which we relate to the Earth but also a recentering of the discourse in which Ubuntu has often been relegated to the margins. This thesis thus examines an Ubuntu framework as a way of reframing our relation to the Earth, and by implication technology. Drawing from insights that emerge from discourses surrounding the Anthropocene, intercultural philosophy and Ubuntu scholarship, it is argued that Ubuntu provides a reframing of our relation to the Earth that challenges notions of Enframing as standing reserve.

There are numerous implications that arise from this Ubuntu reframing of the Anthropocene. Firstly, the radically relational ontology of Ubuntu means our relationship to the Earth is always conditioned by our interrelatedness. Relationality here is described as *radical* as it includes not only our fellow living human beings but also those who have come before and will come after us. In addition, this relationality also includes the chain of being that is made up of non-human animals and the Earth. For this reason, Ubuntu goes beyond anthropocentrism to include the non-human other. Secondly, agency is not determined by the autonomy of the individual but is defined by the way in which we interact with other beings with their own sense of agency. This ontological entanglement of different modes of being also allows for a semiotics that repositions human beings as interconnected with the Earth. Finally, our intergenerational interconnectedness also means that we have obligations to other generations that affect our moral status as human beings. Heidegger's warning of the supreme danger

of Enframing also rings true within an Ubuntu framework - and this warning is in juxtaposition to the dynamic, always in motion, interrelational ontology in which Ubuntu is grounded. Thus, technology is not understood through defining the *essence* of technology but is defined instead through our *relation* to technology. The orientation point presented in this thesis calls for further investigation of the particular technologies of the Anthropocene that make up our technosphere. The framework presented here allows for a discursive space in which particular technologies of the Anthropocene can be reinterpreted in ways that affirm our radically relational humanity.

Acknowledgements

The popularised Ubuntu maxim presented in this thesis, “I am because of others”, firmly applies to my own life. Writing a thesis during a pandemic made me acutely aware of my indebtedness to those around me. I would firstly like to acknowledge my supervisor, Dr Jochem Zwier, who had been incredibly generous with his time during our many stimulating discussions. These conversations led to topics I might have been hesitant to explore on my own, much less discover my own voice in. Through the provocative thought of Professor Peter-Paul Verbeek, I have been able to move beyond my pessimism about technology in the world and re-orientate myself to ways in which I can contribute to shaping technologies in my own idiosyncratic ways. I am also thankful to the PSTS community at the University of Twente, who provided me with invaluable guidance and support. Finally, “derrida” to my beloved Morrisseyan monk, who had to listen to my ramblings on many a walk and genuinely seemed to enjoy doing so.

Cover Image

The cover image was taken by the author on 20 March 2021 on Mzamba beach on the Southern African Wild Coast. It portrays a tree trunk from the late Cretaceous period (145 to 66 million years ago). These fossilised remains depict something of the notion of *deep time* in which humanity has grown aware, through scientific measurement and calculation, of the immensity of time in which we find ourselves. At the same time that this picture was taken, Giant Manta Rays and other rare ocean species were washing up on the shore nearby, due to temperature shock caused by the phenomena of *upwelling* which occurs when deep cold water rises to the surface of the ocean. The intensity of this recent upwelling, the short span of time in which it has happened and the increasing frequency at which it occurs is linked to global climate change. Mzamba beach presents a sombre meeting point between the natural environment which has remained frozen in time for millennia and the effects of human activity on the Earth. The image was chosen to express the motivation for this thesis, namely a profoundly personal grappling with human impact on the Earth, the thought and technologies that led us here, and how to proceed from this via an African point of departure.

Introduction

This thesis concerns a point of orientation. Through technological intervention, humanity has arrived at a place where we are losing our footing on Earth. We have arrived at a place in time at which our activity is threatening our very existence. How then, are we to orientate ourselves in this new *Anthropocenic* epoch? In particular, how are we to understand our relation to the Earth through technology? Underlying this thesis is the hope for a *Rehoboth*[1]: a place at which our thinking about technology in the Anthropocene can be diversified and broadened by including localised understandings about this precarious place in which we have arrived. It is only when we have arrived at this orientation point that we can embark on the question of *where to from here* in the way that we use technology on the Earth. To arrive at this broad scope of orientation, the main question of the thesis will be addressed in this introduction, namely: *how would an African approach to technology serve as a technodiverse critique of the technologies of the Anthropocene?*

Methodologically the thesis will concern a literary analysis and a historical overview of intersecting discourses of the Anthropocene, technodiversity and the African philosophy of Ubuntu. In order to do so, the first chapter will address the question of diverging ontologies in the Anthropocene. The reason for approaching this chapter specifically through the lens of ontology will become clear in the final chapter where it will be argued that Ubuntu is fundamentally an ontological orientation point. For this reason, the scope defined in Chapter 1 is limited to the reframing of the question of technology in the Anthropocene through the lens of Ubuntu in Chapter 3. In order to provide the framework of the Anthropocene that will be reframed through Ubuntu, Chapter 1 will commence by giving an overview of the Anthropocene as a conceptual tool through which our relation to the environment is understood. This discussion will also encompass the question of who the "Anthropos" is that is situated so centrally in the concept and the overarching discourse. The question that follows is to what extent this "Anthropos" has agency to act and influence the trajectory of technological activity on the Earth. The ontological dimensions of the relation of humanity towards the Earth will be considered through engaging with several post-Heideggerian considerations that question how humanity is ontologically predisposed towards technology and, in turn, the environment. This, of course, also includes the question of whether ontology is at the centre of technological engagement at all. Here, we will once again orientate ourselves by considering the thought of Yuk Hui, who aims to define the *crossroads* at which these different traditions of thinking about technology can meet in order to critically evaluate the role of technology in the Anthropocene. Once again, this line of argument is directed towards the

[1] From the Hebrew (רחבת עיר), meaning "broad space" or "wide expanse". Incidentally, it is also the word used to describe the indigenous community of the Rehoboth "Basters" of Namibia, who are descendants of European colonists and the indigenous Khoi-people of Southern Africa. In other words, it is a word that signifies the grappling with European and African ways of being present throughout this thesis.

framework that will be presented in Chapter 3, namely, the notion that Ubuntu is on the one hand fundamentally ontological while on the other, it concerns the dynamic relation between the person and their environment. Therefore, the framework of Ubuntu is also situated at this crossroads.

In Chapter 2, the dangers that are posed through technologies that are described by Hui as *monotechnical* will be considered. Hui suggests that *Enframing* technologies through monotechnical thinking has severe geopolitical implications that accelerate the devastation of the Earth's resources. For Hui, this way of thinking is rooted in Enlightenment thinking, which is why the Ubuntu framework that will be presented here is to be understood as a *modern-critical* framework. In a similar vein, Hui suggests the notion of cosmotechnics in an attempt to overcome the nature-culture divide which is perpetuated through monotechnical thought. An Ubuntu cosmotechnics is thus a reply to Hui's call for diverse cosmotechnics that challenge the hegemonic monotechnical framework that has led us to the edge of our planetary boundaries. The second section of this chapter will therefore be dedicated to a description of an Ubuntu framework that could serve as such a monotechnical critique. As Ubuntu generally does not have the same propensity for dualism as is found in monotechnical systems of thinking, it is not surprising that an Ubuntu framework cannot be unproblematically subdivided into various sub-domains or disciplines. For this reason, the description of Ubuntu that will follow takes a layered approach. In other words, the description of Ubuntu as it is introduced in Chapter 2 should be read as a first layer of the theory that will be further developed in Chapter 3, as opposed to attempting to create artificial divisions in a theory that resists such divisions[2]. Ubuntu will thus be framed through describing historical moments or schools of thought in which various aspects of Ubuntu is emphasised. The first generation of Ubuntu scholarship introduces Ubuntu as fundamentally ontological. The second school of thought developed various normative aspects of the theory. The positioning of this thesis thus falls within the third school of scholarship in which questions concerning technology and the environment are becoming increasingly prominent.

The final chapter will attempt at to synthesise all the above in a coherent unit. The questions that were raised with regards to the Anthropocene in Chapter 1 will be reframed by considering how notions such as ontology or agency are redefined within this framework. The question of the Anthropocene will be reframed in the plural, as Anthrop*oi*cene, as Ubuntu is based on a radical relationality in which the individual is always understood as embedded in a community. The second section of this chapter will develop this notion of community further by illustrating that this radical relationality also extends to the non-human or the environment. As will be noted, the Ubuntu discourse also consists of various controversies in which misinterpretations of the theory as anthropocentric are refuted. Ontology will be further elaborated upon by adding two more layers: firstly, ontology will be

[2] This approach could also be described as "archaeological", as developed by Michel Foucault (1969). This hermeneutical approach is chosen in order to acknowledge that the emergence and development of the discourse surrounding Ubuntu originated in a highly politicised context in which the discourse was subject to continual disruption and power struggles. It is for this reason that a just description of Ubuntu will consist also of acknowledging the question of "the archive" and the postcolonial context which shaped and keeps on shaping it.

discussed in terms of being intergenerational: how we relate to the environment also has implications for how we relate with those who lived before us and those who live after us. Secondly, the supreme danger of Enframing will be addressed once more by arguing that monotechnical technologies that enframe being undermines what it means to be human in an Ubuntu framework.

The aim of the thesis is to provide a point of orientation that could serve as a way of evaluating technologies of the Anthropocene. It is not within the scope of the thesis to give descriptions of *how* this orientation point could serve as a critique pertaining to particular technologies. Rather, it attempts to illustrate *which considerations* should be taken into account when we engage with the Earth through our technologies. In other words, the objective is to arrive at a solid grounding from which to proceed from this precarious place at which we have arrived in the age of the Anthropocene.

Chapter 1

Towards Diverging Ontologies in the Anthropocene

Introduction

The concept of *the Anthropocene* encapsulates an epoch in which human activity has come to be seen as a threat to the very existence of life on Earth. As is expected of such a "charismatic meta-category" (Malhi, 2017, p.78), the term conjures up a myriad of meanings and associations: from a geological descriptor proposed to illustrate that humanity's departure from its Eden-like Holocene epoch, to a concept that has rapidly outgrown this geological embeddedness, to a conceptual tool of broader philosophical, social and political significance. Despite the radically divergent meanings attributed to the term, common themes do emerge. One such theme is that human activity has indelibly, and perhaps immutably, changed the planet and its systems. A second is that these changes have brought us to our planetary Rubicon, where the boundaries we are about to traverse will bring us to our own demise. The central question raised in this chapter concerns how the notion of the Anthropocene challenges how we relate to the Earth. As will be shown through the discussion about what the Anthropocene is, this relation occurs primarily through human technologies. The technologies through which we relate to the Earth have become such a monumental force that they constitute a new sphere akin to other spheres like the lithosphere, hydrosphere biosphere and atmosphere. This new technosphere has now acquired independence that some deem to be a form of agency beyond human agency. The technosphere also raises the question of how human beings relate to the Earth and whether this relation should be evaluated in terms of the particular technologies or the way in which these technologies are, as Martin Heidegger argued, *Enframed*. After Heidegger, the discourse surrounding ontological understandings of technology bifurcated into the so-called transcendental-empirical discourse. For Yuk Hui, this discourse allows for an orientation point at which we can re-evaluate our position in the Anthropocene. Hui proposes that a *monotechnological*[3] understanding of the role of technology underlies the way in which we relate to technology and, in turn, the Earth. For Hui, the discourse after Heidegger does not go far enough in that it does not question the philosophical tradition and geopolitical situatedness in which Heidegger came to grips with technology. A critique of the Enframing which has led to the Anthropocene must, for Hui, incorporate localised understandings of technology that challenge monotechnical thinking.

[3] In Chapter 2, the notion of *monotechnological culture* described by Yuk Hui as a universalising way of thinking about technology that sees the Earth as nothing more than a standing reserve, will be further elaborated upon. As for the current chapter, monotechnological culture is understood as playing a constitutive role in the shaping of the Anthropocene.

If *questioning builds a way* of thinking about technology, as Heidegger (1954, p.3) posited, then the type of questioning in this chapter concerns building a way to relate to the Earth through technology in ways that dismantle monotechnical thinking. This chapter thus follows some of the *turnings* in the discourse surrounding technology in the Anthropocene in order to arrive, in the following chapter, at the question of *diverging* instead of turnings. At the planetary boundaries, the way in which technology is understood is reframed to include local ontologies of technology. In Chapter 2 these divergences will be considered in terms of the notion of *technodiversity* for which Hui advocates. In particular, this view of technodiversity will concern the often-neglected locality of the African philosophy of *Ubuntu* as a further orientation point at the boundaries of the Anthropocene.

What is the Anthropocene?

The stratigraphic term *Anthropocene* emerges at the turn of the twenty-first century to denote humanity's arrival at a new geological unit of time in which the human (ἄνθρωπος) has become central in the shaping of the Earth and its geological systems. The term denotes humanity's exit from the relatively warm period known as the *Holocene* that started at the melting of the ice sheets more than 11 000 years ago (Bonneuil & Fressoz, 2016, p.14). Crutzen and Stoermer[4] coined the portmanteau *Anthropocene* to indicate that human activity is largely responsible for this exit from the Holocene (Steffen*, et al.* 2011, p.843). While the term *Anthropocene* has been widely appropriated in different contexts, it was formally accepted as a geological time unit by the Anthropocene Working Group (AWG)[5] of the International Commission on Stratigraphy only in 2019. The initial hesitance of the geological community in accepting this term is not insignificant: suggestions that we have now entered the Anthropocene era was "generally rejected, on the basis that the great forces of nature that drove Earth's geology were considered to operate on a vaster and longer-term scale than any kind of human impact" (Zalasiewicz, *et al*., 2019, p.2).

The realisation by geologists that humans can significantly affect the Earth's systems parameters and the course of its geological evolution has led to the conclusion that we are, indeed, now in an Anthropocenic epoch. A number of distinctive characteristics such as the sharp increase of atmospheric carbon dioxide levels, the global carbon isotope and nitrogen isotope anomalies, and a biosphere modified by species extinctions and invasions, indicate that human activity has had an impact on the Earth that is on par with changes caused by natural events such meteorite impacts or volcanic eruptions. Along with Crutzen, a group of Earth system scientists led by Johan Rockström (2009, p.473)

[4] Although biologist Eugene F. Stoermer used the term since the 1980's, it was formalised in 2000 by both Stoermer and Crutzen.

[5] The AWG is an interdisciplinary research group studying the Anthropocene as a geological time unit. The unit is part of the Subcommission on Quaternary Stratigraphy (SQS) of the International Commission on Stratigraphy (ICS). The working group was tasked with examining whether the Anthropocene could be identified as a formal division of the Geological Time Scale.

identified nine[6] *planetary boundaries* which, if crossed, would trigger non-linear, abrupt and possibly irreversible environmental changes. As of 2015 (see Steffen, *et al.*), four of the proposed boundaries have already been crossed. If these planetary boundaries continue to be transgressed, humanity etches closer towards Hothouse Earth, a trajectory that poses a myriad of risks for health, economies, political stability and the habitability of the planet. It is for this reason that Rockström *et al.* (2009, p.8258) suggest that "a deep transformation based on a fundamental reorientation of human values, equity, behaviour, institutions, economies, and technologies is required" for humanity to avoid Hothouse Earth.

When trying to ascertain whether the term *Anthropocene* should be accepted as a descriptor for a new geological age, the AWG was also confronted with dating[7], or whether the base of the Anthropocene should be placed at one of the stratigraphic signals at around the mid-twentieth century, which they also affirmed. In his initial defining of the term, Crutzen notes (2002, p.23) that his dating of the Anthropocene in the latter part of the eighteenth century, when analyses of polar ice showed increased global concentrations of carbon dioxide and methane, also "happens to coincide with James Watt's design of the steam engine in 1784". Crutzen's dating of the Anthropocenic era therefore coincides with the so-called Industrial Revolution. Much debate has ensued concerning this dating of the Anthropocene, with some, like William Ruddiman, attempting to trace its roots as long as 8 000 years ago to the first Agricultural Revolution[8]. Based on a wide array of stratigraphic-proxy markers[9], the AWG situates (Zalasiewicz, *et al*., 2019, p.285) its base relatively late in the 1950's, alongside what they deem the "Great Acceleration of human population growth, industrialisation and globalisation". The AWG also dates the base of the Anthropocene after Crutzen and Stoermer's initial starting point of the Industrial Revolution as industrialisation had "minimal impacts on global atmospheric chemistry or any biogeochemical cycles until after 1870" (2019, p.253).

The hesitation to officially accept the term by the Earth Sciences community in which it was founded did not hinder the use thereof beyond the discipline. As Arias-Maldonado (2019, p.50) notes, the descriptor is "both a state of socio-natural relations and an epistemic tool that invites us to see such relations from a new standpoint". While the term *Anthropocene* cannot be severed from the scientific

[6] The nine planetary boundaries concern climate change, the rate of biodiversity loss, interference with the nitrogen and phosphorus cycles, stratospheric ozone depletion, ocean acidification, global freshwater use, change in land use, chemical pollution, and atmospheric aerosol loading.

[7] In the chapter *The Stratigraphic Boundary of the Anthropocene* (2019), the AWG considers the merits of various periods like early Anthropocene theories, Pre-Industrial Revolution start dates and the Industrial Revolution before concluding that Earth System indicators point towards the mid 20th century or "The Great Acceleration" as the starting point of the Anthropocene.

[8] Gabrielle Hecht (2018, p. 110) suggests early start dates run the risk of "naturalizing the Anthropocene as part of the human experience, depoliticizing its causes and exonerating energy intensive capitalism" which is one of the reasons why the dating of the Anthropocene is a controversial endeavour.

[9] The AWG (2019) considered markers from a variety of sources including *Stratigraphic* signatures (including black carbon from combustion, artificial ground and changes in patterns of sedimentation from terrestrial to marine), *Biostratigraphic* signatures (including fossils and the state of reefs), the *Technosphere* (plastics and microplastics), *Chemostratigraphy* (carbon, nitrogen and phosphorus, metals and organic compounds) and *Climate Change* (climate markers and the measurement of ice and sea levels).

foundations in which it originated, it has gained considerable attention in a variety of disciplines. In an attempt to provide an analytical framework for the multidisciplinary *event-space* in which the ontological, epistemic, political and aesthetic dimensions of the Anthropocene is considered, some commentators suggest the term *Anthropo-scene*. The Anthropo-scene has become mobilised to refer to "scientific question, intellectual Zeitgeist, ideological provocation, new ontologies and science fiction" (Lorimer, 2016, p.118). The term has thus gained a plasticity that allows for generative discourse arising from a variety of contexts like academia, the arts and popular media.

If the Anthropocene can be seen as one of the dominant discourses of our time (if not *the* dominant discourse), what are the *technologies of the Anthropocene*? In employing this term, *technologies of the Anthropocene*, a subtle yet clear distinction between technologies that have created the conditions under which we have arrived in the Anthropocene, and technologies that are being created within the constraints of the Anthropocene, must be drawn: the former is understood as technologies of extraction[10] and, within the scope of this thesis, is understood primarily through the Heideggerian lens of Enframing[11]. It is precisely these technologies that have led to environmental catastrophes that signal their unsustainability. One of the arguments that will be raised throughout this thesis is that there is an underlying dualism that escalates the extractive tendencies of these technologies through the pretence of a rigid distinction between the human and the non-human other. The latter notion of technologies of the Anthropocene refers to those technologies that are developed within an Anthropocenic framework which does not assume that the resources used to create these technologies are infinite. While these two forms of technologies are not always easy to distinguish, reframing technology in the Anthropocene could be understood as an attempt to move towards the latter type of technology in which humanity is understood as interconnected to the environment.

Who is the "Anthropos"?

Definitions of the Anthropocene such as the one presented by the Earth sciences community creates the impression of a Copernican reversal in which the *Anthropos*[12] is once again central and to some extent seen as separate from the world that they inhabit. The following section concerns the way in which the conceptualisation of the term *Anthropocene* contributes a shift in understanding the epoch as a geological concept, towards understanding it through an ontological lens which questions the way in which the Anthropos relates to the non-human other. The response of the philosophical community

[10] There are a broad range of technologies that come to mind, for instance strip mining technologies that erode soil and drain underground water reserves, aerosol propellants that damage the ozone and the burning of fossil fuels that contribute to ocean acidification. These technologies also include *metabolising* systems (see Edwards & Hecht, 2016 and Haff, 2014) in which the accumulation of the spent material is impairing the function of the system.

[11] *Enframing* is discussed further in section 5 of this chapter that centers on Heidegger and ontology.

[12] "Anthropos" is used to refer specifically to the way in which the term has been designated in the naming of the Anthropocene, namely as humankind in a position of commanding centrality *over and against* the natural.

to the question of the Anthropocene indicates at least two strands of relation to the non-human other. On the one hand, initial portrayals of the Anthropocene from perspectives in the Earth Sciences appear to convey a dualism between the natural environment and the Anthropos. Critical responses to the notion of the Anthropocene, as discussed below, brings this underlying dualism to the surface. On the other hand, the non-human in terms of the technological object through which we engage with the world is questioned.

In questioning the descriptor "The Anthropocene" itself, many of the underlying tenets of the centrality of humankind within it become apparent. For instance, in *Staying with the Trouble: Making Kin in the Chthulucene* (2016a), Donna Haraway proposes that we rather refer to the *Chthulucene*[13] than the Anthropocene. Instead of an anthropocentric vantage point, Haraway suggests a view from *below* to the creatures "replete with tentacles, feelers, digits, cords, whiptails, spider legs, and very unruly hair" (2016a, p.2) with whom human beings share the Earth. In this view, the Anthropocene becomes a multispecies story not defined by the dominant drama of the Anthropos. Furthermore, it is not only our kin or fellow species that also inhabit and act in the so-called Anthropocene, but also the Earth itself. Along with Isabelle Stengers and Bruno Latour, Haraway refers to the Earth/Gaia as a "maker and destroyer, not resource to be exploited or ward to be protected or nursing mother promising nourishment" (2016b, p.43). Latour and Stengers use the image of the "Intrusion of Gaia" (see Stengers, 2017) to indicate that Gaia or the Earth exhibits agency instead of merely being the landscape against which human actions occur. The Intrusion of Gaia hypothesis is also an *intrusion* on the misconception that human beings are the protagonists on Earth and that agency is limited to the agency of the Anthropos alone. During the recent Covid-19 pandemic, the idea that Gaia is acting or intruding on human life has been reinvigorated. Sturm (2020, p 2) writes that Gaia is now intruding on our "dream of existence by blowing a deadly virus our way like a cannibal wind". Some scholars, like O'Callaghan-Gordo and Antó (2020, p.1), proclaim that zoonotic diseases like Covid 19 are "diseases of the Anthropocene", hinting at planetary health intruding upon human health. Thus, while the Anthropos of the Anthropocene might have played a dominant role in leading themselves into the new epoch of the Anthropocene, the naming of the Anthropocene as such diminishes the role of other actants within this new epoch. Simply put, while human activity has caused a new epoch it is not just humanity that finds itself within this new epoch.

Furthermore, referring simply to the Anthropos as a homogenous group also raises concern. Langdon Winner (2017, p.283), in his idiosyncratic rebranding of the Anthropocene as the *Langdonpocene*, illustrates the absurdity and egoism of humans in naming a whole geological epoch for themselves. Through this rebranding of the Anthropocene, Winner raises the question of *who* the Anthropos of the Anthropocene is and notes that there are billions of people who have "little if any

[13] The *Chthulucene* is a compound of the Greek roots *Kainos* which refers to newness or a time of beginning and *Khthôn* as the creatures of the Earth or underworld.

claim to this grandiose geologic title" (2017, p.285). The term *Anthropocene* does not adequately differentiate between those who have disproportionately negatively impacted the biosphere and those who have not. The danger of this mistake, Winner continues (2017, p.286), is that vaguely identifying the "proximate agents of a biosphere in crisis" undermines national and global policies that address the excesses that have led to the Anthropocene. Thus, the prevailing description of the Anthropocene allows for the misconception that the human species is a unified whole which, in turn, reduces the critical capacity of the concept. Along similar lines, James W. Moore (2016, p.6) suggests the notion of *Capitalocene* as signifying capitalism "as a way of organising nature - as a multispecies, situated, capitalist world-ecology". Malm and Hornborg (2014) argue that the notion of the Anthropocene is analytically flawed as intra-species inequality is inherent in the current ecological crises. In their neo-Marxist critique of the Anthropocene, they note that the "affluence of high-tech modernity cannot possibly be universalised - become an asset of the species - because it is predicated on a global division of labour..." (2014, p.3). Winner notes that when it comes to the "game of names" in the Anthropocene, much of the world's population in the so-called developing countries cannot be identified as serious players since "for their levels of wanton destruction are pathetically minuscule at best" (2017, p.285). Reconceptualisations of the Anthropocene, such as those suggested by Winner and Moore, illustrate that the Anthropos of the Anthropocene is not a homogeneous entity. Critiques of the term allow for a more nuanced interpretation of how humanity relates to the Earth which, in the instances mentioned above, seem to indicate that the way in which human beings relate to the Earth is not universal.

Agency in the Anthropocene

A second strand in the critical reception of the concept of the Anthropocene has concerned the question of how Anthropos interacts with the environment with its tools or technologies. Like the term itself, the problematic nature of this relation has already become apparent during the inception of the term in the context of geological sciences. In *The Anthropocene as a Geological Time Unit* (2019), the Anthropocene as a period that coincides with the technological innovations of the so-called Great Acceleration is expressly made clear. In particular, Haff[14] (Zalasiewicz *et al.*, 2019, p.138) elaborates on the notion of the technosphere as the Earth's newest "sphere" alongside the classical spheres of the atmosphere, hydrosphere, lithosphere and biosphere, the material output of the technosphere is estimated to weigh in excess of 30 trillion tons and has, if assessed on palaeontological criteria, technofossil diversity which greatly exceeds known estimates of biological diversity (Zalasiewicz *et al.*, 2016, p.2). Haff describes this technosphere as an autonomous Earth system that is "endowed with

[14] The environmental and Earth scientist Peter Haff was a member of the Anthropocene workgroup. In the 2019 report, Haff reiterates a substantivist view of the technosphere that he developed in more detail in *Technology as a Geological Phenomenon. Implications for Human Well-Being* (2013), *Humans and Technology in the Anthropocene* (2014) and *Being Human in the Anthropocene* (2017). Thus, the argument that Haff's view is overly deterministic is based not only on the AWG report, but also on his previous descriptions of the technosphere.

intrinsic purposiveness" (Haff, 2019, p.139). In its emphasis on efficiency, Haff's description of the technosphere strongly reminds of substantivist views of technology such as that posed by Jacques Ellul (1954). This becomes apparent particularly through Haff's emphasis on *efficiency* as the "principle incentive offered by the technosphere" (2019, p.141). On the one hand, Haff portrays the geological technosphere as a system with intrinsic agency that is also subject to the same dynamic processes as other spheres. On the other hand, the social Anthropocene is portrayed as lacking the "single-minded devotion to efficient cause necessary to penetrate the workings of the physical world or of technological systems" (Haff, 2019, p.143).

Although Haff does not represent the entire geosciences community who are working on the question of the Anthropocene, he is perhaps *the* central figure in geoscience perspectives on the technosphere and therefore represents a central orientation point in the debate. Haff's peculiar form of technological deism portrays human beings as the movers that set the technosphere in motion. He notes (2013, p.135) that the Anthropocene is the "product of human activities and of technology" and that the creation of human activity is a derivative phenomenon of human activities. At the same time, he outlines various rules through which humanity can place themselves in relation to the technosphere. The rule of inaccessibility, for instance, holds that the difference in size between different strata means that human beings cannot affect the technosphere system as a whole. While "technospheric agents" (Haff, 2013, p.131) like "cell phones, salesmen, police, utility bills and so on" fall within our stratum, the technosphere itself does not. He continues by concluding that humans are components of a sphere that we "did not design, do not understand, do not control and from which they cannot escape". A further rule that Haff elaborates on is that of *performativity*. He claims (2013, p.133) that the function of the technosphere is "to extract high quality energy from the environment and to do work with that energy to sustain its own existence and that of its parts, including humans". Haff presents the technosphere as something well beyond the control of human influence. In arguing (Haff, 2019, p.143) for the Anthropocene as having agency that is different from human agency, Haff also diminishes human agency. Haff's estimation of the technosphere as an autonomous system is problematic as it does not account for how the current epoch came into being. In other words, while human activity caused the technosphere that same activity is now incapable of shaping the way it now unfolds. Understanding the technosphere as an autonomous system is valuable in that it is a warning of the unintended consequences of the technological systems that human beings put in place, particularly during a time in the Anthropocene when introducing technologies like geoengineering technologies are becoming much more of a certainty. However, Haff's position does seem to disregard entire discourses surrounding the way in which technology is constructed or comes into being. To name one, the idea that technology is socially constructed (Pinch & Bijker, 1984, p.399) means that the technologies that do become part of the technosphere developed along specific trajectories open to human influence.

While Haff's theory of agency in the technosphere does raise some interesting questions, the question of what the aim or function of the technosphere becomes even more compelling. Haff (2013,

p.129) gives a *compact description* of the technosphere as a "global apparatus that searches for, extracts, and does work with (mostly) fossil energy resources to provide support for its own existence as well as that of its essential parts, including members of the world's human population". In his portrayal of the technosphere as an energy system the function of the system is also understood as configured in a way to "reliably find and use high quality energy to support its metabolism" (2013, p.129). Furthermore, human beings "essentially captives" in this system over which they have no control and "in whose service they labor" (2013, p.135). Haff's theory that the technosphere is an autonomous system seeking reliable resources to maintain its ever-increasing metabolism presents a problematic, though valuable approach to the question of the Anthropocene. On the one hand, Haff's description raises many questions about the relation between the Anthropos and technology, questions that cannot be answered merely by claiming that the Anthropocene is an autonomous system that was in some mysterious way initiated through human technology. On the other hand, it does allow for a novel to interpret the way in which humans relate to the Earth. As will be discussed in the following section, Martin Heidegger argues that our technologies are Enframed in specific ways determined by the way in which we are directed ontologically to it. For instance, modern technology for Heidegger is portrayed as something that extracts resources for the benefit of human beings. Haff's idiosyncratic understanding of the technosphere raises the question of how this way of extracting has now become the underlying mechanism in a system that is now outside of our control. In other words, has humanity's activity on the Earth now reached a point at which our way of thinking about the planet has become, in effect, automated in a system that is operating increasingly outside of our control?

Haff's description of the technosphere as a system that exhibits provisional agency different to human agency provides a view of the technosphere that is ex-centric and non-anthropocenic, situated thermodynamically within other Earth spheres. The ex-centric view proposed here allows for postulating the Anthropocene's relation to other Earth spheres and the trajectories that these relations can put into motion (see Szerszynski, 2017). Furthermore, while not explicitly stated by Haff, this view of the Anthropocene serves as a caveat that reminds us that the trajectory of technologies we introduce into the world cannot be fully controlled or anticipated. Human activities may have put into motion the development of the technosphere, but the thermodynamic or energetic processes which now co-determine the trajectory of the technosphere are becoming increasingly less susceptible to the interventions of human activity. As Haff (2019, p.143) notes, the social Anthropocene lacks the "single-minded devotion to efficient cause necessary to penetrate the workings of the physical world or of technological systems proposed allows for postulating the Anthropocene in relation to other spheres". It is for this reason that rethinking human activity once again becomes a question of great urgency, the way in which the technosphere interacts with other Earth systems is becoming increasingly more unpredictable and resistant to intervention. Haff's substantivist views of the technosphere do serve in informing anthropo-scenic analyses of the role of human activity and the limits thereof, although this view does not incorporate any views on the processes that led to the inception of the technosphere. He

concludes that the agency of the technosphere is "not the same as our own" (2019, p.144) but does not venture into exploring the differences between these forms of agency. Lemmens (2021a, p.14) notes that Haff's portrayal of humans as ontically functional parts of the technosphere is "ignorant about the human's onto-logical implication in the coming into being of this sphere". It is exactly this rethinking of the ontological dimensions of how the technosphere came into being that exemplifies the "Ontological Turn"[15] in the Anthropocene.

Ontology in the Anthropocene

It is hardly possible to talk about ontology in the Western philosophical tradition without evoking the name of Martin Heidegger. In his project of fundamental ontology (*Fundamentalontologie*), Heidegger re-interprets Husserlian phenomenology. In questioning what it is *to be*, Heidegger also questions the role of technology. Most famously, his 1954 Bremen Lecture *The Question concerning Technology* (*Die Frage nach der Technik*) raises the question of what the *essence* of technology is, and whether technology has such an essence at all. In his later *Memorial Address,* he further develops his views on technology by claiming, among other things, that modern technology has reduced our ability to think meditatively. In his *The Question concerning Technology*, Heidegger famously claims that the essence of technology is by no means technological. In this lecture, Heidegger opposes the idea that technology is a mere means to an end or a human activity. He claims that while it is in a sense true to view technology as a means to an end or a human activity, this view does not go deep enough. If technology is not a means to an end or human activity, what is it then? Heidegger answers this question by asking what the *essence* of technology is through a re-reading of Aristotle's four causes. For Heidegger, technology is to be understood as a bringing forth (*poiēsis*) or revealing that which does not bring itself forth. Although *poiēsis* here refers to both the poetic[16] bringing forth of that which is concealed, Heidegger also sees it as a form of *physis* or something that arises from itself. By relating *physis* to *poiēsis* as something that bursts open, like the "bursting of a blossom into bloom" (Heidegger, 1954, p.10), the notion of bringing forth is contrasted with that which is brought forth by a craftsman or artist.

Why is this particular understanding of *poiēsis* such a central concept for Heidegger? It is because this form of revealing, as something brought forth from itself or the ecstasy of one thing becoming another, that reveals *alētheia* or truth. In this view, technology cannot be seen as merely instrumental, but as something that could occasion truth. Heidegger further explicates this in his discussion of the four Aristotelian causes and argues that technology goes beyond being either a means

[15] A number of fields like new materialism, posthumanism and agential realism grapple with the move away from the centrality of the human (see Benson, 2019, p.253). In this thesis, the term *Ontological Turn* is preferred as it signifies the trajectory within the philosophy of technology that refers to Heideggerian interpretations of the question of technology.

[16] See Liddell and Scott's revised *Greek-English Lexicon* (1940).

to an end (*causa finalis*) or a human activity (*causa efficiens*). In his description of these four causes, Heidegger illustrates that the four causes together allow for the object to be revealed. Heidegger then describes the notion of *Gestell* or Enframing which refers to the way in which this revealing or disclosure occurs. Heidegger (1954, p.20) describes Enframing as the "gathering together of that setting-upon which sets upon man" or that which challenges forth to reveal. While ancient technologies brought forth that was unrevealed modern technologies challenge forth nature in ways that render them as standing reserves (*Bestand*). For instance, Heidegger portrays the ancient technology of a windmill as something that challenges forth through *poiēsis* that which was hidden. Modern technologies on the other hand, such as the hydroelectric power plant of Heidegger's time, challenges forth in order to create a standing reserve of resources.

Writing at what would later become known as the Great Acceleration or starting point of the Anthropocene, Heidegger notes that nature is Enframed in ways that reduce it to a reservoir of energy and resources to be exploited when needed. The world now becomes an "object open to the attacks of calculative thought" (1966, p.50). He continues by noting that this relation to the world, which is principally a technical one, developed first in the seventeenth century, and only in Europe. This manner of calculative thought as a new way in which humanity relates to the Earth "rules the whole Earth" (1966, p.50), a way of thinking that is also advancing past the Earth into outer space. For Heidegger, the Enframing of the world that makes possible modern technologies is a universalising way of thinking that encompasses a sphere that grows larger and larger.

The universalising way of Enframing the world that Heidegger suggests has often been criticised as being totalitarian. Zwier & Blok (2017, p.7) notes two examples from the philosophy of technology which has critiqued this totalitarian view of technology. Firstly, Andrew Feenberg suggests that the democratising potential of technology is not fully acknowledged. On the other hand, postphenomenologists like Don Ihde and Peter-Paul Verbeek[17] argue that the way of Enframing suggested by Heidegger does not allow for much nuance in understanding human-technology relations. Ihde further (2010, p.109) critiques Heidegger for a "thin understanding of the history of technology" as technologies such as mining, that exhibit the type of revealing Heidegger associates with modern technological revealing, has existed since Roman times. Heidegger's metaphysical elevation of technology (or "Technology with a capital T") also dooms his analysis to "being the same for every technology" (2010, p.109). The impact of technologies on the Earth and the seismic shifts that have been brought about in our understanding of how human technologies influence our environment does call for a re-evaluation of whether the technologies of the Anthropocene are universalising. It is hard to deny the exploitative impact of the technologies that Heidegger would deem as "Standing Reserve" has on the Anthropocene, particularly in the way in which these technologies have brought us on the brink

[17] See *The Thing about Technology* in Verbeek (2005, pp.48-95) for a detailed discussion of Heidegger from 'n postphenomenological empirical perspective.

of the planetary boundaries of the Anthropocene. However, a nuanced critique of the so-called totalitarianism of Heideggerian thinking of technology reveals that the difference between ancient and modern technologies are not as clear-cut as Heidegger seems to think. Ancient technologies can be categorised as technologies that *challenge forth*, while modern technologies cannot all be understood as *challenging forth*.

After Heidegger: Technologies of the Anthropocene

In the wake of Heidegger's theory of technology, the question of how technology is to be understood arose: on the one hand, proponents of the Empirical Turn[18] in the philosophy of technology calls for a re-evaluation, or in Heideggerian terms, a "meditative thinking" (1966, p.56), about the specific technologies that surround us. Proponents of this position, like Don Ihde and Peter-Paul Verbeek, turn from the traditional, in this instance Heideggerian, sense of *technology* towards *technologies* (see Verbeek, 2001, p.122). In their criticism of "Technology with a Capital T", proponents of the Empirical Turn are in turn criticised for inadvertently overlooking their own Enframing of the world[19]. The way in which technology is understood by Empirical Turn theorists has come under scrutiny in the age of the Anthropocene, both from those outside this stream of thinking and from its proponents. For instance, Winner (2013) who, when questioning the future of the philosophy of technology, asks *on which planet* this future is to occur. Winner argues that the underlying conditions which served as a foundation for the rise and continuation of modern societies cannot be assumed to be a given for the societies to come. He specifically notes (2013, para.13) the dependence on "cheap, readily available petroleum that fuels virtually every function of our technological civilization" as something that is undergoing drastic change. The critique that Winner levels here concerns the notion that the foundation on which this thinking about technology rests, that of the Earth as a stable resource, is no longer a certainty. This critique is also gaining momentum within the thought of theorists of the Empirical Turn.

Ihde (2020, p.7) notes that the sciences are currently in the midst of a "second scientific revolution" that relates to the development of new imaging technologies which Ihde notes as the type of technologies that create the possibility for a *material hermeneutics*[20]. After providing a myriad of examples of imaging technologies (such as magnetometers, X-rays, mass spectroscopy and thermal imaging) and the way in which they mediate our relation to the world, Ihde turns towards the debate of

[18] Hans Achterhuis (2001, p.6) coined the term *The Empirical Turn* to refer to a generation of thinkers after the classical thinkers of technology such as Heidegger, Ellul, Mumford and Marcuse. Thinkers of this new turn reject the pessimism and deterministic image of technology as proposed by the classical turn and embrace empirically informed views of technology as presented in a variety of fields such as Science and Technology Studies, Cultural Studies, and so forth. Brey (2010, p.40) further distinguishes between two branches within this Empirical Turn, namely society-orientated approaches and engineering-orientated approaches.

[19] For a detailed analysis of the Empirical Turn as *Enframed*, see Zwier, Blok & Lemmens (2016).

[20] Ihde outlines this program of material hermeneutics in *Expanding Hermeneutics: Visualism in Science* (1998).

anthropocenic issues in climate change. While not referring to the term *Anthropocene* directly, Ihde argues (2020, p.17) that the scientific consensus about "global warming, climate change and anthropogenic factors" are instrumentally mediated. The simulations and models that became prominent in understanding climate change, Antarctica gas isotope records, the measuring of greenhouse gasses, ocean level measurements, identification of fluorocarbons, and so forth, are all technologically mediated ways of understanding the current geological era that we live in, and these can all be understood in terms of material hermeneutics. In other words, seen in terms of the Anthropocene, technologies not only define our current epoch, but also allow mediate our experience thereof. Lemmens and Van Den Eede (2021, p.3) describe this dramatic change influenced by the onset of the Anthropocene as one of the reasons why scholars within the Empirical Turn now consider a partial *re*-turn to classic approaches. In the age of the Anthropocene, along with its technologies that acquire a "life- and globe-spanning character" (ibid.) the question of *capital "T" technology* once again becomes pertinent.

While the Empirical Turn within philosophy of technology rejected grand theorising of the essence of technology, thinkers such as Peter Sloterdijk and Bernard Stiegler represent a *transcendental* approach to technology. In Lemmens' (2021b, p.2) definition of the *transcendental*, the term refers simply to Heidegger's "groundbreaking understanding of transcendence as characterizing the fundamental structure of Dasein". The term *transcendental* in this context is, of course, heavily laden and attempts to define it in relation to the Empirical Turn remain problematic. Kirk Besmer (2021, p.6) notes that the transcendental/empirical distinction is a "needlessly agnostic binary". Others, like Dominique Smith (2021, p.6) seek ways in which the notion of technological transcendentalism as belonging to the realm of the "sublime and otherworldly" can be rehabilitated and in Smiths case trivialising the transcendental is suggested to overcome transcendentalisms banishing to this otherworldly realm. Looking beyond the conceptual complexities of the notion reveals a much more pertinent question: namely, what is the relation or correlation between the concrete material technologies of the Anthropocene and the way in which these technologies are conditioned by our Enframing of the world? Lemmens (2021b, p.1) argues that the concrete technologies which could be seen as the focal point or point of departure for theorising by the proponents of the Empirical Turn, are not just "empirical effects of an overarching movement of transcendence (Technology with a capital 'T') but are originally constitutive of it". Thus, proponents of this transcendental school of thought consider particular technologies as always already conditioned. For example, Stiegler employs Gilbert Simondon's notion of the *interior milieu* as "social memory, the shared past, that which is called 'culture'" (1994, p.57) which constitutes our technologies. In *Technics and Time: The fault of Epimetheus* (1994), Stiegler contends that the interior milieu from which our technologies are borne are also already conditioned by technology. Following Derrida's notion of *grammatisation*, Stiegler argues that through the prosthetics of memory technologies (such as writing, or even the internet) human beings overcome the problem of our limited retention through a process of exteriorisation. It is for this reason

that technological innovation becomes something that is intergenerational[21]: our interior milieu is conditioned by that of the generations that have come before us. Stiegler thus exemplifies the transcendental school of thought in that it is not the particular technologies that are seen as the point of departure for how we interpret the technologies of the Anthropocene. The transcendental approach to the philosophy of technology has also come under scrutiny from Empirical Turn theorists. The reliance on Greek mythologies, like Stiegler's reliance on the Prometheus and Epimetheus fiction, is one such critique. Ihde notes (2021, p.3) that "so much of continental philosophy accepts myths and fictions for origin stories". A further critique is that the transcendentalists, following Heidegger, have an exceedingly dystopian view of technologies. Ihde (2021, p.10) writes that the technodystopian view inspired by Heidegger remains predominantly industrial with its "machinic, gigantic, industrial shapes". Heidegger's gigantism has, for Ihde, been overtaken by technologies that display nanoscale dimensions such as nanosurgical technics, quantum computing, DNA-RNA technologies, etc. (2021, p.9). Thus, Ihde's critique against transcendentalism raises the question of whether transcendentalist thinking has moved too far away from the particular iterations of technology in order to schematise technology as gigantic and dystopian.

How, then, does this transcendental-empirical discourse allow us to position ourselves in the Anthropocene? Hui[22] (2021, p.1) proposes that the two directions in this discourse, particularly exemplified by Ihde and Stiegler, allow for a rethinking of technologies that confront each other at a crossroads which he refers to as an *Erörterung*, a place or site at which these different directions of thinking about technology could meet. In other words, this intersection opens up possibilities for thinking about technology in which the importance of historical, cultural, and geopolitical difference is acknowledged in the "interrelationship between the cosmos, morality, and technical activities"[23] (2021, p.2). For Hui, Ihde's critique gives philosophy a new task, namely to "to engage with concrete technological developments and applications such as embodiment and other forms of mediation" (2021, p.3). Stiegler, on the other hand, sees technology as a necessary supplement which allows for Dasein to overcome its retentional finitude. It is these technologies of the supplement that conditions phenomenological experience. To illustrate, technologies that serve to overcome the limits to memory, or memory prosthetics, allow for a reliable recollection of information that cannot be as accurately

[21] In Chapter 4 of this thesis the question of intergenerational technology will be raised in more detail. The argument will be raised that localised systems of thinking in Africa, specifically that of Ubuntu ontologies, allow for a re-evaluation of how generations relate to one another through technology. While Stiegler succeeds in sensitising us to the way in which our interior milieu is conditioned by generations that have gone before, Ubuntu ontologies sensitises us to the question of the generations that are still to come.

[22] Hui is not the only author to propose questioning the Anthropocene from some sort of meeting point between the Transcendentalists and Empirical Turners could be the most fruitful way in understanding technologies of the Anthropocene. For instance, Zwart (2021) notes that understanding these movements in terms of dialectics could allow for a critical understanding of both. The special *Foundations of Science* journal issue dedicated to *Rethinking Technology in the Anthropocene* (2021) gives a comprehensive overview of the transcendental-empirical discourse in the philosophy of technology.

[23] Hui refers to this as *Cosmotechnics*, a term that will be elaborated upon in Chapter 2.

stored in biological memory. So if I read, let's say Ihde's *Technology and the Lifeworld* (1990), I retain a typology of the fourfold way in which technology mediates my experience to the world. While I might have remembered this typology from conversation or earlier reading, the technology itself (the grammatology of the book) allows me to remember the typology much more reliably than my own memory, in its retentional finitude, could have attained. It is through this technology that my phenomenological orientation itself is potentially conditioned. My relation to technology itself is conditioned by notions of technology that I myself have obtained through the experience of others. Technology thus mediates my phenomenological experience of the world, and even technology itself. It is for this reason that Stiegler conceptualises the human condition (or *Dasein* in his reading of Heidegger) as fundamentally technical. In contrast to Ihde's Empirical Turn, Stiegler responds with the notion of the a-transcendental which means "that which conditions and is vulnerable to being conditioned, in contrast to a transcendental universal a priori of Kant's categories" (Hui, 2021, p.4). Heidegger, with reference to Hölderlin's hymn, claims that "where the danger is, also grows the saving power" (1954, p.34). In other words, Stiegler and Ihde depart along different trajectories when departing from Heidegger's analysis of technology. For Stiegler, the danger requires a *pharmacological*[24] understanding of technology. Ihde, on the other hand, calls for going back to the technical objects themselves in order to "endow them with an ontological dignity" (Hui, 2021, p.4).

The question which then arises from both the Transcendentalist and Empirical Turn thinkers is *where to from here?* For Hui, Heidegger is once again at the centre of this question. He argues that Heidegger was not only confronting a metaphysical question, but also a geopolitical one. The modern technologies Heidegger critiques and the rationality he engages with relate to the "*Dasein* of Europe" (2021, p.6). In both the Transcendentalist and Empirical Turn reception of Heidegger, in as much as they oppose each other, one shared orientation remains, that of engaging with Heidegger who was "speaking as a German philosopher, and, more generally, a philosopher of the war and post-war time Occident, the *Abendland*[25]" (2021, p.7).

For Hui, engaging with Heidegger has brought us to an orientation point at which we engage with Heidegger as a thinker not only of technology but also as a thinker in Europe. Hui also asks (2021, p.12) whether European technology is not already global after a "hundred years of colonisation and globalisation" and arrives at the question of technology *after* Europe. Following Ihde and Stiegler, Hui proposes that locality and pluriculturality could pave the way for new forms of thinking about technology in a globalised and modernised world. After Heidegger, the question now becomes how European and non-European cultures can reinscribe the framework of technologies in ways that affirm their histories of *cosmotechnics*. Hui (2021, p.2) defines *cosmotechnics* as acknowledging the

[24] With reference to Plato's *Phaedrus*, Stiegler describes technology as a *Pharmakon* that is both a poison and a cure.

[25] Heidegger refers to *Abendland* in Trakl's poem "Grodek". Hui (2021, p.8) illustrates Heidegger's view of the "Earth turning into disaster" by its technological development.

importance of historical, cultural and geopolitical difference in the interrelationship between the cosmos, morality and technical activities[26].

Concluding Remarks

The concept of the so-called Anthropocene conjures up a myriad of meanings and associations. From its original bedding in the geological sciences, it is described as an entirely new geological era that resulted from human activity. It is this *human activity* that raises the question of how the Anthropos is orientated towards the Earth in and through the technologies that have impacted the Anthropocene. The Anthropocene was initially embedded within the context of geological sciences which gave rise to the notion that the Anthropocene, or specifically the technosphere of the Anthropocene, has progressed beyond the grasp of human control and obtained a form of agency different to human agency. By now far removed from its geological sciences bedding, a variety of conceptions of the Anthropocene has been set into orbit around the notion that human activity is fundamentally changing the Earth. In questioning the *Anthropos* of the Anthropocene thinkers like Haraway, Latour, Stengers and others also raise the ontological question of how humanity relates to the Earth. While the question of ontology remains central, it is further problematised through the question of agency as it is raised in the geological sciences discourse. For Haff, the technosphere has a form of agency beyond that of human beings. Proponents of the Ontological Turn in the philosophy of technology argue that this view of agency neglects the question of how the Anthropocene came into being in the first place.

It is at this point that the way in which humanity relates to the world through our technologies comes into view. In the Western tradition, it is the thought of Heidegger that has had a particular impact on the way in which we define our relation towards technology. Proponents of the Transcendentalist turn towards technology argue that the way in which we Enframe technology has given rise to the current Anthropocenic conditions in which we are thrown. Haff argues that this type of exploitative thinking has now become a characteristic of the technosphere itself. On the other hand, thinkers of the Empirical Turn argue, amongst other things, that this Enframing as defined by Heidegger does not do justice to the particular technologies and that these technologies are to be empirically understood. After all, the Anthropocene can only be understood through the particular technologies that describe the epoch. While the transcendental-empirical discourse suggests various ways in which technologies of the Anthropocene can be understood, Hui suggests that the discourse in its entirety remains indebted to Heidegger as a thinker engaged in a particular Western tradition of thinking about technology. He therefore argues that the technologies of the Anthropocene could not only be understood from different cultural contexts but proposes that these differing contexts allow for the dismantling of the monotechnical way of thinking that arises from the type of Enframing that Heidegger describes.

[26] See Chapter 2.

This chapter attempted to describe various *turns* in the discourse surrounding the technologies of the Anthropocene. Some, like Haff, seek to turn away from human agency towards the agency of the technosphere while others, like Stenger, remind us that the Earth itself portrays some form of agency. How we relate to these other agents becomes a question both for those who turn towards the technologies that empirically exist within this epoch as well as those who seek to find ways of Enframing that condition these technologies. Hui suggests another turn towards the local ontologies and technologies as a way to critique the monotechnical thinking that gave rise to these technologies. The following chapter concerns the way in which these turnings, or divergences, towards other localised ways of thinking about technology could allow for an orientation towards technology that serve to fragment the monotechnical thinking of the Anthropocene.

Chapter 2

Ubuntu Cosmotechnics

Introduction: where to from here?

This chapter aims to position Ubuntu philosophy within the overarching discourse of technology in the age of the Anthropocene. As the first chapter concerned a *surveying of the landscape* of the Anthropocene, this chapter emphasises the necessity for technodiverse ways of thinking about technology. Firstly, following from Chapter 1, the dangers of the specific type of Enframing that has led to the Anthropocene will be discussed. Yuk Hui elaborates on the supreme danger that Heidegger warned about by illustrating also the geopolitical dangers that follow from this supreme danger. It becomes clear that a critique of monotechnical thinking also concerns an Enlightenment tradition in which dualism has become central. To dismantle monotechnical thinking, Hui proposes the notion of Cosmotechnics and this chapter thus considers what an African, or more specifically Ubuntu, Cosmotechnics would entail. For Hui, such a Cosmotechnics extends beyond the milieu in which technologies arise, but also includes what he deems the moral order through which technical activities occur. The discussion that follows about Cosmotechnics can be considered *a tilling of the soil* for the notion of Ubuntu Cosmotechnics that shall follow: Hui and other thinkers like Descola and Ingold illustrate how intercultural thinking about the environment challenges a nature-culture dichotomy. Ubuntu is therefore pre-emptively positioned alongside other intercultural philosophies that critique the dichotomies that leads to the particular type of Enframing Heidegger warned about. This chapter also includes a brief excursion into technical tendencies and technological facts for the purpose of illustrating the urgency of developing localised critiques: the milieu in which particular technologies are created are increasingly shaped by Western technologies. While an interplay between universal and particular technologies is a given, and perhaps also necessary for innovation, the scope in which localised technologies develop is slowly becoming narrower. After considering the dialectic between universal and particular technologies, technical fact and technological tendencies, Ubuntu as a Cosmotechnics will be introduced through a brief overview of the philosophical framework[27] of Ubuntu.

The Dangers of Monotechnological Thinking

But where danger is, grows
The saving power also.

[27] In this thesis, Ubuntu is referred to as a framework as a way to indicate both the philosophical study of Ubuntu as well as the praxis of Ubuntu.

This famous quote by Hölderlin is echoed in Heidegger's *Question concerning Technology* (1977, p.42) when he warns of the supreme danger brought about by Enframing. As discussed in the previous chapter, the way in which modern technology is Enframed gives rise to a way of thinking about technology that understands the environment as a standing reserve. Later on in the text, Heidegger also argues that this danger of Enframing also extends to human beings themselves. The one Enframing the world also risks becoming the Enframed. The danger is both "nowhere and everywhere" (Heidegger, 1977, p.43) and it becomes present only as Enframing. So when the hydroelectric plant is created as a way to challenge forth energy, the dangers of Enframing become present. The "extreme danger" (1977, p.32) is that human beings themselves are Enframed as a standing reserve because the essence of their Being is forgotten. As was discussed in the previous chapter, the Heideggerian notion of Enframing also plays a central role in the emergence of the Anthropocene. It is no surprise that the dangers of the Anthropocene have given rise to a re-thinking of the dangers of Enframing of technology. The supreme danger of which Heidegger warned seemed to have been forgotten in the African Anthropocenes. As (Yusoff, 2018, p.11) notes, Africa and its peoples have often taken up the "body burdens of exposure to toxicities and to buffer the violence of the Earth". Gabrielle Hecht (2018) considers this from the perspective of gold and uranium mining in South Africa. She claims that even though the term *Anthropocene* did not exist yet, the Anthropocene was "nevertheless etching itself into the lungs of generation after generation of young African men" (2018, para.6)[28].

The geopolitical implications of thinking about technology in the Anthropocene also becomes a central theme in Hui's thinking. In *What Begins After the End of the Enlightenment?* Hui (2019) confronts the role that the Enlightenment played in humanity's progression to the precipice of the Anthropocene. Responding to Henry Kissenger's (2018) remark that artificial intelligence marks the end of the age of the Enlightenment, Hui argues that the technological acceleration we are experiencing is not a rupture but a continuation of the Enlightenment. Modern technology is a continuation of Enlightenment thinking as it constitutes "specific forms of knowledge and rationality" (Hui, 2019, para.8). Hui thus does not agree with Kissinger's argument that modern technologies like artificial intelligence and machine learning denote the end of the Enlightenment. However, he does agree with Kissinger in his assessment that Enlightenment philosophy was spread "or more precisely, universalised" by modern technology (2019, para.4). The technologies of the Enlightenment, such as navigational and military technologies, also lead to globalisation that spread Enlightenment thinking. In other words, the technologies of the Enlightenment were not only the result of a specific way of thinking but also served to distribute this way of thinking. Enlightenment thinking is thus a type of rationality that dispels superstition but creates the technologies through which these technologies are

[28] In *Being Nuclear: Africans and the Global Uranium Trade* (2012), Hecht further explores the cost of *nuclearity* for Africans and the environment.

communicated. Hui further notes that the technologies that exemplified Enlightenment thinking were also part of a process that orientated the "West as the centre of this transformation, the source of its universalisation". The technologies that spread the form of Enlightenment thinking that made the technologies possible in the first place, also play a role in establishing these technologies as universalist. Citing Oswald Spengler's *Man and Technics* (1931), Hui also notes that the process of self-actualisation of the technologies that spread Enlightenment thought also leads to forms of self-negation. Spengler warned against the West's exportation of their technologies as the cultures that these technologies were exported to gain, in some instances, technological superiority. It is for this reason that Enlightenment thinking has led to its own negation; the technologies that were appropriated by other cultures also made it possible for those cultures to become part of global competition.

For Hui, Spengler's examples of how Western technologies were exported reveals what he terms the *Global Axis of Time*: on the one hand, European modernity becomes the "synchronising metric of all civilisations" (2019, par.9), on the other hand, the same exportation of technology frees modern science and technology from being an asset of the West and opens the West up to competition from other cultures. Furthermore, the notion of the *Global Axis of Time* also allows for the questioning of how this synchronisation metric works. Furthermore, non-Western countries are able to enter the Western geopolitical stage by creating a "cost-effective assemblage of modern technology, cheap labour, and cheap nature" (Hui, 2019, p.12). Gilbert Simondon optimistically argues that the increased perfection of technologies will allow for the resolving of alienation and antagonism between culture and technology. Hui takes a more critical stance and notes the example of China under Deng Xiaoping's accelerationist politics in which China has put in place a new geopolitical arrangement in which the East is increasingly outstripping the West in innovation and automation.

Hui's thesis that the way in which Western technologies are exported and appropriated in non-Western cultures, and the way in which it establishes a *Global Axis of Time*, illustrates why it is problematic to refer to technologies that Enframe the world in terms as modern technologies in the Heideggerian sense as Western technologies. While Hui does not use the term, one could portray the relation of technologically dominant societies and the societies in which these technologies are appropriated as a dialectic. The technologies that are created within a society do not exist in a vacuum within that society but are embedded into a culture that relates to other cultures on a global technological axis. Cultures that appropriate more advanced technologies do so by entering into the so-called Global Axis of Time, and entering into this geopolitical stage brings with it the cost-effective assemblages that allow these cultures to compete on the global stage. It is for this reason that the way of Enframing technology becomes a question that is deeply intertwined with the advent of the Anthropocene. The synchronisation with the *global time axis* necessitates drastic technological acceleration which often leads to the exploitation of resources of these cultures. Simondon's optimism is thus brought into question as the technologies being accelerated do not allow for the resolution of antagonisms and alienation, but may contribute to the further deepening thereof.

In assessing monotechnical cultures, Hui's invitation to think about technology in a more pluralist sense necessitates both thinking with and against Heidegger at the same time "*with* Heidegger" in the sense that technologies in line with what he describes as modern technologies, thus seeking to challenge-forth, has a universalising effect. The distinction between the modern technologies of monotechnical cultures and the non-monotechnical technologies are, of course, not easy to define. It is for this reason that Hui turns towards Leroi-Gourhan in order to elucidate how the particular and universal relate to one another. "Thinking *against* Heidegger" indicates that these technologies are universalising and not universal. The iteration of the technology does not portray the universal facts of that technology but includes the technological fact associated with the development of that technology. For Hui, the competition based on monotechnics is "devastating the Earth's resources for the sake of competition and profit, and also prevents any player from taking different paths and directions" (Hui, 2020, p.4). It is for this reason that Hui calls for technodiversity as a way to overcome these devastating effects. He continues by noting that technodiversity does not merely refer to different kinds of technologies with "different branding and slightly different features" but rather refers to a "multiplicity of cosmotechnics that differ from each other in terms of values, epistemologies, and forms of existence" (ibid.). Hui argues that the Anthropocenic era that we find ourselves in resulted from monotechnical ways of thinking that is devastating the Earth. Monotechnical thinking is also encroaching on other ways of thinking about technology, enveloping this technodiversity into a *global time axis*. The acceleration created by this monotechnical thinking can only be sustained by creating cost-effective assemblages that drive further destruction of the Earth's resources and its peoples. This calls for a technodiversity which Hui describes as going beyond the superficial branding and features, a multiplicity of cosmotechnics. In the following section, Hui's understanding of cosmotechnics will be elaborated upon in order to, in due course, arrive at one of the central questions of this thesis: how could an African ontological understanding of the Anthropocene serve to dismantle monotechnical thought?

Cosmotechnics

In *The Question Concerning Technology in China: An Essay in Cosmotechnics* (2017a, p.4), Hui argues that there is a "tacit acceptance" in the Heideggerian tradition that there is one kind of technics and technology which is "anthropologically universal". Surviving in the new epoch of the Anthropocene, Hui claims requires reflection upon and the transformation of "the practices inherited from the modern, in order to overcome modernity itself" (2017a, p.8). The *Question Concerning Technology in China* is thus such a reflection. Hui considers the implications of thinking of technology in terms of technological tendencies and technological facts from the perspective of Chinese conceptions of technology. He notes that the existence of contingent and accidental technical facts that define our understanding of technology calls for a re-evaluation of technology in the particular contexts in which they are

concretised. For Hui, this re-evaluation does not simply concern functionality and aesthetics, but also an ontological and cosmological re-evaluation (2020, p.xiii). Hui's approach to the question of technology could be seen as a response to Stiegler's argument (2020, p.74) that technological universalism becomes a form, not of emancipatory reason that respects the diversity of people but a "rationalisation that alienates all resources according to its own (that is, Western) interests".

Hui's question concerning technology in China is heavily indebted to the work of André Leroi-Gourhan and in particular to his distinction between *technical tendencies* and *technical facts*. Leroi-Gourhan compares technical tendencies to the necessity of physical laws in which all civilisations share technologies such as the use of a flint or the wheel. It is within this universal technical tendency that diversification takes place in particular cultures due to the specificities of technical facts. Hui explains (2017a, p.217) this distinction by describing the technology of the wheel as a universal *technical tendency* but the particularities of the wheel such as the design of the spokes or the materials used for the artefact as *technological fact*. The socio-geographical milieu thus conditions the particularities of the technology. In his interpretation of Leroi-Gourhan, Hui appropriates Stiegler's understanding of both technical facts and technical tendencies. For Stiegler (1994, p.25), Leroi-Gourhan helps to "broach the question of the adjustment between the technical and the social from an anthropological point of view". The question concerning technology becomes an anthropological question. Stiegler notes (1994, p.36) that for Leroi-Gourhan universal tendencies exist "largely independent of cultural localities where it becomes concretised as technical fact". These universal technical tendencies also enter into conflict with the local cultures from which they arise. Technical facts cross through the localised community and the tendency then *defracts* into "an indefinite diversity of facts" (Stiegler, 1994, p.44). The diffusion of technical facts does not mean that the technical facts are always unique only to a particular culture. The diffusion of technical tendencies also contains "reciprocal influences" (1994, p.49) between cultures which means that there is no pure technical tendency that can be isolated. A question that arises at this point is how the particular technological facts relate to the universal tendencies; do technologies arise from invention or do they arise from borrowing the inventions of other cultures? For Stiegler (1994, p.52) it is rather a *composition,* instead of an opposition, of tendencies and facts or the universal and the ethnic that give rise to technological innovation.

Stiegler (2020, p.75), notes that the conditions of the *expression* of technical tendencies are also determined by the types of processes of "exomemorisation". The "exteriorisation of memory" is elaborated upon in *Technics and Time 1: The Fault of Epimetheus* (1994). Here Stiegler argues that because of the biological limits of memory, technologies serve as a prosthesis that allows for our memory to be exteriorised. The exteriorisation of memory is "always the memory of the human qua already-there" (1994, p.159). Human memory can, therefore, not be detached from the memory of the generations that precede them. This exteriorisation occurs through processes such as language and writing, or ways in which memory is exteriorised and transmitted to other individuals. For Stiegler, the internet is also seen as a form of this exteriorisation of memory. Similarly to Stiegler, Hui (2017a,

p.234) considers human life to be conditioned by tertiary retention because "in every projection, there is always a restructuring of memory that is not limited to the past that I have lived". Hui and Stiegler both arrive at this position through a re-appraisal of Heidegger's notion that Being is temporally conditioned as human beings are historically situated in that which is *always already* there. Thus, for Hui, our thrownness (*Geworfenheit*) is always preceded by the existence of others not by a singular or universal ontology, but rather by particular ontologies. In order to explain this Hui employs a form of Kantian antinomy. On the one hand, technics is anthropologically universal. They consist of prosthetics which Hui describes as extension of somatic functions as well as externalised memory. The differences in culture can thus be explained "according to the degree to which factual circumstances inflect the technical tendency" (2017, p.19). On the other hand, technics is not seen as anthropologically universal and technologies are affected by the Cosmological understanding of these cultures. For Hui, this antinomy is the Ariadne's thread of his inquiry into cosmotechnics and it is a thread that also runs through the question of African Cosmotechnics.

Returning to the question of the Anthropocene briefly, what does this mean? For Hui, amongst others, the question of how we live and relate to the world around us is conditioned by the existence of those who have come before us. In terms of technology, this means that the way in which we relate to artefacts is also conditioned by the way in which those other beings around (*Mitsein*) and before us understand and implement tools. The technical facts that arise in a particular context are also preconditioned by the existence of others through technical objects. Technology once again becomes central in the question of technology as the Anthropos itself is constituted through genetic and non-genetic (Stiegler, 1994, p.173) modes of being. In other words, the way we invent and engage with technologies of the Anthropocene is preconditioned not only by our physical environment but also by the ways of existing that have preceded through the technological protheses of memory. Technodiversity is thus a way of interpreting technology through a multiplicity of cosmotechnics, or different cosmological understandings, of the world in order to arrive at conceptions of technology that is not dominated by one particular cosmotechnics, such as that of Enframing.

Towards an African Cosmotechnics

Hui asks (2017a, p.18) whether Leroi-Gourhan's analysis of technical tendencies and technological facts is not sufficient for understanding the particularities of technics in the Anthropocene and concludes that there is a limit to Leroi-Gourhan's thinking that needs to be overcome. This limit stems from Leroi-Gourhan's focus on the individualisation of technical objects in order to construct a notion of technical genealogy and technical hierarchy. In this view technology acts as a lens through which the "evolution of the human, civilisation, and culture can be retrieved" (2017a, p.19). However, for Hui this singularity

of the technical facts cannot be attributed to cannot be attributed to the *milieu*[29] alone and the question of cosmology is raised. Hui defines cosmotechnics as "the unification between the cosmic order[30] and the moral order through technical activities" (2017b, p.19). By employing the term *cosmotechnics*, Hui tries to overcome the conventional opposition between technology and nature. This opposition between nature and culture is informed by the notion of naturalism as it is presented by the anthropologist Phillipe Descola in *Beyond Nature and Culture* (2013). Naturalism is seen as the predominant ontological category that has dominated Western thinking since the seventeenth century[31]. The distinction between nature and culture which is described by Descola is something that has developed in the Occident and was taken for granted in modernity. Where Descola opts for the usage of *practice* as a way of avoiding the nature-culture dichotomy, Hui reconfigures (2017, p.24) this notion as *cosmotechnics*. In other words, he moves away from thinking of technology as something distinct from the cosmic order by referring to cosmotechnics as a way in which human beings live in the world.

This concept is further informed by the work of Ingold who proposes that there is a "unity between practices and the environment to which they belong" (Ingold, 2011, p.24). To illustrate this, Ingold gives the example of hunter-gatherer societies. In these societies, the perception of the environment that the hunter-gatherers hold are embedded in their practices. Ingold describes this as *sentient ecologies* (2011). He writes that (2011, p.25) the hunter "felt as if his own being were somehow bound up or intermingled with that of the animal". The sentient ecology described here is not a formalised, authorised kind of knowledge that is transmissible outside the context in which it is lived. While Ingold and Hui focus on sentient ecologies in the hunter-gatherer of groups like the Cree people of north-eastern Canada, it goes without saying that traces of sentient ecologies exist in many cultures that do not ascribe to the duality between nature and culture often associated with the West. For instance, in *The Mind in the Cave* (2004), Lewis-Williams' study of the Sān cave paintings found in the Drakensberg region of South Africa, it becomes clear that the experiences of sentient ecologies were often re-enacted in the everyday rituals of the Sān peoples. Lewis-Williams writes about the *shamanistic cosmos* (Lewis-Williams, 2004, p.256) of the Sān in ways that resonate with the sentient ecologies of Ingram. He further illustrates the dialectic of the features of painting in caves in the Drakensberg to other caves like that of Gabillou and the renowned Lascaux caves in France. Thus, while the question of technological facts and tendencies has been thoroughly established in the literature by scholars such as Lewis-Williams, the implications for technology remains under-examined. Some scholars like Clapperton Mavhunga (2014) have succeeded in illustrating how the particularities of the environment

[29] Leroi-Gourhan arrives at the notion of "technical milieu" from the notion of internal milieu which refers to the cell model of Claude Bernard. For more see Triclot (2018, p.114).
[30] Referring to the Greek κόσμος (*Kosmos*) that indicates not only the world or universe, but also the way in which this world is harmoniously constituted or ordered.
[31] Here Hui deviates from Descola. Descola names naturalism as one of four ontologies, alongside animism, totemism and analogism, that have underlied human thinking and practice for different people at different periods. Hui places naturalism in a much more central position in his ontology.

impacts the development of technologies such as hunting technologies or even the laboratories, or as Mavhunga terms them, *transient workspaces*, in which these artefacts are developed. The danger of Enframing as described by Hui does pose the risk that the milieu in which particularist technologies are developed is quickly decreasing.

However, can it be said that there was ever a time period in which technologies have been developed *purely* in a localised milieu? Surely not, or at least not for very long. Cultures have always borrowed technologies from one another and will continue to do so. The question in the Anthropocene is rather why the specific enframing of technology that has led humanity to the boundary has become such a dominant force and whether this hegemony can be resisted. Hui's notion of the *Global Time Axis* presents some indication of why this is so. Furthermore, the "environment" in which we now find ourselves is not predominantly the natural environment that we find ourselves in, but rather a technologically mediated environment (see Aydin *et al.*, 2018, p.17). For this reason, Hui's question of localised technology becomes infinitely more problematic. Although technological facts have rarely been *pure* iterations of a milieu unaffected by the technologies of other cultures, the increasing opacity of technology in localised cultures means that the environment in which technological innovation arises is becoming more intertwined with globalised technologies. While this is not problematic per se, it is problematic when this form of intertwining leads to the type of Enframing that becomes apparent in the Anthropocene.

As discussed in Chapter 1, a rethinking of the technologies of the Anthropocene have led to a crossroads in which thinking about technology in an empirical and transcendental way meet (Hui's notion of the Empirical-Transcendental *Erörterung)*[32]. This opens up the possibility for engaging with the concrete developments of technology by acknowledging the cosmos, morality and technical activities, or Cosmotechnics, of technology. While the local milieu shapes the way in which technologies are understood, developed and implemented, the question of ontology plays an equally important role. Reframing the Anthropocene from an African ontological perspective, in this case that of Ubuntu, calls for an understanding of what this framework entails. In order to arrive at an ontological framing of the Anthropocene from the perspective of Ubuntu, the first question that arises is, of course, *what is Ubuntu*?

What is Ubuntu? Framing the Framework

Ubuntu is an African moral and philosophical system practised by Africans of the Bantu-speaking tribes in Sub-Saharan Africa. As this system of thinking developed in various Bantu tribes, there are phonological variations[33] of the term, such as Nunhu in Shona or Utu in Swahili. Variants of the term

[32] For more on the Ontological Turn in the Anthropocene, see Lemmens (2020a and 2020b).

[33] Numerous detailed accounts of the linguistic variations can be found in accounts by scholars such as Schutte (2001), Broodryk (2002) and Chuwa (2012). Note that although the term *Bantu* is used neutrally and non-pejoratively in the relevant literature to refer to indigenous, historically colonised societies in sub-Saharan Africa,

also exist within tribes of the same region such as Undu for the Chagga and Bumunu for the Sakuma peoples in Tanzania, or Umundu for the Kikuyu and Umuntu for the Merians of Kenya. The terminology also communicates a degree of nuance within regions: in Southern Africa Ubuntu (in isiZulu and isiXhosa) and botho (Sesotho and Setswana) refers to the notion of "humanness" and in Zimbabwe the word ukama (Shona) emphasises "relatedness" (Murove, 2009)[34]. Kamwangamalu (1999, p.25) claims that sociolinguistically Ubuntu is a "multidimensional concept which represents the core values of African ontologies"[35]. The etymological positioning of Ubuntu also points towards the conceptual framing of the term.

When employing this multidimensional Ubuntu framework through which to evaluate the technologies of the Anthropocene, one is immediately confronted with the question of the archive. Mbembe (2002, p.19) reminds us that not all documents or textual artefacts are destined to become part of a "curated archive"[36]. The notion of the archive is of particular importance in reframing the Anthropocene as this form of intercultural philosophical critique juxtaposes the central tenets of a monotechnical or more Westernised theory, and that of Ubuntu. Therefore, the question of the archive is an attempt to understand to what extent Ubuntu as a theory has been influenced by the theories it is critiquing. In terms of the Ubuntu archive, it is important to acknowledge that Ubuntu is grounded in the lived experiences of those who practice it. Gyekye (1987, p.13) notes that African philosophical thought is expressed both in oral literature and the thoughts and actions of the people or "philosophical material embedded in proverbs, myths and folk-tales, folksongs, rituals, beliefs, customs, and traditions of the people". The codifying of the Ubuntu archive thus firstly consists of a process of interpretation and translation[37] from an Ubuntu praxis into the material archive. In *Ubuntu: Curating the Archive*[38], Praeg notes (2014, p.106) how this abstraction[39] of Ubuntu from the historical praxis became

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the term is not free from negative connotations when used in European derived languages such as Afrikaans. Conforming to and for the sake of terminological correspondence to its use in the established literature, the term is used here with self-critical caution.

[34] For sake of clarity, "ubuntu" will be used here to refer to the lived praxis, "Ubuntu" to the philosophical theory, and "Ubu-Ntu" to denote ontological embeddedness. For the purposes of this thesis, the term *Ubuntu* will be used as an overarching term. *Botho* or *Ukama* will be used based on how the specific author employs the term.

[35] Kamwangamalu lists a few of these values: respect for any human being, for human dignity and for human life, collective sharedness, obedience, humility, solidarity, caring, hospitality, interdependence and communalism.

[36] While Mbembe refers explicitly to the African archive, Ubuntu is understood here to fall within the scope of this archive.

[37] Since the 1980's, Kwasi Wiredu has addressed the difficulties of translating African traditional thought into other frameworks, specifically Western frameworks. He reminds that there will always be some elements that are lost in translation. For more, see *Philosophy and African Culture* (1980) and *Cultural Universals and Particulars: An African Perspective* (1996).

[38] The volume contains the proceedings of the 2012 Thinking Africa Colloquium hosted by the Department of Political and International Studies at Rhodes University.

[39] In *A Report on Ubuntu* (2017), Praeg employs the notion of *abstraction* as a conceptual apparatus that denotes a form of translation from the lived reality of praxis into the abstraction of an ethic. The concept term serves to communicate a move from Ubuntu as a function of "the historical political economy of obligation" (2017:79) into a contemporary community in search of a metaphor to express a sense of belonging. The inclusion of Van Binsbergen's harsh critique of Ubuntu has a similar aim, namely to remind that the framework of Ubuntu

"articulated in confluence with the very discourses through which Western modernity articulated its imposition on Africa" such as Christianity and the liberal discourse on individual human rights. Furthermore, the communities in which the socio-ritual events and rhetorical acts that exemplify the radically relational character of Ubuntu were themselves disrupted by colonialism and hyper-capitalism (or, specifically in Apartheid, the antithesis of interconnectedness, a literal *Apart*-ness). In other words, the communal bonds that serve as carriers of the praxis-archive which enshrines the communal values of Ubuntu, were themselves severed. It is within these historical contingencies that the process of codification, translation and interpretation occurs. As Van Binsbergen (2001, p.80) points out, this process is also in danger of doing violence in producing a Grand Narrative for a globalised audience that is alien to the village and kinship matters that it explicates.

Why is the question of the archive so critical in the debate concerning the Anthropocene? Firstly, Ubuntu is not exempt from the monocultural tendencies put in place by technology that Hui describes. Van Binsbergen (2001, p.58) demonstrates this when he notes how the archive is subject to the ravages of globalisation "in which the modern world is increasingly drawn, amounts to the ascendance of a market-orientated economic logic of maximalisation, in which the value, dignity, personal safety, even survival of the human person no longer constitute central concerns". This, he continues, is reinforced by the North Atlantic region's "drive for political and cultural hegemony". Ubuntu thus presents a counter-hegemonic critical perspective on the way in which technologies are employed in this globalised, or monotechnical, system. There is an inherent tension at play in the hegemonic and counter-hegemonic tendencies described: on the one hand, Ubuntu could be understood as a critique against monocultural tendencies. On the other hand, the codification of the Ubuntu archive occurs at a moment in history that coincides with a universalising *velocity*[40] brought about by technology. As was discussed in the previous chapters, Hui's critique of monocultural technics or monotechnics is based in part on Heidegger's assertion of the danger in which the human person also becomes prone to the supreme danger of being Enframed as Standing Reserve. As will be discussed when considering the ontology of being in the Anthropocene, Ubuntu as an affirmation of the continual unfolding of being serves as a critique against the fixing of Dasein as no longer open to possibility, as Standing Reserve.

Secondly, the importance of the archive with regards to the Anthropocene becomes apparent in the possibilities it opens up for a dialogue between different epistemic traditions. Prozesky (2009, p.3) states that there can be "no genuinely global ethic until non-Africans start taking the rich and immensely long-standing ethical heritage of black Africa seriously" not only in terms of geographical completeness, but also in terms of ethical scope and depth. It is also the discourse surrounding the

employed in this thesis extends beyond the contemporary or scholarly discourse which, in this thesis, is the primary point of convergence between different theories on which the reframing of the Anthropocene is based.

[40] *Velocity* here is understood in the Virilian (2007) sense in which technological progress takes place at such a rapidly increasing speed that the pace of progress is overlooked.

Anthropocene that has often neglected African systems of thought in its conception of a global ethic. Mbembe (2015, p.24) argues that, regarding the Anthropocene, our "capacity to make systematic forays beyond our current knowledge horizons will be severely hampered if we rely exclusively on those aspects of the Western archive that disregard other epistemic traditions". Furthermore, as Mbembe notes, the Western archive is not seen as a singular tradition but as containing within itself also the resources that allows for self-refutation. Neither is it monolithic or the "property of the West" as "Africa and its diaspora decisively contributed to its making and should legitimately make foundational claims on it" (ibid.). The framing of the Ubuntu archive could thus be seen as contributing to the opening up of the dialogue between differing epistemic traditions. Mbembe here suggests a *pluriversality* through which the question of the Anthropocene is addressed. However, this does not assume a clear juxtaposition between the so-called West and an Ubuntu framework. As Murove (2009, p.xv) claims, African ethical traditions have been influenced by Western philosophy, Christian and Islamic traditions and ethics, and is therefore *overwhelmingly dialogical* and not *purely assertive*. The conception of Ubuntu presented here is thus seen within this framework of a dialogical critique and is not an attempt to replace current theoretical framings of the Anthropocene. Rather, the framework of Ubuntu is presented as a central theoretical framework precisely because it has largely been confined to the margins. It is therefore a form of recentering through centering.

Ubuntu as a mode of being

Ubuntu is an ancient framework (see Broodryk, 2002), which is why modern conceptions thereof should rather be understood as a re-emergence of the idiom in a modern academic system. In terms of the scholarship, Ubuntu has seen a drastic increase of the material archive since the 1980's. There are a number of reasons for the timing of this re-emergence in the scholarship. One is the political shifts through decolonisation that took place across Africa that led to the opening up of discursive and institutional spaces. The ensuing post-colonial and post-apartheid zeitgeist shaped the discourse towards movements such as Julius Nyerere's *Ujamaa* and African Renaissance movements as popularised by, among others, Thabo Mbeki. *Ubuntu* gained mainstream popularity after prominent political figures like Nelson Mandela and Desmond Tutu referred to the centrality of Ubuntu in the struggle for freedom in South Africa. These societal shifts also incurred a shift in Ubuntu scholarship, and outputs from the scholarship drastically increased. It is for this reason that Mangena (2021) identifies this as the *first generation* of Ubuntu scholarship. He refers to scholars such as Mogobe Bernard Ramose (1999; 2014), Stanlake Samkange, Tommie Marie Samkange (1980) and Desmond Tutu (1999) who played critical roles in defining the theory[41]. While the defining of this generation would be a difficult, if at all an attainable task, it is marked by a re-emergence and optimism that could be described as the rebirth of a theory.

[41] Mangena's description (2021) of Hunhu/Ubuntu forms part of an encyclopedia entry and could therefore be seen as favouring brevity instead of detail. The immense influence that thinkers like Gyekye, Bhengu, Mthembu and Dandala had on the early defining of the theory cannot be overstated.

If the political context in which this rebirth occured serves as one way to demarcate this generation, the metaphysical and ontological foundation of the theory is another. In particular, Mogobe Ramose argues that Ubuntu is a way of *Being*. Ramose (1999) draws upon a semantic analysis to illustrate the ontological dimensions of the term: the prefix ubu- refers to the concept of being in general which is orientated towards the unfolding be-ing while -ntu is the point at which be-ing becomes apparent. While the separation of the prefix and root draws attention towards the ontological dimensions of the term, a strict separation is not possible as the ubu- and -ntu is co-constitutive, referring to two aspects of being that cannot be separated, the being of one-ness and the being of whole-ness. Personhood, here understood as the embodiment of -ntu, exists in the continual unfolding of being towards the other and the environment. This unfolding is also a mutual unfolding in which one becomes someone that *has* Ubuntu. Personhood here presents some conceptual difficulty as there are considerable differences between Ubuntu and Western perspectives. Personhood in an Ubuntu framework is something that one achieves or develops throughout life, it is not something that is given merely on account of being human (See Peterson, 2019). Ubuntu is thus a relational form of personhood.

Furthermore, this ontology indicates a continual *movement* or *motion*, which is why Ramose's description of Ubuntu as an indeclinable "dance of being" (2017, p.59) is particularly apt. To dance along with be-ing, he claims, is to be *attuned* to be-ing. He writes that is via "an autopoietic activity that the human is in constant interaction with their environment, with nature, and with their own self-preservation"[42] (Ramose, 2019, p.137). While some interpretations of Ubuntu emphasise the role of persons within this framework, Ramose places emphasis on the often neglected notion that the self comes into being through relations with other beings and with the "physical nature" (Ramose, 2019, p.13) in which these relations occur. Ramose takes a critical stance against the exploitative practices detrimental to the Earth. He illustrates this by noting the maxim "*feta kgomo o tshware motho*" which implores one with Ubuntu to choose, when confronted with the decision, the life of the individual above any monetary gain. The point that Ramose makes through this and other examples, is that the individual is no longer an entity at the centre of the universe. The self is determined by the continual unfolding towards the other that indicates a mutual interdependence which is continually constituted in the way that the self relates to the (non)human other. While personhood is constituted through interdependent relationships with the community and the environment, Ramose (1999, p.380) also notes that the affix -ntu refers to continuities with other categories of being such as the unborn and those yet to be born. Personhood is inextricably bound up in the relations one has with both the physical and spiritual worlds. Considering the ontological dimensions of Ubuntu, it becomes clear that the popularised dictum[43] of Ubuntu as "I am because we are" appears as reductionistic.

[42] This translation is my own from the Dutch edition of *Ubuntu: Stroom van het bestaan als levensfilosofie* (Ramose, 2017).

[43] In his *African Religions and Philosophies*, John Mbiti coined the phrase "I am because we are, and since we are, therefore I am" (1970, p.141).

The search for an ethics of Ubuntu

Mangena (2021) identifies this as the *first generation* of Ubuntu scholarship in which the theory was metaphysically and ontologically grounded through scholars such as Ramose. The discursive spaces that had been made inaccessible in the colonial past had been re-opened, and Ubuntu as a philosophical theory in academia had started to (re)emerge, albeit too slowly. This paved the way for a second generation of scholars to further elaborate on the contours of the theory. Among this second generation of scholars, Fainos Mangena (2021) notes Michael Onyebuchi Eze (2010) and Michael Battle (2009) have situated the term historically and linguistically as well as ethicists like Thaddeus Metz (2007) and himself, as proponents establishing a normative framework of Ubuntu[44]. In particular, Metz's *Toward an African Moral Theory* (2007) was monumental in developing the ethical implications of Ubuntu. Metz's description of Ubuntu as a moral theory illustrates several judgments that are common to adherents of Ubuntu and Western people in modern industrialised democracies. However, he also illustrates judgments that are not typically found in communities with Eurocentric value systems. For example, Metz (2007, p.325) notes that African communities respond to wrongdoing with the expectation of a good result which would appease the ancestors and protect the entire community from the wrath of the ancestors. Or, the notion that creating wealth on a competitive basis instead of a cooperative one is seen as deeply immoral in Ubuntu practicing societies. It is important to note here, in terms of thinking about Ubuntu in the Anthropocene, that there is a clear continuity between the ontological dimensions of Ubuntu and the ethical practices that follow. The division between different "branches" of the theory is not as pronounced as in other more westernised theories.

While Mangena notes the linguistic, historical and ethical development of Ubuntu during this second generation of scholarship, this phase also clearly represents, in my view, a markedly more critical approach to the theory. Matolino and Kwindingwi (2013) presents the critical view of Ubuntu in the extreme when they proclaim *the end of Ubuntu* in which the "Ubuntu-isation" of intellectual, business, public and private lives is superficially popularised. Although Matolino and Kwindingwi were criticised for leaving a vacuum by "taking the easy way out" (Koenane and Olatunji, 2017, p.266), the self-critical turn in the discourse became much more pronounced and responded[45] to *the end of Ubuntu* view by questioning why the promotion of Ubuntu has often led to "public social and political failure" (2013, p.197). Chimakonam (2016, p.226) claims that this critical discourse has brought African philosophy to ground zero at which its questions may now be asked with discursive originality, in keeping with what Michael Eze calls "creative fidelity" (2010, p.117). A similar critical attitude can be

[44] Mangena gives a very brief encyclopedic description of the different generations of scholarship. This is, of course, broad strokes, and the second generation of scholars include a myriad of thinkers and many different branches of Ubuntu scholarship emerged or were elaborated upon. For instance in public policy (Nkondo, 2007), law (Cornell, 2014), education (Le Grange & Cossa, 2020), social work (Mugumbate & Nyanguru, 2013) and religion (Tutu, 1999; Battle, 1997), to name a few.

[45] See Metz (2014), Chimakonam (2016) and Koenane & Olatunji (2017).

found in the work of Praeg (2017, p.295) who warns that conceiving of Ubuntu through the lens of humanism renders it "synecdoche for a whole rainbow of good news" and it is "sentimentally reduced to everything nice" (2017, p.298). Thus, the second generation of Ubuntu scholarship has diverged from the idealism of the first and in this process positioned Ubuntu for a much more critical engagement. It more firmly established not only the contours of the framework, but also its limitations.

Ubuntu in the age of the Anthropocene

If the first generation of Ubuntu scholarship could be considered the rebirth of an ancient theory, the second's lack of idealism has initiated it into a realm of critique better equipped to address the urgency of our current way of being in the world: namely, a way of being in the world in which it is not only the survival of the theory of Ubuntu that is at stake, but also the survival of humanity as a whole. It is in this, perhaps third generation of scholarship, that themes challenging our very being such as the Anthropocene and its technologies[46] come to the fore. In the following section, central questions that were raised with regards to the Enframing of the Anthropocene will be re-evaluated in terms of an Ubuntu framework. It is for this reason that the Enframing presented below will not maintain a strict separation of ontology, epistemology and ethics as it is positioned in continuation with the historical development of Ubuntu.

Conclusion

This chapter concerns the question of how technodiverse thinking, or the framing of technology in a particular localised cosmology or Cosmotechnics, can redefine the way in which we understand technology. More pertinent, can technodiverse ways of thinking about technology allow for a critique of the technologies of Enframing that has led to the Anthropocene? The dangers of the Anthropocene illustrate why this question is of such great importance: the Earth and her resources, as well as humanity itself is in danger of Enframing that could render the Earth and humanity standing reserve. How can we dismantle this kind of thinking? Hui suggests technodiverse ways of thinking in which the Cosmology of local cultures reframe the Enframing of the Anthropocene. It already becomes clear that the type of dualism that contributed to the creation of the Anthropocene is scrutinised. The following chapter will thus concern ways in which the particular framework of Ubuntu could further scrutinise Enframing of the Anthropocene. To do such an evaluation, the question of *what is Ubuntu?* was addressed. In the following chapter, the framework of Ubuntu provided here will be employed to re-evaluate and critique the key concepts that underlie the Anthropocene that were introduced in Chapter 1.

[46] It is within this "Third Generation", along with scholars from different generations such as James Ogude, Lesley le Grange and Jose Cossa etc. who engage with the question of the Anthropocene by employing an Ubuntu framework, that this thesis is positioned. Within the context of education, Cossa proposes a theory of *Cosmo-Ubuntu* (2020).

Chapter 3

Ubu-Ntu in the Anthropoicene

Introduction

The departure point of this thesis was to move *towards* diverging ontologies of the Anthropocene. In this chapter, Ubuntu as one such diverging ontology will be described. In this motion *towards* an Ubuntu ontology of the Anthropocene, the claim is not to arrive at a conclusion of what this framework would be. Rather, a series of considerations that shape the debate surrounding the ontology of Anthropocene was presented in the first chapter. This chapter concerns the reframing of these considerations through the localised framework of Ubuntu. Ubuntu ontology is, as will be discussed below, a redundant concept as Ubuntu is primarily an ontological framework from which moral considerations extend. This reframing will be undertaken in the light of Yuk Hui's arguments that technodiverse conceptions of the Earth and technologies could serve as a way to dismantle the destructive monotechnical tendencies that have led us to the Anthropocene. It is important to note that while the distinctions between different aspects of Ubuntu, such as ontology, epistemology and ethics, do occur in the scholarship, these distinctions are transient. They allow for the framing of specific aspects within the theory, but cannot be understood in complete separation from other branches of inquiry. The reason for this, as will be discussed, is that Ubuntu ontology grounds other aspects of Ubuntu such as ethics.

The structure of this chapter mimics the structure of the first in order to present clearly *how* Ubuntu reframes the Anthropocene through engaging with some central questions raised concerning the Anthropocene. Firstly, the question of who the Anthropos is will be reframed in terms of Ubuntu in order to show that the Anthropos is primarily a communal concept when engaging with it through this lens. Secondly, the framework of Ubuntu redefines the way in which agency is understood as the non-human is understood as inherently having agency. When agency is conceptualised through this framework, the way in which we interact with the environment takes place through co-agency. Finally, the reframing of the technologies of the Anthropocene will be discussed as the view of the human, ontology and agency determined the way in which we relate to the Earth through technology.

As will become clear in this chapter, the various elements of Ubuntu are heavily interrelated: ethics cannot be understood in the absence of the ontological framework that grounds it, ontology cannot be separated from the metaphysics in which it is grounded. It is for this reason that the discursive units of this section cannot be completely separated from one another and the different sections of this discourse should rather be understood as *layers* of the argument instead of discursive units. Thus, the aim of this chapter is not to arrive at a conclusive framework of how technologies can be understood in

the age of the Anthropocene but is rather intended to provide an orientation point for future descriptive and normative frameworks of technology in the African Anthropocene.

Who is the "Anthropos"? (Revisited)

Mirroring the question posed in Chapter 1, now restated against the backdrop of the expositions in Chapters 2 and 3, *who is the Anthropos* whose activity has so drastically altered the course of the planet, bringing to an end the age of the Holocene? The discourse surrounding the Anthropocene has revealed that, while *humankind* might be responsible for our exit from the Holocene, this exit also encompasses other lives, for instance in Haraway's Chthulucene. The Anthropocene as a discursive tool also reveals flaws in the notion of the Anthropocene such as the term being indicative of the primacy of humankind's agency. As Latour and Stengers noted, Gaia herself *intrudes* by exhibiting agency on the Earth, and certainly intrudes on the notion that the Anthropos is the primary carrier of agency. Of course, the notion of the Capitalocene suggests that the coming of the Anthropocenic age also has something to do with the way in which we structure economic and political life in our Earthly *oikos*. The mainstream discourse about the Anthropocene scrutinises what we mean with "Anthropos" and this discourse raises questions not only about who the Anthropos is, but how the perceived planetary centrality of the Anthropos has shaped the march to the epoch of the Anthropocene as well as what living in this new epoch means for the Anthropos. How, then, would the "Anthropocene" be understood if it was conceptually framed in terms of an Ubuntu framework? Central to Ubuntu is the notion of personhood as communally embedded. Jomo Kenyatta (1965, p.297, in Kamwangamalu, 1999, p.27) notes about the Kiguyu people, whose lives are governed by Ubuntu, that:

> *Nobody is an isolated individual. Or rather, his uniqueness is a secondary fact about him; first and foremost he is several people's relative and several people's contemporary ... This fact is the basis of his sense of moral responsibility and social obligation.*

The notion of personhood is thus profoundly relational. It is for this reason that the proverb *umuntu ngumuntu ngabantu,* roughly translated as "a person is a person through other persons", figures prominently in discussions about Ubuntu[47]. As Bhekizizwe Peterson notes (2019, p.1616), the notion of "personhood, identity, and morality are not innate but are achieved in relation to and through social interaction based on ethical conduct with others". It is also for this reason that praise and castatigation takes the form of affirming one's humanity (*u nobuntu*) or denying it (*akana buntu*). In outlining the differences between Western and Ubuntu notions of personhood, Menkiti (1984, p.172) writes that "personhood is something which has to be achieved" and one is not simply considered a person because they are born human. He continues by noting the absence of ritualised grief when the death of a child occurs, as opposed to more elaborate burial ceremonies and ritualized grief that occurs when an older

[47] It is for this reason that John Mbiti's definition of Ubuntu "I am because we are, and since we are, therefore I am" (1969, p.141) is one of the most often cited definitions of Ubuntu.

person dies, which indicates a "significant difference in the conferral of ontological status" (1984, p.174). Personhood can thus be attained through the way in which an individual participates in communal life and engages in various rituals and obligations that secures one's position as a member of the community. Antjie Krog (2008, p.357) gives a striking example of how personhood is accordingly understood through noting the words of one of the mothers of the Gugulethu Seven[48]. Cynthia Ngewu said about the murder of her son Christopher Piet:

> *This thing called reconciliation ...if I am understanding it correctly ... if it means this perpetrator, this man who has killed Christopher Piet, if it means he becomes human again, this man, so that I, so that all of us, get our humanity back ... then I agree, then I support it all.*

As becomes clear in the words of Cynthia Ngewu, humanity is something that one could lose or regain. The killer of her child had lost his humanity, her forgiveness could help him regain his humanity and her own humanity had been compromised by the actions of the perpetrator. As this example indicates, personhood is intrinsically linked to the way in which one relates to one's surrounding community. Humanity is not simply a given but something that one attains through one's participation in the community. As can be seen from the above example, the way in which personhood is understood in Ubuntu practising cultures impacts one's ethical conduct, rights and duties. When we reframe the Anthropocene in terms of an Ubuntu framework, it would be more accurate to describe it as an Antropo*i*cene which denotes the plural *Anthropoi* instead of a singular *Anthropos*. The discourse surrounding the Anthropocene is not void of pluralist conceptions of the human. However, in an Ubuntu reframing this notion this plurality as a movement towards interconnectedness becomes much more radical when considering that interconnectedness extends beyond humanity (as will be discussed).

Beyond the Anthropos

The interconnectedness of beings extends further than humans alone. LenkaBula (2008) warns against an interpretation of botho/Ubuntu[49] that lends itself to an anthropocentric framework. Concepts like respect, humane relationships, compassion and caring for others are often seen as central values within the botho/Ubuntu framework. LenkaBula (2008, p.380) notes that this framing neglects the notion of this worldview as an "integral part of ecosystems that lead to a communal responsibility to sustain life". She further notes the many symbolic demonstrations of this interconnectedness with the non-human environment in communal lives such as that of the Basotho people of which she is part of[50]. The way in which *botho* affirms the interrelatedness between communities and the natural environment also leads

[48] A group of young men who were anti-Apartheid activists were murdered by the South African Police Force on 3 March 1986 and became known as the "Gugulethu Seven". Antjie Krog was a journalist during the Truth and Reconciliation Commision (TRC) in South Africa who detailed her experiences, particularly also the testimony of Cynthia Ngewu, in her book *Country of my Skull* (1998).

[49] Although the terms are used interchangeably here, *botho* refers specifically to the Sesotho interpretation whereas *Ubuntu* is typically used in isiXhosa and isiZulu.

[50] For instance, many clans identifying themselves with the ecology and communities in which they live (for instance, Bakoena literally translated as "those of the crocodile", Bafokeng as "those of the hare", Bataung as "those of the lion", and so forth).

to a re-evaluation of the meaning of ecological justice in African communities. LenkaBula states that (2008, p.390), through a botho framework "ecological justice regards as unjust those actions which transfer environ-mental risks onto people and creation not implicated to their production, articularly subaltern groups". Specifically, she critiques the hyper-capitalism and economic globalisation that deny the fullness of life for humanity and creation (2008, p.393). While the notion of *botho*, more commonly used in Sesotho and Nguni languages, denotes the interrelatedness of being, the Shona concept of *Ukama*[51] more specifically defines the relation to the non-human other. Ukama could thus be seen as a broader understanding of Ubuntu that emphasises relatedness to the entire cosmos. Murove argues that while Ubuntu refers more specifically to humaneness, the concrete form of ukama refers more specifically to relatedness in which states that "human interrelationship within society is a microcosm of the relationality within the universe" (2009, p.316). Murove continues by noting that ukama provides the ethical anchorage for socal, spiritual and ecological togetherness. In other words, the notion of ukama shapes the way in which we act in the world, and by definition how we act through technologies.

Scholars such as Edwin Etieyibo develop this notion of African ontology and metaphysics as a basis for a relational cosmology of the person and the natural environment further. He writes (2017, p.637) that within this worldview "reality is seen as a closed system so that everything hangs together and is affected by any change in the system" which allows for a metaphysics in which the spiritual and the physical worlds overlap. He continues by noting that the "community of beings" that constitute this system comprises humans, God, spirits, animals and inanimate beings. The ontological essence described here is described as *Vital Force*[52]. Agada (2020, p.103) states that ontologically, vital force is "an all-pervading principle, neither wholly immaterial since it interacts intimately with material nature, nor wholly material since it is not bound up with material nature". Vital Force theory underscores the notion that although Ubuntu is a theory that is centred around humanness, it is not by definition an anthropocentric theory[53]. Through a focus on what it means to be human, Ubuntu dialectically decenters the human. In order to become more human, one's humanity is to be found somewhere outside of the individual human subject. Vital Force theory illustrates this through an epistemological, metaphysical and ontological grounding of Ubuntu as directed towards wholeness and interconnectedness. Ijiomah describes (2006, p.50) this as a "harmonious monism" while Godfrey Tangwa refers (2004, p.100) to the "African eco-bio-communitarian outlook" in which "recognition

[51] Related concepts exist in other African languages, for instance *lesika* in Setswana or *letshinga* in Ikalanga (Le Grange, 2012, p.332).

[52] The notion of *Vital Force* was first articulated in the controversial and highly problematic text by Placide Tempels' *Bantu Philosophy* (1959) described by Paulin Hountondji (1983) as a prime example of "ethnophilosophy". For an overview of the development of the term see Weidtmann's "The Philosophy of Ubuntu and the notion of Vital Force" (2019).

[53] The question of whether Ubuntu is an anthropocentric theory or not has been heavily debated in the aftermath of a controversial publication by Horsthemke (2015), claiming that Ubuntu cannot ground animal ethics. In my view, this misconception occurs through a superficial view of Ubuntu that fails to acknowledge the ontological and metaphysical dimensions of Ubuntu. Horsthemke's arguments have been solidly refuted by Metz (2017b), Le Grange & Aikenhead (2017) and Etieyibo (2017).

and acceptance of interdependence and peaceful coexistence between Earth, plants, animals and humans"[54].

Ubuntu as inherently relational also challenges the way in which these relations extend to non-human animals. Etieyibo grounds the non-anthropocentrism of Ubuntu partially in the theory of Vital Force consisting of a hierarchy of beings. He refers to Teffo and Roux's claim (1998, p.138) that Vital Force is hierarchically placed in a chain of beings in which God or the creator and the source of Vital Force is at the apex, followed by the ancestors, humankind, the lower forces, animals, plants and matter. For Etieyibo, this "ladder" or hierarchy of Vital Force does not translate into the rejection of intrinsic value. Instead, the hierarchy of being could be understood as "closer to biocentrism or ecocentrism rather than anthropocentrism" (2017, p.155). Thus, humans are not the single most important bearers of intrinsic value and exist within an order in which the non-human other is possessed ontological status in itself. The stark dualism that has characterised the Western philosophical tradition, also in the critique of this dualism, cannot unproblematically be translated into an Ubuntu and other African worldviews. Metz presents a more secular approach in claiming that the *capacity* to relate to the non-human (animal) other confers or recognises moral status. He writes (2017, p.283) that "communal *relationship qua* identity and solidarity that has or confers moral status, but rather an individual's natural *capacity* for it". Moral status is attributed not only to subjects and objects of the communal relationships, but partial moral status is also extended to those who can only be objects of this communal relationship. Relationality within an Ubuntu framework is thus extended to the other regardless of levels of reciprocity. Rather, it is the ability to relate communally that is foundational in moral status.

An Ubuntu cosmology serves as a framework for the reframing of the Anthrop*oi*cene as radically relational. Le Grange (2012, p.334) argues that this view of nature is consistent with the notions of *deep ecology* as presented by Arne Naess (1973) and also resonates with the *wholeness of the Earth* notion that James Lovelock (1995) defined as Gaianism. While Ukama resonates with more modern notions of ecological interconnectedness, this ancient worldview has only recently become codified in the so-called archive of Ubuntu philosophy. Le Grange (2012, p.334) draws further correlation between modern ecological interconnectedness and Ubuntu/bothu/ukama when he employs Guattari's (2001) well-known view of th*e three ecologies of the self*. He argues that the notion of transversality presented by Guattari also illuminates the way in which suffering in one register will be witnessed in another. In other words, the erosion of Ukama through colonial rule or apartheid-capitalism will effect other ecological registers. Le Grange (2012, p.334) states that "If Ubuntu means that our deepest moral obligation is to become more fully human then this means not only fostering a closer and deeper relationship with human communities but also with biotic communities and the entire

[54] The description here of the non-anthropocentric Ubuntu notion of relating to the environment is limited and serves to illustrate the radical relationality of Ubuntu and the non-human other. The discourse is, of course, much more nuanced and Ubuntu scholars have increasingly been engaging with issues like climate change and environmental devastation. For instance, see *African Philosophy and Environmental Conservation,* Chimakonam (ed. 2018).

ecosphere". This implies that the realisation or self-actualisation of one's personhood is inextricably linked to the way in which one relates to other human beings and nature.

Agency in the Anthrop*oi*cene

As mentioned in Chapter 1, the notion of the Anthropocene as a conceptual tool to understand the way in which human beings relate to the Earth also uncovers the question of how human beings relate to the Earth through our technologies. The debate surrounding agency in the Anthropocene raised the question of *who* has agency. Those in support of the Gaia hypothesis claims that the Earth herself has agency and that the environmental catastrophe's, including COVID 19, is seen as the enactment of this agency. Peter Haff goes as far as claiming that the technosphere, which includes human technologies and the remnants thereof, has intrinsic purposeness.

How would an Ubuntu understanding of agency frame the way in which the Anthropocene and its technologies are understood? Firstly, the autonomy of the individual is de-centred as the point of departure from which the question of agency is understood. Gyekye (1998, p.318) argues that Ubuntu "tends to whittle down autonomy of the person; that it makes the being and life of the individual person totally dependent on the activities, values, projects, and practices, and the ends of the community". Not only is the autonomy of the individual[55] underplayed, the interests of the community is emphasised. This does not mean that a sense of individualism is completely diminished, rather it is much less pronounced than the overtly individualistic notions of the self that exists in the West. Gyekye (1997, p.35) defends a more moderate communitarianist view in which he argues for equal concern for individual rights and social responsibilities. He argues that the metaphysical construal of personhood as communal by scholars such as Menkiti and Mbiti is overstated. Later scholars such as Eze (2008, p.388) refined the community-individual discourse through a conception of the individual as discursively situated between the self and community. Critiques such as that of Gyekye warn against the diminishing of the singular person as it undermines agency and duties of the individual.

Secondly, the interconnectedness of being makes it clear that agency within Ubuntu ontology will always be a co-agency[56]. Central to the notion of co-agency is the ontological interconnectedness of the non-human and the environment as portrayed through notions like Ukama and Botho. As reiterated by Ramose (2001, p.98), this relationality exists not only between human beings, but it extends also to the relation between human beings and physical or objective nature. He continues by writing that "to care for one another, therefore, implies caring for physical nature as well". For Ramose, the role that

[55] However, the position of *radically relationality* is maintained throughout this thesis as relationality here is considered also in terms of the non-human (the environment and the non living). This inclusion of a chain of being is radically different from other communitarian views.

[56] For a recent and very thorough discussion of Ubuntu and co-agency in the age of the Anthropocene, see James Ogude's lecture on *Ubuntu and the Principle of Co-Agency: Reflection on nature-human nexus in African ecology* that was (digitally) presented at the Gesellschaft für Interkulturelle Philosophie's conference *The Political Dimension of Nature: An Intercultural Critique*, held on 4 June 2021.

technology plays in the fragmentation of this wholeness is not to be overlooked. He claims (2001, p.102) that the "reductionist, fragementative and empiricistic rationality (that) continues to make great advances in the sphere of technology" results in disturbances in the ecology which also leads to a disruption in the precarious balance of human beings and their environment. It is also within the context of impending ecological disaster, caused by technological advancement, that Ramose calls for the need to restore botho. Thus, co-agency in an Ubuntu framework could firstly be understood as the rejection of the dichotomy between the self and the other, which included the non-human self. The concept of Ubuntu is critically opposed to the Cartesian dualism that has shaped, and continues to shape, the Western discourse to a large degree. This diminishing of the subject-object dichotomy is also clearly illustrated in the thought of Ramose. Agada (2021, p.7) describes this view of Ramose's as a porosity of the borders separating individual entities. This frames the agency of these entities as existing in a network absent of rigid borders, which means that these entities and their actions are understood in terms of "a continuation of interactive relationships within a dynamic, self-sustaining, or creative network"[57]. The affordances allowed by this dualism, such as an ontological distancing between the self and the environment which allows for the destruction of the external environment without a disruption of the self, is foreign to an ontology that is grounded in Ubuntu. Consider again the Gaia hypothesis as presented by scholars such as Stengers: Vital Force theory enforces this view by conceptualising the Earth as an entity with Vital Force, or agency that is beyond but interrelated with our own form of agency. Human agency exists within the confines of a natural environment in which one acts in ways that promote or disrupt Ukama or Botho.

A further consideration when it comes to co-agency in the Anthropocene is the notion of moral status that extends beyond notions of moral status as it is typically understood in the global North. As was discussed earlier in this chapter, moral status is deeply intertwined with ontological conceptions of the self and personhood and it is extended to the non-human. While Ubuntu might be critiqued as hierarchical, this hierarchy includes non-human animals and the environment. Etieyibo argues while this view is indeed hierarchical, positioning within this hierarchy does not affect intrinsic value. He writes (2017:155) that "one might say that they are valuable in and of themselves in virtue of their humanity or beingness". Hierarchical positioning on the ontological chain of being therefore does not determine value, rather value is determined through being part of this ontological system of being. It is for this reason that the natural environment, by virtue of being ontologically interconnected, has intrinsic value. Mbiti (1969) describes many instances in which the natural environment, such as plants, animals and rivers, is understood as fundamental to the ontology of Ubuntu frameworks[58]. As noted earlier in the chapter, moral status is not considered solely on the basis of the other to respond to one's

[57] For more on the breakdown of subject-object dualism in Ramose's thought, see Bruce Janz's *Mogobe Ramose, Cosmopolitanism, and the Being to Come* (2019).

[58] See Chibvongodze (2016) for a more complete discussion of various natural elements that shape an Ubuntu worldview.

actions, but also on one's *capacity* to act towards the other (Metz, 2017a, p.283). It is through this capacity to relate to the community and the environment that one becomes "a person with Ubuntu". Would the implication then be that we become more or less human depending on the way in which we relate or act in the world? Logically it follows that this is the case. Within the framework of Ubuntu, acting in ways that promote central values like wholeness, harmony, balance and interconnectedness is closely related to one's own ontological status as a human being. Becoming more human thus means that one relates more humanely to the other, and this other is extended to the environment.

A much more complex question is whether the technosphere as described by Haff (2019, p.139) could be understood as having intrinsic purposeness or agency beyond the grasp of human control. One might concede that the technosphere has gained autonomy beyond the confines of human agency in a similar vein as in which animals have agency. One could also concede, when considering more animistic and spiritual theories of Ubuntu, that the technosphere now has its own vital force through which it exists on the Earth. However, an Ubuntu framework in which the dichotomy between the self and the other is diminished cannot easily accommodate the notion that the technosphere, something that was created by human beings, now exists as a completely separate entity with its own purposiveness. More drastically, if the technosphere disrupts community, balance and harmony which are central to being, it clearly does not abide by the principle of Ubuntu[59]. Co-agency in and of the technosphere would thus be framed within a communal network of actors which, in turn, would subject the way in which it is constituted to a set of values that aim to promote the well-being and harmony of the group. Of course, this does not mean that the problem of the technosphere moving increasingly out of reach of the control of human beings is solved. It would rather entail that the technologies that form this new sphere of the Earth would be understood, designed and acted upon in ways that promote the values of the community. To put it more concretely, if technologies denigrate the communal way of life and the environment that make human flourishing possible those technologies should be discarded.

Although the notion of shared agency is not unique to the African tradition, Ubuntu offers much in terms of contributing to a semiotics of the Earth in which agency is intertwined with agency of the environment. As Bruno Latour notes (2014, p.5) in *Agency at the Time of the Anthropocene*, "to be a subject is not to act autonomously in front of an objective background, but t*o share agency with other subjects that have also lost their autonomy*". In his description of agency, Latour (2014, p.16) also calls for a return to the "metaphoric zone" that subjects and objects had tried to escape. We are to become, once again, the *Earthbound* and who have the chance to articulate our speech in ways compatible with the articulation of Gaia. Latour argues (2014, p.12) that "existence and meaning is synonymous" and therefore calls for a semiotics that reaffirms the articulation of Gaia. He remarks (2014, p.7) that one of

[59] One could even go as far as claiming that certain technologies of the Anthropocene are forms of *witchcraft*. As Banda notes (2019, p.217), at the core of the notion of witchcraft is the "perceived ability to destroy a person's capacity to flourish as a dignified human being". Some exploitative technologies of the Anthropocene can no doubt be seen as destroying a person's capacity to flourish as a dignified human being.

the main puzzles of Western history is not that "there are people who still believe in animism", but rather that many still live in a deanimated world of mere stuff. Ubuntu philosophy thus presents a semiotics that allows for the re-animation of the multiplicity of agency in which we are ontologically entangled. For instance, the notion of *Ukama* presents articulations of our relation to the Earth, or actor-Earth in the Gaia paradigm, that allows for the Earth as de-animated object (or standing reserve) to be reframed in terms of a shared ontology. Semiotics extends beyond discourse, language, text or fiction (Latour, 2014, p.12). Therefore, lived praxis that encompasses Ubuntu maxims, rituals, songs, folklore and so on allows for a semiotics that affirms the environment as something beyond a mere deanimated object. Take for example Tangwa's (1996, p.190) description of the way in which the Nso' people of Cameroon relate to the Earth (*nsaiy*): the Earth is seen as a potent force, and is literally not cut into without ritual permissions. Transgressing the law of the Earth (*nsër nsaiy*) leads to consequences that are "severe, metaphysical and unavoidable" (ibid.). In Nso' cosmology, the Earth is spoken of "as a separate being with a will and body (*wun*) of its own" (Chilver in Tangwa, 1996, p.190). The ontological entanglement of different modes of being also means that there is a clear link between the transgressions of persons and nature. As van Binsbergen (2001, p.55) notes that as a result of "human transgressions, nature is supposed to grind to a halt, life force reduced to a minimum, and as a result crops fail, births stagnate, and death prevails, until the cosmological order is restored by socio-legal-ritual means". This form of transgressing of the Earth is understood as something that should be restituted through sacrifices and ritual. The rituals described here are once again a way of reconciliation of different modes of being, in this case the person and the Earth. In an Ubuntu semiotics of the Anthropocene, the Earth becomes reframed also as part of an ontological wholeness which necessitates reconciliation should transgression against the other occur.

As was mentioned in Chapter 1, the concept of the Anthropocene had grown out of its embeddedness in the geological sciences. The framework of Ubuntu allows for a semiotics that broadens this term to include notions of agency which serve to re-animate that which has been rendered objects destined for standing reserve.

Ontology in the Anthrop*oi*cene

Ubuntu as ontologically grounded has been described in the preceding sections. However, when one considers ontology in the Anthropocene the implication of being and time within Ubuntu has not been fully developed.

Intergenerationality

An Ubuntu ontology of the self is also deeply intertwined with temporally to the community. Ramose describes this as the onto-triadic relatedness of being (2002, p.50). He claims that -Ntu also includes

generations that have already passed away (the living-dead[60]) and the generation that are yet to be born (the unborn). Ukwamedua (2018, p.26) provides a detailed overview of how the ancestors have been conceptualised in African existential metaphysics. The ancestors are typically understood as those who have "distinguished themselves" (Gyekye, 1996, p.162) and have led particularly virtuous lives[61]. Furthermore, the ancestors are near and present in everyday life. Ukwamedua (2018, p.27) writes that the "ancestors are able to see and observe what is happening on Earth, and they maintain the greatest interest in the affairs of man, most especially those of their immediate family". Mbiti's discussion (1969, p.19) of the concept of time emphasises the idea that the past is more ontologically real than the present[62]. The living-dead have gone through more initiations than the living, and in terms of the notion of becoming more human that was discussed in the first section of this chapter, the living-dead have had more time on Earth to become more human.

The relational is described throughout this thesis as a *radical relationality*. Not only does it include the present-day human and non-human community, but also those who came before and those who are yet to be born. Wiredu (1994, p.46) describes the obligations of the current generation to other generations as follows:

> *Of all the duties owed to the ancestors, none is more imperious than that of husbanding the resources of the land so as to leave it in good shape for posterity. In this moral scheme the rights of the unborn play such a cardinal role that any traditional African would be nonplussed by the debate in Western philosophy as to the existence of such rights. In upshot there is a two-sided concept of stewardship in the management of the environment involving obligations to both ancestors and descendants which motivates environmental carefulness, all things being equal.*

Ubuntu as a mode of being thus includes generations that are yet to be born. The implications of this framework for technologies, particularly modern technologies of the Age of the Anthropocene, have been explored in recent scholarship. Leonard Chuwa (2012) elucidates how an intergenerational view of ethics could be used to reinterpret ethical concerns surrounding biomedical technologies such as germline editing and technologies that impact the environment. He states (2012, p.249) that within an Ubuntu mindset, the "destruction of the integrity of future generations means, at the same time, self-destruction". The concept of being ontologically interconnected to the generations that came before you and who will come after you is thus fundamentally intertwined with the well-being of the current generation. Chuwa, along with scholars from other cultural traditions such as Takayuki Morisaki,

[60] The term *the living-dead* was popularised by John Mbiti. However, the term has different nuances depending on locality. Ukwamedua notes (2018, p.27) some examples such as the Baba nla (great fathers) of the Yorubas, the Ndichie (those of old) of the Igbo, the Okwoikwo (great parents) by the Igalas.

[61] It is for this reason that Ubuntu has been understood by some to portray certain characteristics of Virtue Theory (see Kayange, 2018).

[62] Mbiti argues (1969, p.28), through employing the Swahili notions of *Sasa* (the now period) and *Zamani* (the unlimited past) that African ontology has a greater emphasis on the past while views of the future are not as prominent.

advocate for the inclusion of diverse groups of decision makers when it comes to technologies that can impact future generations. Pellegrini-Masini, *et al*. (2019) focus more specifically on the environmental concerns that are raised in terms of technologies that will impact future generations. They note (2019, p.262) that in an Ubuntu view of energy technologies, the *temporal borders* that delineate whose rights and duties are to be taken into account are redefined. They continue by noting the asymmetry that exists between generations as the current generation have the power to affect future generations, while the future generations only have the power to praise or blame past generations. However, the current generation is also under more scrutiny as they have to account for their actions in relation to their ancestors (the living-dead). The radically relationality that characterises an Ubuntu framework once again defines the way in which personhood is understood and lived out. In other words, if your personhood (in terms of becoming) is dependent on your relationship with other generations, then it follows that those who live lives of social or environmental destruction are limited in their attempt to become more of a person.

Returning briefly to the notion of agency in the Anthropocene, the onto-triadic relatedness of being implies that one's actions are situated within a complex network of actors. Therefore, one's directedness towards the environment is not only determined by the notion that the environment is ontologically part of the hierarchy of beings, but also that one's directedness towards the environment could negate or improve your moral status with relation to other generations. To illustrate how this view can serve as a critique of technologies of the Anthropocene, consider Hui's notion of the *Global Time Axis* as was discussed in Chapter 2: the synchronisation of a Global Time Axis leads to an acceleration of technologies that exploit the resources of the Earth. Monocultural thinking of technology establishes a Global Time Axis that is appropriated by non-Western cultures and leads, among other things, to views about the acceleration of technologies as indicative of progress. Should communities abide by more Ubuntu-centred views, technologies would perhaps be understood in ways that would privilege future generations more than current generational progress. Competition and profit as central concerns of technology would thus be critiqued from the perspective of radical relationality. Of course, the idea of Ubuntu presented here is an *ideal* view of the theory and does not assume that the same type of critiques does not exist in other cultures. Furthermore, the problematic geopolitical and economic considerations that play a role in the development of technologies in the African Anthropocene cannot be understated. The value of the critique of technologies of the Anthropocene here is that it provides localised forms of critique that could, potentially, stave off the encroaching monotechnical thinking that is playing an increasingly prominent role in technological development in Africa[63]. The argument here is that understanding the Earth as interrelated to our won being, those who came before us and those

[63] This crique cannot be separated from the forms of critique raised in discourses concerning decolonisation (see Simpson, 2020). An Ubuntu informed critique of the technologies of the Anthropocene could thus be framed more specifically in terms of postcolonial theory. However, the nuances of Ubuntu and the technologies of the Anthropocene with regards to the postcolonial discourse does not fall within the scope of this particular study.

who will come after us, would make it considerably more difficult to frame the Earth as standing reserve. The Earth in this framework is not understood as something separated from our own being, but as intrinsically connected to our own personhood.

The Enframing of Being

The ways in which being is understood through the framework of Ubuntu has been illustrated through the way in which being is conceptualised in terms of personhood, the community, the environment and other generations. A further aspect that remains to be explored is the ways in which an Ubuntu ontology resists technological destining (*Geschick*) as conceptualised by Heidegger. Heidegger describes (1969, p.31) technological determining as that which sets humans "upon a way of revealing" into that which they can "neither invent nor in any way make". The supreme danger here is, as shown in Chapter 2, that this destining upon which human beings are set leads to a form of Enframing that renders humans standing reserve. Destining itself is not what causes concern, but it is the Enframing through technology that could lead to the danger of Enframing the beings as standing reserve. As Botha (2003, p.161) summarises it, this form of destining means that the "human being is no longer Dasein as an open possibility, but rather a grounded actuality, a fixed identity". Furthermore, it is the complete forgetfulness of being that is fully adapted to the technological world that brings about the possibility of being Enframed as standing reserve. In his now infamous Der Spiegel interview (1976: para.103), Heidegger states that humanity is "posed, enjoined and challenged by a power that becomes manifest in the essence of technicity - a power that man himself does not control".

An Ubuntu ontology as it relates to technology is fundamentally at odds with this so-called essence of technology that is capable of fixing identity. For this reason, an ontology that *fixes* identity is in opposition to the dynamic motion of an Ubuntu ontology. Once again notions associated with Ubuntu ontology such as vital force diverge from non-African ontologies. Historically, attempts to identify a uniquely African ontology has been characterised through controversies that seek to differentiate an African ontology from Western categories that have been imposed, both intentionally and unintentionally, on the defining thereof. Through a critical re-reading of the work of Tempels, Mosima (2016, p.49) suggests that the concept of Being as it is construed in Western ontologies is determined more by the concept of essence as opposed to African conceptions in which the notion of force is more central. However, Tempels' original conception of force has been heavily scrutinised. Asouzu (2007, p.193) goes as far as claiming the Tempelsian Damage that was done due to Tempels' portrayal of Vital Force that portrays an African ontology that "leaves us with an ontology that has nothing elevating, except magic and superstition". Perhaps the most thorough critique on Tempels' conception of being as force was developed by Alexis Kagame (1951) conceives of the categories of

being[64] with relation to the concept of -Ntu. He develops the notion further by elaborating on four categories of being namely[65]:

Muntu/Bantu: Human being

Kintu/Bintu: Thing

Hantu: Place and Time

Kuntu: Modality

In Kagame's ontology, all that is exists within one of these four categories. These four categories are not understood as physical substances, but as forces. A common constant in these four ontologies is that of -Ntu. As is the case with Ramoses description of Ubuntu ontology, the notion of -Ntu grounds Ubuntu ontology. Ntu is understood here as a universal force and it cannot be conceived of apart from its manifestations of Muntu, Kinti, Hantu and Kunti. Kagame thus elaborates upon Tempel's notion of forces to include different categories of forces that also interrelate while identifying -Ntu as the underlying category of Being. Similarly to the critique of Tempels, Kagame has been criticised for being "too unapologetically Aristotelian in his analysis of the Bantu ontology of being" (Ukwamedua 2011, p.258). However, scholars like Tempels and Kagame raised the question of how a distinct African ontology can be defined.

Innocent Asouzu provides a crucial critique on Kagame's categories that further deepens the concept based on his critique of Aristotelian ontology as divisive, polarising and dichotomising (Chimakonam, 2016, p.16). Rather, Asouzu (2007) suggests an ontology of *Ibuanyidanda*[66] (complementarity) that seeks to overcome the dichotomies raised by conceptions of African ontology that rely too heavily on Aristotelian conceptions. In his critique of prior conceptualizations of African ontologies, Asouza illustrates the fundamentally complementary nature of African ontologies that is often underplayed by earlier conceptions of the theory. Ibaunyidanda expresses the idea that "being is that on account of which anything that exists serves a missing link of reality" (Asouza, 2011, p.31). Although Asouza's account differs from that of, for instance, Ramose, what does become clear is that the understanding of being differs from Western conceptions of ontology. Asouza's critique also makes it clear that views that are overly dependent on the historical Western or Greek framework presents an ontology that is reductive and neglects central notions of African ontology such as interrelationality, complementarity or force. While Ramose also critiques Kagame[67], his critique is more sympathetic to

[64] Kagame's conceptualisation of ontology is based specifically on the linguistic ethnophilosophy of the Banyarwanda people of Rwanda and the Kinyarwanda language.

[65] This translation is from *Alexis Kagame's Ontological Categories* (2019) by Bassey and Mendie.

[66] The concept of *Ibuanyidanda* as a new ontological horizon is based on the Igbo complementary system of thought. For a more detailed analysis see Asouzu (2017, p.11).

[67] In Ramose's response (2006) to Kagame's use of Aristotelian categories, he also points out Kagame's problematic conflation of ontology and metaphysics. He asks (2006, p.60) whether writings such as that of Kagame on African metaphysics is, indeed, an African metaphysic or if it is "only an African ontology masquerading as metaphysics". The relation between African metaphysics and ontology is not explicitly addressed in this thesis. However, to arrive at a comprehensive African philosophy of technology, this question would have to be addressed in further detail.

the use of Western categories, or at least engaging in dialogue with those categories[68]. As noted earlier, Ramose's ontology originates from a holistic interrelation between Ubu- and -Ntu which presupposes motion or movement. As Ramose places emphasis on the dynamic attribute of being by coining the concept of be-becoming. He writes (1999, p.55) that "instead of recognising only be-ing becoming, that is infrangible incessant motion, language insists upon the fragmentation of be-ing becoming into be! and becoming". The imposed separation and opposition between be and becoming is constantly being overcome. As Agada (2021, p.6) describes it, be! is conceived of as a "broken link in the network of intimately interconnected things". It is through this reconciliation between the be! and the becoming, the Ubu- and the -Ntu, that the universe is reconciled in a harmonious oneness or wholeness. Ubuntu as dynamic and always already in motion is also illustrated by Ramose's use of the term *rheomode* (2019, p.37) which uses the Greek *rheo* (to flow) to indicate a new mode of language[69]. Ubuntu ontology as rheomode thus critiques the strict, often assumed, dualism between subject and object also through language[70]. Thus, Ubuntu is grounded in a dynamic interrelatedness towards wholeness that shapes the entirety of being in different modes such as speech, relations with others and the environment and the understanding of the self as *be-becoming*.

An Ubuntu ontology is, at its core, incommensurable with the fixing of a self or an essence. Of course, this does not mean that the greatest danger of rendering persons as objects or standing reserve does not occur in African Ubuntu centred communities. Precisely the opposite is true: succumbing to Heidegger's greatest danger would instead be an indication that there is no longer Ubuntu present in the way that humans relate to each other, the environment and to technologies that mediate these relations. The above discussion of Ubuntu ontology reveals some of the discrepancies between a Heideggerian narrative of Enframing, but may also serve as impetus for uncovering an Ubuntu framework through which the technologies of the Anthropocene can be understood.

Technologies of the Anthropocene: Ubuntu Cosmotechnics

From the above discussion, what would an Ubuntu ontology of technology entail? Firstly, the deeply interrelated or interconnectedness of being would entail that the question of the Anthropocene cannot be raised in the singular, but has to be understood in the plural. The notion of the *Anthropoicene* that was constructed is an attempt to address the problematic notion of the singular Antropos at the centre of the cosmos. Instead, interconnectedness is understood as fundamental to becoming a human being

[68] Van Binsberger (2001) criticises the views of prominent Southern African Ubuntu scholars such as Ramose as being, amongst other things, products of globalisation. For a solid rebuttal of this view, see Bewaji and Ramose (2003).
[69] For a detailed exploration of rheumatic language structure or action language structure as an alternative to the question of being in both African and Western thought, see Grivas Kayange's chapter on Action-Language Ontology (2021).
[70] Ramose (2003, p.272) also conceives of human beings as simultaneously *homo sapiens* and *homo loquens*, the human being that speaks and is the maker of politics, religion and law.

with Ubuntu and while the interconnectedness of Ubuntu might seem, at first glance anthropocentric, this interconnectedness extends beyond the human creatures of the Earth. As stated above, it could convincingly be argued that in order to become fully human, one must relate to the Earth in ways that strengthen this interconnection instead of severing them. As was discussed in later sections of this chapter, interconnection also has a temporal dimension which entails that the way in which we relate to the environment also satisfies our duties to those who have come before and those who will come after us. Once again, this view extends beyond anthropocentrism as the natural environment is also endowed with ontological status that endows it with intrinsic value.

Secondly, the way in which agency is conceived of reframes technology in the Anthropocene. Agency is first and foremost a co-agency between entities based on the shared -ntu. A strict distinction between the human and the non-human is upheld. Human persons act as agents within a framework in which they do not act on their own, but their actions are intertwined with other ontological beings such as the environment or the non-living. A crucial difference between theories of the Earth acting as an agent, such as the Gaia hypothesis, is that Ubuntu ontology through the interconnectedness of *Anthropoi* frames agency of the environment through the co-agency of human beings. In other words, it is not Gaia herself that acts, but beings like the ancestors that act through Gaia (as was discussed earlier by nothin that transgressing of the Earth is seen as also transgressing against the living-dead). The Earth has a will of its own, able to afflict those who transgress and reward those who care through the Earth, also through rituals enacting this relationship. The notion of the technosphere as acting outside of this framework would be untenable. Even if the technosphere is understood as acting independently, it cannot be seen as an ontologically separate entity. Reconciliation or a restoration of harmony, thus includes entities like the technosphere. Ubuntu also posits a semiotics of the Earth that seeks to re-animate the Earth and diminish the boundaries between the self and the non-human other.

Thirdly, the discussion surrounding ontology indicates that Heidegger's renowned question that dominated the Western discourse, *what is the essence of technology?,* would be untenable within an Ubuntu Cosmotechnics. Instead, relating to technology is not defined in terms of essence, but in terms of an interrelatedness of being. While the precise theoretical framing might diverge from depending on localised vantage points (for instance some scholars arguing for vital force as central, others for -Ntu or complementarity) it is clear that the relation to technology cannot be found in the essence of the human or technology, but somewhere *in between*. Technologies in the Anthropocene cannot be understood from beyond the relations of different categories of being. For instance, it cannot be understood in terms of Muntu (human) alone but has to be understood in relation to something else, like Kintu (technology) or Hantu (time). It is for this reason that the most recent generation of Ubuntu scholars, such as Le Grange, grappling with the questions of the Anthropocene suggest (2016, p.34) that we engage with a post-anthropocenic view of that does not take as a starting point the "atomised individual" but is "ecological; embedded in the material flows of the Earth/cosmos, constitutive of these flows, making

the subject imperceptible"[71]. The first chapter of this thesis claims to present a framework *towards* diverging ontologies of the Anthropocene. In this chapter some of the nuances of how to potentially arrive at such an ontology was discussed. However, many of the implications of this framework still have to be fully developed. For instance, how does one approach technology in this framework? In the first chapter, the difference between the so-called transcendental and empiricists approaches were considered. Redefining this question through an Ubuntu ontology would, on the one hand, emphasise ontology as it is a worldview that departs from a deeply ontological understanding of the self and the non-human. On the other hand, the interconnected dynamic relations between the self and technology would call for a study of the way in which these relations are mediated.

[71] This is modelled after Rosi Braidotti's dissolution of the self or the individual ego in *The Ethics of Becoming Imperceptible* (2006).

Conclusion

Towards an Ubuntu Cosmotechnics of the Anthropocene

In this thesis, an attempt was made to arrive at an orientation point through which technologies in the Anthropocene could be understood and critiqued through the localised framework of Ubuntu. The first question that was addressed is what is meant by the *Anthropocene*? This notion was discussed as a conceptual tool that allows for a re-evaluation of how human beings are relating to the Earth. As was also elucidated, the way in which this relation to the Earth occurs is to a large extent determined by the way in which we understand and relate to technology. The chapter concerns a movement *towards* diverging ontologies in the Anthropocene, which implies that there is a dominant ontology from which we should now depart as it has led us to the edge of our planetary boundaries. Understanding the Anthropocene as emerging from the geological sciences also hints at the notion that it is through our tools and technologies that we are able to measure and relate to shifts in our environment. The naming of our current epoch as the Anthropocene also raises questions about who the Anthropos at the centre of this concept and era is. Through a discussion of differing ontological understandings of the notion, it becomes clear that the singular Anthropos is not as central to the Anthropocene as it might first appear. This Anthropocene at which we have arrived also concerns those non-human entities with which we coinhabit the Earth. The question that remains is to what extent technology has become an autonomous force, and to what extent humanity can still influence the technosphere? The extent to which human autonomy can still influence the technosphere that is taking on autonomy of its own, what is clear is that the influence that humanity does have is waning. Furthermore, in seeking an orientation point the question also turns toward *how* we have arrived at this place in the Anthropocene. Heidegger and his followers suggest that it is the way in which we enframe that shapes the way in which we relate to our (technological) environment. As the age of the Anthropocene has revealed, we have now entered a time in which Enframing as standing reserve has become a dominant way of relating to the Earth.

For Heidegger, the danger of Enframing is also ontological: we ourselves risk being enframed as standing reserve. Heidegger's theory of Enframing remains influential in the debate about how we are to relate to technology, and by implication the environment, both in the critique of his overtly ontological understanding of technology and the further development of the theory. It is for this reason that the Transcendental-Empirical debate has gained traction in recent years. The question that arises from this discourse is whether to depart from the articular iterations of technology in attempting to understand the way in which these technologies constitute our relation to the world, or whether the way

in which these technologies are enframed should be central in our questioning of technology. When referring specifically to the Anthropocene, Hui suggests a crossroads or *Erörterung* at which these two directions could potentially meet. He argues for an interrelationship between the cosmos, morality and technical activities which he develops as cosmotechnics. He also raises the question of thinking *with* Heidegger also as a thinker of post-Enlightenment Europe. Hui's theory of cosmotechnics sets the stage for a reframing of the technologies of the Anthropocene through Ubuntu. As was illustrated in the final chapter, Ubuntu is first and foremost ontologically embedded. Technologies cannot be evaluated by taking the empirical or particular technology as a starting point as Ubuntu is based on a holistic interrelated worldview. At the same time, Ubuntu is a theory that understands the relation between humans and non-humans as dynamic, always in motion and a determinant of moral personhood. It is for this reason that Ubuntu cannot be positioned at either pole of the transcendentalist-empirical discourse, but has to be positioned somewhere *in between*. Hui's theory is further relevant in its positioning of the question of technology in the Anthropocene also as something that has relevance for intercultural philosophy. An Ubuntu reframing of the technologies of the Anthropocene cannot be reframed in isolation from the postcolonial discourse.

The reasons for this become even more compelling when, as was discussed in Chapter 2, Hui emphasises the dangers that arise from monotechnical thinking. Following Spengler, Hui notes that the exportation of culture and technology creates a Global Time Axis in which progress and technological development become conflated. Non-Western cultures then enter the geopolitical stage by creating cost-effective technologies on the basis of cheap labour and cheap nature. Furthermore, Hui maintains that these technologies that seek to challenge-forth have a universalising effect. The importance of this line of reasoning will prove important when considering the way in which Ubuntu philosophy is situated in the broader discourse. On the one hand, it is presented as a counter-hegemonic theory that challenges the assumptions of nature and human beings as standing reserve. On the other hand, Ubuntu is itself prone to be enveloped by these universalising tendencies which makes the theory vulnerable to critique such as that raised by Van Binsbergen, that the localised philosophical-praxis of ubuntu is diminishing. It is for this reason that there is a double sense of urgency in the debate surrounding Ubuntu views of technology in the Anthropocene: the Anthropocene is itself indicative of the Earth as becoming more devastated by technology while Ubuntu itself runs the risk of losing its critical function through the universalising tendencies of monotechnical thought. Hui suggests cosmotechnics as a way in which this monotechnical thought and its implication on nature and culture can be negated. Primarily through a rethinking of the nature-culture divide that allows for the type of Enframing that has led to the Anthropocene. In this sense it becomes clear why Ubuntu has affinities with other intercultural manners of thinking about technology that opposes the nature-culture dichotomy that was historically propagated in Western philosophy. Hui then suggests a cosmotechnics that is based on *technical tendencies* and *technical facts* developed by Leroi-Gourhan. Through engaging with Leroi-Gourhan and Stiegler on this topic, it becomes clear that there is an interplay between the internal and external milieu that shapes

our use and design of technology. The danger, again, here is that the external milieu is itself becoming conditioned by universalising technologies that diminish localised expressions of technology. The question of how these milieus relate, particularly in an African context, has been a topic of discussion in the work of scholars such as Lewis-Williams. In order to understand how these facts and tendencies could be understood, Ubuntu was analysed as a framework through which the technologies of the Anthropocene could be assessed. To provide a succinct yet nuanced overview of Ubuntu, the historical development of Ubuntu scholarship cannot be overlooked as this overview indicates an ontological embeddedness on which an Ubuntu framework is based upon. In other words, an exploration of technology through the framework of Ubuntu that excludes the ontological dimensions of the theory will be reductive. An Ubuntu cosmology accounts for the internal dynamic of interrelatedness that underlies ontology, metaphysics and ethics. Returning to the question of orientation of positioning, this thesis is thus positioned within a generation of scholars that builds upon both the ontological and normative dimensions of the theory.

It is once this framework of Ubuntu has been defined that the question of the Anthropocene can be re-evaluated. Applying this framework to the Anthropocene reveals some significant implications, such as the idea that the way in which we relate (technologically) to the Earth determines our moral status. Relating to the Earth in ways that sustains harmonious interdependence between humans and non-humans or is detrimental to this relation impacts whether our humanity is affirmed or denied. This reveals a compelling dialectic: on the one hand, this framework decentres the human and on the other it re-affirms its status as human. The conceptual analysis of the notion of the Anthropocene is also predisposed to be reframed through a communal ontology to become *Anthropoicene*: an epoch in which we act not only on account of our own agency but act in ways that promote the agency of the other (non)humans, both living and non-living. It is not the essence of a person or technology that is to be determined, but rather the way in which relations between the self and other occur (whether it be through vital source, -ntu, or complementarianism like Ibuanyidanda). While this notion differs greatly from western ontological conceptions, even communitarian conceptions, similarities remain although they are exaggerated: a person is understood as dynamic, always in motion towards the other, and fixing of the self through Enframing strips a person of their personhood. An Ubuntu centered approach to technology thus entails the design, use and implementation of technologies that affirm the interconnectedness of being.

As this study is presented as an orientation point and not a complete framework for understanding technologies, it follows that there are various limitations. A first limitation is that of scope, as not all central questions concerning the Anthropocene can be addressed. Central elements that were isolated and explored, such as ontology, agency and the notion of the Anthropos, were chosen specifically to emphasise those discourses that would be affected to the greatest extent through a reframing. Thus, while other discourses such as governance in the Anthropocene, politics and biodiversity are not unimportant, they were nevertheless understated as to emphasise other aspects.

Secondly, much more could be stated in terms of self-criticism concerning my own positioning in the debate. Critiquing certain modes of Enframing does not exempt one from this Enframing. The *supreme danger* here is that Ubuntu itself is understood as a standing reserve from which to draw in order to find solutions for Anthropocenic problems that arose from monotechnical cultures. It is for this reason that methodological decisions concerning the archive were made, such as deliberately not secularising Ubuntu as some scholars have done, and including scholars that are highly critical of Western philosophical influences on the philosophy of Ubuntu. Although this approach does not mean that difficulties that stem from the complex relation between African and Western scholarship is hereby overcome, it nevertheless is an attempt to account for these complexities. The third limitation also points, dialectically, to the way forward: throughout this thesis mention was made of the relation between ontology and particular technologies. Now having argued for a preliminary orientation point from which to engage with particular technologies, the questioning then turns to how to relate to particular technologies, how technological innovation takes place within this framework, as well as how our relation to technologies of the Anthropocene can allow us to become more human.

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