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Why the Narrator Matters:

Narrating Environmental Futures in Frank Herbert's *Dune* and N. K. Jemisin's *Broken Earth* Trilogy

Master's thesis in English Literature

Supervisor: Hanna Musiol

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Abstract

This thesis explores how works of speculative fiction engage in narrating environmental futures. The Anthropocene details how human intervention in nature has led to the current climate crisis, which makes speculating about environmental futures essential. In *Dune*, Frank Herbert closely linked the protagonist's character development to his experiences of the indigenous perspective on nature. They have adapted to work *with* nature and respect the interconnectedness of the ecosystem. Paul's newfound understanding of nature saves Arrakis from being transformed into a green landscape, which would destroy a creature that creates a substance upon which the universe is dependent on. *Dune* also narrates the story of a messiah, leading the indigenous population to freedom. The use of this messiah narrative turns the novel into a work of messianic and apocalyptic anti-imperialism. Unlike *Dune*, the *Broken Earth* trilogy by N. K. Jemisin narrates an apocalyptic future from the perspective of the oppressed. This oppression is related to the protagonist's powers over nature and caused by an ancient society's obsession with technological advancement, which led to environmental destruction. Jemisin also links racial and ecological injustice, and depicts how one can negatively affect the other. Alastair Iles claims that we cannot transition into a sustainable future without also acknowledging this connection, making Jemisin's imagined future one to avoid rather than one to pursue.

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Introduction

What does the future look like? Will we invent flying cars and have robot servants? Or, will we have to survive a dystopian landscape created by the current climate crisis? There is no way to be certain, but we can use our imagination to create thousands of possibilities. Fiction is a great vehicle to allow for such exploration of the future. Writers such as Ursula K. Le Guin envision futures that may seem impossible to contemporary thinkers, and often goes beyond the knowledge or science available to them at the time. This makes it interesting to explore how books approach the topic of our relationship to our environment in different ways and from different perspectives. However, this thesis will not focus on literary fiction that often focuses on “reality unfolding in the historical present” (Banerjee 185), but rather on sci-fi and speculative fiction. There used to be a distinct divide between literary fiction and science fiction, the former being considered a more respectable genre. Because of this divide, Darko Suvin (1979) theorised that science fiction functioned as cognitive estrangement, the *what if* and the *what would happen if* (Banerjee 185). Even so, the spectre of the Anthropocene transcended these boundaries. Speculative fiction is a concept that is hard to define, and our understanding of it has changed through time. It is not limited by genre; some sci-fi or horror stories can also be speculative fiction. The common denominator of all the works under the umbrella of speculative fiction is fantastical or futuristic elements. Speculative writing about the future is even more urgent now that there is more awareness about climate change.

The Anthropocene is a concept that was created to describe the geological era we are currently in where humans have become the determining factor in the future of the earth and its species (Tsing et al. G1). This means that humans are affecting the environment in such a way that ecosystems that have taken millions of years to form are being destroyed at a rapid pace. This concept has sparked discussions about humanity’s collective agency and impact on the environment (Heise 3). The discussions surrounding this concept has led to criticism about how the Anthropocene offer universal truths and agents, which does not work well with the specific. This universalism does not leave room for historical inequalities, power relations and hierarchies (Armiero & De Angelis 346). The book *Arts of Living on a Damaged Planet* (2017), assures readers that its essays are written in dialogue with those who “remind readers of unequal relations among humans, industrial ecologies, and human insignificance in the web of life by writing instead of Capitalocene, Plantationocene, or Chthulucene” (G3). This opens the door for narratives about the future that reflects the diversity in environments, cultures and

values that exist today. As the indigenous author Grace Dillon reminds us: “What happens to the *what if* ... when for the majority of the planet the apocalyptic future has not just arrived a while ago but is here to stay for the long term” (Banerjee 187-88). This echoes Kyle Powys Whyte’s claim that because of large-scale human intervention in the environment (Anthropocene), many indigenous people inhabit what would have been seen as a dystopian future by their ancestors (207). They do not have the dread of facing a future in which climate destabilization threatens established ecosystems because for them, it has already happened and will continue to happen. Indigenous groups like the Anishinaabek have already lost their longstanding relationship to a vast number of animals, plants and ecosystems (Whyte 208). What counts as a potential dystopian future for many of us is their current existence.

Fiction might not have the power to change society on its own, but the kinds of futures we are able to imagine are influenced by the media we consume. Author N. K. Jemisin explains in an interview with *Writer’s Digest* that she had difficulty imagining a future for herself namely because the science fiction stories she read did not include black people. She said that there had been “some kind of unspoken apocalypse that wiped us all out, and Asians, and everybody else too” (Brown 2019). Therefore, it is important to look at the authors of these stories. What is their perspective? Who do they write a future for? And who is excluded? The texts I have selected, *Dune* by Frank Herbert and the *Broken Earth* trilogy by N.K. Jemisin, engage in narrating environmental futures. However, they do so from different points of view: that of the oppressor and that of what Armiero and De Angelis calls victims of the Anthropocene (345). Those who perpetuate ecological devastation, as in *Dune*, and the victims of the Anthropocene, as in *Broken Earth*, will inevitably narrate the future in vastly different ways. Specifically, I want to analyse how the narrative perspectives of these texts affect its depiction of oppression, exploitation, violence and belonging in these fictional environments.

My thesis also explores the different ways in which the texts engage with the future; *Dune* focuses on how the present is actively influencing the future, while *The Broken Earth* trilogy focuses on how the past affects the present (as well as the future). In order to explore how the past and the future are narrated in these texts, I will employ a postcolonial ecocritical approach. The first novel is *Dune* by the American author Frank Herbert, a science fiction novel published in 1965. It has also sparked a number of sequels but this thesis will only make use of the first. The novel won the Nebula Award for Best Novel and the Hugo Award shortly after its publication, and it has inspired several adaptations. The most recent one is set

to be coming in 2021, over 50 years since the book's first release. Additionally, it is often referred to as the greatest science fiction novel ever written; at least it says so on the back of the 50th anniversary edition. The second novels, first published in 2015, are the *Broken Earth* trilogy by the female author N.K. Jemisin. The first book is called *The Fifth Season* (2015), the second is *The Obelisk Gate* (2016), and the last is *The Stone Sky* (2017). She won the Hugo Award for Best Novel three years in a row for each book, and was the first ever black person to win the award. The reason I chose these texts is that they are critically acclaimed sci-fi and speculative fiction novels that has achieved popularity. They are firmly planted in the canon of speculative fiction, and therefore has a big chance of influencing how others are able to imagine the future for themselves and others. In addition, both authors use narrative perspective to explore an environmental and speculative future, but in different ways.

This thesis will consist of two chapters. Chapter one opens with an exploration of postcolonial ecocritical criticisms in a narrative where the protagonist is an oppressor of both the environment and the indigenous population. *Dune* is the story of a messiah, an outsider, destined to lead the Fremen to freedom. The text simultaneously performs and analyses this narrative by using it for a messianic and apocalyptic approach to anti-imperialism. Furthermore, I will be exploring the connection between nature and culture by examining the Fremen's relationship to water. To do this I will examine how water has shaped their culture and customs, especially in contrast to the people from Caladan, a water-rich planet. Chapter 2 follows with the *Broken Earth* trilogy and the ways the humans and the earth interacts with each other. The analysis focuses first on the missing narratives of the past, and how the past gives context for the future. Then I examine the narrative of an orogene, who is exploited due to her magic powers. Her narrative is split into three perspectives, one of which is from a second-person narrator. Lastly, I will explore the narrative of earth itself. In the novel, the earth, called Father Earth, is anthropomorphised and given agency to enact revenge for all of the exploitation that it has endured. It also provides insight into nature's perspective on humans and humanity. Additionally, it discusses how humans are a part of the ecosystem, not above it. To conclude, I will briefly make a comparison between the novels and how, despite their differences, their imagined futures share an idea about our relationship to nature.

Chapter One: How Learning to Work *with* the Environment Can Save Your Life

Dune is set in a galaxy far, far away, in a universe in which the spice, Melange, is incredibly important. The spice can only be found on the desert planet of Arrakis, which is inhospitable to humans and most other life forms. Whoever is given ownership over Arrakis by the Emperor would essentially control the universe, which in the beginning of the novel is Duke Leto of House Atreides. However, after being betrayed in a coup, young Paul Atreides and his mother flee into the desert where their only hope for survival is to be accepted by the native population called the Fremen. They mostly reside in the deep desert where they can stay hidden from the ruling class and avoid confrontation. Because of this, they are able to maintain their own culture and way of life without outside interference. The unique climate on Arrakis means that their lives are spent adapting to the environment, essentially making it an important element to the story as well as the setting. For the ecosystem of Arrakis, Frank Herbert created a landscape filled with new species and different ways in which the environment is entangled. However, the nature of this ecosystem is a mystery to both the protagonist and the readers, and an important part of the novel is devoted to solving this mystery. However, as the Fremen have lived in this ecosystem for generations, they have already solved this mystery, rendering them capable of surviving the harsh conditions of sand storms, giant worms that burrow in the sand and the distinct lack of water.

This novel was published in the sixties, a time when the science fiction genre was predominantly written by white male authors. Therefore, popular science fiction from that era often portray a future for white men only, and if novels actually do include diverse characters, they are left to the margins. This is the case in *Dune*. The protagonist, Paul, is a white male whose journey consists of colonising a people and a planet, and yet he is portrayed as a hero. Still, the novel manages to use its protagonist and his journey to explore the relationship between humans and nature, as well as introduce ecological concepts in the way the ecosystem is connected. In order to explore ecology or environmental values, critical studies of science fiction often use other concepts such as feminism, history and politics as a vehicle. At the time Susan Stratton published her article about environmental action in *Dune*, which was in 2001, ecocriticism was a new literary field. In the late 1990s, Stratton found that there was little research combining the works of speculative fiction writers and scholars that studied the relationship between literature and ecology. She claims that the subject of literature and the environment invite for broader explorations than just nature writing, which would create

new approaches to studying science fiction or broaden the application of approaches that are not often used (304). Stratton also claims in the article that while *Dune* is not the most accurate in its portrayal of certain ecological concepts or environmental action, it was an important first step “for a generation of SF readers who needed to learn the fundamentals of ecology” (313). Following the release of *Dune*, in addition to other texts such as Rachel Carson’s *Silent Spring* (1962), the reading public became increasingly aware of ecology as a concept and of how ecosystems can be connected. Furthermore, science fiction novels published later, such as Stanley Robinson’s *Pacific Edge* (1988), might convey a better understanding of how to change the socioeconomic practices that are devastating the planet.

Today, in 2021, we can see this broad application of approaches in numerous literary categories and studies, especially sci-fi and speculative fiction. Similarity to how the concept of the Anthropocene has expanded to include more diverse narratives and approaches, sci-fi and speculative fiction has also evolved since the publication of *Dune*. Due to the increasing importance of writing about the current climate crisis, new genres has emerged such as climate fiction that focuses on dealing with it. Likewise, environmental scholarship has evolved to include a wide range of approaches to studying speculative fiction. One example of this is an anthology that was mentioned in the introduction, which is “Arts of Living on a Damaged Planet” (2017). This anthology, along with other books by scholars like for example Robert Nixon, set the trends for modern environmental scholarship about speculative fiction. Divided into two sections, one about ghosts and the other about monsters, the anthology includes essays from people of a variety of backgrounds and professions. These essays are interdisciplinary and portrays that so-called “hard science” can be relevant to both art and politics. *Dune* also crosses this boundary between science and literature, but from a modern standpoint, much of the scientific basis used in producing the novel is outdated today.

Though *Dune* is a science fiction novel about a solar system that is vastly different from ours, the author also intended for it to be, among other things, an ecological novel (Stratton 307). At the time of *Dune*’s publication, audiences were interested in stories that featured “the complexities of the relationships within a planet’s ecology”, the relationship “between its ecology and its indigenous culture” as well as “the interplanetary culture of which it is part” (Stratton 307). Because the main protagonist of the story is Paul, an outsider to Arrakis, the planet’s ecology is presented as a big mystery. Both the readers and Paul slowly uncover how the environment and people on Arrakis is interconnected, which is a major part of Paul’s character development. The framework of this essay is narrative technique; how the narrator

or protagonist shape the story in regards to their views and actions about the environment. Who the narrator is can have a major impact on how the book itself portrays the environment, as well as our role in it. In this chapter, I will focus on how *Dune* engages with the present and future, interpreted through the prism of postcolonial ecocritical theories. I will use articles by Susan Stratton, Gerald Gaylard and Elizabeth Callaway as they all have great insight into environmental action, postcolonialism and speculative ecosystems in *Dune*. First, I will focus on how *Dune* narrates an environmental future through its protagonist Paul. His growth as a person and a leader is directly tied to his understanding of the ecosystem of Arrakis. Through his experiences with the Fremen, Paul starts to see a different perspective on the landscape of Arrakis. He starts to understand how certain species are entangled, as well as how to use it to his advantage. However, because Paul is a coloniser and the novel portrays him as a hero, it lacks any significant focus on how colonialism is affecting the landscape, particularly on Arrakis. Nevertheless, Paul is also significant because he is prescient, meaning that he can see into possible futures and outcomes from the events in the book. There is one future in particular that he is desperately trying to avoid because it shows that in order for him to achieve his goals, he has to make peace with the fact that he will create a deadly jihad in his name. Paul is aware that every move he makes will have a major impact on the future, and that he is essentially haunting the future.

Paul Learns How the Ecosystem is Entangled

“‘Water!’ she snapped. ‘Everywhere you turn here, you’re involved with the lack of water!’ ‘It’s the precious mystery of Arrakis,’ he said” (Herbert 65). This quote perfectly encapsulates how outsiders of Arrakis view the planet. Arrakis is a desert planet that is deemed hostile to humans by the imperial forces that wants to colonize the planet. As Paul is part of these colonisers, the planet that he is supposed to rule one day is a mystery to him as well. The ground is plagued by ferocious storms, giant and deadly sandworms and there is a distinct lack of water. The ground is also entirely covered in sand. Yet, there are natives there called the Fremen, who have adapted to survive the harsh climate. The reason why Arrakis is such a mystery is that the atmosphere is stable even though water is difficult to come by. The solution to this mystery lies in the “relationship between water, spice and the sandworms” (Callaway 242). Most importantly, this harsh climate allows for the production of the spice Melange, even though nobody outside of the Fremen knows exactly how. All they know is that the spice can be found in the sand, but the equipment they use to mine it is always in

danger due to sandstorms or the sandworms. While the story includes perspectives from a varied cast of characters, the main protagonist is Paul. Though, given how important Arrakis is to Paul's character development, it can be argued that the planet itself is also a hero in the novel. In order to survive living in the desert as opposed to the Duke's mansion, Paul and Jessica has to adapt to the Fremen's way of life. While outsiders simply view Arrakis as dry and dangerous, the Fremen have let the landscape shape their culture in major ways. Throughout the novel, Paul slowly adapts to Fremen's ways of surviving, which helps him solve the mystery of Arrakis.

Paul's character development is closely tied to his understanding of Arrakis; the more time he spends with the Fremen, the more Paul he understands their perspective on the environment. While on his journey of attempting to regain his previous position of power, Paul is simultaneously learning to embrace the natural features of Arrakis instead of resisting it. The first instance of Paul using Arrakis' landscape to his advantage is during his escape after the coup. To avoid the pursuing helicopters, Paul's only possibility is to fly into an approaching sandstorm. These sandstorms are known to be dangerous, which is why he is presumed dead and the chase stops after he disappears into it. However, Paul survives and is able to search for shelter, where he eventually encounter some Fremen. At this point in the novel, Paul also displays ignorance in how the ecosystem is connected. Paul asks a Fremen, Kynes, why no one has attempted to wipe out the sandworms because they make it more difficult to harvest spice. Kynes replies that it would be too expensive. However, Paul senses that Kynes was not being entirely truthful and realises that if there is a "relationship between spice and worms, killing the worms would destroy the spice" (Herbert 125). This is how Paul becomes aware that he lacks a fundamental understanding of how the ecosystem is connected, as it is very different from the one he is used to on his home planet of Caladan.

The growth of Paul as a character is directly tied to his growing status within the Fremen hierarchy and their connection to their local landscape. Being challenged by both the Fremen and the harsh environment shapes the person he is by the end of the novel and the kind of leader he becomes. He gains experience in how to lead others, as well as stand for himself which is exemplified in him becoming a "sandrider". In the paragraph above, Paul suggests killing the worms without knowing their role in the ecosystem. Later in the novel, as Paul is in the process of becoming a Fremen, he has a different view on the worms. The Fremen have figured out how to mount them using hooks and use them as transportation over large distances. Fremen who can use the worms this way are called "sandriders". Paul eventually

learns this skill as well, and it is seen as an important step into becoming a true Fremen (Herbert 416). The worms' destructive nature can also be used to disguise their presence and help keep them hidden from view of their enemies. More importantly, the worms never become domesticated or less dangerous. The Fremen never attempt to interfere with the worms or their natural behaviour beyond what is necessary. In fact, the Fremen have adapted their own behaviour in order to avoid contact. They have even developed a special walk meant to mimic the natural shifting movements of the sand so they can move through the desert undisturbed. Paul adopts all of these new behaviours from the Fremen, as well as their perspective on preserving nature where they can.

The lessons that Paul learns from both the Fremen and the environment is due to how Herbert designed the ecosystem. The ecology of Arrakis, or more specifically biodiversity, is presented as a puzzle or a mystery that need to be solved. The question is how, with the surface being entirely covered in sand, is there enough water to sustain the life of the species that live there? To Elizabeth Callaway's disappointment, the answer to the question is the prevalent metaphor about the balance of nature (Callaway 241). The concept of balance of nature stabilises the world and makes it understandable. According to historian Frank Egerton, the balance of nature has been a "background concept" in the natural sciences since Antiquity (Callaway 242). The concept is based on the assumption that nature is well regulated, and static rather than shifting. Proportions and the number of species are always stable. Organisms belong perfectly in their own place, which means that the extinction or removal of any plant or animal would destroy the ecosystem unless it is able to return to its equilibrium. This is a system where extinction of any species is the largest threat because nature does not have any adaptability. The concept has never been explicitly drawn on or defined, but rather used as an assumption in many ecological frameworks over the years. This way, it has influenced ecological thought but has not been tested or properly defined. It has long been discarded by mainstream ecologists and is seen as an antiquated concept today. Still, the idea of a nature that is balanced has been hard to dispel in the popular imagination (Callaway 242). In *Dune*, the entire ecosystem of Arrakis is based on this concept.

Perhaps the most important knowledge that Paul learns is the process in which spice is created. To begin, we need to first explore what spice is and how important it is to the story. As previously mentioned, the spice Melange is incredibly important in the universe of *Dune*. Not only does it allow for safe interstellar travel by allowing them to navigate through the universe, it also has the capabilities to extend human life. If one ingests enough, it might also

unlock prescience. Unlocking this ability allows for viewing into the past, present as well as the future. The spice can be found “in everything here – the air, the soil, the food” (Herbert 210), which means that the Fremen ingest spice through everything they do. The amount they are exposed to turns their eyes a deep blue, which has become a characteristic that outsiders use to identify the Fremen. By the end of the book, Paul’s eyes have also turned this shade of blue, signalling to others that he has become part of the Fremen. However, becoming addicted to the spice is dangerous. Once addicted, you can never stop taking it because the withdrawals are fatal. This means that the collection of spice on Arrakis can never end as their entire civilisation is built on the use of spice. Paul exploits the fact that they are all dependent on the spice in order to win the final battle. He needs to stall the attacking force, the Harkonnen and the Emperor, and does so by threatening to begin a chain reaction that would destroy all the spice on the planet. Callaway puts it as taking “the whole planet hostage” (237), revealing just how dependent they have become on a substance even though they have no knowledge about how it is even created.

So, how is spice created? First of all, the process of creating the spice begins with the sandtrouts, which are the larval forms of the sandworms. This means that without the sandworms, there would be no spice. Secondly, these sandtrouts create little pockets of water under the surface, which combined with organic matter from the sandtrouts, creates a pre-spice mass. Once this mass explodes, it rises to the surface and becomes Melange due to the intense heat and air. During this explosion, most of the sandtrouts die except for a few that are allowed to grow into the massive sandworms that roam the desert. The spice, while being important to the people on the surface, also feeds sand plankton. Adult sandworms feed on this plankton while traveling along the surface, which then effectively spreads it across the desert (Callaway 234). This means that the environment, even though it might be hostile to humans, is well suited for the creation of spice. It also means that the process of creating the spice is what shapes the environment. The reason that there are no open water sources on Arrakis is because the sandtrouts create pockets of it beneath the surface to create spice. This also allows the sandworms to move freely through the desert because water is deadly to them once they survive the pre-spice mass explosion. Herbert created this ecosystem based on balance, where the sandworms only need to rely on one other species to survive and actively create the environment they need to survive later on.

However, is there another use for spice? The Fremen also use it in their religious practices, for example, but they use significantly less than people on other planets. We do

know that sand plankton feeds on it, but could human interference have disrupted this part of the cycle? Did other species also feed on spice before humans started mining it in massive amounts? There is no way to know the relationship between species before humans intervened, but we can analyse the ecosystem after humans became a part of it. Humans are the ones who consume spice in what can be classified as a symbiotic relationship: a close interaction between two or more species. A sub-category of this relationship is called commensalism. Merriam-Webster defines commensalism as “a relation between two kinds of organisms in which one obtains food or other benefits from the other without damaging or benefiting it”. Humans benefit from the spice created by the worms, but does not give anything back or harm it directly. Because of spice’s addictive properties, humans are essentially entangled with these sandworms. In the book “Arts of living on a damaged planet”, Peter Funch details how some species’ lives are intertwined. He uses the example of horseshoe crabs and red knot birds, and explains how the decline of one will ultimately affect the one who dependent on it because they often “share a similar fate” (Funch M143). It functions the same in the *Dune* universe. A decline in the population of worms would greatly reduce the amount of spice produced. In turn, this would affect the humans as they not only use spice for many vital functions but are also addicted. As aforementioned, spice has deadly withdrawal symptoms. This means that the humans are inescapably tangled with the worms, no matter how deadly or disruptive they can be to their harvesting of spice. It also means that humans have become part of the ecosystem of Arrakis. While the worms are seemingly not dependent on human activity, the humans are dependent on the worms. In the end, it does not matter if anyone else used to be dependent on the spice. Humans are entangled to both the worms and Arrakis now, possibly forever unless they figure out how to safely stop ingesting spice.

The concept of balance of nature is also carried into the structure of their civilisation. In *Dune*, they have what they call a three-point civilisation. It consists of the Imperial Household, the Emperor, which is balanced against the Federated Great Houses of the Landsraad, which includes House Atreides and House Harkonnen. Between these two is the Guild, which has the monopoly on space travel and transport. However, “the tripod is the most unstable of all structures” when it comes to politics (Herbert 25). Add in a feudal trade culture that ignores most science, and the system becomes even more unstable. This instability results in a continuous power struggle between the three, a struggle that is evident on Arrakis. In the beginning of the book, the Emperor and House Harkonnen secretly

cooperate in order to steal ownership of Arrakis from House Atreides. If this cooperation were to be found out, the three-point system collapses because the Emperor should not interfere in business between the Great Houses. Because spice is essential for their way of life, controlling the spice production means having great power. It is this power that the Emperor and House Harkonnen desired to steal, and were willing to risk everything to attain. The reason for all of the power struggle and conflict in the novel is that their civilisation is not balanced, not the way nature is supposed to be. By becoming the Emperor at the end of the novel, Paul is determined to make this tripod stable, as well as maintain this balance on Arrakis alongside their attempts of planetary engineering.

Even though Herbert used balance of nature and biodiversity to create the environment on Arrakis, it is not equivalent to the one here on earth. The ecosystem on Arrakis is entirely new and alien, built from the ground up. This way, the ecology of Dune is not imagined as a stand-in for our own planet's potential future, as science fiction or climate fiction often are. Arrakis is not portrayed as a possible future for planet earth because of an environmental disaster or our negligence. It is an alien planet with a desert ecosystem that, according to the Atreides family, should not be able to sustain life of the creatures that exist there. The story is also not about the destruction of our planet, or the planet Arrakis, as a warning against climate destruction. Herbert's creation is a speculative ecosystem that "provide insights into the meanings of the *diversity* of life, rather than *extinction*" (Callaway 234). These kinds of novels do environmental work by proposing possible futures, some of which is bleak or utopian depending on what they are trying to show us about our future. *Dune*, however, works as a productive imagination of alien environments, meaning that it does environmental work by "imagining things that could never be" (Callaway 236). These strange and counterfactual speculative ecosystems play an important part in proposing, probing and modelling unconventional stances about the nonhuman world (Callaway 236).

Like I mentioned above, the author, Herbert, created the ecosystem of Arrakis on the principle of biodiversity. According to Elisabeth Callaway, biodiversity is a concept that shapes how life on this planet looks and has become a foundational framework for measuring the health of the "more-than-human environment" (232). The media that engage with and remediate this concept are the ones that negotiate the meanings of biodiversity and the loss of biodiversity. Because conservations strategies are often based on biodiversity, and determines where they should direct their efforts, it is important to examine the discourses that determine what voices are heard when it comes to preservation decisions, as well as what diversity is

made visible (Callaway 232). Science fiction is one of the main places where alternate forms of biodiversity are imagined. Yet, it is an underexplored genre for exploring the limitations of the concept and for new attitudes toward diversity in the living world (Callaway 233). Callaway is particularly interested in how biodiversity is constructed in different ways when planetary ecosystems are imagined from the ground up, such as it is in *Dune* for example. She claims that these imaginary planets examine the meaning of an alternative type of biodiversity. The biodiversity found in the ecosystem of *Dune* is not due to species count but due to the many endemic species that disproportionately contribute to the overall biodiversity. An endemic species is one that is unique to a defined geographical area, meaning that it does not exist anywhere else such as the sandworms. Callaway claims that texts like *Dune* represent speculative biodiversity hotspots that are full of endemic species, and defines biodiversity as a stance where matter and discourse are entangled instead of as a set of pre-existing and measurable attributes of a system (233). This way of characterising biodiversity is accompanied by a “puzzled accounting for the diversity of life”, meaning that the diversity functions as a mystery that affects the characters’ chances of survival. The characters, as well as the readers, have to solve the mystery by piecing together clues that makes them re-evaluate their own knowledge about the more-than-human worlds they are a part of (Callaway 233). *Dune* also has this mystery surrounding the ecosystem of Arrakis. One of the biggest mysteries are concerning the production of spice. However, by the end of the novel, this mystery has been solved and they have discovered a stable balance of nature that can be manipulated by planetary engineering.

Furthermore, the alien ecology of the planet highlights the relationship between nature and culture (Stratton 307). This is especially apparent in the Fremen and their culture, particularly when it comes to water. Arrakis is a desert planet with no open sources of water, and is often described as having an apocalyptic landscape or as a waterless void (Herbert 264). Still, the planet is also described as beautiful. The Duke Leto, as he is witnessing the sunrise, describes the moment as “a scene of such beauty it caught all his attention” (Herbert 110). However, he also witnesses the dew gatherers using devices resembling a scythe to collect the dew from flowers because water is so precious and scarce. This makes him think that “it could be a hideous place” as well (Herbert 110). When the Atreides family first arrive on Arrakis, they are shocked by just how dry the landscape is. When Paul learns of how the Fremen are so in need of water that they wear “stillsuits”, which recycles their body moisture, he is stricken “with a feeling of desolation” (Herbert 32). The Atreides comes from the planet Caladan,

which Paul explains as a paradise for human's way of life (Herbert 273). The Lady Jessica makes a comparison after taking a sip of water from her stillsuit. The water tastes brackish, and makes her remember the tall fountain on Caladan with such a richness of moisture that it is only recognised for its shape or its sound, not as a lifesaving source of water as Caladan is overflowing with it (Herbert 263). As mentioned previously, the Fremen have adapted their own behaviour to fit their environment, such as their walk. The outsiders, like Paul in the beginning, always compare Arrakis to their home planet Caladan, which has an excess of water. However, the Fremen's culture is influenced by a different type of environment, one in which water is scarce.

The scarceness of water is one of the biggest indicators of the close relationship between culture and nature in the Fremen population. They have live on Arrakis for many generations, and has therefore learned to find new and creative sources of water. One of these sources is the human body. In order to have enough water for the entire tribe to survive, the Fremen take water from the dead. This way, death is also important to them because while they did lose a human life, they gets life-saving water in return. For them, it is inconceivable to bury the dead without taking their water, as Thufir Hawat discovers in an encounter with some Fremen after escaping the coup. The Fremen, seeing the amount of wounded soldiers and the fact that they have no stillsuits, tells Hawat that he needs to make a water decision. He explains that the "wounded and the unwounded must look to the tribe's future", meaning that the Fremen are used to the idea someone giving up their water (dying) for the benefit of the tribe (Herbert 226). Their difference in thinking become apparent when one of Hawat's men dies of his wounds. The Fremen immediately offers to take him to a place to "accept the water", but Hawat is worried about how his men will react as the idea of doing that to the corpse as they are used to burials. Additionally, they come from Caladan and are not used to going to such lengths for water. As Hawat expected, his men are furious after the dead man is taken away by the Fremen. Hawat's men believe that taking the water from the dead is not as respectful as burying them. However, the Fremen sees this offering of water as a bond that joins them together, which means that they will treat the dead man with the same reverence as their own. The Fremen explains that "[a] man's flesh is his own; the water belongs to the tribe" (Herbert 230). In addition, when the Fremen talk of killing, they use phrases like they "spilled the water" from their enemies (Herbert 228). This way, water is connected to both life and death, and shapes important rituals like what to do with the dead.

Furthermore, water is so precious that tears also become precious. This affects the way they mourn their dead. It also forces them to exert control over their emotions because crying for the dead would waste life-saving water. This is evident when Paul and Jessica attend a funeral of a Fremen. During the ritual, Paul begins to cry, or as the Fremen says he “gives moisture to the dead” (Herbert 337). The Fremen whispers in awe and touches his wet cheek because they see his tears as a sacrifice and a sign of respect for the dead. Jessica witnesses this and realises that tears are sacred. Further, she explains that even after everything she had experienced so far, nothing else had “so forcefully hammered into her the ultimate value of water” (Herbert 338). On Arrakis, water was the most precious substance because it was life itself, as well as entwined with symbolism and ritual.

As important as water on Arrakis is for survival, the absence of it highlights the relationship between ecology and economy. When water is scarce, it is given economic significance: it defines the difference between rich and poor (Stratton 307). While Fremen existence revolves around water and scavenging small amounts wherever they can, the rulers of Arrakis does not have this concern. The compound where the leaders live has a cistern that is filled with fifty thousand litres of water, and it is always kept full by their servants. This way, they do not have to worry about water as the rest of the population does. In addition, the Duke’s residence also comes with a wet-planet conservatory. The world outside is full of dry sand and a scorching sun, but the small world inside the conservatory is vastly different. It is filled with all kinds of beautiful flowers, an artificial yellow sun and so much water that the air is moist. It even comes with a small water fountain. Even Jessica, who comes from a water-rich planet, is shocked by how water is being wasted there when water “was the most precious juice of life” on Arrakis (Herbert 77). In opposition to this, the Fremen survive by not wasting a single drop of water as it could mean the difference between life and death. This wealth gap is “shown in the ruling class custom of deliberately spilling water and wringing the towels that mop it up into the cups of the poor” (Stratton 307). While the conservatory and the custom of spilled water represent wealth, water reclaimed by stillsuits and dead bodies, as well as captured by wind traps and dewcatchers, represent poverty (Stratton 312). Additionally, the novel makes no references to characters actually using money while living on Arrakis. Money seems to have no real value, the value lies in the water.

Even though the Fremen have shown great respect for the landscape by not interfering too much, Paul discovers that they are slowly working on changing the ecology of the planet. Even though they have little water to begin with, the Fremen are saving as much water as they

can to help their experiments in modifying the environment. In dialogue with First Nation Elders, Michael Blackstock discusses how essential water is for our survival. The First Nation women explain how they believe that the primary factor of a healthy ecosystem is water with sufficient quality and in an appropriate quantity (Blackstock 5). For them, water functions as a connecting component, or “blood of life”, in an ecosystem. They believe that minimizing significant human intervention and preventing interference in the water cycle is essential for ecological health (Blackstock 4). The preservation of water is their priority. However, these women are discussing water-based ecology in a forest climate. The Fremen have to live on a desert planet where water is scarce. This way, they have an incredible amount of respect and reverence for water like the First Nation Elders, but they have concluded that they need to interfere in the ecosystem in order to gain access to more water. A youth from one of the Elders’ tribe claims that they are merely “borrowing clean drinking water from future generations, and thus we are also implicitly accepting the responsibility of returning water in as good or better condition” (Blackstock 2). It is this sentiment that drives the Fremen to sacrifice and slowly transform the environment in the present, fully knowing that the benefits will only be reaped hundreds of years later. Their hope is that future generations will not have to struggle so much to simply stay alive.

Their desire and knowledge to do this came from Pardot Kynes, the first planetologist sent to Arrakis by the Emperor. His story is detailed in Appendix 1 in the book. It explains his journey in convincing the Fremen that it is possible to change the ecosystem to such a degree that they could walk in the open without their stillsuits to preserve water. His goal was to create open pools of water on the surface, and make Arrakis greener and more hospitable for humanity. Upon entering Arrakis for the first time, Pardot Kynes explains how it might appear as an overpowering barren land to outsiders. Also, that nothing could either live or grow there. To Pardot Kynes however, the planet was nothing but an “expression of energy, a machine being driven by its sun”, and the Fremen population was an “ecological and geological force of almost unlimited potential” (Herbert 533). Convincing the Fremen that it was possible to change the landscape to such a degree was a challenge, but he eventually convinced the Fremen to help him with his vision.

Kynes began by having Fremen infiltrate the Imperial Biological Testing Stations and had them steal equipment, which resulted in them being able to collect more water than before. Pardot Kynes then proceeded to take core samplings, measure temperatures and track the weather. After having the resources to collect more water, he discovered that the biggest

problem was moisture. On Arrakis, pets and stock animals are incredibly rare because it would take too much water to keep them alive. The same goes for quite a number of plants. During one of his research expeditions, Pardot Kynes discovers a saltpan in the desert, which proves to him that there had once been open water on Arrakis. Furthermore, he also discovers how spice is created and the role that sandworms play in this process. Additionally, in order for the spice to be created, pockets of water needed to be created underground. Pardot Kynes attributes this to sandswimmers, which blocks off fertile pockets so that the sandtrouts can mix with the water to create a pre-spice mass. In fact, Pardot figures out the circular process of creating the spice as it begins with little makers and ends up creating more little makers. From there, Pardot shifted his focus to micro-ecology, as well as how and where he could introduce various plants that would suit the climate. Eventually, he was able to introduce animals such as burrowing animals and the predators that would keep them in check (Herbert 539). Next, he tried introducing cotton, coffee, medicinal plants and so on, as well as over 200 types of food plants. Kynes believed that an ecosystem was a system that could be “destroyed by a misstep in just one niche” and therefore “highest function of ecology is the understanding of consequences” (Herbert 539). The rest of the times was spent on analysing which plants survived and which did not, and then adapting by changing out the plants or changing their location until he achieved a system that had a fluid stability. Kynes had predicted that it would take approximately five hundred years before they could reap the benefits of the new ecology, something the Fremen were well aware of and motivated them even if they would never see their dream future for themselves. The son of the elder Kynes, Liet-Kynes, was set to continue his father’s work until “the day his planet was afflicted by a Hero”, meaning the arrival of Paul Atreides (Herbert 341).

Postcolonialism and Ecology in *Dune*

Paul is seen as the hero of the story, the one who has to struggle after being betrayed, the one who has to work his way into power so he can reclaim what is rightfully his. However, in a story where a planet and a people are being colonised, why is the protagonist one of the colonisers? In a story where a planet’s resources are being exploited without regard for sustainability, why does it end with Paul taking over Arrakis, knowing that the planet will still be exploited for spice? In a story where the natives of the planet are forced to hide in the deep desert in a harsh climate with barely any water, why do they end up as Paul’s loyal subjects or as a fanatical jihad meant to spread violence in his name? Firstly, the novel was written in a

time when conquering heroes was in high demand from both readers and publishers (Stratton 306). In such a story, something has to be conquered, whether it is a place, a people or a landscape. In Herbert's story, I argue that Paul conquers all three. The place he conquers is Arrakis, but you can technically also count the rest of the planets in the Imperium as Paul ends up becoming the new Emperor. Furthermore, he becomes the new leader of the Fremen. When Paul is asked about the future of the Fremen on Arrakis after retaking the planet, Paul replies that the "Fremen are mine" (Herbert 528), signalling that the people belong to him now. In this ownership of both the planet(s) and the people, Paul has effectively also conquered the landscape. Not only does he plan to continue the extraction of spice, though in a more sustainable way, but he also plans to carry on the Fremen's work of planetary engineering. This means that the ecosystem of Arrakis will change, but in order to prevent disrupting the worms' creation process of the spice, there has to remain large areas of desert. Essentially, Paul fulfils the role of the conquering hero that the readers and publishers wanted, but Herbert also managed to include elements of ecology.

Secondly, even though the narrative is from the perspective of a coloniser, the novel also engages in environmental storytelling. As I have already stated, Herbert intended *Dune* to be an ecological novel (Stratton 307), meaning that the text takes an ecocritical approach to literature. On its own, ecocriticism examines the representation of, and relationships between, the environment and texts through ecological theory. Both "environment" and "texts" are comprehensive categories. For example, environment is comprised of climate and weather, flora and fauna, industry and commerce while texts can refer to literature or film, the internet, policy paper and trees (Mason et al. 3). Ursula Heise claims that ecocriticism consists of "the scientific study of nature, the scholarly analysis of cultural representations, and the political struggle for more sustainable ways of inhabiting the natural world" (Mason et al. 4). However, today, ecocriticism is rarely used alone. Similarly to how the concept of the Anthropocene was originally Western centred and non-inclusive of marginalised perspectives, ecocriticism was originally a very narrow concept before the inclusion of diverse narratives. Heise's three-part structure reveals both intersections and divergence from postcolonial theory that has a focus of undermining ideologies that makes living unsustainable for marginalized people (Mason et al. 4). Colonialism is often defined as geographical dominion but it can also exist in other forms. Subsequently, the "post" in postcolonial is meant to recognize the reverberations of colonialism that can still be felt decades later, and suggests "the ongoing survival and heritage of colonialism" (Gaylard 22-23). Because of this, postcolonial

strategies are useful in discussing neoliberal policies and neo-colonial realities, as well as demonstrating the relationship between humans and the environment (Mason et al. 2).

Even though the narrative perspective of the novel is that of a coloniser, the novel does not criticise colonialist exploitation of resources. However, that does not mean that it is devoid of postcolonial critique. The text handles apocalyptic nationalism and anti-imperialism through the framework of a messianic narrative. Herbert is simultaneously telling the narrative of a messiah figure saving the indigenous population, and criticizing our need for messianic apocalypticism. *Dune*'s iconography and imagery is very reminiscent of our medieval past. Gaylard claims that mythologization of this mediaeval and tribal past is echoed in our desire for messianic narratives and strong leaders (32). Between the 1960s and 1980s, a common theme for science fiction works was colonising hostile alien planets that contained a vital resource (Gaylard 24). Texts from this period portrayed a struggle over resources between a minimum of two parties, one being an imperial hegemony (Gaylard 22). In *Dune*, this resource is the spice, and the imperial hegemonies are House Atreides and House Harkonnen fighting for control over Arrakis. Gaylard claims that Herbert was clearly influenced by the human desire to colonise the "other", or the alien. This is evident in how Arrakis is difficult to colonize, but its appeal lies in the highly desirable spice. Moreover, this desert landscape also contains "a human culture of coexistence, scarcity and thrift" that exist as an apocalyptic end-point opposite of the excesses, often ecological, of imperialism (Gaylard 25). Because Herbert based the Fremen on Arabic and Islamic culture, the text can be interpreted as an analogy for the West's quest for oil in the Middle East. This way, Herbert gives his critique of imperialism contextual relevance by creating an allegory to American imperialism in the Middle East. However, this opens *Dune* up for the same criticism T. E. Lawrence received on his novel *The Seven Pillars of Wisdom* (1922). In his postcolonial text *Orientalism* (1978), Edward Said criticised Lawrence because he did not establish his role as an outsider seeking to liberate the indigenous population from imperialism. Failing to establish this position allows the outsider to *become* the oppressed, and silence the voices of the indigenous people they want to liberate (Gaylard 26). The result of this is that the outsider becomes a substitute for the oppressed, ironically repeating the process of imperialism. This critique can, and have been, directed at *Dune* for its similar depiction of an outsider becoming the leader of the Fremen and leading them to freedom. Given that *Dune* is a product of its time and context, Gaylard writes that this critique could possibly be valid (27).

However, Gaylard believes that Herbert was aware of this during the writing process. He believes that Herbert was aware of this criticism and wrote the novels to avoid this issue, resulting in a more sceptical but complex version of postcolonialism. The critique of Lawrence portraying Orientalist imperialism cannot be applied to Herbert because of *Dune's* subtle portrayal of an apocalyptic nationalist prophecy. One of the reasons for this is the transparency regarding where the Fremen's messiah prophecy originated, which is from the Bene Gesserit. The Bene Gesserit is a group of women who have achieved prescience due to ingesting a large amount of spice. Still, their prescience is limited. The spice Melange allows them to unlock genetic memory, but only on the female side. Their prescience was also limited to thoughts, feelings and images into the near future only. Because of this, their ultimate goal was to create a Kwisatz Haderach through a genetic breeding program, a male Bene Gesserit who could perfectly see both the past and the future. This Kwisatz Haderach would be able to unlock knowledge that would bridge space and time, while being under the complete control of the Bene Gesserit sisterhood. To prepare for the arrival of such a man, the sisterhood created the Missionaria Protectiva. This group was tasked with planting the seeds of superstition and religion in primitive cultures such as the Fremen of Arrakis. Throughout the years, the Fremen developed a prophecy of a prescient child of a Bene Gesserit that would arrive on Arrakis and lead them to freedom. This person, a male, is referred to as the Lisan al-Gaib. In the novel, the Bene Gesserit have not been able to engineer such a being. It is not until Jessica defies orders and births a son instead of only daughters, as she had been instructed to, that a potential Kwisatz Haderach is born. This man is Paul. This interference by the Bene Gesserit is explicitly stated by Jessica in the text, foregrounding their position as an outsider. Furthermore, both Paul and Jessica is truthful about their intentions of exploiting this prophecy, at least towards the readers. Because of the Fremen's strong belief in this messiah, everything Paul does becomes a part of the myth. Gaylard also claims that myths in *Dune* are synonymous with power, and that the Fremen are dependent on the messiah myth to maintain their culture when facing the Harkonnen onslaught on their planet (28). The messiah myth gives them hope of escaping their imperial yoke, which is why they are so accepting of Paul once he has proven himself to them.

Every other planet except Arrakis is ruled by a rigid class system that prevents anyone from acting outside of their designated roles. However, this system is not closely guarded on Arrakis, in part because the Fremen that live on the edge of the desert is sheltered by the planet itself due to the harsh climate. They also live freely without an outsider commanding

them, and is not marked down on any Imperial census. This way, they exist largely outside of the reach of other civilisations. The reason for this is that Arrakis is not a planet that the Great Houses want to populate. The desert climate, as well as the dangerous worms, deters anyone from wanting to move there. Therefore, no one attempts to “civilise” or introduce the rigid class system even though the Fremen are seen as primitive. The value of Arrakis lies solely in the spice they can extract from it. There is no regard for sustainability of the ecosystem of Arrakis, especially the spice. At the beginning of the novel, nobody that has ruled Arrakis has known how spice is even produced. This means that they exploit it without knowing if they are somehow disrupting the natural process, essentially disregarding whether they are taking too much or all of it. Given how much their society is reliant on spice, one would assume that they would be more worried about sustainability of this resource, or at least understand the creation process. No one did, until Paul.

After Paul and Jessica have been forced to flee into the deep desert, their only chance of surviving is to join the Fremen. Both Jessica and Paul are aware of the prophecy that is prevalent among the Fremen, and decide to exploit this to be accepted into their ranks. Even so, the Fremen have already displayed signs that they believe Paul to be their saviour. Upon their arrival on Arrakis, the Duke Leto is informed that the Fremen were shouting “Madhi!” at Paul, indicating that they believe him to be their saviour. In addition to this, Jessica was tested early on by the Fremen servant Mapes. Mapes had brought a weapon, a crysknife, and tells Jessica that the weapon was for her if it turned out she was “the One”, meaning the Bene Gesserit mother of the Lisan al-Gaib (Herbert 58). Mapes asks Jessica if she knows the meaning of the crysknife and Jessica senses an edge to the question. Depending on her answer, she would either confirm the prophecy or be met with violence. Jessica, using her Bene Gesserit training, figures out which answer Mapes is looking for and ultimately convinces her. Furthermore, Paul and Jessica are both tested to see if they fulfil the prophecy when they join them, which they eventually do. This prophecy, as well as Paul’s abilities as a potential Kwisatz Haderach, allows him to reach a high position in the Fremen society, and eventually becomes their leader. Had it not been for this prophecy being planted there earlier by the Bene Gesserit, it is unlikely that the Fremen would allow a foreigner to become their leader and give them a new purpose.

By continuing to perform his role as the Lisan al-Gaib, Paul slowly convinces the Fremen to help him reach his goal of retaking Arrakis while simultaneously trying to avoid what he calls his “terrible purpose”. As Paul has the power of prescience, he has the ability to see

multiple possible futures throughout the novel. In most of these futures, Paul can see a Jihad raging across the universe in his name. He can see “a warrior religion here, a fire spreading across the universe with the Atreides green and black banner waving at the head of fanatic legions drunk on spice liquor” (Herbert 214). This is what Paul sees as his terrible purpose, and is why he keeps trying to prevent such a future. However, it seems inevitable the further along he goes with his plan. Paul makes multiple references in the book about how this possible Jihad haunts him as a ghostly figure. An example of Paul noticing the growing of the jihad in the Fremen was after Paul had claimed to be the ruler of Arrakis while Stilgar remained an important leader for the Fremen. Paul had talked about Caladan and how the water falls from the sky and plants grow incredibly thick, to which Stilgar reacts with awe. Paul realises that:

“In that instant, Paul saw how Stilgar had been transformed from the Fremen naib to a *creature* of the Lisan al-Gaib, a receptacle for awe and obedience. It was a lessening of the man, and Paul felt the ghost-wind of the jihad in it. *I have seen a friend become a worshipper*, he thought.” (Herbert 507)

Prior to this moment, Paul has relied on Stilgar as a leader and a companion. However, as Paul said, Stilgar has now turned from friend to “worshipper”. This means that, except his mother, Paul is now surrounded by people who only see him as a deity and not as a man. Not only does it make him feel lonely, it also serves as a reminder of his terrible purpose. This is also evident by him feeling the “ghost-wind of the jihad”. Throughout the novel, Paul has been haunted by visions of a future in which the jihad ravage the world and felt this ghost-wind in several of his interactions with the Fremen. Paul feels haunted by his terrible purpose, and seeing his friend become a creature of the Lisan al-Gaib is just another step towards a future that is seemingly becoming inevitable. Additionally, what this excerpt portrays is how the Fremen are slowly being “colonised” by Paul: by his purpose, his words and his ideology. The Fremen are turned into less-than-human creatures whose purpose is to be obedient. Paul claims several times that he wants to avoid the jihad but keeps playing into the lore of the Lisan al-Gaib in order to follow through on his plan to retake ownership of Arrakis. Essentially, Paul sees how the jihad is slowly forming before his eyes the more he performs his role as their saviour. Nevertheless, he moves forward with his plan until the Fremen stands united behind him in the final battle, not as ghosts but as a fully formed jihad.

Even though Paul feels haunted by the future, it can also be said that he is haunting the future as well. Through his visions, Paul can see his own importance in the future. Just before

Paul is about to perform an important but deadly ritual in order to be initiated by the Fremen, he thinks about what this moment could mean for the future. He wonders if Fremen in the future will create a rock shrine at that place to commemorate the death of Muad'Dib, because that is one of many possible futures branching out from that moment. The fact that Paul has imperfect vision of the future plagues him, especially because he feels that the more he resists his terrible purpose and the coming of the jihad, "the greater the turmoil that wove through his prescience" (Herbert 418). Additionally, Paul remarks how everything he does becomes legend, that every move he makes on this day will be marked down to the last detail. He thinks that "[I]ive or die, it is a legend. I must not die. Then it will be only legend and nothing to stop the jihad" (Herbert 419). Stilgar, the leader of the Fremen, even carries Paul's banner instead of a banner representing the Fremen or himself. Before this ritual, some Fremen had asked him if he was the Lisan al-Gaib and Paul had "sensed the jihad in their words" so he only shrugged off the question (Herbert 376). Meanwhile, the readers are already aware of how Paul will be remembered because each new chapter begins with an excerpt about Paul's journey taken from books written in the future.

Ultimately, the story is about a hero, Paul, and his journey to reclaim what is rightfully his. One way in which the book communicates this is through the small excerpts that precede each new chapter. These excerpts are taken from written works by Princess Irulan, though she is not introduced into the story until the end. In these excerpts, she writes about Paul: his words, his actions and his purpose. Most notably, she writes about actions that have not happened in the story yet, effectively foreshadowing important events and creating suspense. Given how important prescience is in the story, using this narrative technique allows the reader to experience prescience as well. For example, the reader is told about how the Atreides family will be betrayed by a close friend, as well as the identity of said friend. It effectively haunts the readers in a similar manner to how prescience haunts Paul throughout the novel. While these excerpts detail many of Paul's accomplishments and ideologies, the Fremen are barely mentioned. The narrative frames Paul as the hero of Arrakis who singlehandedly liberated Arrakis. What these excerpts demonstrate is how history will remember the events of the story, and history will not remember the Fremen. It is as if their story has also been colonised by Paul, effectively erasing them, or at least who they were before Paul. They are denied both a voice and agency, and only outsiders to their culture are allowed to speak and act for them.

Before the beginning of the story in *Dune*, the Harkonnens family had been in charge of Arrakis and the spice production for 80 years. This means that the Fremen had been living under the Harkonnens oppressive rule for a while before Paul and the Atreides family was given control over the planet by the Emperor. The Atreides family was betrayed before they could make any significant changes to their role as colonisers on the planet, so there is no way to determine how their methods would have differed from the Harkonnens. However, the Duke Leto, his son Paul and the Fremen Kynes did have the occasion to travel by helicopter to oversee a dig site for spice before the betrayal happens. The Duke spots an approaching worm that would destroy the dig site and the people there unless they escape in time. As a rule, whoever is the first to spot a worm get a bonus load of spice. The Duke then tells the crew to divide it up amongst them instead as a gesture to show that he is concerned for the safety of his crew. Additionally, the Duke risks his own life, and his son's life, in order to save more workers on the ground because there is an aircraft missing and a lack of space. The perspective of the chapter then shifts towards the end so that we follow the Fremen Kynes, who thinks that the Duke was more concerned for his men than the spice and that a leader such as him would command fanatic loyalty (Herbert 136). Gaylard explains that Duke Leto Atreides, as Herbert's agent of colonisation, is a benign ruler. Leto is also aware of the perils of colonisation, and attempts to rule by winning the support of the Fremen in order to avoid duplicating the Harkonnens cruel colonialism. The inclusion of this perspective from a coloniser displays awareness from Herbert about the dangers of imperialism, regardless if it is driven by power or ecological factors (Gaylard 33).

After Duke Leto is captured and then killed, and Paul and Jessica has fled into the desert, the House Harkonnen is once again in charge of Arrakis. The Baron lets his nephew, Rabban, travel to Arrakis to be its ruler in his stead. The Baron tells his nephew that unlike the last time he ruled Arrakis, this time he wants Rabban to "squeeze" all the possible income that he can out of Arrakis (Herbert 253). The coup against House Atreides was solely financed by them, even though they were helped by the Emperor, and they are now in massive debt. Through his perspective, the reader becomes aware of just how ruthless and uncaring the Baron can be. While telling his son to squeeze the planets for all the income he can, he also claims that the Fremen are "slaves envious of their masters and waiting only the opportunity to rebel", which is why Rabban must not show them any mercy (Herbert 256). Rabban mistakes this message to mean that he needs to exterminate the entire planet, to which the Baron replies that he merely wants him to squeeze because he should not waste the entire

population but rather “drive them into utter submission” (Herbert 256). He follows this statement by urging Rabban to act like a carnivore, and to never stop being hungry and thirsty. At the end of the chapter, the readers are allowed an insight into the thought process of the Baron. He believes that the Fremen will be a bloody pulp after Rabban is finished with them, which only aids in his plan. After Arrakis has had to endure such an oppressive ruler, the Baron intends to send in his son, Feyd-Rautha as a saviour from their previous beast of a ruler. They will be so grateful to their new ruler that they will willingly follow him anywhere. Additionally, the Baron believes that by the time Feyd-Rautha steps into power, he will have learned how to “oppress with impunity” (Herbert 258).

While both House Atreides and House Harkonnen seems to view Arrakis simply as a way to earn money, the Duke and Paul demonstrates through the book that they at least care about the people under their rule. One example of this is the Duke saving the workers one the ground from a giant worm at the risk of his and his son’s life. In opposition to this, the Baron has little regard for the life of the people who work for him, and especially the Fremen. This is evidenced by the paragraph above in which the Baron plans to force the people of Arrakis to endure Rabban’s oppression so that they later will praise Feyd-Rautha simply for not being as violently oppressive as his predecessor. Furthermore, the Baron consistently underestimates both the population size and the capabilities of the Fremen. The Baron tells his nephew, Rabban, that he estimated that there are five million Fremen on Arrakis. Rabban counters that the Baron’s estimate might be low considering how difficult it is to count them given that they are “scattered among sinks and plains”, but the Baron responds with the “Fremen aren’t worth considering” (Herbert 255). The Baron’s belief is that because the Fremen live in the Deep desert, where no one else goes because it is dangerous, then they must be both few in numbers and no threat to him.

However, Rabban points out that the Sardukar believes otherwise. The Sardukar is the elite military force of the Emperor, and they are well known for being vicious in battle. During the Baron’s assault on Arrakis in order to dethrone Duke Leto, he was accompanied by the Emperor’s Sardukar, though they were in disguise because they had to keep the Emperor’s involvement a secret. Rabban had contacted some of his previous lieutenants on Arrakis and found out that a Sardukar force had been ambushed by a Fremen band and had been wiped out. The readers have already read about this in a previous chapter from Paul’s perspective. The Baron refuses to believe this, claiming that there is no possible way for the Fremen to be able to kill any Sardukar and that they must have been Atreides men in disguise.

Rabban explains then that the Sardukar seems to find the Fremen to be a threat as they have launched a program to wipe them all out. The Baron's refusal to acknowledge both the skill and sheer numbers of the Fremen points to how little regard he gives to the people on Arrakis, as well as the planet itself. To him, Arrakis is only a way of procuring income and the Fremen are only standing in his way.

Because Paul is the hero character of the novel, retaking Arrakis would also mean that the Fremen would be saved from the Harkonnens who plans to "squeeze" all the money they can from them and the planet. However, ending up as a fanatic legion that plans to ravage the universe to spread the message of a man who used to be an outsider is also not a so-called "good ending". Because of spice's addicting nature, Arrakis will always be exploited for its resource. Now that Paul has an understanding of how spice is created, he plans to use his knowledge to both facilitate the production of spice, but also help modify the environment to make it easier for the Fremen living in the deep desert without disrupting the process of creating spice. What both Paul and the Baron fail to see is that there is more to Arrakis than just the spice. In the middle of this struggle for ownership over Arrakis, there is the Fremen. Though rarely, the novel does include their perspective on living under imperialistic rulers. Even though the Atreides family and the Duke seems to not be as oppressive as the Harkonnens were, the Fremen Kynes laments that "Arrakis could be an Eden if its rulers would look up from grubbing for spice" (Herbert 122). Essentially, both the Harkonnen and the Atreides were so focused on procuring spice that they either ignored the Fremen population or only saw them as a threat. Neither of them truly considered the idea that Arrakis belonged to the Fremen or that the planet could be anything more than an extraction site for spice.

In order to retake ownership over Arrakis, Paul plans to use the Fremen as an army and exploit the three-point civilisation structure. His strategy involves blackmailing the Emperor by exposing his involvement in the Harkonnen coup to take back Arrakis. Because of the three-point structure, knowing that the Emperor was involved in infighting between The Great Houses would cause a war to break out and chaos would follow. Paul plans to blackmail the Emperor into allowing him to marry one of his daughters in exchange for not having the "Imperium shattered by total war" (Herbert 239). This plan reveals how Paul does not only want to regain ownership of Arrakis but aims even higher. The Emperor has no sons so if Paul were to marry one of the Emperor's daughters, then he would be next in line for the throne. At the end of the novel, he accomplishes everything he wanted. He is set to marry Princess Irulan

and he decides to send the Emperor to live on a prison planet of his own creation where he used to train the Sardukar. Effectively, Paul has become the Emperor of the Imperium and gained more power and recognition than if the Harkonnens had not attempted a coup in the first place. In the end, Paul gains complete control over Arrakis and says that everything the Fremen gets will be given by Muad'Dib because the "Fremen are mine" (Herbert 528). Not only is the planet still colonised and exploited for its resources, it can be argued that the Fremen have also been colonised because of their new purpose of serving Muad'Dib and his vision.

By the end of the novel, Paul has failed at preventing any future in which the jihad does not spread to other planets. In the expanded *Dune* series, the jihad has spread to the rest of the universe and countless planets were pillaged. The sequel, *Dune Messiah*, has Paul contemplating the fact that he has "killed sixty-one billion, sterilised ninety planets, completely demoralised five hundred others", and in addition he has "wiped out the followers of forty religions" (as quoted in Gaylard 29). These conquered worlds served as structures for Paul's palace and provided him with both workforce and materials. By feeding into the religious beliefs of the Fremen, which was planted there by the Bene Gesserit, Paul managed to not only take back Arrakis but also gather a force that helped him colonise large parts of the universe. While Paul might have been trying to prevent the jihad, he did benefit greatly from it in the end. There is also an argument for the fact that Paul, even though he is seen as a saviour, essentially colonised the Fremen themselves. Not only did Paul take charge of Arrakis with the help of the Fremen, he also managed to make the Fremen work for him by feeding into a religious mythos that he knew to be false. He deliberately made them religious zealots even though he knows about the potential futures where the jihad travels across the universe in order to spread the word of Muad'Dib using violence. The novel itself neither condemns nor celebrates Paul and his actions. Essentially, Paul utilizes organic warrior tribalism in order to combat the imperial exploitation on Arrakis. The consequences of this is the violent jihad formed by his messianic narrative. Gaylard claims that the text is postcolonial in the sense that it portrays "mutual imbrication of the individual with history, and the limited potential for liberation within both" (Gaylard 31). Despite achieving everything he fought for in the end, Paul is disappointed in himself for his inability to stop the jihad. He becomes a "prisoner of his own ideals" and has to live with the knowledge that he is the reason behind so much violence, in addition to being alone because everyone else has tuned into worshippers (Gaylard 30).

In line with contemporary science fiction traditions, *Dune* depicts a future narrated by a conquering hero. From an environmentalist perspective, the novel warns against the dangers of interfering with nature. Despite using some ecological concepts that are outdated today, Herbert envisions an imagined future where the landscape has an important role. The planetologist, Pardot Kynes, wishes to transform Arrakis into a green world where the Fremen could live without desperately preserving water. However, this endeavour aims to drastically alter Arrakis' natural environment, which is a dry desert. As the messiah figure, and the new Emperor of the Imperium, Paul has a vital role to play in the future. His experience with the Fremen and their perspective on nature helps him appreciate how important connecting with nature truly is. Due to this newfound understanding of Arrakis' landscape and the entanglements of the ecosystem, Paul realises that Pardot Kynes' vision for the future of Arrakis as a green paradise would destroy the universe. The sandworms that create spice can only live in the desert, and water is toxic. Making Arrakis green would subsequently destroy the natural habitat of the worms and their production of spice. As I have stated before, the universe in *Dune* cannot function without spice. The absence of such a vital resource could potentially collapse the entire three-point civilisation, as well as ruin their ability to safely use interstellar travel.

As this book was published in the 1960s, the approach used to depict our relationship to the environment is coloured by the contemporary literary and scientific trends. *Dune* was a product of its time, when ecology was becoming a popular concept to explore. The ecosystem of Arrakis is based on the concept of the biodiversity and balance of nature, the latter of which is an outdated concept today. Even so, the novel takes a postcolonial approach to ecology through the narrative of a coloniser and a messiah to the Fremen. Although the novel criticises the messiah narrative, and how it is not the solution to defeat imperialism, it does end up silencing the voice of the indigenous population of the Fremen. Through excerpts in the beginning of each chapter, the readers learn about how Paul's actions have affected the future, with little mention of the Fremen's contribution. Furthermore, the Fremen eventually form a violent jihad to spread the words of Muad'Dib, leaving their home planet to do so. This postcolonial and ecocritical approach to the messiah narrative is valuable, but is from the perspective of a white man, as well as being written by one. As popular as the novel is, it is important that environmental futures imagined and narrated by marginalised voices are allowed to be explored, especially since they are most likely to be the victims of the Anthropocene. The next chapter, I will analyse a speculative fiction trilogy written by a black

female author. The trilogy is written from a different perspective, and poses the question: what if earth was alive and able to enact revenge for our exploitation?

Chapter Two: From the Perspective of the Oppressed

Unlike *Dune*, the *Broken Earth* trilogy is written from the perspective of the oppressed, not the oppressor. Today, there is less demand for conquering heroes and more room for novels with diverse storylines and perspectives. The *Broken Earth* trilogy is set in a world that is, as the title suggests, decidedly broken. The world consists of a single supercontinent called the Stillness, which is an ironic name given how the land is in constant motion. The story begins with the creation of The Great Red Rift, which brings with it a season that will last for thousands of years, essentially threatening to end the world once again, at least for humanity. Jemisin writes about three women: Damaya, Syenite and Essun. As a mere child, Damaya is discovered to be an orogene due to an accident at school. Because of this, her parents reported her to the Fulcrum, who sent a Guardian to take her away for training. Once at the Fulcrum, Damaya learns about the brutal teaching methods meant to force absolute obedience in orogene, as well as how their only value is tied to their skill in orogeny. Syenite has been at the Fulcrum for several years and has slowly risen through the ranks. She is sent to accompany Alabaster, a powerful orogene, to help a coastal community. On this journey, she witnesses the full cruelty of the Fulcrum and their treatment of orogene, which leads to her and Alabaster running away. Her Guardian, Schaffa, is sent after her. Essun is living in a small town with her husband, Jija, and two children. Essun's story begins with the murder of her son. The norm is to kill whoever is discovered to be an orogene, even if they are your own child, which is what her husband did. Jija, leaving their son's dead body in the house, took their daughter and fled on the road. Essun's journey is finding her daughter, Nassun, in a deteriorating landscape headed for the end of the world. While on the road, she meets a young boy named Hoa, whose importance in the story is a mystery. However, at the end of the first book, Jemisin reveals that these three perspectives are all from the same woman but at different times in her life. It is also revealed that Alabaster, her previous companion, is the one who caused The Great Red Rift.

Historically speaking, speculative fiction has had a long and problematic tradition of portraying colonialism as glorious enterprises, which transforms indigenous people into an "other" or something alien. Because of this, in her edited anthology *So Long Been Dreaming* (2004), Nalo Hopkinson claims that "postcolonial voices must engage with speculative fiction" rather than merely criticising or attacking it (as quoted in Burnett 134). Furthermore, the imagined futures portrayed in these works of speculative fiction should not entirely be written by Western and white people. This leaves marginalised people and people of colour

largely absent from our future. As mentioned in the introduction to this thesis, Jemisin claimed that this made her feel excluded from the future as a black woman. Going forward, Hopkinson argues that if black and postcolonial voices interact more with speculative fiction, then the genre can grow to propose new representations of the (post) colonial in fiction (Burnett 135). In the decades since Hopkinson argued for this, several African and black writers have arisen from the speculative fiction genre to contribute their perspectives, including N. K. Jemisin.

This chapter will explore how Jemisin imagines the future could look like, with special focus on the environment and our relationship to it. The overarching theme of this thesis is narrative perspective as seen through a postcolonial and ecocritical lens. The chapter will be partially based on a research article by Alastair Iles about race and environment in the trilogy. To a lesser extent, I will use Kim Wickham's article on second-person narration, as well as Rob Nixon's theory on slow violence. Lastly, Jemisin has given several interviews where she discusses her relationship to sci-fi and important aspects of her novels, which will also be added. To begin with, I will analyse the trilogy by examining the narratives that are missing: namely, the events of the past that created the Fifth Seasons. Then I will explore how having an orogene as the protagonist affects the message the story communicates about our potential future if we continue focusing on technology to achieve sustainably. In addition, I will discuss the use of second-person narration even though it is rarely used in science fiction stories. Finally, I will study the narrative of the earth. The Fifth Seasons, that are a constant threat to humanity's survival, are believed to be caused by the earth itself. In this story, Earth is anthropomorphised and given a "body", a voice and agency. You could say that Jemisin explores what Arrakis would do if it were alive and given agency to fight back against its oppressors.

Missing Narratives: Earth throughout History

An important element to this series is narratives: who is telling the story, who is the story about and how does the narrator influence our perspective on the story. However, before we start analysing the narratives of the novels, we should look at the narratives that are missing. The characters have very little knowledge about their past, especially regarding how the world changed into the broken world they now inhabit. Even so, much of the past is also a mystery to the readers. Jemisin gives several hints to events and people of the past but large parts of it is entirely forgotten. Regardless, these missing narratives are still very much present in the

story, either as mysterious items floating in the sky or as small excerpts at the end of certain chapters that hint at past knowledge. Some of these missing narratives are essential to the story progression, and revealing them changes both the readers' and the characters' perspective on the world. Based on the revealed information, the books detail three distinct types of environments that have been changed through the years. These three eras portray how both society and the environment adapted to catastrophic events that drastically change the landscape. The first period narrates the fall of a once great society, Syl Anagist, due to their technological hubris. In pursuit of infinite power, the Syllangistines attempted to steal magic from the earth's core but only succeeded in narrowly avoiding the extinction of the human race during "the Shattering". The second time period takes place several thousand years later when civilisation has rebuilt and adapted to a new world with devastating Fifth Seasons. Humanity is now in a constant state of alertness and readiness for seismic activity that warns of an upcoming Fifth Season. Orogene are uniquely qualified to help prevent much of this seismic activity due to their magic, but they are living in an oppressive society where they are not even officially regarded as human (*The Fifth Season* 234). However, the world is about to end for a second time due to The Great Red Rift. This rift triggered a Fifth Season that will last thousands of years, effectively wiping out humanity for good. The rift brings with it environmental changes that Essun experiences while desperately searching for her daughter.

The storyline of the *Broken Earth* trilogy is set on a parallel planet earth, some 40 000 years into the future. This means that the ecology of the world, or the Stillness as it is called, is similar yet different to what we are used to today. Unlike *Dune*, nature is rather similar to ours. Jemisin did not create an entirely new ecosystem with new species but rather kept nature recognisable. The biggest difference in the environment is that the Stillness is missing its moon, which has caused so-called Fifth Seasons to appear. An example of a season is The Season of Teeth, which lasted for 13 years. When an oceanic shake triggered a supervolcanic explosion in the Arctic, the ash cloud went upper-atmospheric and rapidly spread to the rest of the world. The name of the Season originated from rumours of cannibalism due to communities not being prepared. It had been 900 years since the last Season, and popular belief was that the Seasons were merely legend. It was at the end of this Season that the Fulcrum was founded (*The Fifth Season* 452-453). While this world is still rather similar to ours, it also contains magic. This way, it will never be an accurate portrayal of what could happen on our own earth because magic is not real (that we know of). Nevertheless, it serves as a metaphor for a kind of future without the reliance on technology.

Towards the end of the trilogy, Jemisin reveals how society was before “the Shattering”. This society, called Syl Anagist, was highly technological and had achieved technological feats such as placing a base on the moon, making vehicles that resembled crawling arthropods and even genetically engineering a new type of human, “tuners”, that were able to tune energy fields. Because of its heavy reliance on technology, Syl Anagist was constantly searching for new ways of acquiring or creating power. In their pursuit for infinite power to feed their power-hungry society, Syl Anagist endeavoured to build a network of obelisks that could extract and store energy from earth’s core, calling it the Plutonic Engine. The only way to control these obelisks was using orogeny, which was why they created the tuners. Syl Anagist needed large amounts of power because they infused magic into almost everything. Even their beds were full of magic, which Nassun discovers when she reaches an old Syl Anagist city. She explains how the bed is “determining her discomfort by touching her nerves and then repairing her bruises and scrapes”, as well as scrubbing away infinitesimal flecks of dust and conforming to her body as she lies in it. She claims that is it no wonder that the Sylangistines needed as much magic as they did if they “used it in lieu of wearing blankets, or taking baths, or letting themselves heal over time” (*The Stone Sky* 293-94). The Sylangistines believed that the earth’s core would provide unlimited energy, or magic, which would allow them to continue to rely on their vast technology rather than try to find more sustainable ways of organising their society.

Syl Anagist was also a racially stratified society that devoured other diverse cultures. One example of this is how they stole a genome from an indigenous population, who they deemed inferior, in order to create the tuners. It is also revealed in the third book that the Sylangistines did not just steal the genome from the indigenous population, called the Niess; they also imprisoned them to exploit their magical ability. Before activating the Plutonic Engine, Hoa and the rest of the tuners are shown the big crystalline obelisk that powers the city of Syl Anagist. They are horrified to see human bodies, the Niess amongst others, speared through and attached to the obelisk with vines that siphons all of their magic except the bare minimum to keep them alive. Their guard, Conductor Gallat, respond merely with impatience, to which Hoa thinks that “these stored, componentized lives mean nothing to him” (*The Stone Sky* 263). Essentially, the Sylangistines were determined to exploit both the earth, which they believed to be non-sentient or able to feel anything, as well as other races they felt were beneath them. This included the genetically engineered humans, who they raised to merely view themselves as tools to be used. This raises the question: How far are we willing to go for

technological advancement? What, or who, are we willing to sacrifice for our imagined high-tech future.

The downfall of Syl Anagist came as a result of their assumption that the earth, and other people, were simply a resource that could be exploited indefinitely, and without major repercussions. While the Sylangistines were planning their Plutonic Engine, the tuners were slowly learning that they were more than just tools to be used. As the Sylangistines were going to power up the network by using the tuners, they were in turn planning on sending a feedback pulse that would destroy both Syl Anagist and themselves. Meanwhile, neither of them knew that not only was earth alive, it was also furious. In the end, both of their plans failed when the earth seized control over the Plutonic Engine while the tuners were activating it. One of the tuners, Hoa, describes it as a ghost in the machine, whose presence is “intense and intrusive and immense” (*The Stone Sky* 336). Father Earth intended to eradicate all of humanity and “any possible creature that might evolve in the future to hurt the Earth” (*The Stone Sky* 339). The tuners fought back by redirecting the impact of the Plutonic Engine and inserting a delay so that people on earth would have time to prepare. The impact was redirected to the moon, where the tuners were already strapped into wire chairs and trying to control the engine, causing it to fall out of orbit. A hundred years after the moon was lost, the “burndown” that Earth originally wanted happened, though on a much smaller scale. Twenty-seven obelisks burned down “to the planet’s core, leaving fiery wounds all over its skin” (*The Stone Sky* 342). This was the first Fifth Season, also known as the Shattering. While a delay of a hundred years was nothing to the earth itself, it was enough time for people to prepare and for humanity to survive. All of this might seem highly unlikely to happen on our own earth, but who can say that our earth is not equally as angry after sustaining us for millennia? What if our own earth is already plotting its revenge?

According to Iles, Syl Anagist is “almost a metaphor for what 21st century industrial society could evolve into, if we pursue a bioeconomy pathway” (11). This means that the fate of Syl Anagist serves as a cautionary tale against unfettered economic and technological growth, as well as overly relying on technology to achieve a sustainable society. Jemisin’s books also highlights the ways in which technology is racialised. It raises the question regarding who is in charge of technological or sustainable advancements. Iles draws a parallel between Silicon Valley innovators and the Syl Anagist elites that arrogantly believe that they have the right to make decisions for an entire society purely based on their racial superiority (12). Much of today’s actions towards a sustainable future relies on technology, but the

workforce of high-tech companies are predominantly white and masculine, though they rely on low-income workers of colour for tasks such as fabrication (Iles 7). This means that racial and social justice is not being considered an essential part of our sustainable future, and that our future lies in the hands of primarily white and masculine tech workers. Given how Syl Anagist inadvertently almost destroyed the world in doing the same thing, maybe it is time to include racial and social justice when discussing our sustainable future. Additionally, Syl Anagist and its power-hungry society is ultimately unsustainable because it is parasitic and its “hunger for magic grows with every drop it devours” (*The Stone Sky* 334). No matter if it takes fifty thousand years, the earth’s core would eventually run dry and then everything dies. Such a parasitic relationship with the environment will never be sustainable.

The main plot of the trilogy takes place quite a few years after the Shattering, where we see how humans have adapted to living in a world with the Fifth Seasons being a constant threat to their survival. Similarly to Syl Anagist, it is now the Fulcrum and the Guardians that have imposed their worldview on everybody else, resulting in the enslavement and subjugation of orogene. The orogene are vitally important to everyone’s survival given their connection to the earth, but are exploited or killed because of it. While the Syllangistines believed they were racially superior, now races have become mixed beyond recognition. In fact, a new kind of race has emerged, the orogene, which takes the place of the Niess and the other diverse cultures that were exploited by the Syllangistines. The protagonist is a black woman, but because oppression is not based on the colour of their skin, her subjugation is due to her magical abilities instead. The only way to survive in this new world is to belong to communities, or comms, that are always prepared for a Season. Surviving alone is normally conceivable but during a Season is virtually impossible. However, in order to be accepted into a comm, you have to be useful. If you are not useful, and seen as a burden rather than an asset, you will be cast out. People in a comm are separated into “use-castes” that determine their roles. For example, breeders are responsible for maintaining a stable population in a comm, especially during a Season. In opposition to Syl Anagist’s lavish and technological lifestyle, life and culture in the Stillness is purely based on survival. This conflicts with the idea of social Darwinism, which is often relied upon as a default in American thought. In an interview with Barnes & Noble, Jemisin explains how a common misconception of social Darwinism is that survival is about being the strongest or having the most stuff. Based on her research into actual accounts of survivors of real disasters, she discovered that the people who survive are the ones who adapt and cooperate (Cunningham 2017). The use-castes in the

books are the reflection of this, that to survive a comm needs people with different skills and abilities, not just physical strength.

When the book focuses on the perspective of Hoa in the time before the Shattering, the expression “Evil Death” is frequently used. This expression works as a swearword or as an exclamation of surprise. In Syl Anagist, life is sacred “for the city burns life as the fuel for its glory” (*The Stone Sky* 334). The Plutonic Engine was meant to deliver unlimited amounts of power, which would then free people from scarcity and want, lead to people living forever and even travelling to other worlds (*The Stone Sky* 259). For a society that treats life, though only their own, as sacred, death is their ultimate enemy. This is why their swearword in those times was “Evil Death”. However, after the Shattering, death was no longer their biggest threat. Death was now a part of life, something to be expected. The biggest enemy people faced now was the earth itself, which is why the expression changes to “Evil Earth” in the Essun’s timeline. The earth is seen as a vengeful entity that is punishing people with the Seasons. This is an example of how perspectives change over time as the environment grows and evolves, as well as the people in it.

While the people in the books might not have a complete overview of their history, the reader does. The reader is allowed a glimpse into the past, which reveals not only how humanity was almost destroyed, but also the reason why. The Syllangistines’ hunger for power is the biggest reason, but their entire society was built on racial superiority. This suggest that technology might not have been the sole reason for the devastation they caused, and it associates race to environmentalism. Historically, social oppression has been closely linked with the making of ecological problems, though not always clear-cut or one-directional (Iles 9). One the one hand, industrialisation is based on exploiting impoverished or racially subordinated people as cheap labour. Furthermore, cheap labour means that industries can afford more materials and rapidly expand their businesses, eventually leading to consumption societies where the amount of material goods you own signifies your social status. This exploitation of workers in industry has for example lead to air pollution, mass deforestation, and several other ecological traumas in China (Iles 9). On the other hand, industrialisation relies on externalising environmental harm to certain communities or geographical regions that are societally regarded as ‘sacrifice zones’ (Iles 9). The people in these zones often do not have the resources or visibility to withstand this abuse. This way, poor or racially oppressed people are exposed to more environmental harm than they themselves create, further exacerbating the problems.

This thinking echoes Rob Nixon's concept of "slow violence". Nixon writes about how violence, especially slow violence, disproportionately affect the poor. He describes slow violence as a violence that "occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all" (Nixon 2). This is the kind of violence that is not sensational or immediate, which makes it difficult to hold the attention of the media. It is also the kind of violence that is more likely to affect poor communities because they are, as Iles explained, "sacrifice zones". In his article, Iles uses the example of the West Virginia government failing to regulate the coal mining industry, which then caused people to be exposed to high levels of coal dust and gave them many respiratory diseases (10). The example here is one of the many ways that racial oppression contributes to and perpetuates environmental degradation. The reason the Syllangistines were able to drill into the earth's core in the first place was the genome they stole from the Niess to create the tuners. Therefore, their social oppression of other people lead to the ecological problems they created, which was the Fifth Seasons. While we cannot reasonably imagine a future right now that does not deal with the climate crises, we also cannot separate race from environmental justice. If we want a sustainable future for all of us, we need to do much more work other than simply looking at the environment in a vacuum, because there are many causes of environmental harm.

The Narrative of an Orogene

The legacy of the society of Syl Anagist is still present in the contemporary timeline. Only this time, the environmental degradation is what has led to social oppression, not the opposite. Because of the destruction caused by the Fifth Seasons, the orogene are uniquely qualified to help. They have the ability to prevent or significantly reduce the damage done by these Seasons. However, while this does makes them useful in preventing Seasons, if one does occur then the orogene are the first to die. Similarly to how the Syllangistines viewed the Niess, orogene are seen by society as a resource to be used rather than people who can help. This means that the biggest obstacle or villain for the orogene is not the hostile environment but rather the people who enslave them to exploit their abilities. Orogeny is classified in Jemisin's glossary as the "ability to manipulate thermal, kinetic, and related forms of energy to address seismic events" (*The Fifth Season* 462). Orogene can sense rocky matter events like for example tectonic shifts, as well as every creek, river and stream in the earth. Iles claims that Jemisin creates a culture around these "sensory experiences of working with Earth

and knowing its features” (8). Orogene are more connected to the earth, both mentally and physically, and is punished for it.

An advantage of using literature to imagine various futures is that one can explore what that future looks like for different people. The main character is not a “normal” person, called a “Still”, living in a world where magic users (orogene) pose a constant threat alongside major earthquakes and Fifth Seasons. Instead, the main character is an orogene living in fear of something vastly different. Contrary to *Dune*, in which the protagonist is an outsider to Arrakis and part of the ruling class, the *Broken Earth* trilogy follows the journey of someone who is being oppressed. This does not only affect how the story is told, but also allows for a different narrative perspective and representations of the environment. Likewise, the author being a black woman as opposed to a white man will also indubitably influence both the storytelling as well as their perspective on nature. When writing from the perspective of Damaya and Syenite, Jemisin uses a third-person limited narrator. Before the reveal that all three of them are the same woman, both Damaya and Syenite seem like completely different characters. The reason that this plot-twist is so effective is that Jemisin gave them each a distinct voice and a very different perspectives on the world. It is a great example of how time can change your perspective, especially when it comes to your place in society. As a child, Damaya does not know that she is different from the others. She sees herself as normal, which is why her worldview is shaken when everyone around her treats her differently once she is discovered to be an orogene. Her own family turns on her, locks her in a barn without any amenities before having her taken away to the Fulcrum. Her view on the Fulcrum once she reaches it is that of a cruel place where she is being unfairly treated by both the Guardians and her fellow orogene. Shifting to Syenite’s perspective, she had lived in the Fulcrum for years and has internalised her oppression. In fact, when she is told to get herself pregnant using another powerful orogene, she barely reacts because she is now used to not having much autonomy, bodily or otherwise. Yet, this perspective she has on her identity as an orogene changes through her and Alabaster’s journey outside of the Fulcrum. Once outside, she witnesses cruelty that is not disguised under fake smiles or the illusion of autonomy.

First, it is important to understand the Fulcrum’s role in this contemporary society. In a world where the Fifth Seasons ravage the planet, the Fulcrum emerged as a preventative measure. As the orogene has the ability to interact with the earth, the Fulcrum became a place to train them. However, this training is based on ownership and power. At the point in time when Damaya is discovered to be an orogene, the view of them is one of fear and disgust.

Any orogene discovered is in danger of being murdered by their fellow villagers, friends or even their own families. This means that the only “safe” place for them is at the Fulcrum to be exploited. In addition to the expectation that every orogene need to have full control over their abilities, they are also expected to reproduce with whoever they are told in order to breed more powerful orogene. This is exemplified by Syenite and Alabaster forcing themselves to procreate despite their dislike for the other. The only time orogene are allowed outside of the walls enclosing the Fulcrum is when they are sent out on missions on behalf of the Fulcrum. Once again, people are being exploited as if they were natural resources and therefore not extended any sympathy. They are treated as slaves whose only value lies in what they can provide for the Fulcrum, though only if they are obedient. Syenite, as opposed to Damaya, has internalised this perspective so much that she no longer questions the Fulcrum’s actions. After all, she experienced everybody, even her own family, turn against her. Her only safe haven is the Fulcrum, despite its cruel intentions.

The Fulcrum also assigns each orogene a Guardian to “watch over” them. The Fulcrum expects full obedience, which is what the Guardians are tasked to teach them through any means necessary. This is exemplified in how both Essun and her daughter Nassun have their hand broken as a child in order to test if they are able to control their abilities while in excruciating pain. These Guardians all have a piece of earth’s core lodged in their head, which allows them to live for thousands of years, not unlike the stone eaters. Orogenes are taught control through physical harm, and any orogene who show signs of weakness are effectively killed or sent to a node station. These node stations have significance in the story because it was her experience with them that led Syenite to fully realise the cruelty of the Fulcrum towards orogene, and attempt to escape with Alabaster. The cities that are still standing are dependent on the node stations so that their city will not crumble due to frequent earthquakes and other seismic events. A node station holds orogene that are drugged into unconsciousness but still instinctively perform orogeny. Essentially, they sit in a wire chair their entire lives and quell quakes for the local population while not conscious. By stripping the node maintainers of their consciousness while keeping their bodies alive, the Stills have managed to turn a human into “a reliable, harmless, completely beneficial source of orogeny” (*The Fifth Season* 142). This perfectly exemplifies the notion that orogene are only seen as a resource to be exploited without empathy, similarly to how the Syllangistines saw the earth and the Niess. This inhumane treatment causes Syenite to realise that they are merely seen as weapons and the only thing keeping them alive is their usefulness. This realisation leads her

on a journey where she eventually finds peace and a family, before the Guardians find them again. While she does manage to escape, her new home and family is destroyed in the process, which is where Syenite's story end and Essun's take over.

Again, when you read Essun's chapters, she feels like a completely different character. The narration for her chapters is the one that deviates from both of the other chapters the most, as well as the social convention of Science Fiction writing. The perspective is that of a second-person narrator, which is not common in sci-fi. Jemisin explains in an interview with *Paris Review* that part of the success of the *Broken Earth* trilogy is due to her use of literary techniques such as perspectives other than third person. She expresses how she does not care about only using techniques that are common in a genre; she will use "whatever techniques are necessary to get the story across" (Bereola 2018). So, why was the second-person narration important to the story? Firstly, this allows the narrator to address the readers directly by constantly using the pronoun "you". It immediately draws in the audience, making them feel like a part of the story. The use of this narrative technique also allows the narrator to be emotionally involved in the story, although we can only see Essun through the narrator's eyes rather than her own or a third person narrator. Furthermore, Jemisin plays with the idea of perspective even more by actually making the reader a part of the story. The prologue for the first book begins with the narrator explaining the story by directly addressing it to the reader. When he is talking about Essun, he uses the pronoun "she". However, in the first chapter about Essun, the narrator only uses "you" when referring to her. In fact, the narrator claims that "You are she. She is you. You are Essun. Remember? The woman whose son is dead" (*The Fifth Season* 15). These chapters read as if Essun is learning her own story at the same time as the reader. Jemisin uses this second-person narration to both portray slavery and the Black experience, and it becomes crucial to connect experiences of identity, community and memory for the readers (Wickham 393).

The New Yorker describes this as Jemisin having "shattered her protagonist's story into three narratives, a formal echo of her broken world" (Khatchadourian 2020). Additionally, it is also a great literary representation of Essun's own fractured mind. The last chapter from Syenite's perspective is titled "Syenite, fractured". It details how Syenite loses both Alabaster and their lover Innon, as well as their new community and home, due to the Guardians' attack. In addition to all this, Syenite believes that they only way to save her new young child from being forced into the Fulcrum is by murdering him. By the end of this chapter, the text itself is fractured. The story stops flowing naturally and is instead told in broken pieces and

unfinished sentences. At one point, Syenite thinks that even a hard stone can be fractured if applied with enough force at the right angle. She describes it as a “*fulcrum* of pressure and weakness” (*The Fifth Season* 440). This fractured mental state is a representation of how marginalised people’s identities are decided for them by an amalgamation of violence, historical precedent, and social constructs. Essun lost parts of her identity by repressing her past. Accepting the past, and resisting those trying to shape your identity for you, is the only way to create a unified identity and hope for the future (Wickham 392).

Secondly, the narrator is Hoa: a stone eater who masquerades as a child when Essun meets him on her search for her daughter. Because Syenite’s mind was fractured, Essun seems to be incapable of telling her own story anymore. This means that Essun is not the narrator for her own section of the story, but the readers experience her journey through another person’s eyes. The perspective that this other person has is also of great significance. As a stone eater, Hoa has been alive for thousands of years. It is also revealed that he was one of the tuners that activate the Plutonic Engine, which gives a perspective on how long he has been alive. Even though Essun meets Hoa rather quickly in the story, he narrates what happened to her before this. He is able to do this because he has been watching her for a while. As he is also a part of the story, Hoa has to narrate Essun’s perspective on him, especially once she finds out his true identity. It depicts just how detached he is from himself, that he can objectively describe himself and his behaviour as interpreted by Essun. Although, before the reveal that Hoa is a stone eater, he was not obviously an outsider or inhuman. He was perfectly capable of narrating Essun’s story with empathy and knowledge about human behaviour and emotions. This way, the second-person narration simultaneously gave insight into Essun and Hoa’s minds.

I explained earlier how society moved past oppression based on the colour of their skin when Syl Anagist was destroyed. However, the orogene became a stand-in for the oppressed and is seen as a new race. According to Iles, orogene “could be any of numerous racial and ethnic groups that have been enslaved across human history” (8). It is significant that all the “races” that are seen as inferior or expendable, such as the orogene, stone eaters, the Niess and the Guardians, all have a connection to the environment and earth that the Stills lack. These “races” in some way embody nature, which is what makes them an “other” and seen as accomplices to the evil Earth. This way, the exploitation of those people can be seen as a metaphor for how nature is exploited. On the one hand, they are exploited the same way nature is because the Stills see themselves as superior. On the other hand, the Stills are

heavily reliant on the Orogene to, for example, quell quakes so that cities in dangerous areas can survive. Similarly, we are reliant on nature and its resources to survive. One would think that the Stills would worship or at least respect the orogene for what they can do for them, instead they enslave them and force their cooperation.

This goes back to what I mentioned in the introduction, which is that the novels narrate from the perspective of the victims of the Anthropocene. Armiero and De Angelis focuses not on the Anthropocene, but rather on the Capitalocene. The Capitalocene centres the specific experiences of individuals rather than the universal approach of the Anthropocene (Armiero & De Angelis 346). This term was proposed by Jason W. Moore, and claims that capitalism has altered the planet, not human bodies. Armiero and De Angelis suggest that capitalist development, which is built on mass consumption, is a major factor in greenhouse gas emission accumulating in our atmosphere, overfishing and more. Therefore, the traces of the Capitalocene is accumulating in the “biological and genetic strata of human bodies” (Armiero & De Angelis 347). Human bodies and experiences are engraved with inequalities, subordination and exploitation, and this is visible. In the *Broken Earth* trilogy, the Syl Anagist city is a capitalist society. Even though they accumulate power instead of capital, it functions in a similar manner. Syl Anagist’s constant hunger for more power lead to environmental disaster when the moon was pushed out of orbit. Whether the earth was anthropomorphised or not, the loss of the moon is what triggered the Fifth Seasons. Additionally, it led to the creation of new “races” that, in various degrees, were imbued with Father Earth’s magic. For the orogene, this magic manifests itself as the ability to manipulate earth’s strata. However, if they use a massive amount of their power, pieces of their bodies turn into stone. This happens to Essun in the last book. During her journey, she loses an arm and a breast, which she lets Hoa, the stone eater, eat off her body to combat their heavy weight. During the final confrontations between her and Nassun, one wanting to save the world and the other wanting to end it, Essun sacrifices herself. She desperately tries to stop Nassun from destroying humanity by turning everyone into stone eaters. In the process, her entire body becomes petrified, essentially making her body a part of the geological strata. Unlike the stone eaters, she does not remain sentient or alive. Her death is permanent. This way, even though the orogene are oppressed similarly to the earth, they are forced to carry earth’s oppression in their physical bodies as well.

In the novel, there is a parallel between Father Earth and Nassun. In the short years that Nassun has been alive, she has experienced incredible loss and pain, just like her mother.

Though their experiences were different, they both suffered due to the subjugation of orogene. For a while, they are of the same mind that the world needs to change, or be destroyed. Given all that Nassun has experienced in her short life, she decides that the world cannot be saved. As the summary on the back of the book says: “[s]he has seen the evil of the world, and accepted what her mother will not admit: that sometimes what is corrupt cannot be cleansed, only destroyed” (*The Fifth Season*). This is the same mindset that Father Earth had when it decided to kill every human that might pose a threat during the activation of the Plutonic Engine. They both have the notion that humanity has gone too far, and that we need to start over rather than try to fix the existing system. This idea is also reflected in Essun’s chapters where she is blaming a member of her comm for her son’s murder, even though she knows that it was her husband. The narrator explains that “[y]ou mean you-plural, even though you’re speaking to you-specific” (*The Fifth Season* 57). While it was Jija who murdered her son, he grew up in that comm and learned his hatred from them. It has to be a lot of hatred as well, for someone to kill their own son because of it. The oppression that orogene are facing is not just from a few bad people, it is engrained in their society. For things to change you need to rearrange the entire structure of the society, which is what Nassun wants, though on a more destructive level. In order for us to prevent the worst disasters from happening due to climate change, we also need a reworking of society, especially because racism and climate change is often entwined. It is not a separate issue that can be solved on its own, it would take a communal effort to survive, which is what Jemisin portrays in the trilogy. Though, as we know, this is Hoa talking to her, meaning that it could be his reflection on humanity due to his thousands of years of experience. He must know better than anyone else that change is not only possible, but has happened several times already during his lifetime. Change is also inevitable in this story because the earth itself, Father Earth, has the ability to use force if necessary.

The Narrative of Father Earth

While the novel features a number of antagonists that the protagonists have to face, the ultimate villain of the story is the earth itself. At least if you view it from the perspective of the humans. In both *Dune* and the *Broken Earth* trilogy, the planet itself is an essential element. However, in this story, the planet is alive and a character with its own motivation, agency and voice. The Earth has been anthropomorphised into a vengeful figure whose purpose is to punish humanity, or so people believe. So much time has passed since the

Shattering that humanity has forgotten its own history. The only information left is that the moon was lost. Jemisin chose to not only write about environmental degradation from the perspective of humans who are being oppressed, she also anthropomorphised the earth itself into a human-like entity that can interact with the people trying to harm it. Anthropomorphism is a literary device where non-human objects or entities are given human-like attributes. Anthropomorphised characters are often seen as more sympathetic because people can recognise their own behaviours or traits in other non-human beings. The Syllangistines believed it was better that they enslaved “a great inanimate object that cannot feel pain and will not object” (*The Stone Sky* 334), which is not far off from our own thinking regarding the planet and our usage of its natural resources. Jemisin poses the question: what if earth is alive, able to feel pain and fully capable of objecting?

One of the human attributes earth is given is that of a voice: both metaphorically and physically. In this fictional universe, Father Earth is able to communicate, though it does so rarely. One of the ways in which Earth communicates is through its “voice”. It does not speak as humans would but rather through vibrations. Nassun, as she is confronted with Earth’s core, describes the sensation as she “hears the vibrations with the bones of her ears, shudders them out through her skin, feels them pull tears from her eyes. It *hurts*” (*The Stone Sky* 245). As she is a child, she can only hear an approximation of what the Earth is saying, and the Earth is saying “Hello, little enemy”. Earth extends the same greeting to the tuners during the activation of the Plutonic Engine. This way, people are actually able to communicate with the Earth, and Earth is allowed to use words to describe its own intentions. When it takes over the Plutonic Engine, it claims that the human started this war and that:

The Earth did not start this cycle of hostilities, it did not steal the Moon, it did not burrow into anyone else’s skin and snatch bits of its still-living flesh to keep as trophies and tools, it did not plot to enslave humans in an unending nightmare. It did not start this war, but it will rusting well *have. Its. Due.* (*The Stone Sky* 248)

Because humanity has forgotten the actual reason for the Seasons, humans simply believe the earth to be evil. However, Father Earth himself is allowed to dispute this in its own voice, placing the blame on the Syllangistines for attempting to enslave it. It is a perspective that is lost in history, and allows history to repeat itself. Earth is not just a resource or an unfeeling object, it describes itself as alive by talking about its “still-living flesh”. Furthermore, the earth’s crust is described as skin. This is a product of anthropomorphising the earth, making the action of drilling into the earth’s core seem more grotesque by comparing it to piercing a

person's skin. This also creates a comparison for how the orogene are enslaved and exploited because they can provide power. It shifts the perspective from the earth being evil to humans being evil, and earth simply responding to their cruelty with its own. As the people in the story seem to have no reservations about exploiting orogene like this, comparing the earth to a human might not have that much of an effect. However, it will have significantly more impact on the readers, to be introduced to the idea that earth might be alive. Although earth is not human like us, nor does it seem to possess many human-like qualities like Father Earth, it can still be seen as a living being. And, if you see it that way, our treatment of it is appalling.

In addition to having a voice, Father Earth also has agency in the story. While the Sylangistines were powering up the Plutonic Engine, Father Earth was getting ready to use its agency to both stop it and enact revenge. As previously described, earth attempted to take over the Engine and use its power to destroy all life on earth that could potentially harm it in the future. This was meant to punish all of humanity because of the continued and relentless exploitation of earth as a resource. However, due to the interference of the tuners, earth was unable to end all life on earth. In response to this, Father Earth punished the tuners by making them a part of the earth, "chained fate to fate" (*The Stone Sky* 308). Their skin was transformed into solidified magic that resembled stone and they were now practically incapable of dying. Essentially, their fates were now linked with Father Earth; they would live as long as the Earth did. These people are called stone eaters. For the Sylangistines that worked on the Engine, earth used a piece of its own core that they had brought with them to display in order to kill them. However, human will was stronger than Father Earth anticipated, so instead pieces of the core lodged into their brain, making it possible for Earth to exert control over them. This way, earth left pieces of itself in the bodies of the humans that sought to exploit it. Similarly to the orogene, the stone eaters also display, although more visually, the oppression felt by Father Earth. They are forced to carry this oppression in and on their bodies, making them human embodiments of earth's exploitation. Without earth having any agency, the Sylangistines would have probably tapped the earth's entire core by now, and the world would look like a completely different place, for better or worse. The world in contemporary times is completely shaped by the earth's actions, as well as the new "races" he created, forcing humanity to experience consequence more directly and on a bigger scale.

Instead of using the popular "Mother Nature" deity, Jemisin anthropomorphised the earth into a father figure. Mother Nature has been popularized as a personification of nature, and one of the ways in which Mother Nature is depicted is as a nurturing and forgiving mother.

However, the Father Earth we see in the trilogy is angry and vengeful. It has already tried to wipe out humanity once when the Syllangistines tried to burrow into its core, and is responsible for the devastating Fifth Seasons. What does this say about our relationship to the earth? It shifts the focus from the earth as a figure that forgives and nurtures into a figure that reacts similarly to how us humans would: with anger. As previously discussed, Nassun and Father Earth has similar reactions to humans oppression and exploitation of them. This makes Father Earth more human in some ways, and less of a deity or an abstract idea of nature. As a personified figure, Mother Nature is more of a figurative deity. She lacks agency or a physical presence, both of which Father Earth possesses. Furthermore, other than changing the gender in the name, Father Earth is not necessarily depicted as a male. He does not use masculine pronouns, he is referred to as “it” by Nassun when she is directly faced with it. Additionally, Father Earth never uses that name for itself, it is a name most likely given to it by humans. Therefore, I hypothesise that anthropomorphising nature as “Father Earth” was less about gender, and more about existing as an opposition to the nurturing and forgiving Mother Nature. Even so, Father Earth is not evil, it is more so depicted as a neutral party. Earth only attacked the Plutonic Engine once it realised that it was going to be used to exploit it. With the personification of nature not being forgiving, we are held accountable for our treatment of it. Father Earth being neutral, as well as given agency, forces the humans in the trilogy to be responsible in the way they treat the environment.

As an anthropomorphised figure, earth is also able to provide its own perspective on humanity. What does Father Earth make of the humans? As Hoa narrates what happened when they tried to activate the Plutonic Engine, he talks about how the Earth was aware of what the humans were doing. Father Earth had been investigating for decades before the Engine was finished in order to understand its purpose. Hoa claims that to the Earth, humans are “insignificant vermin, apart from our unfortunate tendency to sometimes make ourselves dangerously significant” (*The Stone Sky* 339). This is connected to the idea of earth being neutral, especially when it comes to humans. Father Earth is neither nurturing nor vengeful. Human beings were not a significant threat until they decided to tap into the earth’s core for more magic. This way, the readers get a perspective on humanity but through the eyes of something that is perceived as unfeeling and without any consciousness. Giving Father Earth its own perspective gives him the ability to judge us and to fight back when we cross the line. This perspective also gives insight into how we are not the only species on earth that matters, we are “insignificant” until we damage the environment so much that it needs to use force to

stop us. We are a part of the ecosystem, and need to work within its constraints. When we start taking more resources than we need, we become vermin that the earth needs to deal with. In the novel, the earth decided that total annihilation was the solution, and given how we are heading towards a sixth mass extinction, it might be our earth's solution as well. Likewise, both apocalyptic events would be due to human intervention in, and exploitation of, nature.

Additionally, Earth had a difficult time understanding humans because of the difference in their lifespan. The Earth sees humans as “short-lived fragile creatures, puzzlingly detached in substance and awareness from the planet on which their lives depend” (*The Stone Sky* 341). Humans did not understand the harm they were about to inflict, possibly because they were so short-lived and detached. Meanwhile, the Earth has lived for millennia. Humanity is nothing but a temporary occupant. This is why, when Father Earth sought punishment for what was done to it, the punishment was to live as long as the Earth did. By linking their fates together, Earth forced them to experience time in a different way. For the Stone Eaters, time chips away at their humanity little by little. Alabaster explains it by saying that he can barely remember what he did fifty years ago; imagine trying to remember five thousand years ago. The Stone Eaters forget their own name and their sense of self the longer they stay alive. Alabaster claims that they are not so different because of what they are made of, but rather because “no one can live that long and not become something entirely alien” (*Obelisk Gate* 168). Essun had noticed this in her time with Hoa, how something mundane as soap fascinated him. Technically, the Syllangistines achieved one of their goal in the end, which was eternal life. The scientist working on the Engine became Guardians and the people in the city became stone eaters. Is it worth it to live forever if we lose our humanity on the way?

These Fifth Seasons might not be apocalyptic for the entire world, but they have wiped out many civilisations, whose remnants are still visible in Essun's timeline. For example, the sky is filled with obelisks but no one knows exactly what they are or why they were created. To them, they are simply grave markers of an ancient civilisation that is now forgotten (*The Fifth Season* 8). This idea ties in with what Hoa is explaining in the beginning of book one, which is that civilisations are born, and then they die. It has happened before and most likely will again. The world does not end just because people do, as “*the planet is just fine*” (*The Fifth Season*). The planet does not exist because we do, or to sustain and house us. It was here before us and will be here after us. Our own earth has been through several mass extinctions; we are still unearthing bones of creatures we can only imagine. Does this mean that the earth is evil for defending itself? According to Horacio de la Cueva Salcedo's article on the

consequences of environmental violence, for scientists that study evolutionary processes, the time scale they work with is hundreds of millions of years. To track human impact on the biosphere, scientists track evolution alongside mass extinction events, and have discovered that our exploitation of natural resources is bringing us closer to a sixth mass extinction event. We are changing the face of the planet, possibly irreversibly, and forging a path for new life. However, our destruction of the global environment does not ensure our own survival. Reversing these massive changes to the environment might not be possible in the time scale of human generations (Salcedo 20). The environment has survived several mass extinction events before, same as Father Earth, but we are not guaranteed to survive. Humans are part of the environment and ecosystem, but if we continue our unsustainable use of the resources available to us, then we become parasites. The question becomes: should we live forever? Should we inhabit the planet until it dies or should we make room for new species after us?

“Let’s start with the end of the world, why don’t we? Get it over with and move on to more interesting things” (*The Fifth Season* 1). This is how the *Broken Earth* trilogy starts: with the end of the world. In fact, it is not the first time that the world has ended, yet the planet is still alive. This is an interesting idea to explore, that the end of the world for us humans is not the end of the actual world. The earth has existed for millions of years already, humans only for about a few thousand. In a timeline of earth’s history, humanity is a mere footnote. Unless we permanently destroy the planet due to nuclear bombs or climate change, the world will outlive us. What about a future where humanity is extinct? What does earth look like then? The overgrown forest like many dystopias depict? A wasteland because of the major climate change we inflicted before we went, leaving only creatures that can survive such a harsh climate? How will the creatures left alive adapt to this new world without humans, especially those we domesticated and bred to fit our own needs? Maybe new life forms will emerge in our stead, drastically changing the landscape just like humans did. This is important when it comes to our relationship with the earth. We are a part of nature and its ecosystems. However, we are not indispensable. The world has survived five major extinction events; it will survive ours.

The theme in this trilogy is summed up by Hoa when he explains that “for a society built on exploitation, there is no greater threat than having no one left to oppress” (*The Stone Sky* 334). Jemisin’s trilogy presents a future where humanity inhabits a post-apocalyptic world. The reason for this broken world is the city of Syl Anagist: a technologically driven society that attempted to violate the earth’s core in search of infinite power. According to Iles, Syl

Anagist serves as a metaphor for our future if we pursue a biotechnological pathway (11). This metaphor exists as a warning for the kind of future our society might be heading towards, which Jemisin theorises could lead to environmental harm akin to losing the moon. Societies based on oppression, like Syl Anagist, will never be sustainable because it has a parasitic relationship with nature. Furthermore, saving the world did not include any technological advancements, but rather restoring nature to its natural state before losing the moon. Instead of believing that the world was beyond saving because of its oppression of orogene, Nassun ends up restoring nature to what it was before Syl Anagist angered the earth. This would end these devastating Fifth Seasons, but also force a restructuring of its established systems of oppression. Without the Seasons, upon which their entire society has been built, they could rebuild society into one that is not built on exploitation but rather cooperation. Moreover, as Iles argues, racial justice is entwined with environmental sustainability. One can greatly influence the other. This way, Jemisin imagines what the future could look like by engaging with the past. Contemporary society is overly focused on technological advancement to prevent environmental damage, but Jemisin argues that a sustainable future is only possible if we also have equality. In order to transition into a more sustainable future, there needs to be more focus on the social aspect, not the technical.

Despite belonging to the same genre, *Dune* and the *Broken Earth* trilogy are very different books. Both of their environmental futures are narrated by protagonists that are opposites, that of the oppressor and that of the oppressed. Nonetheless, both set of novels imagine a future in which close ties to nature and our environment is vital for survival. They depict how species and other elements within ecosystems are entangled, and that humans are entangled with it as well. Disrupting these connections in an ecosystem could have devastating effects in civilisation. In *Dune*, Paul's understanding of the landscape saves the Fremen from attempting to modify nature to such a degree that it stops being a desert and starts becoming a green paradise. Interfering in nature to this extent would destroy the natural habitat of the sandworms, which would affectively end the creation of spice. Given how essential spice is to the universe in *Dune*, this intervention into nature could have had devastating cost, potentially even leading to the collapse of civilisation. In the *Broken Earth* series, the Sylangistines interfered in nature by attempting to siphon magic from earth's core, which then led to the moon being pushed out of orbit. This triggered the devastating Fifth Seasons, though the people of the future are missing this narrative. It allows them to forget the lessons the Sylangistines learned about intervening in nature, and continue their cycle of oppression and

exploitation. However, orogene have the ability to exert some control over the earth such as stopping earthquakes within a certain radius. This connection to the earth makes them vital in surviving a landscape where the ecosystem has been disturbed and turned hostile. These books were written fifty years apart but still contain the core message that surviving the future requires us to work *with* nature as we are all entangled within its ecosystems.

Conclusion

What does the future look like? In this thesis, I have examined how *Dune* by Frank Herbert and the *Broken Earth* trilogy by N. K. Jemisin narrate environmental futures through their respective protagonists and narrators. Furthermore, I also explored how these texts engage with the future, from either the past or the present. The context for this thesis is the Anthropocene, and how humans have become the driving force behind environmental devastation. We are living in an era where human intervention in nature has led to the destruction of ecosystems formed through millions of years at a rapid pace (Heise 3). Awareness of this climate crisis urges for further speculative writing about the future. However, it is important that these speculative futures are written by, and includes, marginalised people. As quoted by Jemisin in the introduction, she had difficulty imagining herself in the future because of the exclusion of black people in the sci-fi novels available to her as a child (Brown 2019). Traditionally, sci-fi and speculative fiction used to be Western centred and not inclusive of non-white perspectives. However, modern takes on the speculative fiction genre include more diverse narratives as the genre has, and continues to, evolve.

Dune's point of view in environmental speculation and storytelling is that of the coloniser. The protagonist, Paul, came to Arrakis as part of the governing family. After being deposed from power, he has to turn to the indigenous population for aid, and plans to retake his power back with their support. The advantage to the protagonist being an outsider to the environment on Arrakis is that it allows for exploration. Paul is incapable of surviving as an outsider; he has to learn to view the landscape through the eyes and experiences of the Fremen. They have lived on Arrakis for generations, which has given them the ability to adapt. This is apparent in the stillsuits they wear to conserve water in the desert heat, the way they traverse through the sand to avoid detection by the sandworms, and their ability to utilize the worms as means of transportation by mounting them with grappling hooks. Their relationship to the landscape has also influenced their culture, as seen in their treatment of water. Because water is so essential to survival, they extract the water from the dead instead of burying them. This way, the dead still contributes to the survival of the group, which is met with great respect. Moreover, the speculative ecosystem that Herbert created for Arrakis is based on concepts of ecology such as balance of nature and biodiversity. Through these concepts, he managed to explain how species in an ecosystem can be entangled, just like the Horseshoe Crabs and Red Knot Birds (Funch M143). In addition, he portrayed how humans have become entangled in the

ecosystem of Arrakis due to their addiction to spice. Destroying the natural habitat of the worms by turning Arrakis into a lush and green planet would also affect the humans as it would prevent the production of spice.

Despite Paul's status as a messiah, or perhaps because of it, the novel is a work of messianic and apocalyptic anti-imperialism. The desire for strong leaders, and a messiah, is a relic from the mythologization of our mediaeval past, which is the basis for much of the imagery in *Dune* (Gaylard 32). Herbert designed Arrakis' culture of coexistence, scarcity and ingenuity to exist as an opposition to imperialism's ecological excesses (Gaylard 25). Edward Said criticizes such messianic narratives if they fail to foreground their position as an outsider to avoid silencing the indigenous voices they are trying to liberate (Gaylard 26). However, Gaylard claims that *Dune* circumvents this critique by foregrounding Paul's position explicitly in the text. The novel tells the reader about the Bene Gesserit and their involvement in establishing the mythos of Muad'Dib on Arrakis. Additionally, Paul is clear about how he is deliberately playing into this mythos to join the Fremen. The disadvantage of exploiting a messianic narrative is portrayed in how Paul is unable to prevent the forming of the jihad to violently spread the word of Muad'Dib to the rest of the universe. Paul effectively used the messianic narrative and the Fremen's religious beliefs to combat House Harkonnens imperialist colonization, but it also led to fanaticism and more violence.

The *Broken Earth* trilogy's point of view in environmental speculation and storytelling is that of the oppressed, or victim of the Anthropocene. The oppression of orogene is directly linked to their ability to extract power from the earth, which is only necessary because of the repercussions of the actions by the Syllangistines. They attempted to drill into the earth's core in order to access unlimited power to fuel their highly technological society. However, the narrative of Syl Anagist is lost in history to the people in the contemporary timeline. They blame Father Earth for the environmental wasteland they have to survive in, completely missing the fact that the devastation was manmade. According to Iles, the Syl Anagist society serves as a metaphor for our own planet's future if we continue to rely on technology to achieve sustainability. Jemisin also points out how sustainability is not achievable because structural racism and oppression is directly linked to technological hubris and environmental destruction. Iles claims that we cannot transition into a sustainable future without also acknowledging this connection. This way, Jemisin's imagined future is not a one we should be striving towards, but rather one we should endeavour to avoid. That future would be built on oppression and exploitation, and would be unsustainable to all of us.

The novels use an orogene as its protagonist, and as a narrator. Damaya and Syenite tells their story from their own perspective through a third-person narrator. Yet, as Syenite's mind is fractured due to the pressures of subjugation, Esssun becomes incapable of narrating her own experience. Therefore, the second-person narrator addresses Esssun during her chapters, effectively engaging in the reconstruction of her identity and memory by telling her of her past experience (Wickham 392). Likewise, Father Earth is also a victim of oppression and exploitation. The earth is anthropomorphised, and given the ability to communicate and interact with humans. Father Earth uses the ability to "talk" by communicating its perspective to the people that try to exploit it. Nassun, in her encounter with the earth, finds herself agreeing with its reasoning for the destruction of human kind based on their systems of oppression. Also, earth uses its agency to actively prevent the Sylangistines from burrowing into its skin and snatching "bits of its still-living flesh to keep as trophies and tools" (*The Stone Sky* 248). By giving itself human-like qualities, earth is able to humanise itself. This process of humanisation helps elicit more sympathy as it is easier to sympathise with anthropomorphised figures than a mere object. Jemisin's novels depict both orogene and the earth as victims of the Anthropocene, and allows them to narrate their own experiences.

Despite being written fifty years apart, the novels have a similar approach in aspects of their environmental futures. These futures highlight how our survival is dependent on our close connection to the environment. Disrupting ecosystems that are entangled can lead to apocalyptic environmental scenarios such as a drastic increase in seismic activity that drastically alters the landscape, or the collapse of civilisation because of the extinction of a species that was responsible for a vital resource.

Future work on this topic can include continuing to explore the development of speculative fiction and sci-fi as more non-white and non-Western writers engage with the genres. It takes some time for scholars to write and publish research articles about these new speculative fiction texts, so we have to wait a little to read their analyses of these new interpretations of environmental futures and those who narrate them. Similarly, it would be interesting to follow the evolution of the concept of the Anthropocene. It has already spawned more nuanced and specific terms like Capitalocene, as employed in this thesis, or Donna Haraway's Chthulucene. What new concepts and ideas will be created in the future, as our planet continues to degrade and our relationship to nature evolves?

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