

Eco-Fiction: Bringing Climate Change into the Imagination

Submitted by Sophia David, to the University of Exeter as a thesis for the degree of Doctor of Philosophy in English in June 2016.

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Abstract

As a global population, inclusive of humans, fauna, and flora, we are each subject, though disproportionality, to the risks associated with our planet's changing climate. These changes are largely caused by our unabated expulsion of CO² emissions into the atmosphere. Our globalized world and economic activities have largely engendered the burning of fossil fuels. The 2014 report from the Intergovernmental Panel on Climate Change states that to mitigate the worst effects of climate change, which means keeping warming below 2°C, we need to achieve emissions scenarios relative to pre-industrial levels. Without such reductions we can expect substantial species extinction, increased food insecurity, frequent extreme precipitation events, continued warming and acidification of the ocean, global mean sea level rise, and more frequent and longer lasting heatwaves. Responding to this means collective action at a global level.

In my thesis I ask how the novel can respond to and help us to cognise these demands, as well as to cognise the scale and complexities of climate change, its philosophical and physical implications, and to attend to the particularities of local place whilst remaining global in its scope and vision. I argue that climate change gives rise to a new form of novel. My work is primarily concerned with eco-fiction and how it can raise consciousness about climate change. I consider that the novel, as a counterfactual narrative, can personalise the issue, create stories so that we have ways to speak about it and enchant us towards an ecological imagining.

My thesis begins by discussing the existing genre of popular climate change fiction. This mostly consists of clichéd, post-apocalyptic and hero-orientated disaster narratives. These novels are often predictable and limited in how they can engage the reader with climate change. In my second chapter I look at how climate change affects and alters our language. Certain processes belonging to it lead to a loss of words but also to the production of new words. I examine these themes in Margaret Atwood's *Oryx and Crake* (2003), Cormac McCarthy's *The Road* (2006), Marcel Theroux's *Far North* (2009) and Indra Sinha's *Animal's People* (2007). My third chapter considers how climate change confounds scales and forms of measurement, as it can be invisible, trans-temporal and trans-spatial. I discuss this

in reference to John Christopher's *The Death of Grass* (1956), Don DeLillo's *White Noise* (1984) and Nadine Gordimer's *Get a Life* (2005). In my fourth chapter, by close reading of Ian McEwan's *Solar* (2010) and Nathaniel Rich's *Odds Against Tomorrow* (2013), I suggest how much of our existing climate change discourse has become outworn and fails to prompt critical reflection. In my fifth chapter I argue that particular mitigation strategies and consequences of climate change force us to revise certain epistemologies. I examine how this is represented in Jean Hegland's *Into the Forrest* (1995) and Barbara Kingsolver's *Flight Behaviour* (2012). In each of these chapters I suggest that creative writing and revising the form of the novel can take account of these aspects and bring climate change into the imagination.

In my final chapter I discuss how Amitav Ghosh's *The Hungry Tide* (2005) overcomes some of the obstacles associated with representing climate change in the novel. *The Hungry Tide's* form, plot and characters are structured by the unique tidal landscape of the Sundarbans, Bengal. Popular fiction typically provides an egocentric account, concerned with the development and interior world of an individual. Yet, they must move towards a more holistic outlook, as found in Ghosh's example, which can depict the wider interconnections of the nonhuman world. Though climate change is both global in impact and the response it demands, it is particularity with the local that I consider to be essential to eco-fiction. The complexity, wonder and incalculable interconnections and variety owing to place cannot be evoked without such particularity. Therefore climate fiction must balance itself against the broad demands of a global crisis whilst attending to the special character of place and fabric of the local.

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Foreword

A number of experiences have shaped this thesis and how I came to be involved in it. How we inhabit and relate to our environment has been an enduring concern for me. I believe this environmental consciousness began in early outdoor explorations. Hills and landscape have long since been a compelling draw for me, with weekend rambles over Dartmoor and longer adventures spent navigating steep Berber villages, glaciers in the Himalayas, and climbs across the Alps and Dolomites. It is in such sublime places that an awe for the natural world has grown and been reconfirmed. The freedom and wonder we experience in these places, and the reflection afforded by them, has often prompted me to consider the significance of our relationship with nature. It is in such places that I have realised the importance of the diversity and richness of our landscapes, beyond an instrumental value. This passion for simply walking and losing my thoughts to the sights, sounds, and air of the hills has gradually led me to taking action to protect our environment. Climate change is one of the most urgent issues that we, and the nonhuman world, face. For many years now I have directed myself towards this concern.

To familiarise myself with the science of climate change I studied an MSc in Geography at the University of Edinburgh. I became a sustainability engagement officer for Transition, an environmental grassroots charity,

following graduation. I have also lobbied for Greenpeace for a number of years. It has been in the combination of these experiences that the ideas and impetus for this thesis began to emerge.

A fundamental question lies at the heart of this thesis: how do we imagine climate change? I have been led in various directions in search of answers, establishing dialogue with academic and non-academic groups. In the second year of my PhD, two colleagues and myself set up the network 'Green Connections', sharing an aim to bring together activists, artists, scientists, and academics to consider responses to the Anthropocene. This network was inaugurated by a symposium, where ideas, stories and research were shared and initiative set up for collaborative projects. Some outcomes have included an exhibition, 'Trembling Grass', about the depletion of natural resources, as well as the publication of the journal *Politics of Place*, which I co-edit. In the same year I travelled to the Curonian spit, Lithuania, on a EU-funded project to work with marine biologists and visual artists to address ways to productively represent climate change. Such dialogues have led me to realise the importance of cultural engagement with climate change; it enables us to explore what it means to us and develop concepts to imagine it.

During my doctoral studies I had the opportunity to spend a term with 'Semester at Sea': an innovative study abroad programme based on a

floating university. Together we travelled through Mediterranean Europe and West Africa, sailed across the Atlantic to Brazil, journeyed around Central America, through the Panama Canal, to finally dock in San Diego after one hundred and ten days at sea. During this time I could really bring the global perspective of my research to the fore, as I engaged in conversations with people from across the world about their immediate experiences of climate change. I spoke with fishermen from the Saloum Delta, Senegal, about their loss of livelihoods due to declining fish stocks; witnessed fires blaze across Chapada Diamantina, an area in Brazil which had been suffering from severe drought; spoke with Costa Rican coffee farmers about their initiatives for soil protection and agricultural diversification; and passed numerous evenings at sea discussing the state of our oceans with marine biologists.

In the final stages of my thesis I was employed by the Royal Society to co-author a policy report about climate resilience in the UK. I liaised with policy-makers, scientists, social researchers, and parliamentarians about climate adaptation. This was an opportunity to consider my research in an alternative context, and consider how it might be applied to a decision-making framework. The role that the humanities can play in responding to such global concerns was reinforced. It has been this trans-disciplinary collaboration that has emphasised to me the necessity of a multi-lateral approach for addressing climate change effectively.

This thesis has not had a purely academic orientation, but in its intention and conception has instead been defined by an activist agenda, emerging from various experiences and dialogues that have often taken me beyond the pages of books. I hope that this work will contribute to further consideration of alternative ways of thinking about and responding to climate change.

Introduction: The Novel and Cognising Climate Change

‘I think we need a new type of novel to address a new type of reality’¹

As a global population, inclusive of humans, fauna, and flora, we are subject, though disproportionately, to the risks associated with our planet’s changing climate. These changes are largely caused by our unabated expulsion of CO² emissions into the atmosphere. Our globalized world and economic activities have largely engendered the burning of fossil fuels. The 2014 report from the Intergovernmental Panel on Climate Change states that to mitigate the worst effects of climate change, which means keeping warming below 2°C, we need to achieve emissions scenarios relative to pre-industrial levels. Without such reductions we can expect substantial species extinction, increased food insecurity, frequent extreme precipitation events, continued warming and acidification of the ocean, global mean sea level rise, and more frequent and longer lasting heatwaves. Responding to this means collective action at a global level.

In this thesis I ask how the novel can respond to and help us to cognise these demands, as well as to cognise the scale and complexities of climate change, its philosophical and physical implications, and to attend to the particularities of local place whilst remaining global in its scope and vision. My work is primarily concerned with climate-fiction and how it can

¹ Angela Evancie, ‘So Hot Right Now: Has Climate Change Created A New Literary Genre?’, *NPR*, 20 April 2013, <<http://www.npr.org/2013/04/20/176713022/so-hot-right-now-has-climate-change-created-a-new-literary-genre>> [accessed 29 July 2014]

raise consciousness about climate change. I consider that the novel, through its engagement with fiction, can personalise the issue, create stories so that we have ways to speak about it and enchant us towards an ecological imagining.²

When surveying the existing canon of climate novels, it became apparent that many were hackneyed disaster narratives, though there are some exceptions. I found that we lack the concepts to imagine climate change. This research therefore considers the ways that climate change challenges the imagination. The reasons are various; it is a vast and global concern, yet it can only be experienced locally. It is often invisible and latent, with unpredictable consequences. It is trans-spatial and trans-temporal. No one is directly responsible for it, yet nearly everyone has contributed to it. Climate change confounds systems of measure and throws categorical thinking into chaos. Responding to it means re-envisaging how we relate to our world. It involves forming a new economic model and ending the use of fossil fuels. Climate change therefore is particularly difficult to cognise and as such many representations of it are formulaic, which fail to provoke contemplation. However, this thesis suggests that the novel, by creatively recasting the issue, can bring it into the imagination.

To do so, however, the climate novel must grapple with these complexities. The challenges for it are to convey local, subjective

² *Enchant* is defined here as developing an ecological appreciation.

experiences whilst simultaneously attending to abstract, global forces, and to depict complex spatio-temporal scales and multiple perspectives, including the nonhuman. Many of the traditional features of the novel, which are anthropocentric and conflict with ecological integrity, must be reinvented. To capture the particularities of place and lead to ecological enchantment, they must be creative and employ poetic nature diction. Avant-garde practices are also consistent with cognising climate change as familiar representations fail to prompt contemplation. We find then that climate change gives rise to a new form of novel, which steadily gives rise to a new way of conceptualising the issue.

Reshaping the Field

When researching this thesis I was surprised to find that the burgeoning field of ecocriticism lacked substantial discussion of its most serious issue, climate change. This is, perhaps, because literary responses to climate change have mostly been in the form of science and genre fiction, rather than canonical works. Climate change is also a tenaciously complex topic. Yet, contrary to this, in the final stages of this thesis there have been a handful of significant publications concerning climate novels, including Kate Rigby's *Dancing With Disaster: Environmental Histories, Narratives, and Ethics in Perilous Times* (2015) and Adam Trexler's *Anthropocene Fictions: The Novel in a Time of Climate Change* (2015).³ Both are a major

³ Timothy Clark's *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept* (2015) is another significant publication to be released this year. However I have not

contribution to defining an emerging branch of ecocriticism, the study of climate fiction. Though these works emerged in the final stages of my thesis, I consider them to be inaugural texts and will therefore take a moment to summarise them.

It is particularly Adam Trexler's work that I consider to be a significant contribution, as it underpins some critical questions about this exciting new area to be investigated. Trexler's book is the first extended study of climate novels. His work offers an overview of the genre and its development in the last thirty years. Yet it is not a definitive study, but rather the beginnings of further critical enquiry into the role of culture in mitigating climate change.

Anthropocene Fictions mainly identifies the evolution of the climate novel. Trexler describes the novel as 'a privileged form to explore what it means to live in the Anthropocene moment'.⁴ Climate change, Trexler notes, 'is not just a "theme" in fiction' since it radically reshapes our expectations of the novel.⁵ His research focuses on how the climate novel can articulate and examine the politics, economics, new technologies and disasters that define the Anthropocene. Similarly to my research, Trexler finds many novels to be limited in addressing climate change. The first chapter in *Anthropocene*

summarised it here since the book's central ideas, such as how climate change destabilizes norms, poses intellectual challenges and leads to a derangement of scales, were developed in Clark's earlier publications and have already been considered in researching this thesis.

⁴ Adam Trexler, *Anthropocene Fictions: The Novel in a Time of Climate Change* (Charlottesville, VA: University of Virginia Press, 2015), p. 27.

⁵ Trexler, p. 233.

Fictions discusses how to incorporate climate change into the novel, arguing that it ‘must bring fact into dialogue with fiction.’⁶ However, I later dispute the necessity of factual information within the climate novel. Trexler also asks how the evidence of climatology is altered by its portrayal in fiction. His second chapter argues that place, space and disaster need to be narrated differently; this also resonates with Kate Rigby’s work. He finds that climate fiction is nearly always about a character’s immediate confrontation with an environmental calamity. As a consequence narratives become highly dependent on a limited range of cultural narratives, which I critique in my third chapter. Depictions of disasters need to be more imaginative and something beyond the predictable tales of deluge and polar stories. His third chapter addresses politics and agency in the climate novel. Trexler suggests that novels struggle to articulate sufficient or compelling ways of responding to climate change. They also fail to articulate the global politics of the issue, due to the sheer complexity of international climate negotiations. Such contexts make the climate novel a difficult one to construct. His final chapter addresses how we can speak about the influence of markets, and the nonhuman agents acting within them, upon climate change. He states, ‘plants, animals, bacteria, machines, financial capital, and weather all materially shape markets as well, in ways that are not precisely predictable, even if they are often decisive.’⁷

⁶ Trexler, p. 29.

⁷ Trexler, p. 221.

Trexler finds that recent climate novels are becoming more innovative in order to include political and ecological nuances and complexities. He notes that the ‘most striking feature of novels written in the last several years is that they have sought to explore the complex economic and social adaptations necessary in a period of anthropogenic global warming.’⁸ They are becoming better at articulating climate change by describing ‘the unsettling of familiar systems and the reconfiguration of human ecology’,⁹ wherein ‘species, weather, social groups, and financial interests act on their own terms and allow the reader to integrate ever more concerns when considering the Anthropocene’.¹⁰ Trexler’s work argues for the importance of the novel in constructing meaning in the age of climate change. The innovations that Trexler suggests primarily concern the novel at the level of its content and themes. My research, on the other hand, examines more closely how we lack the concepts to cognise climate change. I suggest that climate change disrupts our thinking even at the level of meaning making, as modes of measuring it are displaced. Therefore, I rather find that avant-garde practices and revising the novel’s formal features are needed. I have found the novel in its conventional form to be mostly inadequate for giving meaning and cognising the crisis; both Trexler’s research and mine suggest that the novel must recast its traditions in order to bring climate change into the imagination.

⁸ Trexler, p. 202.

⁹ Trexler, p. 173.

¹⁰ Trexler, p. 173.

Kate Rigby's *Dancing with Disaster* examines our perceptions of natural disasters. Though Rigby identifies how the term *natural disaster* is a misnomer and she rather uses *eco-catastrophe*. From her research she examines how our responses to climate change are shaped by a historical relationship to calamities. Rigby suggests revising our relationship with disaster and learning to 'dance' with it. Her metaphor, 'dancing with disaster,' describes a 'multispecies performance, at once rehearsed and responsive'.¹¹ It is an ethos inclusive of nonhuman agency and is 'orientated toward averting eco-catastrophe where possible; enhancing resistance should one such nonetheless eventuate; and enabling transformation should that prove necessary.'¹² Part of this 'dance' involves an advanced understanding of the complex interplay between the geophysical processes and cultural factors belonging to calamities. Rigby gives historic reconsideration of past disasters, from the Black Death in the Middle Ages to the mega cyclones of the early twenty-first century. She proposes an 'ecological enlightenment of the Enlightenment',¹³ as the Enlightenment has contributed to ecophobia and a 'mythic fear of nature as Other'.¹⁴ This 'ecological enlightenment' would entail a 'an alternative, countermodern way of framing, anticipating, and responding to eco-catastrophe.'¹⁵

¹¹ Kate Rigby, *Dancing With Disaster: Environmental Histories, Narratives, and Ethics in Perilous Times* (Charlottesville, VA: University of Virginia Press, 2015), Introduction, Kindle ebook.

¹² Rigby, Introduction.

¹³ Rigby, Introduction.

¹⁴ Rigby, Introduction.

¹⁵ Rigby, Introduction.

Rigby's research brings a new dimension to my consideration of the climate novel. In this thesis I have focused on how the novel might bring climate change into cognition. Rigby, however, suggests that calamities need to be altogether reframed. The results concern the mitigation of climate change. Her work adds another important consideration to the climate novel, which is finding a more productive way to frame and present disasters. Not only can novels help us imagine climate change, as I identify, but they can also 'inform the ethos embodied in our responses to the risk, impact, and aftermath of eco-catastrophe'.¹⁶ Her work suggests that narratives can shape how we respond to and recover from calamities. They determine 'whether our responses are geared toward maintaining current systems, relations, and practices or whether they are transformative, enabling the emergence of new ways of being and dwelling that might prove not only more adaptive but also more just and compassionate'.¹⁷ We therefore need to find alternative way to speak about the calamities of climate change.

Both Rigby's and Trexler's book suggest that new narratives about climate change are needed. Their work and mine look towards creative endeavour to find responses that have greater efficacy in engaging us with this issue. I believe it is the novel that can help develop such concepts to

¹⁶ Rigby, Introduction.

¹⁷ Rigby, Introduction.

imagine climate change. The following discussion offers an introduction to climate novels, including the emergence and features of this genre.

What is a Climate Novel?

The climate novel is an emerging literary genre that has seen a recent increase in media attention and popularity.¹⁸ According to Adam Trexler and Adeline Johns-Putra, in 2011 over 200 climate novels had been published.¹⁹ The defining characteristics of this genre are not straightforward, however. Indeed, many climate novels do not mention either environmental degradation or global warming directly. It is instead through the post-apocalyptic setting that environmental issues are explored, for example in Cormac McCarthy's *The Road* (2006) and Marcel Theroux's *Far North* (2009). Such settings often curtail direct acknowledgement of an environmental disaster or issue and it is often left for the reader to imagine the events leading to the crisis. In many of these archetypal climate novels there is no direct examination of environmental issues; rather, the environmental disasters serve simply as backdrops to explore human experience in extreme situations. However, there has been a marked shift in more recent climate novels, wherein climate change is examined through current modes of scientific understanding and discourse, such as Barbara

¹⁸ For instance, the blog 'Good Reads' lists 75 novels under its category of climate change fiction and London Bookstore, 'Foyle', had a 'cli-fi' display. 'Cli-Fi: Climate Change Fiction', *Good Reads* <http://www.goodreads.com/list/show/36205.Cli_Fi_Climate_Change_Fiction> [accessed 9 September]; *Brian Micklethwait's Blog* <http://www.brianmicklethwait.com/index.php/weblog/comments/cli_fi/> [accessed 9 September 2014]

¹⁹ Adam Trexler and Adeline Johns-Putra, 'Climate Change in Literature and Literary Criticism', *WIREs Climate Change*, 2 (2011), pp. 185-200.

Kingsolver's *Flight Behaviour* (2013) and Ian McEwan's *Solar* (2010). Jonathan Franzen's *Freedom* (2010) offers another alternative and non-typical example of a climate novel by exploring the topic through a contemporary, realist lens. Environmental issues are primarily presented in the novel through the characterisation of Walter Berglund, the novel's protagonist.

Classifying *Freedom* as a climate novel prompts questions as to whether, when categorising such texts, the importance of climate change to the novel's plot should take precedence, and if promoting environmental action should be one of the novel's points of focus. Since, in *Freedom*, environmentalism is a means of examining Walter's personality, but is not otherwise essential to the narrative, we might question the extent to which a text needs to engage with ecological issues in order to be understood as a climate novel. Similarly, we might also ask whether novels written before global warming entered the public imagination, for instance John Christopher's *The Death of Grass* (1956), can be classified within this genre. As with Don DeLillo's *White Noise* (1985) and Indra Sinha's *Animals People* (2007), which I consider in a later chapter, Christopher's novel can be discussed within the canon of climate novels despite the disaster, which is central to the plot, not resulting from climate change. The features and consequences of these disasters provide an alternative imaginative means to consider environmental destruction. Surprisingly these somewhat

marginal works -- when compared to the more common dystopian climate novel -- explore more effectively issues of scale and ineffability, which are vital when addressing ecological reality.

By surveying the growing canon, this introduction shall identify the key devices and tropes of the climate novel. In seeking to define the climate novel, this discussion therefore examines the ways in which climate fiction conflicts with established standards and conventions of the genre. It considers, for instance, whether scientific detail might successfully be incorporated into fiction; whether we can expect a novel to create an ecological consciousness for its readers; and if, in doing these things, the novel's status as an art form is affected. The implications of literary experimentation are therefore brought to bear on the stated purpose of many climate novels: to engage its readers with real ecological issues.

The roots and iconography of the climate novel belong to science fiction. An early example of climate fiction is J. G. Ballard's trilogy: *The Drowned World* (1962), *The Burning World* (1964), and *The Drought* (1965). These novels share conventions of science fiction; the causes of the catastrophes are described in pseudo-scientific ways. The novels are post-apocalyptic and dystopian. Arthur Herzog's *Heat* (1977) is another early example, and is the first novel to deal with anthropogenic climate change. More recently, however, the climate novel has expanded to encompass

other genre conventions, begun to generate its own audience and affiliations, and moved beyond simply being a subgenre of science fiction. As David Burdick writes, 'cli-fi has been creeping out of the fantasy and science fiction sections of bookstores and libraries and into the mainstream.'²⁰ Dan Bloom, who coined the term 'cli-fi', argues that climate novels which steer away from the tropes of science fiction often have the most success and power.²¹ Restricting climate novels to the realm of science fantasy means that they arguably have little value in prompting engagement or action. Though the origins of the climate novel can be found in science fiction, many of the authors and readers are now keen to dissociate themselves from it. As Trexler and Johns-Putra suggest, association with this genre, rather than literary fiction, might distract from a text being read with seriousness and so being properly appreciated.²² Dan Bloom explains this in terms of the climate novel's apparent political agency:

The difference is that cli-fi is written with a certain moral sense of what things might be like if we do not stop climate change and global warming, whereas sci-fi is more concerned with science and amazing stories and adventures created mostly as escape and entertainment. Cli-fi is not about escapism or entertainment, although cli-fi novels and movies can be entertaining, too. But cli-fi has a moral imperative. Sci-fi does not.²³

²⁰ David Burdick, 'Climate Change: The Hottest Thing in Science Fiction', *Grist* <<http://grist.org/climate-energy/climate-change-the-hottest-thing-in-science-fiction/>> [accessed 29 July 2014]

²¹ Dan Bloom, 'Thanks to TeleRead and NPR, 'Cli-fi' is Now an Official Literary Term', *TeleRead* <<http://www.teleread.com/around-world/cli-fi-is-a-new-literary-term-that-npr-blessed-and-approved/>> [accessed 25 August 2014]

²² Adam Trexler and Adeline Johns-Putra, 'Climate Change in Literature and Literary Criticism', *WIREs Climate Change*, 2 (2011), pp. 185-200.

²³ Jen Zoratti, 'Are we Getting Warmer? Works of Climate Fiction Posit a very near Future Dramatically Altered by Global Warming', *Winnipeg Free Press*, 22 April 2014.

A 'moral imperative', then, offers another means for classifying the climate novel. Its authorial intention and environmentalist reasoning appear, for Bloom, as one of its key features. That its style, theme and formal qualities are secondary to its intention prompts some interesting reflections about this new genre, and how it might reshape or revise received ideas about the role, function and appreciation of the novel. The climate novel, as opposed to the traditional, realist novel, might prioritise its purpose -- to promote change, bring about engagement with a global issue -- over other considerations. Therefore such novels demand a new critical criterion for how we value and assess their worth, moving beyond only literary and artistic criteria.

Discussions and debates about the climate novel have come to particular prominence over the last few years. It is arguably only since April 2013 that this genre has gained widespread public attention.²⁴ Such attention is characterised by its contemporary approach to literary analysis, coming in the form of blogs and online forums.²⁵ Digital publications, for example the independently published novel *Finitude* (2009) by Hamish MacDonald, have also caused this genre to proliferate further, despite a niche readership. Though the climate novel has attracted many new writers to the field, the number of established literary authors who have contributed to it is also notable. Writers such as Doris Lessing, Margaret Atwood,

²⁴ When discussions about 'cli-fi' begin, according to Zoratti's article. Jen Zoratti, 'Are we Getting Warmer? Works of Climate Fiction Posit a Very Near Future Dramatically Altered by Global Warming', *Winnipeg Free Press*, 22 April 2014.

²⁵ These include a Facebook group 'Cli-Fi Central', website *Eco-Fiction*, <<http://eco-fiction.com/>>, and blog *Climate Change Fiction* <<http://climatechangefiction.blogspot.co.uk/>>

Jeanette Winterson and Ian McEwan have all written novels about climate change in recent years. Yet, even with a diverse field of writers it is still stifled and limited by the capacity for the novel to engage with climate change as a topic. Many of the novels simply reproduce disaster narratives and survivalist fantasies.

The growth of the climate novel is testimony to climate change increasingly entering the public consciousness. That climate change is becoming ever more represented in culture shows that it is extending from a matter solely concerning science. It is increasingly permeating across art forms. Gregers Anderson, a Danish academic who has carried out central work on the climate novel, writes:

French philosopher Paul Ricoeur once wrote: ‘The first way human beings attempt to understand and to master the “manifold” of the practical field is to give themselves a fictive representation of it.’ If Ricoeur is right in this observation, one cannot diminish the importance of *climate fiction*, or *cli-fi*, in our contemporary world. There is basically a need for fiction about what tomorrow may hold – not just in order for us to come to terms with what a climate changed world may look like, but also in order for us as a species to be able to come to terms with what it will mean to live in a seriously altered climate.²⁶

Anderson’s statement refers to a process wherein a cultural field helps imagine emerging world problems. This process is particularly important in bringing climate change into public prominence, and allowing it to be cognised in a way that offers relevance and immediacy to ordinary thinking. By extending the issue beyond the discourse of science and into the cultural,

²⁶ Gregers Anderson, ‘Cli-fi: a Short Essay on its Worlds and its Importance’, *Nature Fiction and Cli-Fi Books*, <<http://clifibooks.com/climate-fiction>> [accessed 29 July 2014]

public and imaginary domain, climate change is perceived with greater meaning and pertinence. Even if the individual novels fail to clarify the climate debate, present communicable scientific fact, or inspire emission reductions, they can, nonetheless, assist in the process of forming an environmental consciousness. They bring the issue of climate change into cognition through growth and development in the cultural realm.

The climate novel also provides an arena wherein human actions, desires and conflicts may play out and be examined, unlike other textual sources, in government reports for instance. Brigitte Nerlich suggests that the climate novel allows science to enter into an imaginative and exploratory dialogue with the climate change, allowing for reinvigorated comprehension of it. She writes:

It might be that cli-fi brings modelling from the laboratory bench (imagine rows of supercomputers) to people's bedside (imagine reading a cli-fi novel in bed). However, unlike scientific climate modellers, writers and readers of cli-fi novels are 'allowed', indeed it is their task, to extrapolate from modelling certain scientific futures to imaging, exploring and testing out political futures. This means that cli-fi novels provide a space for engaging in and with climate science as well as climate politics, albeit in a fictional way.²⁷

Other critics, Dan Bloom included, argue that a central function of the climate novel is to examine the climate debate at an emotional level.²⁸ Elsewhere, it

²⁷ Brigitte Nerlich, 'Climate Fiction: The Anticipation and Exploration of Plausible Futures', *Making Science Public*,

<<http://blogs.nottingham.ac.uk/makingsciencepublic/2014/07/27/climate-fiction-the-anticipation-and-exploration-of-plausible-futures>> [accessed 29 July 2014]

²⁸ Jen Zoratti quotes Dan Bloom (who coined the term cli-fi) and Mary Woodbury (founder of the blog 'Clifibook') about this relationship between the climate novel, imagination and emotion. Jen Zoratti, 'Are we Getting Warmer? Works of Climate Fiction Posit a very near Future Dramatically Altered by Global Warming', *Winnipeg Free Press*, 22 April 2014.

is suggested that the novel might be a way for scientists to communicate their message in an approachable and engaging way, allowing it to reach a broader audience.²⁹ Rodge Glass similarly discusses in *The Guardian* how the climate novel can bring the issue into conception and relevance:

Engaging with this subject in fiction increases debate about the issue; finely constructed, intricate narratives help us broaden our understanding and explore imagined futures, encouraging us to think about the kind of world we want to live in. This can often seem difficult in our 24-hour news-on-loop society where the consequences of climate change may appear to be everywhere, but intelligent discussion of it often seems to be nowhere. Also, as the crime genre can provide the dirty thrill of, say, reading about a gruesome fictional murder set on a street the reader recognises, the best cli-fi novels allow us to be briefly but intensely frightened: climate chaos is closer, more immediate, hovering over our shoulder like that murderer wielding his knife. Outside of the narrative of a novel the issue can seem fractured, incoherent, even distant.³⁰

From these arguments we can draw upon the potential critical functions of the climate novel: communicating climate change, engaging readers with the issue, and making climate change meaningful and relevant to non-scientific people.

This idea -- that the climate novel can engage audiences more effectively than science -- is the feature of discussions within blog entries, social media and newspaper supplements, whereas discussion of climate fiction within academic journals and critical literary pieces remains

²⁹ See David Burdick, 'Climate Change: The Hottest Thing in Science Fiction', *Grist* <<http://grist.org/climate-energy/climate-change-the-hottest-thing-in-science-fiction/>> [accessed 29 July 2014] and Angela Evancie, 'So Hot Right Now: Has Climate Change Created A New Literary Genre?', *NPR*, <<http://www.npr.org/2013/04/20/176713022/so-hot-right-now-has-climate-change-created-a-new-literary-genre>> [accessed 29 July 2014]

³⁰ Rodge Glass, 'Global Warning: The Rise of "Cli-Fi"', *The Guardian*, 31 May 2013.

uncommon. The emergence of ecocriticism has made nature writing and environmental texts the object of a renewed interest and focus, yet the climate novel is still to be fully acknowledged by the field. Trexler and Johns-Putra discuss ecocriticism and the climate novel:

Nonetheless, the contours of ecocriticism as we have described them go some way to explaining why it has been relatively slow to engage with climate change. There has long been a political need to deal with the issue, but earlier research too often subsumed climate change under the vague heading of 'the environmental crisis'. Then, ecocriticism's interdisciplinary work tended to focus on life and landscape, providing few clues for how to connect climate and literature. In addition, the ecocritical emphasis on nature as it is imagined by 18th- and 19th-century writers has deflected attention away from the very contemporary discussion of anthropogenic climate change. Similarly, the antitechnological and spiritual dispositions of some ecocritics have not always encouraged the encounter of scientific data. Finally, the focus on nature, landscape, setting, and place has been inimical to the development of a critical method for understanding both the complexity of climate change and the formal innovations of literature as it represents this complexity.³¹

Serpil Oppermann argues that we are currently in the third wave of ecocriticism. Its first stage began in the 1990s; here it was initially concerned with developing meaningful and ethical relationships with the natural world. Its main critical attention was on the works of Ralph Waldo Emerson, John Muir and Henry David Thoreau. Its second wave explored environmental social issues. The current phase is concerned with a more global and encompassing perspective, which 'explores all facets of human experience from an environmental viewpoint.'³² In each of the stages the contemporary

³¹ Adam Trexler and Adeline Johns-Putra, 'Climate Change in Literature and Literary Criticism', *WIREs Climate Change*, 2 (2011), pp. 185-200.

³² Serpil Oppermann, 'The Future of Ecocriticism: Present Currents', *The Future of Ecocriticism: New Horizons*, ed. by Ufuk Özdağ, Nevin Özkan and Scott Slovic (Newcastle upon Tyne: Cambridge Scholars Publishing, 2011), p. 15.

environmental crisis has been overlooked. Ecocriticism's greater concern with nature writing and composition, as well as its indifference to science, means that the climate novel is not typically within the field's concern. However, for ecocriticism to draw its attention to these climate novels would allow for the development of this genre. It would assist in understanding the function and value of these works. An increased critical attention would impart seriousness, discussion and recognition to the field that, congruently, would help shape and inspire future novels.

Though climate change is a global issue and has had more decisive effects in less-economically developed nations, the emergence of related fiction from these nations has been slower. There are, however, some rich and exciting examples of environmentally concerned world literature, such as Ngugi wa Thiong'o's *Petals of Blood* (1977), Mahasweta Devi's *Imaginary Maps* (1993), Amitav Ghosh's *The Hungry Tide* (2004), Lü Jiamin's *Wolf Totem* (2004), and Indra Sinha's *Animal's People* (2007). Though these novels address ecological concerns, they are not typical of climate fiction, since the environmental concerns are more related to eco-socio issues, colonial exploitation and environmental justice. They are very different in style from examples from western nations, which are usually apocalyptic, abstract and sensationalist. These novels are more concerned with the immediate environment and power structures that impact upon the communities within the story. They present more symbiotic and holistic

relationship structures between society and the environment. There is thus a marked difference in the presentation of contemporary environmental issues between western literature and world literature, as well as a marked absence of the climate novel emerging from developing nations. Rob Nixon notes: 'Postcolonial literary critics, by contrast, have tended to shy away from environmental issues as if they were soft, Western, bourgeois concerns. But the notion that environmental politics are a luxury politics for the world's wealthy is clearly untenable.'³³ Nixon clearly states that environmental issues are a global concern, yet they are more often absent from postcolonial discussion because of different priorities and perceptions:

Broadly speaking, there are four main schisms between the dominant concerns of postcolonialists and ecocritics. First, postcolonialists have tended to foreground hybridity and cross-culturation. Ecocritics, on the other hand, have historically been drawn more to discourses of purity: virgin wilderness and the preservation of 'uncorrupted' last great places. Second, postcolonial writing and criticism largely concern themselves with displacement, while environmental literary studies has tended to give priority to the literature of place. Third, and relatedly, post-colonial studies has tended to favour the cosmopolitan and the transnational. Postcolonialists are typically critical of nationalism, whereas the canons of environmental literature and criticism have developed within a national (and often nationalistic) American framework. Fourth, postcolonialism has devoted considerable attention to excavating or reimagining the marginalized past: history from below and border histories, often along transnational axes of migrant memory. By contrast, within much environmental literature and criticism, something different happens to history. It is often repressed or subordinated to the pursuit of timeless, solitary moments of communion with nature.³⁴

As Nixon rightly points out, it is not viable simply to designate environmentalism as a western luxury in explaining the issue's absence in

³³ Rob Nixon, 'Environmentalism and Postcolonialism', *Ecocriticism: The Essential Reader*, ed. by Ken Hiltner (London: Routledge, 2015), p. 202.

³⁴ Nixon, p. 197.

studies of other literatures around the world. Indeed, there are many ecologically concerned works emerging from postcolonial countries, but it is rather the interpretation of these environmental issues that differs. This is, in part, due to the alternative concerns of the ecocritics and postcolonialists, as Nixon identifies. In the South Asian novels, *The Hungry Tide* and *Imaginary Maps*, ecological issues are examined alongside and enmeshed in the politics of power and social injustices. They are presented through a wider and more holistic lens, which includes other developmental issues; environmental concerns are shown as deeply connected with other social and political struggles. Such texts are arguably more successful at engaging with climate change: by presenting a multitude of interconnected factors relating to environmental issues, they sustain a local, relevant and more nuanced focus. These novels offer something other than a large, demonic force of nature creating disastrous situations in which action hero narratives might play out, as found in the typical 'cli-fi' story. By considering a broader canon of climate fiction from around the world, new, creative examples emerge as to how the genre might approach environmental issues.

In the western context, however, climate novels remain largely formulaic. Set in radically altered environments in the near distant future, abandoned crumbling cities serve as a reminder of lost pasts, with violent gangs and dystopian systems of power. An isolated protagonist is often depicted attempting to survive in these wastelands. Oppressive regimes

become the focal point, as found in Will Self's *The Book of Dave* (2006) and Octavia Butler's *The Parable of the Sower* (1993). In these narratives attention quickly turns away from the environmental towards plots of survival, as the character struggles to exist in this new world. The futuristic, otherworldly and severely altered setting of these novels owes its efficacy to the ineffability of climate change.³⁵ It is problematic to both thought and imagination; such settings become a framework to present the issue but without further engagement later in the story. Cormac McCarthy's *The Road* (2006) is the archetypal novel here, and most effectively conveys the horror of such a landscape. The apocalyptic setting is described in sparse detail; yet each word carefully creates an intensely bleak and evocative landscape. Amongst climate novels, *The Road* is unique in its literary achievement, profound in its use of imagery and prose. Other novels that share the themes, motifs and imagery relating to survival, extreme environmental destruction and disaster fail to create the atmospheric intensity achieved in *The Road*.³⁶ Instead, they become predictable in their narration of disaster, and attempts to create affecting scenes and to shock dwindle into clichés and overused imagery. Yet such apocalyptic narrations not only fail aesthetically. Several studies have noted the connection between

³⁵ The third chapter of this thesis discusses this in detail. I argue that climate change is often ineffable due to its vast, global scale or immateriality and invisibility. It is also latent, trans-spatial and trans-temporal, making it particularly challenging to representation.

³⁶ To list just a few of the many examples: Steven Amsterdam *Things We Didn't See Coming* (2009), John Atcheson *A Being Darkly Wise* (2012), Clive Cussler *Arctic Drift* (2008), Robert Edric *Salvage* (2010), Sarah Hall *The Carhullan Army* (2007), Jean Hegland *Into the Forest* (1996), Peter Heller *The Dog Stars* (2013), Liz Jensen *The Rapture* (2009), Daniel Krumb *From Here* (2012), Hamish MacDonald *Finitude* (2009), Simon Rosser *Tipping Point* (2011).

apocalyptic depictions of climate change and environmental apathy. Research from a study about climate change representation, *Fear Won't Do It*, highlights that the use of such imagery can be counterproductive, as it overwhelms the reader with a sense of fatalism and helplessness. It can make climate change seem far off, irrelevant and removed from the individual's life. O'Neill and Nicholson-Cole suggest that although fear might attract attention, personal representations of climate change are more successful: 'nonthreatening imagery and icons that link to individuals' everyday emotions and concerns in the context of this macro-environmental issue tend to be the most engaging.'³⁷ Likewise, Gabriel and Garrard note that the use of apocalyptic depiction can be disabling:

An additional problem is that climate change is so often framed by environmentalists in apocalyptic terms: James Lovelock (2006) has warned of *The Revenge of Gaia*, while Fred Pearce (2006) addresses us as *The Last Generation*. Irrespective of whether the science supports the most extreme projections of societal and ecological collapse, apocalyptic rhetoric risks inducing debilitating apathy, rather than engagement and participation, in students. In such guises, environmentalism seems to promise privation and restraint, rather than new possibilities of pleasure and freedom, and there are few who are likely to relish what Paul Hawken has called a 'lifelong celery diet'.³⁸

³⁷ As with this research and my own, they are typically referring to a Western audience. Climate change is experienced differently across nations and socio-economic groupings. It remains typically abstract for people of Western nations. However, the same cannot be said for people displaced by climate change, for instance citizens of the Maldives where the islands are facing being inundated.

Saffron O'Neill and Sophie Nicholson-Cole, "'Fear Won't Do It' Promoting Positive Engagement With Climate Change Through Visual and Iconic Representations', *Science Communication*, 30 (2009), p. 355.

³⁸ However, Keira Hambrick suggests that readers have genre expectations and are more resilient to the apocalyptic depictions in climate fiction, since they decouple genre and reality. She writes, 'the speculative nature of apocalypticism becomes clearer in fictional texts, and readers may be less likely to feel immobilized by fear and eco-anxiety, and may respond favorably to the call-for-action espoused by the narrator, characters, or the author.' Hambrick, Keira, 'Destroying Imagination to Save Reality: Environmental Apocalypse in Science Fiction', *Environmentalism in the Realm of Science Fiction and Fantasy Literature*, ed. by Chris Baratta (Newcastle upon Tyne: Cambridge Scholars Publishing, 2012), p.135.

Richard Kerridge, in his examination of eco-literature, argues that we find three forms of resignation common to these novels. These are: carnivalesque resignation, apocalyptic resignation and ironic neutrality.³⁹ Kerridge describes T.C. Boyle's *A Friend of the Earth* (2000) as an example of carnivalesque resignation; the environmental disaster seems to be unavoidable and generates a sense of banality in all:

The frailties of the characters produce comic misunderstandings and follies, all overshadowed by the impending ecological catastrophe but not responsible for it except insofar as these frailties are typical of the consumer culture that shapes even the behaviour of the environmentalists, its fiercest critics. A curiously dispassionate comedy is the result, in which grotesque events and ironies abound but do not much matter.⁴⁰

Kerridge explains that, within these common settings, disasters are always placed beyond possible resolution. Such novels do not provide a sense of possibility or change; they avoid answering the ecological and social quandaries that arise, being 'not now or not here'. Kerridge writes:

Strikingly absent from all four novels, conversely, is any belief that a pragmatic, incremental environmentalism, allied to other social movements, might begin to turn the tide. In part, the problem is that conventional plot structures require forms of solution and closure that seem absurdly evasive when applied to ecological questions with their extremes of timescales and complexities of interdependency. And that is the challenge for novelists and ecocritical theorists of narrative, if we are to have environmentalist novels that do not take failure for granted.⁴¹

Hayden Gabriel and Greg Garrard, 'Reading and Writing Climate Change', *Teaching Ecocriticism and Green Cultural Studies*, ed. by Greg Garrard (Basingstoke: Palgrave Macmillan, 2012), p. 119.

³⁹ Richard Kerridge, 'Narratives of Resignation: Environmentalism in Recent Fiction', *The Environmental Tradition in English Literature*, ed. by John Parham (Aldershot: Ashgate, 2002), p. 87.

⁴⁰ Kerridge, p. 89

⁴¹ Kerridge, p. 99

Partly to blame, as Kerridge explains here, is the novel's convention of plot closure which, when addressing these contemporary concerns, is misplaced. Tidy resolutions neither offer a reflective space for continued consideration of the issue.⁴² This, therefore, reflects one way in which the traditional form of the novel conflicts with the demands of environmental literature.

Gregers Anderson divides the climate novel into five categories of different 'imaginaries'. Imaginaries are the recurrent modes in which environmental disaster is depicted. 'Social Breakdown', Anderson's first imaginary, concerns human conflict at either a micro-level -- an individual struggling for resources in a post-apocalyptic world, for example -- or at a macro-level, for instance at war. Anderson provides as his examples Matthew Glass's *Ultimatum* (2009), Marcel Theroux's *Far North* (2009), Steven Amsterdam's *Things We Didn't See Coming* (2009) and Martine McDonagh's *I Have Waited, And You Have Come* (2012). 'Judgement' forms the second imaginary, wherein nature 'revolts against humanity's interpretation of its entities as strictly a resource'.⁴³ Nature is a violent and moralising force, punishing humans for their behaviour. Examples include Kevin Ready's *Gaia Weeps* (1998) and Frank Schätzing's *The*

⁴² I discuss further in the final chapter how the form of the novel is not symbiotic with ecological principles. I suggest that subverting the novels' form and conventions is vital to developing a climate novel. In this instance, closure typical of the novel, as Kerridge discusses, is not compatible to the temporality and complexity of environmental concerns.

⁴³ Gregers Anderson, 'Cli-Fi: A Short Essay on its Worlds and its Importance', *Nature Fiction and Cli-Fi books* <<http://clifibooks.com/climate-fiction/>> [accessed 29 July 2014]

Swarm (2004). 'Conspiracy' is Anderson's third suggestion. He offers this description:

In this imaginary, which is not as future-orientated as the other imaginaries mentioned, anthropogenic climate change is part of a cover-up arranged to promote private rather than public interests. Basically, what we find in fiction applying this imaginary are worlds wherein anthropogenic climate change appears as a very powerful tool of manipulation. This also means that the distinction between science and politics is depicted as blurred. Science transgresses the borders of politics and politics the borders of science, which means that science can no longer be perceived as an apolitical and truthful source to matters of fact.

This can be found in the works such as Arthur Herzog's *Heat* (1977), Rock Brynner's *The Doomsday Report* (1998), and Michael Crichton's *State of Fear* (2004). Anderson's fourth category, 'Loss of Wilderness', concerns climate change experienced as the end of nature. Anderson gives the examples of T.C. Boyle's *A Friend of the Earth* (2000), Jean McNeil's *The Ice Lovers* (2009) and Ilija Trojanow's *Eis Tau* (2011). I would suggest that this is one of the most pervasive sets of imaginaries found across climate novels. Lastly, Anderson discusses 'Sphere', wherein 'anthropogenic climate change leads to a long-term destruction of the biosphere, which again leads to the construction of life-saving artificial atmospheres with humanly controlled climates.'⁴⁴ Kim Stanley Robinson's trilogy, *Science in the Capital* (2005, 2005 and 2007), is the given example. Anderson's five imaginaries are comprehensive in noting the common themes within climate fiction. They detail the typical, recurring and restrictive ways in which climate change is represented. Such reproduced depictions provide minimal creative

⁴⁴ Anderson.

exploration, limiting climate change within the same, generic modes of thought. My fourth chapter speaks about the issues relating to hackneyed representations of climate change.

Other than Anderson's, the most central work carried out on the climate novel is by Adeline Johns-Putra and Adam Trexler.⁴⁵ They argue that Kim Stanley Robinson is the most important climate novelist, not only as the most prolific writer in the field, but as the only author 'to deal explicitly with the problem of climate change, not simply as the premise for an other-worldly setting but as a social, cultural, and political phenomenon and problem, requiring unusual methods of characterization and plot'.⁴⁶ Robinson is one of the few, arguably only, authors to 'confront head-on the problem of mitigating climate change'.⁴⁷ I suggest that Ian McEwan attempts to do a similar thing in *Solar*. Yet, the novel loses focus and becomes more of a satirical portrayal of a mid-life crisis. Trexler and Johns-Putra argue that Robinson manipulates science fiction conventions in order to depict the complexity of climate change; it is a 'deliberately realist rather than science-fiction account of climate change, as it offers pragmatic solutions'.⁴⁸ They state that the 'Science in the Capital' trilogy 'manages just the kind of direct, rather than analogous, confrontation with climate change that Buell

⁴⁵ Though, since writing this, the recent release of *Anthropocene Fictions: The Novel in a Time of Climate Change* (2015), by Adam Trexler, can be considered the most definitive study of climate fiction.

⁴⁶ Adam Trexler and Adeline Johns-Putra, 'Climate Change in Literature and Literary Criticism', *WIREs Climate Change*, 2 (2011), pp. 185-200.

⁴⁷ Trexler and Johns-Putra, p. 190.

⁴⁸ Trexler and Johns-Putra, p. 191.

encourages'.⁴⁹ Trexler and Johns-Putra's praise for Robinson's trilogy is owing to its realism. Though the work, unusually, engages directly with climate change, the issue functions more as a plot advancer. The form remains anthropocentric, concerned with the individual lives of the characters and lacking the depiction of a wider-web of interconnections. Climate change challenges our conceptualisation and forms of measure due to its scale, therefore mimetic representations of it are limited and I would therefore give less priority to Robinson's trilogy. I would argue that Barbara Kingsolver's *Flight Behaviour* (2012) presents us with a more successful realist example, though it was published after Trexler and Johns-Putra's article. Again it is one of the few climate novels to confront climate change directly. *Flight Behaviour*, which is discussed in detail in chapter five, manages to weave various social and environmental factors together to arrive at a comprehensive view of climate change. It focuses on the effect of climate change on a single butterfly species; yet this refined scope does not restrict the narrative given that it quickly becomes apparent how this event is related to the wider human and nonhuman community. Trexler and Johns-Putra's work also suggest that climate change has become the focus of thrillers in more recent novels:

The geopolitical nature of the measures currently being taken to tackle global climate change provides promising material for conspiracy scenarios, while the idea of large-scale environmental disaster becomes a useful tool with which to create narrative suspense and climax.⁵⁰

⁴⁹ Trexler and Johns-Putra, p. 191.

⁵⁰ Trexler and Johns-Putra, p. 187.

In another article, Trexler identifies George Marshall's *The Earth Party* (2010) as one of the few novels to describe in detail an ecological revolution and its political complexities yet, in Trexler's words, it is 'hands down, the worst' novel.⁵¹ Trexler's criticism applies more broadly to a recurring issue with such climate novels, which has to do with their attempt to depict climate change and mitigation strategies in ways that frequently bring about artistic and literary failings. This, as subsequent chapters examine, is tied to representational issues of climate change.

With the exception of a few novels, then, the majority of climate novels are sensationalist, generic and prosaic. Many are disaster narratives wherein climate change figures as a backdrop for entertainment: sites in which end-of-the-world scenarios are played out in clichéd hero tales. In his examination of climate change in books, media and film Thomas Lowe asks:

Is this apocalyptic construction akin to 'climate porn'; purely a way to entice the audience, to sell books, papers and films with no real intention of persuading the masses to reform their behaviour and mitigate their effects upon the global climate?⁵²

Lowe suggests that climate change has become a means for sensationalism; it makes for exciting, melodramatic plotlines. Therefore, we find some of the novels appealing to this entertainment value rather than offering purposeful engagement with the issue. Alternatively, authors who

⁵¹ Adam Trexler, 'The Climate Change Novel: A Faulty Simulator of Environmental Politics', *Policy Innovations* <<http://www.policyinnovations.org/ideas/briefings/data/000230>> [accessed 30 July 2014]

⁵² Thomas D. Lowe, 'Is This Climate Porn? How Does Climate Change Communication affect our Perceptions and Behaviour?', *Tyndall Working Paper 98* (2006), p. 8.

intentionally hope to address climate change in a way that encourages critical reflection may find their narratives compromised by these marketable considerations. We find the climate novel often repeats the forms Theodor Adorno associates with mass culture, a particularly problematic development for the climate novel in limiting its political capacity.⁵³ By conforming to popular appeal this novel may fail to provoke reflection about climate change. Adorno writes:

But every individual product is levelled down in itself as well. There are no longer any real conflicts to be seen. They are replaced by the surrogate of shocks and sensations which seem to erupt from without and generally have no real consequences, smoothly insinuating themselves into the episodic action. The products are articulated in terms of episodes and adventures rather than in acts: the structure of the 'funnies' is overtly reproduced in the women serials and in more refined form in the class A picture. The defective power of recall on the part of the consumer furnishes the point of departure: no one is trusted to remember anything that has already happened or to concentrate upon anything other than what is presented to him in the given moment. The consumer is thus reduced to the abstract present. Yet the more narrowly the moment has to vouch for itself, all the more must it also avoid being burdened with calamity. The viewer is supposed to be as incapable of looking suffering in the eye as he is of exercising thought.⁵⁴

The easy appeals, the 'shocks and sensations', with 'no real consequence' are often found in the climate novel. As in the Hollywood disaster movie *The Day After Tomorrow* (2004), the climate novel frequently fails at reflective engagement with the issues it presents. As the fourth chapter of this thesis will show, the discourse and narratives of climate change have quickly

⁵³ However, Adorno's account of popular culture should not entirely undermine the value of climate novels that belong to genre fiction. There are many arguments suggesting how works other than 'high-art' can be political. See Ken Gelder, *Popular Fiction: The Logics and Practices of a Literary Field* (London: Routledge, 2004); Roger Luckhurst, *Science Fiction* (Cambridge: Polity Press, 2005); and Peter Swirski, *From Lowbrow to Nobrow* (Montreal: McGill-Queen's University Press, 2005).

⁵⁴ Theodor Adorno, *The Culture Industry* (Oxon: Routledge, 1973; repr. 2001) p. 69.

become generic and need to be refreshed or, to borrow Shklovsky's term, 'defamiliarized',⁵⁵ to avoid simply being assimilated into thought without reflection. On the other hand, Jane Tompkins makes a case for the type of fiction the climate novel typically presents us with. For Tompkins, there can be power in the use of stereotypes and predictability since 'they convey enormous amounts of cultural information in an extremely condensed form'.⁵⁶ These quick associations, according to Tompkins, can produce emotional identification and reaction in the reader, which can lead him to alter his political outlook. Tompkins asks us to revalue the way we appreciate literature, asking for a 'redefinition of literature and literary study'.

Tompkins writes:

In arguing for the positive value of stereotyped characters and sensational, formulaic plots, I have self-consciously reversed the negative judgments that critics have passed on these features of popular fiction by re-describing them from the perspective of an altered conception of what literature is.⁵⁷

With this view of Tompkins's, that a novel's 'familiarity and typicality, rather than making them bankrupt or stale, are the basis of their effectiveness as integers in a social equation', in mind, we might be able to reevaluate our approach to the climate novel. Rather than seeing these novels as products of mass culture incapable of artistic prowess or provoking social change, these associated failings, under a Tompkins mode of critique, may in fact be positive attributes of these novels. Despite Tompkins analysis, I maintain

⁵⁵ In quoting Adorno and Shklovsky, it appears that a modernist climate novel is needed. I examine more closely the aesthetic needed by climate novels in the concluding chapter.

⁵⁶ Jane Tompkins, *Sensational Designs: The Cultural Work of American Fiction, 1790-1860* (New York: Oxford University Press, 1985), p. x.

⁵⁷ Tompkins, p. xii.

that renewal, innovation and subverting novel expectations, thus moving away from familiarity and typicality, are vital to the climate novel.⁵⁸ However, Tompkins's suggestion that we reassess how we value and read novels is an important consideration in the development of climate fiction.

Thus far, ideas about the artistic merit of climate novels have been called into question. It has been established that climate novels, which emerged after anthropogenic climate change entered the public consciousness, are written to promote pro-environmental behaviour, explore ideas about climate change or increase awareness and engagement with the issue. Critical examinations of these novels raise questions about how far this novel can balance its ability to be both political and artistic, and whether these are integral to one another's success. Robert Macfarlane wrote an article for *The Guardian* in 2005 on this topic, in which he argued for the importance of fiction that engaged with climate change. 'An imaginative repertoire is urgently needed', he wrote, 'by which the causes and consequences of climate change can be debated, sensed, and communicated.'⁵⁹ Macfarlane laments the absence of climate art: 'Where are the novels, the plays, the poems, the songs, the libretti, of this massive

⁵⁸ I develop this argument more fully in the final chapter, suggesting these factors are need to address the complexity of the subject and web of interconnections; present the vast, abstract spatial and temporal against the subjective, individual experience; allow of imaginative play and critical reflection; and renew climate discourse.

⁵⁹ Robert Macfarlane, 'The Burning Question', *The Guardian*. 24 September 2005.

contemporary anxiety?’⁶⁰ The same year Bill McKibben also bemoaned the lack of art and creative responses to climate change. McKibben exclaims:

Here’s the paradox: if the scientists are right, we’re living through the biggest thing that’s happened since human civilization emerged. One species, ours, has by itself in the course of a couple of generations managed to powerfully raise the temperature of an entire planet, to knock its most basic systems out of kilter. But oddly, though we know about it, we don’t *know* about it. It hasn’t registered in our gut; it isn’t part of our culture. Where are the books? The poems? The plays? The goddamn operas?⁶¹

For both McKibben and Macfarlane artistic responses to the environmental crisis are essentially important in understanding its significance. McKibben writes:

Art, like religion, is one of the ways we digest what is happening to us, make the sense out of it that proceeds to action. Otherwise, the only role left to us — noble, but also enraging in its impotence — is simply to pay witness. The world is never going to be, in human time, more intact than it is at this moment. Therefore it falls to those of us alive now to watch and record its flora, its fauna, its rains, its snow, its ice, its peoples. To document the buzzing, glorious, cruel, mysterious planet we were born onto, before in our carelessness we leave it far less sweet.⁶²

According to McKibben, we need art to mediate the world, to recognise its importance, and to draw value from it. This is a different emphasis to Hegel’s understanding of art, as outlined in *Lectures on Art*. Within Hegel’s definition, art is a means for human expressiveness.⁶³ We might therefore reflect how art, under McKibben’s stated purpose, is becoming less anthropocentric. For McKibben, art closes the gap between knowing, and knowledge about

⁶⁰ Macfarlane.

⁶¹ Bill McKibben, ‘What the Warming World Needs Now is Art, Sweet Art’, *Grist*, <<http://grist.org/article/mckibben-imagine/>> [accessed 29 July 2014]

⁶² McKibben.

⁶³ G.W.F Hegel. *Aesthetics. Lectures on Fine Art*, trans. by T.M. Knox, 2 vols. (Oxford: Clarendon Press, 1975) (1835).

climate change; knowledge is defined as abstract depersonalised scientific knowledge, and knowing as ontological, subjective understanding. Though it might be understood in scientific terms, it has not yet been processed with an emotional, personal perspective: 'We can register what is happening with satellites and scientific instruments, but can we register it in our imaginations, the most sensitive of all our devices?'⁶⁴ Later, in 2009, McKibben revised his claim about the absence of environmental art, stating that there has been a recent 'torrent' of art. He refers to culture as an 'immune system' and insists that art has a key and vital purpose in preventing ecocide:

Artists, in a sense, are the antibodies of the cultural bloodstream. They sense trouble early, and rally to isolate and expose and defeat it, to bring to bear the human power for love and beauty and meaning against the worst results of carelessness and greed and stupidity. So when art both of great worth, and in great quantities, begins to cluster around an issue, it means that civilization has identified it finally as a threat. Artists and scientists perform this function most reliably; politicians are a lagging indicator.⁶⁵

Art, for McKibben, is vital for us to comprehend climate change in a way that will lead to action. Artists are, in this sense, like canaries in the coalmine, ready to anticipate and warn us of the dangers. From this perspective, art has a purpose to motivate and inspire change. It seems, then, that art is a necessary component for mitigating climate change: the climate novel's role is to enable environmental change to be properly imagined. Yet, by turning to theories from Marxist thinker György Lukács, and then to those of Adorno,

⁶⁴ McKibben.

⁶⁵ Bill McKibben, 'Four Years After My Pleading Essay, Climate Art is Hot', *Grist* <<http://grist.org/article/2009-08-05-essay-climate-art-update-bill-mckibben/>> [accessed 29 July 2014]

we begin to question whether the climate novel can be art and, therefore, how far it might succeed in inspiring change.

Lukács examines how the novel is a key instrument for inspiring revolutionary change. Books illuminate social and political tensions for the reader: 'Literature has a great part to play in solving the new tasks imposed by the new life in every country'.⁶⁶ For Lukács, art's primary function is to scrutinize social conditions, leading to political resistance. The author doesn't necessarily have to be conscious about the political content of his or her novel, as this can arise through its subtle mirroring of society. The novel can exceed the author's own conscious understanding and still represent social conditions and express political ideas. It is a powerful medium for bringing awareness and attention to contemporary conditions. Lukács writes: 'If as writers, they delved deeper in order to uncover the true types of man, they had inevitably to unearth and expose to the eyes of modern society the great tragedy of the complete human personality.'⁶⁷ However, it is important that the novel does not become propaganda. From Lukács' theory, we can assume that the more effective works are the ones that entail and emit ideas not via the author's conscious control but simply arise from the novel's depictions. This raises the issue of authorial intention and conflicts with one of the proposed definitions of a climate novel, as referred to earlier, its 'moral

⁶⁶ György Lukács, *Studies in European Realism: A Sociological Survey of the Writings of Balzac, Stendhal, Zola, Tolstoy, Gorki and Others*, trans. by Edith Bone (London: Hilway, 1950)

⁶⁷ Lukács, p. 16.

imperative' and enhancing engagement with environmental issues. We find a conflict between the definition and function of a climate novel and its ability to succeed as a work of its own nature.

Adorno suggests that work spawned from a political intention fails as an artwork:

Social struggles and the relations of classes are imprinted in the structure of artworks; by contrast, the political positions deliberately adopted by artworks are epiphenomena and usually impinge on the elaboration of works and thus, ultimately, on their social truth content. Political opinions count for little.⁶⁸

Art that intends to inspire environmental engagement and action could thus fail for this reason. Adorno's ideas⁶⁹ suggest, for instance, that a novel that has the intent to generate pro-environmental behaviour sacrifices its aesthetic effect and, in turn, becomes a cultural commodity, rather than a work of art:

Art keeps itself alive through its social force of resistance; unless it reifies itself, it becomes a commodity. Its contribution to society is not communication with it but rather something extremely mediated: It is resistance in which, by virtue of inner-aesthetic development, social development is reproduced without being imitated. At the risk of its self-alienation, radical modernity preserves art's immanence by admitting society only in an obscured form, as in the dreams with which artworks have always been compared.⁷⁰

⁶⁸ However Lukács's notion of realism and commitment would conflict with Adorno's statement 'Political opinions count for little'. Theodor Adorno, *Aesthetic Theory*, trans. by Robert Hullot-Kentor (London: Continuum, 1970; repr. 2009) p. 232.

⁶⁹ I do not follow Adorno's ideas dogmatically in application to the climate novel. I later, in the final chapter, qualify that we should avoid making distinctions between mass culture and literary fiction, as the climate novel demands an alternative way of valuing the genre. Yet, I consider climate change to conflict with the capacity for mimetic representation and therefore Adorno's concept about art does have efficacy in thinking about the potential forms the climate novel might adopt.

⁷⁰ Adorno, *Aesthetic Theory*, p. 226

Successful art is for Adorno neither a highbrow, bourgeois, nor populist commodity (though arguably in its purposelessness it is the 'absolute commodity'). He defines 'committed'⁷¹ as being partisan and short-sighted:

It is a form of praxis and need not apologize that it does not act directly, which it could not do even if it wanted to; the political effect even of so-called committed art is highly uncertain. The social standpoint of artists may serve to interfere with conformist consciousness, but in the actual development of works they become insignificant.⁷²

We can draw a similarity between Adorno's classification of 'committed art' (that which is created with a specific intention) and climate novels. Opposite to 'committed' art is 'autonomous' art, which exists for its own means and is not an instrument for moulding public attitudes. However, by merely existing it may provoke revolutionary sentiments, without necessarily intending to, as Adorno explains here:

What is social in art is its immanent movement against society, not its manifest opinions. Its historical gesture repels empirical reality, of which artworks are nevertheless part in that they are things. Insofar as a social function can be predicated for artworks, it is their functionlessness. Through their difference from a bewitched reality, they embody negatively a position in which what is would find its rightful place, its own. Their enchantment is disenchantment. Their social essence requires a double reflection on their being for themselves and on their relations to society.⁷³

The novel, so it seems, needs to bear some sort of original artistic impulse, if it is to be effective for engaging its reader in a direction of societal change or, in the case of the climate novel, environmental action.

⁷¹ Theodor W. Adorno, 'Commitment', *Aesthetics and Politics: Theodor Adorno, Walter Benjamin, Ernst Bloch, Bertolt Brecht, Georg Lukacs*, ed. by Ronald Taylor, trans. by Francis McDonagh (London: Verso, 1980), pp. 177-199.

⁷² Adorno, *Aesthetic Theory*, p. 232

⁷³ Adorno, *Aesthetic Theory*, p. 227

Though they famously disagreed, the discussion of both Lukács and Adorno's work suggests the novel can have a function relating to creating 'eco-consciousness' and political enactment.⁷⁴ However, didacticism, propaganda, or prioritising its 'message' over its aesthetic sensibility, undermines its ability for success. For Adorno, its artistic function must succeed prior to its political function. If we look towards examples of climate novels, we see that many of them conflict with this, ultimately failing in their attempts. Many of the climate novels examined in this thesis lack aesthetic worth—a flaw that, by implication, compromises their political merit. Climate novels are typically compromised in grappling with a broad scientific issue steeped in political implications. These ecologically minded texts would, if we were to follow these theorists, have a greater success by prioritising their aesthetic modes. Yet, for these novels to be able to convey and engage with the complexities and demands of climate change as a subject, they must find new novelistic aesthetics, distinct from those recognised by Adorno. They must find ways to balance their intentions and purpose with their demands as works of art. The aforementioned generic

⁷⁴ Though I have discussed these two theorists in tandem, they had fairly diametrically opposed ideas about how art could and should be political. Adorno's essay 'Reconciliation under Duress' (1958) is a heavy critique of Lukács's theory of realism. Peter Hohendahl's chapter 'Art Work and Modernity' in *Reappraisals: Shifting Alignments in Postwar Critical Theory* (1991) offers a comprehensive overview of the disagreement between Adorno and Lukács. Hohendahl suggests Adorno strongly opposed Lukács's view that modernism and the avant-garde are part of a phase of artistic decline when compared with nineteenth-century realism and twentieth-century socialist realism from the Soviet Union. Their opposition also centres on the concept of art. Lukács defines the interconnection between art and social reality. Whereas Adorno suggests that art is the antithesis of social reality. For Adorno, Lukács misunderstood the importance of non-mimetic tendencies of modern art; art is not about proper imitation. However, critic Peter Bürger in his book *Theory of the Avant-Garde* (1984), argues that the two actually share basic presuppositions. Though they seem contradictory, Bürger insists their theories share foundations.

standard, of the anonymous, apocalyptic destruction, fails both artistically and politically. Our approach to and expectation of the climate novel may demand new reader habits, whilst new novelistic conventions must be sought by writers to convey and engage the reader with such a broad and critical issue.

In addition to the tension between climate fiction's political intent, we find that the form and origins of the novel conflict with ecological principles. Ian Watt's study, *The Rise of the Novel*, conflates the novel's origins with modern industrial capitalism, the creation of the middle class, and individualism. Watt discusses the conditions in which the novel is born:

Capitalism brought a great increase of economic specialisation; and this, combined with a less rigid and homogeneous social structure, and a less absolutist and more democratic political system, enormously increased the individual's freedom of choice. For those fully exposed to the new economic order, the effective entity on which social arrangements were now based was no longer the family, nor the church, nor the guild, nor the township, nor any other collective unit, but the individual: he alone was primarily responsible for determining his own economic, social, political and religious roles.⁷⁵

Here Watt details the shift from an order centred on ideals of the community to those of the individual, favouring consumerism, production and industrial growth. In Defoe's *Robinson Crusoe*, which Watt argues to be the first novel, in its modern sense, the protagonist, Crusoe, represents a key example of such social and economic shifts:

Robinson Crusoe has been very appropriately used by many economic theorists as their illustration of homo economicus, just as 'the body

⁷⁵ Ian Watt, *The Rise of the Novel: Studies in Defoe, Richardson and Fielding*, (London: Chatto and Windus, 1957; repr. London: Pimlico, 2000), p. 61.

politic' was the symbol of the communal way of thought typical of previous societies, so 'economic man' symbolised the new outlook of individualism in its economic aspect.⁷⁶

Watt offers more of an historical account in his discussion of the origins of the novel, rather than a critique of modern industrial capitalism, yet underlying his work is an environmentalist critique. For instance, Watt discusses the religious and industrial values fuelling the desire for the 'mastery' of nature and thus, eventually, environmental destruction:

Defoe's attitude here exhibits a confusion of religious and material values to which the Puritan gospel of the dignity of labour was peculiarly liable: once the highest spiritual values had been attached to the performance of the daily task, the next step was for the autonomous individual to regard his achievements as a quasi-divine mastering of the environment. It is likely that this secularisation of the Calvinist conception of stewardship was of considerable importance for the rise of the novel.⁷⁷

Notions of 'stewardship' and the 'quasi-divine mastering of the environment' are what Carolyn Merchant identifies as the original philosophical shift that has led to the contemporary environmental crisis.⁷⁸ Principles from the philosophy of Deep Ecology are also disparate with the conditions leading to the rise of the novel. For instance, the novel's origins are associated 'with a work that annihilated the relationships of the traditional social order'.⁷⁹ This reflects a move away from an emphasis on community relations and a

⁷⁶ Watt, p. 63.

⁷⁷ Watt, p. 74.

⁷⁸ Carolyn Merchant draws links between environmental destruction, patriarchy and the industrial revolution. She argues these were induced by an ideological shift relating to the rise of capitalism and the Scientific Revolution, headed by Francis Bacon. She writes: 'The Baconian program, so important to the rise of Western science, contained within it a set of attitudes about nature and the science that reinforced the tendencies toward growth and progress inherent in early capitalism'. Carolyn Merchant, *The Death of Nature* (New York: HarperCollins, 1983), p.185.

⁷⁹ Watt, p. 92.

horizontalised rather than hierarchical view of the human in her environment. Ecological principles strive for community -- inclusive of the nonhuman -- based thinking and a non-dominative relationship with nature. The novel and its historical roots are antithetical to principles of environmentalism. As such, we find tensions between the novel's form and the subject of climate fiction. Therefore, the appropriateness of the novel as a form to explore ideas and concepts relating to climate change and environmentalism might very well be questioned.

The climate novel brings the nonhuman agent -- the environment -- into its focus; it comes to play a major, determining role. Yet, the novel is a typically anthropocentric framework. Therefore finding a way to give the environment a voice or precedence is both particularly difficult and peculiar to the novel. The novel is a human cultural form and its frame of reference normally that of only human experience. Its concerns are usually that of the individual's world. Whereas a more ecological form would demand a greater openness and a more fractured, broader scope in narration, as well as the inclusion of the nonhuman. Yet, the anthropocentrism of the novel as a genre raises a related issue: the only possible solution to climate change must be anthropocentric since humans have a political responsibility to save the planet precisely because other species cannot. Timothy Clark writes that in trying to depict the Anthropocene, conventional expectations of the novel must be revisited:

The main artistic implication of trying to represent the Anthropocene must be a deep suspicion of any traditionally realist aesthetic. With its bizarre kinds of action-at-a-distance, its imponderable scale, the collapse of distinctions between the trivial and the disastrous, nature and culture, and the proliferation of forces that cannot be directly perceived, the Anthropocene becomes deeply counterintuitive. It may find its analogue in modes of the fantastic, new forms of magic realism or science fiction, or texts in which distinctions between ‘character’ and ‘environment’ become fragile or break down, or in which the thoughts and desires of an individual are not intelligible in themselves but only as the epiphenomenal sign of entrapment in some larger and not necessarily benign dynamic. Thus some forms of gothic, myth, or science fiction may well seem more interesting than a new novel displaying the latest subtleties of nuance in psychological or social observation, confining itself, that is, to the anthropocentric and arguably illusory world of conventional realism.⁸⁰

As Clark notes, the ecological novel might demand blending genres, introducing new novelistic techniques and revising expectations in order to find a more suitable form and narration for the topic.

Another tension for the climate novel is how to balance the global and the local, an issue raised by Richard Kerridge: ‘Ecocritical narratology has reason, therefore, to search for forms of narrative capable of mediating between these two perspectives: the intensely local and the global.’⁸¹ As Kerridge highlights, the climate novel must work on two contradictory scales. It must focus on the local, to give attention and depth to a particular narrative, but it must also evoke the global and allude to the vast scale in which climate change operates. In my final chapter I discuss how *Amtiva*

⁸⁰ Timothy Clark, ‘Nature, Post Nature’, *The Cambridge Companion to Literature and the Environment* (Cambridge: Cambridge University Press, 2013), p. 81.

⁸¹ Richard Kerridge, ‘Environmental Fiction and Narrative Openness’, *Process: Landscape and Text*, ed. by Catherine Brace and Adeline Johns-Putra, (Amsterdam: Rodopi, 2010), p. 66.

Ghosh's *The Hungry Tide* (2005) attends to both the local concerns and the global forces at play.

Another way in which the climate novel transcends conventions of the novel is through the incorporation of scientific detail into its narratives. Ian McEwan's *Solar* provides extensive and convincing details of an imaginary solar energy project. Margaret Atwood's trilogy, *MaddAddam*, also details dystopian, scientific inventions. Other texts are more realist and scientifically accurate in their details and discussion of climate change issues, such as *Flight Behaviour*. For fiction novels to engage with a critical, ethical and vastly complex scientific issue is innovative. The blending of science with imaginary worlds allows for such issues to be explored in a more poignant and meaningful way. But the exclusive focus on scientific accuracy poses a risk in limiting the climate novel.

We must revise the traditional, western form of the novel if we are to hope that it can bring climate change into the imagination. We find, then, that the novel conflicts with ecological principles: it is anthropocentric and the environment usually only features as a backdrop; it is character driven and fails to portray the wider network of human and nonhuman interconnections. Also, the novel's historical roots are antithetical to principles of environmentalism. How the climate novel might balance both is artistic and activist impetuses are a challenge for it. These all impose ways that might

reshape conventions of the novel and its readership. Stephanie Bernhard believes that climate change will induce a literary shift reminiscent of the Modernist Movement. She argues:

As our experience of climate change proceeds from scientific observation and prediction to the lived reality of frequent weather disasters, climate literature of the future will look increasingly like war literature from the past. Its central concern will be so obvious and so painfully known to readers that it will hardly need to be named.⁸²

New novels are certainly emerging in response to this contemporary environmental crisis. Yet, for any to make a literary impact similar to the Modernist Movement, they must move beyond formulaic and apocalyptic scenarios. There is vast potential for these novels to encompass new forms and find new ways to engage readers and, indeed, the development of the climate novel remains an exciting one. It complicates and conflicts with established understandings of the novel, yet, through such tensions, new forms can arise and innovative solutions found.

Climate Change Impacts

In this brief outline of the impacts of climate change we can reflect on what current and future ecological devastation might entail. The 2014 report from the Intergovernmental Panel on Climate Change states that to mitigate the worst effects of climate change, which means keeping warming below 2°C, we need to achieve emissions scenarios relative to pre-industrial

⁸² Stephanie Bernhard, 'Climate Changed', *The New Inquiry*
<<http://thenewinquiry.com/essays/climate-changed/>> [accessed 27 August 2014]

levels.⁸³ The average global temperature has increased by 1.4 degrees Fahrenheit (0.8 degrees Celsius) over the past hundred years.⁸⁴ More extreme weather events such as droughts, blizzards and rainstorms are to be expected with significant shifts in wind patterns, annual precipitation and seasonal temperature variations. In an interview for *Climate Witness*, Mat Zin, a Malaysian fisherman, explains how the rainy season has become unpredictable:

The rain falls when it shouldn't, and when it should be the rainy season, it doesn't rain at all. This year the rain is more frequent (2 or 3 times per week). When the day is hot, it becomes really hot. There are no more cool days.⁸⁵

His observations reflect the increased variability in weather. He and other fisherman can no longer plan when to go out to sea. As a result, their earnings are being affected and many must find an alternative source of income.

In an article for *Nature*, ecologist John P. Smol explains how the Arctic is the region undergoing the most rapid and dramatic signs of climate change. Smol explains the ice-albedo feedback, describing how the earth reflects energy from the sun back into space. Snow and ice are high albedos, whereas land, vegetation, and ocean are more absorbent and so

⁸³ 'IPCC, 2014: Summary for Policy Makers', *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. by C. B. Field and others, (Cambridge: Cambridge University Press), pp. 1-32.

⁸⁴ 'Global Analysis – Annual 2013', *National Centers for Environmental Information* (2013) <<http://www.ncdc.noaa.gov/sotc/global/201313>> [accessed 8 September 2015]

⁸⁵ Mat Zin, 'Climate Witness: Pak Mat, Malaysia', *The World Wildlife Fund* <http://wwf.panda.org/about_our_earth/aboutcc/problems/people_at_risk/personal_stories/witness_stories/?189903/Climate-Witness-Pak-Mat-Malaysia> [accessed 20 August 2015]

low. The melting of ice reveals darker spaces, creating an amplification effect whereby less of the sun's energy is reflected back into space. This increased absorption of the sun's energy 'explains why the Arctic has warmed at about twice the rate of the global average since 1980.'⁸⁶ Retaining the Arctic sea ice is also important for moderating the planet's climate, as it acts like its 'air-conditioning.'⁸⁷ Yet, it is considered to be a matter of years before the Arctic Sea will be completely ice-free during the summer months. This also results in rising sea levels. By the end of the 21st century it is forecast that 70% of the coastlines worldwide will have undergone sea level change.⁸⁸ If the current trends continue, many coastal areas, where roughly half of the Earth's human population lives, will be inundated.⁸⁹ The submerging of coasts is one of the more obvious ways in which climate change destroys place so entirely.

Ocean acidification is another major consequence for our waters. The increasing levels of carbon dioxide from the burning of fossil fuels and other human activities are largely absorbed into the ocean water, which then forms carbonic acid, increasing the ocean's acidity. Ocean surface waters have become thirty per cent more acidic over the last 250 years and 'this ocean acidification makes water more corrosive, reducing the capacity of marine

⁸⁶ John P. Smol, 'A Planet in Flux', *Nature*, 483 (2012), pp. 512-516, (p. 514).

⁸⁷ Smol, p. 514.

⁸⁸ 'The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change', *IPCC, 2013*, ed. by T. F. Stocker and others (Cambridge: Cambridge University Press, 2013), p. 26.

⁸⁹ Stephanie Pappas, 'Melting Glaciers Cause One-Third of Sea-Level Rise', *Live Science* <<http://www.livescience.com/32066-melting-glaciers-raise-sea-level.html>> [accessed 7 August 2015]

organisms with shells or skeletons made of calcium carbonate (such as corals, krill, oysters, clams, and crabs) to survive, grow, and reproduce, which in turn will affect the marine food chain.⁹⁰ In an interview for *Talking Climate*, a family reflects how oyster farming has been integral to their community and family for more than five generations.⁹¹ Yet acid in the oceans is dissolving the calcium shells of juvenile oysters and they are unable to be cultivated to adulthood. Their traditional livelihood is now uncertain. Ocean acidification is not only a threat to marine organisms with calcium carbonate shells, but also dismantles this family and community's structure. Without this particular species their way of existing must be fundamentally reconsidered. The oyster is an economic, historic and social agent to these people. Though the examples from the fisherman and oyster farmers present climate change through an anthropocentric lens, this can be a convenient way for noting climate change's personal relevance. Yet, I also consider it important to forge an intrinsic valuing of nature, which often means regarding nature ecocentrically. The oyster farmers' experience draws from a localised encounter with climate change. Employing local examples in the climate novel avoids oversimplify and abstracting climate change, as many narrate a generalised, overarching disaster. Such local

⁹⁰ 'National Climate Assessment Full Report 2014', *Energy and Climate Change* <<http://www.energyandclimatechange.org/view/article/537bc46d0cf226e0bdbfef38>> [accessed 8 August 2015]

⁹¹ 'Personal Climate Stories', *Talking Climate: The Gateway to Research on Climate Change Communication* <<http://talkingclimate.org/personal-climate-stories>> [accessed 20 August 2015]

examples also develop a greater sense of place. I discuss this further in the concluding part of this thesis.

The global perspective of species extinction tells us that one half of the earth's plants and one third of animals from their current range are expected to be made extinct by 2080.⁹² Additionally, a report commissioned by the World Wildlife Fund has found that animal populations have declined by 52% in the last 40 years.⁹³ Such statistics are astounding. There is no doubt that such rates of extinction will alter how we relate to places, especially in terms of naming the environment: as it disappears so too do the special words we have for naming and describing particular fauna, flora and landscape.

There are many social effects of climate change, such as famine, civil unrest, and political instability. According the Internal Displacement Monitoring Centre, between 2008 and 2014 102 million people globally were displaced from their homes due to flooding. A further 25.8 million were displaced due to earthquakes, 53.9 million due to storms and 958,000 as a result of extreme temperatures.⁹⁴ A brief look at the displacement maps produced by the organisation highlight how devastating some climate

⁹² R. Warren and others, 'Quantifying the Benefit of Early Climate Change Mitigation in Avoiding Biodiversity Loss', *Nature Climate Change*, 3 (2013), pp. 678-682.

⁹³ 'Living Planet Report 2014: Species and Spaces, People and Places', *WWF*, ed. by R. McLellan and others (2014) WWF, Gland, Switzerland

⁹⁴ 'Global Estimate 2015: People Displaced by Disasters', *Internal Displacement Monitoring Centre* (2015) <<http://internal-displacement.org/publications/2015/global-estimates-2015-people-displaced-by-disasters>> [accessed 19 August 2015]

change events have been. For instance, Hurricane Sandy displaced 776,000 in the USA and a further 343,000 in Cuba.⁹⁵ Displacement is usually further complicated by political issues, such as difficulties accessing land due to discrimination against vulnerable and marginalised groups. We find that most long-term displacement occurs in low and middle-income countries, although the effects of Hurricane Sandy in the US were nonetheless severe. Displacement is usually long term. The 2015 *Global Estimate Report* suggests that many of affected people live in protracted displacement for up to 26 years.⁹⁶ Climate change is already impacting upon lives and ways of existing in relation to the land.

Outline of Chapters

The following chapter, 'Ecocide and Naming', attends to the importance of language in imagining climate change. This chapter draws examples from Margaret Atwood's *Oryx and Crake* (2003), Cormac McCarthy's *The Road* (2006), Indra Sinha's *Animal's People* (2007), and Marcel Theroux's *Far North* (2009). It examines how climate change alters language. Certain processes of climate change lead to a loss of words, but also enable the production of new ones. This chapter calls to rejuvenate our nature diction and examines the role of the climate novel within this. I

⁹⁵ 'Disaster-Induced Displacement Worldwide in 2012', *Internal Displacement Monitoring Centre* <<http://static1.businessinsider.com/image/538f14e8eab8ea5259b5dd7e-960/sdfvsdfvdsuntitled-2.png>> [accessed 19 August 2015]

⁹⁶ 'Global Estimate 2015 Report', *Internal Displacement Monitoring Centre* (2015) <<http://www.internal-displacement.org/assets/library/Media/201507-globalEstimates-2015/GE-2015-HighlightsFINAL.pdf>> [accessed 19 August 2015]

suggest that a poetic language is needed to name our environment and enchant us towards an ecological imagining. 'Ecocide and Naming' discusses the origins of language in natural phenomena. By detailing how language begins through a phenomenological relationship with the land, we can begin to think about how changes in landscape might affect our vocabulary.

Climate change can dismantle certain ways of naming, yet the ability to name is also central to the mitigation of climate change. Language is a potent force to illuminate the wonder and variety in the natural world, and a rich 'place vocabulary' is vital for forming a meaningful relationship with our environment. By weaving such terms into narrative, I suggest that the climate novel allows these words to enter our imagination.

Though climate change can remove certain referents, it also generates its own language, with scientific, economic, media and technical terms. Yet these terms are often stale and do little for building regard towards nature. So that we can relate to climate change in more productive and dynamic ways, we need to bring its discourse into our cultural thinking, to appeal to the imagination. The novel, with its extended imaginative capacities, can recast climate change discourse into compelling stories.

The second chapter, 'Climate Change and Ineffability', shows how climate change is perceptually difficult and examines what this means for the novel. I discuss how climate change features outside normal cognitive boundaries, as it is vast, often invisible and latent, spanning spatial and temporal boundaries. It is often multiple and unspecific. It involves scales both huge -- a tsunami for instance -- and ones that are barely perceptible, such as molecules of carbon dioxide. Climate change transgresses existing borders, and the locations of its effects are unpredictable. It cannot always be known by our senses, and it remains abstract until it manifests itself in disasters.

In 'Ineffability and Climate Change' I examine such climate novels as *The Death of Grass* (1956) by John Christopher, *White Noise* (1984) by Don DeLillo, and *Get a Life* (2005) by Nadine Gordimer. My analysis of *The Death of Grass* draws on the latency and invisibility of a global grass crop virus, addressing how these features hinder effective mitigation of it. Due to its spatial and temporal complexities the characters remain incredulous about the seriousness of the virus, until anarchy has broken out. We can draw comparisons between the virus and climate change, and therefore highlight how climate change can elude the imagination. Like the virus, the chemical spill in *White Noise* remains largely intangible and is rendered insignificant due to its unseen properties. The novel *Get a Life*, on the other hand, attempts to expose the unseen forces operating on all things, organic

and inorganic. It tries to depict the large, tangled web of relations by which we are surrounded. Climate change policies would be better implemented with a fuller understanding of this web, viewing it not only as an ecological phenomenon, but also a historic, social and political one. When we fail to see this network of factors and relations, climate change remains abstracted and only partially understood. This chapter asks how we can bring such ineffable aspects of climate change into the novel. It suggests that traditional forms of representation must be revised in order to represent such complex interconnections, as well as invisible and latent forces.

In my third chapter I show that much of our existing climate change discourse has become outworn and fails to prompt critical reflection. Discussions about climate change are prone to an impoverishment of language. Frequently used terms become hollow; they lack impetus and are over-saturated with other meanings. Furthermore, these words have an anesthetising effect upon the mind: their usage does not provoke thought and they are passively absorbed into cognition. This is because our climate discourse is often reliant on pre-ordered phrases. It lends itself to the frequent use of these because the issue is difficult to articulate. I suggest that many climate novels use repetitious narrative forms and imagery. This chapter begins by examining the climate repertoires found within the public sphere, which tend to be limited to a particular set of words and produce similarly predictable responses.

I then examine how climate change speech is presented in Ian McEwan's *Solar* (2010). *Solar* is an uncharacteristic climate novel, since it is realist, humorous, and no environmental disaster takes place. It follows the deceitful climate cynic Michael Beard and his development of a solar energy project. Beard uses the crisis of climate change for personal financial gain. Climate change is explored through this 'un-eco' character, and we find that the novel has many techniques for presenting the issue in unconventional forms. This means that it can be explored beyond predictable tropes, as the novel avoids becoming simply another disaster narrative. Furthermore, it highlights the usage of environmental clichés by presenting them through the disingenuous voice of Beard. The novel can deploy environmental rhetoric without becoming subject to its anesthetising effects.

I also discuss the Kafkaesque comedy *Odds Against Tomorrow* (2013) by Nathaniel Rich. The main premise of this novel is a huge flood that destroys New York. The flood quickly becomes part of a meta-disaster-narrative and loses its distinction as an event belonging to climate change. *Odds Against Tomorrow* shows how the experience of climate change is overwritten by its representation. The flood's significance is diverted and replaced by the mass schemas of disaster narratives. Climate change typically falls under the same patterns of narration, which overlook the complexity of the issue. It becomes predictable and instantly recognizable.

The flood comes to bear more association with entertainment codes than an ecological event. Many existing climate novels repeat such sensational disaster narratives. To bring climate change into the imagination, climate novels must avoid inserting it into wider entertainment codes. The analysis of *Solar* and *Odds Against Tomorrow* highlights why the climate novel must be innovative and develop fresh concepts for imagining climate change and therefore prompting reflection about it.

In my fourth chapter, 'New Ways of Knowing', I argue that particular mitigation strategies and consequences of climate change force us to revise certain epistemologies. This chapter discusses Jean Hegland's *Into the Forest* (1996) and Barbara Kingsolver's *Flight Behaviour* (2012). In both novels environmental destruction forces the protagonists to undergo a revision in their thinking and relationship to place. *Into the Forest* follows two sisters living in isolation after an apocalyptic disaster. They struggle to find a way to dwell in the present, as previous modes of relating to the world are thrown out of context by the environmental destruction. Their former notions of the world are restrictive to both their cognition and safety. The novel engages in a post-carbon imagination and calls for an existence beyond fossil fuel dependency. Yet, it presents a rather dichotomised perspective on responding to climate change. To survive, the sisters must radically revise their ways of knowing and adopt deeply different sets of behaviours, such as living a gatherer existence and burning down their house.

Flight Behaviour is a less polarized climate novel. It is one of the few realist novels within the genre. Set in Tennessee, it narrates an ecological disaster that threatens nearly an entire butterfly population. The story observes the impact of the disaster upon the protagonist, Dellarobia. As a result she learns to understand and revise how she relates to her environment. In the process she builds an environmental consciousness and becomes a key advocate in protecting the butterflies. The disaster dismantles notions of nation states and reveals the artifice of the nature-culture dualism. In both novels, environmental change leads to an unsettling of norms and inherited modes of thought. It asks us to revise previous ways of drawing meaning and relating to place.

Addressing climate change means reconceptualising both pragmatic and philosophical matters. It also asks us to receive new paradigms that favour ecological integrity. The discussion of *Into the Forest* and *Flight Behaviour* shows the necessity of integrating new ways of knowing in order to cognise climate change. This chapter argues that the climate novel can develop concepts for such imagining. The creativity and experimentation afforded by novels allows us to explore alternative societal and political models, as well as re-imagine a future beyond fossil fuel dependency, and reconfigure our philosophical frameworks to accommodate climate change into our outlook.

In my final chapter I discuss how Amitav Ghosh's *The Hungry Tide* (2005) overcomes some of the obstacles associated with representing climate change in the novel. *The Hungry Tide's* form, plot, and characters are structured by the unique tidal landscape of the Sundarbans, Bengal. It follows the protagonist, Piya, a marine biologist researching an endangered river dolphin. I examine its features to suggest how climate novels might adopt certain styles, forms, or techniques to contribute towards cognising climate change.

I consider *The Hungry Tide* to be rare in its ability to create an enthralling, full, and detailed story whilst also accounting for the various social, ecological, and political factors relating to environmental issues. The novel develops a deep sense of place, drawing on its meaning and ultimately contributing towards an ecological enchantment. The form of *The Hungry Tide* is its great success as an ecological text. The narration imitates the unique tidal landscape of the Sundarbans. Interlinking the landscape and narrative moves the environment beyond a purely symbolic role. Instead we see how the environment is an active agent that influences, alters, and transforms, propelling the plot and structuring it. The novel offers many different focalisations, oscillating between them to create an overall picture. It weaves between timeframes, has several subplots, mixes fact and fiction, incorporates mythology, social and colonial history, and personal accounts.

Employing this multi-perspective viewpoint, the novel is more able to reflect the complexity, variety and interconnection owing to the environment.

The Hungry Tide interweaves notions relating to climate change through subtle observations and attention to place. This gives a holistic account, which rather attends to the complexities and multiple interpretations of climate change. Most climate novels strive to capture climate change as a single, overarching topic, with immediate and dramatic change. This oversimplifies and abstracts climate change.

Novels typically provide an egocentric account, concerned with the development and interior world of an individual. However, *The Hungry Tide* frequently moves away from the individual, detailing the wider scene and not just the character's experience. This gives precedence to both human and nonhuman worlds. This style also moves beyond the anthropocentric form typical to the novel and into a more appropriately ecological and interconnected one. It is also distinct in being able to portray nature poignantly; it does not create a problematic 'othering' of it as pristine and separate. Rather, the novel depicts a balanced and symbiotic encountering of the human and nonhuman worlds. It portrays the complexity of the human relationship with nature: showing how we are both part of and separate from it. It also seeks to represent nature, animals and the environment as vibrant, important and wondrous. This develops an ecological enchantment.

The findings from this thesis suggest that climate novels must be creative. Avant-garde works that subvert boundaries and renew styles enable an attentive reading, and can be part of creating a more ecological form of the novel. We find that generic anomalies and 'defamiliarising' climate change can prompt reflection about it and offer more innovative ways to represent its complexity. Though climate change is global in both impact and the response it demands, it is particularity with the local that I consider to be essential to climate novels. The interconnections and wonder owing to place cannot be evoked without such particularity. Therefore, a climate novel must balance itself against the broad demands of a global crisis whilst attending to the special character of place and particular fabric of the local. The vastly distributed spatiality and temporality of the issue is another difficulty for the novel to contend with. This thesis concludes that we need to abandon the dominant tradition of the European and American novel in order to represent the spatial, temporal, and transnational pressures brought about by climate change. Therefore climate change demands a reshaping of the novel in exciting ways and promises great creative endeavour to find ways to imagine this vast and complex issue.

**Ecocide and Naming in *The Road*, *Oryx and Crake*, *Far North*,
and *Animal's People***

'...pierce rotten diction and fasten words again to visible things'
Ralph Waldo Emerson¹

The epigraph from Emerson evokes a central notion to this chapter regarding enhancing or reclaiming our ability to name natural entities and processes. This chapter arrives at a call to rejuvenate language so that it can bear a greater ecological resonance. I suggest that climate novels are central to this process of fastening 'words to visible things,' allowing us to speak about and be attentive to our environment and thus enchant us towards an ecological imagining. Climate novels can also weave the new, mostly scientific, technical or economic, discourse generated by climate change into meaningful and relevant stories. I also examine how climate change modifies our language. Although the process of climate change causes a loss of words, it also leads to the production of new words. In an interview earlier this year, Margaret Atwood suggested that climate change should be renamed 'everything changes'.² In a similar vein to Atwood, I suggest that this change is inclusive of diction, particularly our terms for nature.

¹ Ralph Waldo Emerson, *The Complete Works of Ralph Waldo Emerson: Nature, Addresses and Lectures* (Boston: Houghton Mifflin, 1854), p. 30.

² Ed Finn, 'An Interview with Margaret Atwood', *Slate*
<http://www.slate.com/articles/technology/future_tense/2015/02/margaret_atwood_interview_the_author_speaks_on_hope_science_and_the_future.html> [accessed 20 August 2015]

Climate change produces its own discourse, with terms like *albedo*, *land use*, *climate extreme*, *rebound effect* and *deforestation*. Yet we also find that it renders certain words redundant. For instance, a local coastal diction describing the particularities of a place might be lost when sea levels rise, or the names of extinct species fall out of use. I ask what such changes in vocabulary mean for our ways of understanding and relating to the world. There are many fascinating depictions of this amongst environmentally concerned novels. These novels help us explore and understand the greater consequence of climate change beyond the physical, such as the troubling ontological consequences it can entail. I suggest that our narratives act as both preserver and developer of words for describing the particularities of nature and its processes. The emphasis is also for the novel to integrate the emerging climate discourse into its stories, so that the issue might be contemplated in a more immediately relevant and thought provoking way. We need to generate an evocative discourse of climate change, so that it does not remain as mere terminology.

We also need to preserve our current, but increasingly vanishing, terms for nature. Such words allow us to distinguish the land around us and appreciate its importance. Being able to contemplate our external world and realise its distinctiveness, is to endow it with its own separate, instrumental worth. The richness of environmental language is necessary for maintaining

meaningful relationships with nature. Some of the factors leading to climate change and the incapacity to implement mitigation strategies are associated with the failure to forge a positive relationship with our natural world. Language is a potent force to illuminate vitality, wonder and diversity in the land. It has the power to shape our sense of place and therefore is critical to the role in mitigating climate change.

I begin this chapter by discussing the origins of language in natural phenomena. By detailing how language, and thus meaning, comes into being through a phenomenological relationship with the land, we can understand how changes in landscape might affect our vocabulary. I then discuss contemporary eco-novels *The Road* (2006), *Oryx and Crake* (2003), *Far North* (2009), and *Animal's People* (2007). This analysis of the novels highlights the importance of being able to name our natural world, and foregrounds the consequences when this is no longer possible. I provide examples from several novels to illustrate how pervasive this theme is across climate novels, and as an opportunity to gain a more detailed sense of the genre in general.

Far North is a typical example of climate fiction in being set after an unspecified apocalyptic event. It follows the journey of an isolated hero threatened by depraved gangs. Several reviews have highlighted the novel's failure to develop the initially interesting characters and ideas, and, as one

reviewer wrote, 'the gaunt narrative suddenly blossoms into a Hollywood plot'.³ On the other hand, Indra Sinha's *Animal's People* offers a more radical example. Rob Nixon claims 'the power of *Animal's People* flows largely from Sinha's singlehanded invention of the environmental picaresque'.⁴ As Nixon notes, Sinha creates a new branch within the climate-fiction genre in order to expose the spatial and temporal complexities and make visible the transnational forces that permeate the local. The novel received much critical attention and was shortlisted for the Man Booker Prize in 2007, but went on to sell a mere 1189 copies.⁵ Although the novel is not directly about climate change, it does represent an environmental disaster and is therefore useful for thinking about ecocide. I have chosen to discuss this text alongside *Far North* in order to represent works from countries of varying economies and thus explore a range of climate novels.

However, my analysis will largely focus on novels by Cormac McCarthy and Margaret Atwood, as they are more seminal works within the genre. McCarthy's *The Road* is an astounding aesthetic accomplishment within this field in its rendering of ecological annihilation. In contrast, Atwood's *MaddAddam* trilogy, including *Oryx and Crake* (2003), *The Year of the Flood* (2009) and *MaddAddam* (2013), is a more complex set of

³ M John Harrison, 'To the Ends of the Earth', *The Guardian*, 11 April 2009. See also Tim Martin, 'Far North by Marcel Theroux – A Review', *The Telegraph*, 13 March 2009. And Jeff Vandermeer, 'Hot Ice', *The New York Times*, 13 August 2009.

⁴ Rob Nixon, 'Neoliberalism, Slow violence, and the Environmental Picaresque', *Modern Fiction Studies*, 55 (2009), pp. 443-467, (p. 444).

⁵ Sam Jordison, 'Booker Club: *Animal's People* by Indra Sinha', *The Guardian*, 8 October 2008.

dystopian novels, addressing themes from ecocide, post-humanism, extinction, genetic engineering, neoliberalism to the human-nature relationship. I consider these works as important examples of the climate novel genre based on their ability to communicate, capture and engage with environmental destruction. Notions of homogenisation and loss are key themes in all these novels and they are central to the ways in which the characters experience ecocide: as the environment shrinks materially, so does their language, perception and understanding. I primarily consider how environmental destruction and the loss of biodiversity 'de-vocabularise' the protagonists and collapses systems of measure through otherness. This chapter exposes the reciprocal patterns between environment and language and foregrounds the effect of climate change in disrupting this relationship.

Organic Language

In order to understand the ways in which climate change can alter words, we can look towards wider theories concerning the formation of human cognition and language in relation to the environment. These theories highlight the symbiosis between language, being, and environment. Hegel's idea about the formation of consciousness in relation to objects offers a useful starting point. Hegel suggested that selfhood is determined by perceptual engagement with external phenomena. This challenges the dichotomy between mind and matter and the related idea that consciousness is a preformed, transcendental entity housed simply in the body. Hegel

argues that 'consciousness is, on the one hand, consciousness of the object, and on the other, consciousness of itself'.⁶ He explains that 'sense-certainty' is a primitive form of consciousness in which the object is immediately present. This then mutates into perception, and then perception into understanding. Hegel's outline of the stages leading to understanding highlights how the self is formed in conceptual relation. Edward Soja extends Hegel's notion further by applying it to spatiality. As with Hegel, Soja notes that 'spatiality is present at the origin of human consciousness'.⁷ Soja claims that the first created space, the distance between subjective consciousness and object, forms the basis to our being.⁸ Being arises in the interplay between subjectivity and objectivity. As Soja argues:

There is an explicitly situated (or to use Husserl's term, 'regional') ontology in which existence and spatiality are combined through intentional and creative acts inherent to being-in-the-world, entering into relations, involvement. This existential spatiality gives to being a place, a positioning within the 'lifeworld (Husserl's *Lebenswelt*). This *emplacement* is a passionate process that links subject and object, Human Being and Nature, the individual and the environment, human geography and human history.⁹

⁶ G. W. F. Hegel, *Phenomenology of Spirit*, trans. by A. V. Miller (Oxford: Oxford University Press, 1977, [1807]), p. 54.

⁷ Edward W. Soja, *Postmodern Geographies: The Reassertion of Space in Critical Social Theory* (London: Verso, 1989), p.133.

⁸ I use 'being' throughout this thesis in the form explained in the *Stanford Encyclopaedia of Philosophy*: 'The question of the meaning of Being is concerned with what it is that makes beings intelligible as beings, and whatever that factor (Being) is, it is seemingly not itself simply another being among beings.' Michael Wheeler, 'Martin Heidegger', *The Stanford Encyclopaedia of Philosophy*, ed. by Edward N. Zalta (2011) <<http://plato.stanford.edu/archives/win2011/entries/heidegger/>> [accessed 18 November 2012]

⁹ Soja, p. 134.

Soja's idea of 'emplacement' introduces us to the concept that being and understanding are reliant on spatiality and phenomena. In other words, consciousness is dependent upon a material 'lifeworld'.

The anthropologist Tim Ingold similarly notes that our existence begins within our environment. Ingold discusses the shift in anthropological thought from the idea of cultural knowledge as something imported into a setting, to an understanding that it is rather constituted within it. His work asserts that cultural knowledge is built from activity in the environment. Ingold emphasises the importance of bodily experience: meaning is not allocated by the mind to phenomena but arises in lived action: 'in short, far from being inscribed upon the bedrock of physical reality, meaning is immanent in the relational contexts of people's practical engagement with their lived-in environments.'¹⁰ Ingold explains that a place gains its meaning by the people and organisms that dwell there, through a process of incorporation and not inscription. He offers an interesting distinction between environment and landscape, the former is the objective, physical reality, made up of neutral objects, whilst the latter, landscape, is constituted in relation to those that inhabit it. Ingold writes:

A place owes its character to the experiences it affords to those who spend time there – to the sights, sounds and indeed smells that constitute its specific ambience. And these, in turn, depend on the kinds of activities in which its inhabitants engage. It is from this relational context of people's engagement with the world, in the business of dwelling, that each place draws its unique significance.

¹⁰ Tim Ingold, *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill* (New York: Routledge, 2000), p. 168.

Thus whereas with space, meanings are *attached* to the world, with the landscape they are *gathered from* it.¹¹

Ingold emphasises the reciprocal and interactive engagement with nature from which meaning originates. Meaning is not attached to place retrospectively. Within the context of environmental destruction this notion prompts some interesting questions as to what happens to meaning with changes in place, for instance could we consider the encroaching desertification affecting Timbuktu in this context?

The relationship between consciousness and phenomena can be extended further to understand the original formation of language. David Abram's *The Spell of the Sensuous* offers an insightful overview of the reciprocal relationship between humans and nature, explaining how language is formed within this sensual interdependence.¹² Abram's work renews the school of phenomenology within the context of the current environmental crisis. Abram positions himself as an environmental activist and suggests that in order to prevent ecologically destructive behaviour we must 'reanimate' our perception to include a conscious engagement with the environment. Abram's work examines the importance of the nonhuman component within the configuration of language, meaning and forms of identification. His thinking establishes the importance of ecology to the health and development of our intellect. His work demonstrates that the ecosystem -- land, weather, atmosphere, and species -- is paramount to our

¹¹ Ingold, p. 192.

¹² David Abram, *The Spell of the Sensuous* (London: Vintage Books, 1997).

capacity to know and define. Abram's statement that 'we are human only in contact, and conviviality, with what is not human',¹³ is an important notion. We find, form and understand our humanness in relation to that which is external and other to us. Without this, our capacity to think and act as humans is diminished.

Abram argues that language originates in our sensual experiences of the world, and, furthermore, suggests that the motions, shapes, sounds and colours of nature are a basis to the formation of language:

Human languages, then, are informed not only by the structure of the human body and the human community, but by the evocative shapes and patterns of the more-than-human terrain. Experientially considered, language is no more the special property of the human organism than it is an expression of the animate earth that enfolds us.¹⁴

According to Abram, nature offers both the material and the referentiality for language, not only through perceptual engagement, but also as the ingredients and substance of our language. 'We regularly talk of howling winds, and of chattering brooks', Abram writes, 'yet these are more than mere metaphors. Our own languages are continually nourished by these other voices – by the roar of waterfalls and the thrumming of crickets'.¹⁵

It is through a coupling of the body and landscape that we find mind and its combined results – language. It is in the interplay between these two, of participation and perception with that which surrounds us, in which the

¹³ Abram, p. 9.

¹⁴ Abram, p. 90.

¹⁵ Abram, p. 82.

origins of reason occur. Language becomes the device for us to produce meaning, coherence and sense within an otherwise seemingly arbitrary world. The human mind is not exclusively ours, but it is embedded in the landscape, the realisation of which leads us to understand the land as an intellectual terrain of meaning. We exist within the land as intertwined and encoded, interdependent on it for both sustenance and meaning.

These notions from Hegel, Soja, Ingold and Abram help us to understand how a primary form of consciousness and language originates through interaction with place. We find that our sense of perception is formed through a relationship with the natural world. These ideas are important for understanding how changes in place might impact on our ability to draw meaning, and I illustrate this notion through my close reading of the novels. The following analysis intends to underpin some wider philosophical notions that are general across this thesis, concerning the importance of nature not only as a means of sustenance, but also as core to our ontological well-being. The novels present extreme, often post-apocalyptic, versions of environmental destruction. The disasters may not necessarily be a result of climate change, and, other than in *Animal's People*, their causes are unclear. But their representation of environmental destruction and its effects upon the characters' ability to name is useful here. In my readings of the novels I suggest that certain processes of climate change and the destruction of nonhuman life corresponds to a loss of referents.

Oryx and Crake

Narrated from both before and after a disaster, *Oryx and Crake* provides a fable about unchecked human interference with nature. Nature ceases to exist in its original sense, since everything is artificially recreated or controlled. Society is divided by those who live inside the compounds, and those who do not. Life is equally bleak, whether in the crime-ridden slums or inside the artificial and despotic compounds. Crake responds to this nightmare by deciding to eliminate its human cause by developing a plague. Only Jimmy is spared, whom Crake keeps alive to become a guardian for his new and eco-friendly species of humans, the 'Crakers', created to inhabit what now remains of the world. We first believe that Jimmy, or Snowman as he later renames himself, is the only survivor, but by the end of the novel it has become clear that others have remained alive. Despite Crake's belief that he has perfected a new human race able to live without tendencies towards domination, crime and harmful attitudes to the environment, his experiment ultimately fails, as the 'Crakers' begin to imitate destructive human behaviour. Hannes Bergthaller's analysis of the novel suggests that it is 'principally concerned with the question of what role language, literature and, more generally, the human propensity for symbol-making can play in our attempts to deal with the ecological crisis'.¹⁶ Elaine Showalter also notes

¹⁶ Hannes Bergthaller, 'Housebreaking the Human Animal: Humanism and the Problem of Sustainability in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood*', *English Studies*, 91 (2010), pp. 728-743, (p.729).

the importance of language and imagination in the novel, highlighting their importance for thinking about solutions to ecological issues.¹⁷

A simple understanding of ecology tells us that biotic health thrives and exists only in relation to other species and natural processes: the greater the biodiversity the greater the thriving of the community. Variety is vital within ecology, yet it also vital for meaning in words and the prosperity of selfhood. We can find parallels to this mechanism in the functioning between language, self and ecology. In ecology the extinction of a species impacts upon the rest of its environment and can lead to a domino-like elimination of creatures, plants and habitats.¹⁸ This same subsuming destruction takes places in language, as words shrink and disappear alongside other living things in the environment. As certain terms become redundant through ecocide, the language network begins to break down and gaps in vocabulary increase the inadequacy of other terms. *Oryx and Crake* show how this linguistic collapse begins with the nouns of physical entities and then extends to more abstract notions, which cease to make sense without relation or reference to other things. In the novel, Jimmy's questioning reflects this relationship: 'can a single ant be said to be alive, in any meaningful sense of the word, or does it only have relevance in terms of

¹⁷ Elaine Showalter, 'The Snowman Cometh', *The London Review of Books*, 25 (2013), p. 35.

¹⁸ Bradley J. Cardinal and others, 'Biodiversity Loss and its Impact on Humanity', *Nature*, 486 (2012), pp. 59-67.

its anthill?',¹⁹ he asks, which suggests that meaning only exists through its relationship with other things and is diminished when aspects of its context are destroyed. Within a system of interconnection, obliteration becomes self-perpetuating and degrades more rapidly with each further loss. Due to this chain-like structure, more breaks in the chains lead to a greater loss of meaning and it becomes increasingly difficult for thought to function. The whole structure finally becomes entirely obsolete when the links become too tenuous for this chain of relevance and meaning to continue to exist, as Crake remarks to Jimmy:

'All it takes,' said Crake, 'is the elimination of one generation. One generation of anything. Beetles, trees, microbes, scientists, speakers of French, whatever. Break the link in time between one generation and the next, and it's game over forever.' (p. 262)

Jimmy experiences the destruction of the environment as a loss of words, which become increasingly redundant in the destroyed or artificial landscape:

What's happening to his mind? He has a vision of the top of his neck, opening up into his head like a bathroom drain. Fragments of words are swirling down it, in a grey liquid he realizes is his dissolving brain. (p. 175)

There are many instances throughout the novel depicting Jimmy's attempts to preserve his vocabulary:

He memorized these hoary locutions, tossed them left-handed into conversation: *wheelwright*, *lodestone*, *saturnine*, *adamant*. He'd developed a strangely tender feeling towards such words, as if they were children abandoned in the woods and it was his duty to rescue them. (p. 230)

¹⁹ Margaret Atwood, *Oryx and Crake*, (London: Bloomsbury Publishing PLC, 2003), p. 429. Further references [to this edition, etc.] are given after quotations in the text.

The narrative is frequently intersected with Jimmy's listing of words:

He compiled lists of old words too – words of a precision and suggestiveness that no longer had a meaningful application in today's world...(p. 230)

Rag ends of language are floating in his head: *mephitic, metronome, mastitis, metatarsal, maudlin*...(p. 175)

Then he'd stay up too late, and once in bed he'd stare at the ceiling, telling over lists of obsolete words for the comfort that was in them. *Dibble. Aphasia. Breast plough. Enigma. Gat*...(p. 306)

These anxieties over the disappearance of language reflect how environmental destruction affects as both an ecological and linguistic crisis. It becomes more difficult for him to maintain his lists. As his environment is damaged, either by technological manipulation, pollution or extinction, words become increasingly displaced:

From nowhere, a word appears: *Mesozoic*. He can see the word, he can hear the word, but he can't reach the word. He can't attach anything to it. This is happening too much lately, this dissolution of meaning, the entries of his cherished wordlists drifting off into space. (p. 43)

The words become more elusive. Without physical counterparts, or with more gaps in the chain, certain words fall to redundancy without a context in which to exist. Jimmy recognises the importance of maintaining these words since he understands that with their disappearance his sense of meaning is also threatened. His environment is first destroyed and then his means to understand it fades away, too. The more seemingly tenuous and superfluous words are the most important ones to preserve, since these seem to suffer the most dramatically in the loss of thought:

'Hang on to the words,' he tells himself. 'The odd words, the old words, the rare ones. *Valence*. *Norn*. *Serendipity*. *Pibroch*. *Lubricious*. When they're gone out of his head, these words, they'll be gone, everywhere, forever. As if they had never been.' (p. 78)

Jimmy tries to preserve these words and recognises their value beyond simply being a means to order and objectify the world, but as the very basis of sense and bringing one's self in relation with that which is external. His word lists temporarily offer comfort in his increasing separation from the world, its comfort all the more important as he believes he is the only one of his own species left. Yet it occurs to him that the task is pointless when the words eventually exist as mere sound patterns, without use or referent:

But there was no longer any comfort in the words. There was nothing in them. It no longer delighted Jimmy to possess these small collections of letters that other people had forgotten about. It was like having his own baby teeth in a box. (p. 307)

For Jimmy this simultaneous destruction of the environment and language also presents itself as an obliteration of thought: "I used to be erudite," he says out loud. *Erudite*. A hopeless word. What are all those things he once thought he knew and where have they gone?' (p. 175). He claims that 'there are a lot of blank spaces in his stub of a brain, where memory used to be' (p. 5). One of Jimmy's observations is particularly important: 'But he doesn't know which it is, bigger or smaller, because there's nobody to measure himself by. He's lost in the fog. No benchmarks' (p. 279). This encapsulates the precise problem of his crisis, as there are 'no benchmarks' in a world in which the environment has been so utterly destroyed, forms of measure are lost, sending its survivors into an

inconceivable existence. Nature offers measure and points of comparison through its variety and otherness. When this becomes lost, we have fewer means for creating understanding.

Oryx and Crake is positioned within the absence of constructed time. As the novel begins, 'A blank face is what it shows him: zero hour. It causes a jolt of terror to run through him, this absence of official time. Nobody nowhere knows what time it is' and ends: 'From habit he lifts his watch; it shows him its blank face. Zero hour' (pp. 3 & 433). Jimmy exists in a realm of abstraction, as nouns for time become irrelevant, 'in September or October, one of those months that used to be called *autumn*' (p.81); he can neither determine the time of year nor name it. As a result, Jimmy feels he cannot belong to the present:

On some non-conscious level Snowman must serve as a reminder to these people, and not a pleasant one: he's what they may have been once. *I'm your past*, he might intone. *I'm your ancestor, come from the land of the dead. Now I'm lost, I can't get back, I'm stranded here, I'm all alone. Let me in!* (123)

Jimmy is unable to make sense of an environment that is so radically altered. His previous conceptions of the world are becoming increasingly inapplicable. Ecocide results in Jimmy's existential crisis.

The Road

George Monbiot claims that *The Road* is 'the most important environmental book ever written'.²⁰ In disturbing and profound ways it captures what a world without nature could also mean philosophically. The story follows a man and his son across a North American wasteland. An undisclosed environmental disaster -- presumably global in reach -- has left everything extinct except for a small number of people attempting to survive within the barren landscape. The story does not follow typical narrative conventions and begins somewhere in the middle, during a futile journey on the road. It is intersected by the horror and depravity of humanity in a post-apocalyptic world. There is something stark and bare about the tale and its narration, which ultimately communicates a deeper reflection about the emptiness of a world without nature. The story ends with the man's death. The boy joins another family with whom his journey through the wasteland must continue.

The Road focuses on the nihilism of a world where nature no longer exists. The very last strand of connection and meaning that remains for the man is his relationship with his child; he otherwise exists in a world that is lost to him, along with all notions of purpose. He also experiences the redundancy of words:

²⁰ George Monbiot, 'Civilisation Ends with a Shutdown of Human Concern. Are We There Already?', *The Guardian*, 30 October 2007.

The world shrinking down about a raw core of parsible entities. The names of things slowly following those things into oblivion. Colors. The names of birds. Things to eat. Finally the names of things one believed to be true. More fragile than he would have thought. How much was gone already? The sacred idiom shorn of its referents and so of its reality.²¹

The disappearance of the world is felt through ‘the names of things slowly following those things into oblivion’. ‘The sacred idiom shorn of its referents and so its reality’ suggests that a word without referent -- made irrelevant here through the environmental destruction -- ceases to exist within its original meaning or purpose. The shearing of referents due to environmental destruction threatens the man’s sense of reality, since he is unable to create meaning without a device (language) to name and represent.

The boy asks, ‘Do you think there could be fish in the lake?’, to which the father replies, ‘No. There’s nothing in the lake’ (p. 19). Such exchanges on the barrenness of the land recur throughout the novel:

No wind. Nothing. After a while the boy said: There’s not any crows.
Are there?
No.
Just in books. (p. 168)

The emptiness of the skies, land, and waters creates a vacuous existence in which the pair struggle to derive meaning either logically or philosophically, since their language becomes a farce without any literal or physical roots. In the following description of the landscape, the notion of words becoming redundant through a loss of physical entities is captured evocatively:

²¹ Cormac McCarthy, *The Road* (London: Picador, 2006), p. 93. Further references [to this edition, etc.] are given after quotations in the text.

He lay listening to the water drip in the woods. Bedrock, this. The cold and the silence. The ashes of the late world carried on the bleak and temporal winds to and fro in the void. Carried forth and scattered and carried forth again. Everything uncoupled from its shoring. Unsupported in the ashen air. Sustained by a breath, trembling and brief. If only my heart were stone. (p. 10)

The phrase 'uncoupled from its shoring' is central here, echoing the loss of a form of measure wherein word and referent are detached from one another. There is no harnessing by physical representation. Everything is sent into a realm of abstraction. Words become severed from their etymological origins and the phenomenological relationship is broken. As a result, the word and world are 'uncoupled' from their 'shoring'. Subjectivity and meaning are perilous, lacking an environment in which ideas can be anchored and 'benchmarks' provided.

Robert Pogue Harrison's study of the role of forests in Western thought offers a lens through which the nihilism in *The Road* can be understood. Harrison discusses how ecological issues confront us and suggests what the consequence is for forests, a source of meaning and wonder, to disappear:

What I hope to show is how many untold memories, ancient fears and dreams, popular traditions, and more recent myths and symbols are going up in the fires of deforestation which we hear so much about today and which trouble us for reasons we often do not fully understand rationally but which we respond to on the some other level of cultural memory.²²

²² Robert Pogue Harrison, *Forests: The Shadow of Civilization* (Chicago: The University of Chicago Press, 1992), p. xi.

As Harrison explains, forests mean more than ecosystems, habitat or resource, but are central to our cultural understandings and memory. The crashing sound of falling trees that accompanies the man and boy throughout their desultory journey is haunting and symbolic of gradual collapsing of their cultural sense. Harrison here describes what the loss of forests means:

We call it the loss of nature, or the loss of wildlife habitat, or the loss of biodiversity, but underlying the ecological concern is perhaps a much deeper apprehension about the disappearance of boundaries, without which the human abodes loses its grounding.²³

He explains how the forest functions as an important border in our imagination, as the edge of civilization and without 'such outside domains, there is no inside in which to dwell'.²⁴ We lose a vital distinction in place. Deforestation, then, leads to a loss of measure and boundaries.

There are no proper nouns in *The Road*, the characters are 'the boy' or 'the man'. When another character is introduced, he is referred to as 'the old man'.²⁵ Names seem out of place in this grimly dystopian scenario, 'You don't want to say your name' (p. 182). Without anything to provide definition, the characters become 'wrinkled effigies of themselves' (p. 22). The man responds to a question 'I'm not anything' (p. 67), allowing the interpretation

²³ Harrison, p. 247.

²⁴ Harrison, p. 247.

²⁵ Brian Donnelly also remarks on the absence of proper nouns. However, he notices that the only recognisable reference is to a can of Coke. He argues this intentional and sole reference to such a recognisable and pervasive brand offers a critique of excessive consumption. "Coke Is It!": Placing Coca-Cola in McCarthy's *The Road*, *The Explicator*, 68 (2009), pp. 70-73.

that, although they are living, they are not alive in any meaningful sense of the term. The exchange between the boy and the man reflects this:

‘Who is it? said the boy.
I dont know. Who is anybody?’ (p. 50)

A person cannot be anybody with nothing to define his or her selfhood. Notions of what it means to be human are removed, as it seems that they are the only species left in existence:

Something imponderable shifting out there in the dark. The earth itself contracting with the cold. It did not come again. What time of year? What age the child? He walked out into the road and stood. The silence. The salitter drying from the earth. The mudstained shapes of flooded cities burned to the waterline. At a crossroads a ground set with dolmen stones where the spoken bones of oracles lay moldering. No sound but wind. What will you say? A living man spoke these lines? He sharpened a quill with his small pen knife to scribe these things in sloe or lampblack? At some reckonable and entabled moment? He is coming to steal my eyes. To seal my mouth with dirt. (p. 280)

The man can neither determine the time of year nor the age of his son, because reference and measure are lost in the shrinking of the world. This measureless, ‘imponderable’, and ‘contracting’ world leads to the loss of his sense and ability to employ speech, as it ‘steals his eyes’ and ‘seals his mouth’. This disaster withdraws him from sense and thus himself, as it diminishes his ability to define.

The narrative of *The Road* is consumed by futility. The sense of nihilism is drawn from the emptiness of the land, which is constantly remarked upon throughout the text:

Those nights was sightless and impenetrable [...] He took great marching steps into the nothingness [...] The wet gray flakes twisting

and falling out of nothing [...] Nothing to see [...] What do you see? the man said. Nothing [...] No moon rose beyond the murk and there was nowhere to go [...] He looked around but there was nothing to see. He spoke into a blackness without depth or dimension [...] The unseen sun cast no shadow [...] All of it shadowless and without feature. (pp. 14, 15, 7, 70, 70, 71, & 189)

Emptiness is the defining feature of this novel; everything is colourless, dead and stagnant. This is also stylistically represented in the prose, as McCarthy often omits apostrophes, sentences are short, the narrative is repetitive and conversations between characters are minimal. Lindsey Banco has written of the use of apostrophes in *The Road*, suggesting that the economy of McCarthy's style highlights the novel's desolation, enacting 'textually the profound nullification central to the novel's thematic'.²⁶ As such a rich and eloquent author, McCarthy's choice for using a retracted and minimal prose in this novel further emphasises the importance of nature for ontological meaning.

Everything becomes subject to the assimilation of the nameless and empty landscape:

The gray and nameless day. (p. 128)

Watching the nameless dark come to enshroud them. (p. 8)

The bleak and shrouded earth went trundling past the sun and returned again as trackless and as unremarked as the path of any nameless sisterworld. (p. 193)

²⁶ Lindsey Banco, 'Contractions in Cormac McCarthy's *The Road*', *The Explicator*, 68 (2010), pp. 276-279, (p. 277).

All is reduced to just existence and space. When the linguistic world is finally demolished, the death of everything occurs. Yet physical death itself is hardly worth noting, there is nothing for it to disrupt. The conversation between the man and the old man reflects this realisation: with the supremacy of nihilism caused through the severity of the ecocide, the death of the last human becomes irrelevant:

How would you know if you were the last man on earth? he said
I dont guess you would know it. you'd just be it.
Nobody would know it.
It wouldnt make any difference. (p. 180)

The death of the last human is hardly worth mentioning as there is nothing to mark it and no one to mourn it. Extinction would be both physical and conceptual, such that everything becomes vacuous and arbitrary. The nihilism of *The Road* exemplifies the importance of the richness of the landscape to firstly maintain environmental integrity and health, and, secondly, to maintain linguistic diversity which prevents us from the descent into an imponderable world.

The Road is set somewhere in North America, yet is always undistinguished since the landscape has become so assimilated there is nothing to differentiate it. Inger-Anne Søfting argues that *The Road* is unusual within McCarthy's corpus for this reason, arguing that the novel 'appears to transcend both time and place [...] which underlies the novel's

nightmarish quality.²⁷ The man is no longer able to exist in the landscape in any sense of relation, and feels alien:

He turned and looked at the boy. Maybe he understood for the first time that to the boy he was himself an alien. A being from a planet that no longer existed. The tales of which were suspect. He could not construct for the child's pleasure the world he'd lost without constructing the loss as well and he thought perhaps the child had known this better than he. (p. 163)

The time before the ecological disaster is frequently distinguished from the present, and often referred to as the 'vanished world' (p. 199). The protagonist asks the old man 'tell us where the world went' (p. 176). This suggests to us that place is more than just geographical location, but rather formed from more complex notions of belonging through reciprocal relationships with nature and linguistic apprehension. Both simultaneous cultural and ecological factors contribute to the formation of place. A series of conversations that take place between the man and the boy illustrates this notion well:

There are our roads, the black lines on the map. The state roads.
Why are they the state roads?
Because they used to belong to the states. What used to be called states.
But there's not any more states?
No. (p. 43)

Later in the novel, another conversation ensues:

I've got to go for more wood, he said. I'll be in the neighborhood. Okay?
Where's the neighborhood? (p. 100)

Place is rendered into non-place without markers to define it. The states and roads have been assimilated back into the rest of the dead and

²⁷ Inger-Anne Søvting, 'Between Dystopia and Utopia: The Post-Apocalyptic Discourse of Cormac McCarthy's *The Road*', *English Studies*, 94 (2013), pp. 704-713 (p.706).

homogeneous landscape. Human and nonhuman interaction with the land, ecosystems, and habitats are what define and distinguish it, without this it cannot exist in any meaningful way. Therefore, the characters find themselves in a non-place. When the boy asks 'Where's the neighborhood?', it becomes obvious that without other people, the term neighbourhood ceases to exist as a place, and the noun for it becomes useless. There can be no neighbourhoods, just further space. Place is dissolved into space because the language that brought them into dwelling, as belonging to place, is now redundant as a result of the ecological crisis. This also reminds us of Heidegger's assertion that poetic creation and sensuous language bring us into dwelling. According to Heidegger dwelling goes beyond merely occupying or inhabiting space, but refers rather to belonging, living and existing in that space in the meaningful notion of Being. Heidegger's notion of dwelling is important in ecological terms, since it implies living on the earth with integrity and care for it; dwelling within it allows us to do this, rather than just occupying space. According to Heidegger, it is 'Poetic creation' that lets us build, defining build as a process of belonging to place and becoming part of it.²⁸ The term 'poetic creation' in Heidegger's sense refers to the conscious and creative employment of language. It is this considered use of language which will become a key idea within this thesis: later I discuss how we must refresh the discourse of climate change through an imaginative deployment of its vernacular in order for it to convey meaning and engage

²⁸ Martin Heidegger, *Poetry, Language, Thought*, trans. by Albert Hofstadter (New York: Harper and Row, 1971)

consciousness. Here, Heidegger suggests that this use of language allows us to come into being and connect with the land. His work is concerned with ontology and its origins in the phenomenal world. Language, in a sense, is the bridge between the two. Heidegger suggests that the linguistic appropriation of the landscape is the very basis in which space becomes place. When we lose this linguistic connection to our habitat a central aspect of our Being is destroyed.²⁹ Heidegger's work gives important clues about how we are embedded within the environment in more than just a physical relationship of needs and affects, but also through a profoundly ontological one.

Like Jimmy, the man and boy are also detached from a cultural dissection of time: 'he thought the month was October but he wasn't sure. He hadn't kept a calendar for years [...] The days sloughed past uncounted and uncalendared' (pp. 2 & 292). Yet it extends further than this; without nature there are no seasons, there is nothing to note changing patterns by, such as animal behaviour or cycles of plant life, just 'the cold relentless circling of the interstate earth' (p. 138). Time dissolves into the absolution of only the present: 'the day providential to itself. The hour. There is no later' (p. 56). They are subject to the horror of only presentness, because time can only be marked against 'the crushing black vacuum of the universe' (p. 138).

²⁹ Martin Heidegger, *Being and Time*, trans. by Stambaugh Albany (New York: State University of New York Press, 1996; 1927)

Animal's People

Animal's People is a fictional tale, set in the imaginary city of Khaufpur (which translates as 'city of fear').³⁰ However, the story closely corresponds to the 1984 Bhopal disaster, in which 40 tons of poisonous gases were leaked into the city. 8,000 people died in the first few days of a disaster that has since left many more thousands and future generations suffering through the contamination of groundwater and soil.³¹ *Animal's People* follows the first-person account of Animal, who gains his name through his disability: the twisting of his spine forces him to walk on his hands and feet. He provides a lurid and bawdy account of the citizens living twenty years after the disaster, still fighting to bring the fertilizer factory, 'Kampani', to justice. The story examines the consequence of the environmental disaster upon the community, and we see how even twenty years later it is still dominating and destroying the memories, identities, and health of the people and the place. The story is politically entrenched, depicting corruption and injustice. A post-colonial reading would unveil the continuingly oppressive dichotomies between the Global South and North.

In *Animal's People* the disaster serves to absorb time, memory, and representation. It divides everything into a time 'before and after'³² the

³⁰ Kamila Shamsie, 'Review: *Animal's People*', *The Guardian*, 15 December 2007.

³¹ 'Just for Bhopal', *Greenpeace* (2002)

<<http://www.greenpeace.org/usa/en/campaigns/toxics/justice-for-bhopal/>> [accessed 12 November 2012]

³² Indra Sinha, *Animal's People* (London: Simon and Schuster Ltd, 2007), p. 14. Further references [to this edition, etc.] are given after quotations in the text.

disaster, wherein people become transformed and the place loses its former identity along with the people. They all become subject to the totalizing of the event. Postcolonial critic Roman Bartosch describes how the story renders the ecological disaster as an event of 'unthinkability'.³³ Place, memory and representation are consumed through the consequence of the disaster:

When something big like that night happens, time divides into before and after, the before time breaks up into dreams, the dreams dissolve to darkness. That's how it is here. All the world knows the name of Khaufpur, but no-one knows how things were before that night. (p. 14)

It dominates thought and memory, and seemingly obliterating everything else of meaning:

I was born a few days before that night, which no one in Khaufpur wants to remember, but nobody can forget [...] You have turned us Khaufpuris into story-tellers, but always of the same story. Ous raat, cette nuit, that night, always that fucking night. (p. 1 & 5)

The citizens complain:

Khaufpur once had a high cultural life, and a remarkable history, famous it was for poets, politically progressive, a haven for refugees including a large community of Afghans...all these things are forgotten because nowadays when the world hears the name of Khaufpur it thinks only of poison [...] I curse the day the Kampani came here because its disaster erased our past. (p. 152)

They have become defined by the ecological crisis. Time ceases to have relevance to them, 'I don't need a watch because I know what time it is. It's now-o'clock. Look, over that are the roofs of the Nutcracker. Know what time it's in there? Now o'clock, always now o'clock' (p. 185). The subsuming disaster displaces memory, and, without this conception of time, the past, present and futures cease to exist:

³³ Bartosch, Roman, 'The Postcolonial Picaro in Indra Sinha's *Animal's People* – Becoming Posthuman through Animal's Eyes', *Ecozon@*, 3 (2012), pp. 10-19.

Hope dies in places like this, because hope lives in the future and there's no future here [...] this wall is its history plus also where its history finished without warning when no one was expecting it. (pp. 185 & 272)

Animal does not regard himself as human. The poison leaked from the factory disfigures him, and he experiences this as a removal of his humanity. Rob Nixon also discusses Animal's status as human:

Animal is a foundling who has morphed into a posthuman changeling, a one-of-a-kind creature spawned by a kind of chemical autochthony. Marooned in the present, Animal views himself as a four-footed species without precedent or the prospect of progeny, the alpha and omega of his kind.³⁴

Animal believes he would be human if it were not for the environmental disaster: 'I would look at the lights of the city and wonder if this pipe had been mended, that wheel tightened, I might have had a mother and father, I might still be a human being' (p. 32). The novel opens: 'I used to be human once. So I'm told. I don't remember it myself, but people who know me when I was small say I walked on two feet just like a human being' (p. 1), his loss of self is a central theme to the story in interpreting the cultural and psychological effects of the disaster. It causes him a self-metamorphosis, where it is his choice 'to be an animal and not human' (p. 87). With this attitude he is better equipped to deal with the trauma of losing his sense of self through the disaster. With the second tide of disaster, when the factory is set alight and the chemicals are released, Animal's metamorphosis unfolds and becomes more complete. He abandons civilisation entirely and

³⁴ Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, Massachusetts: Harvard University Press, 2013), p. 450

tries to become part of the animal world but fails. Neither can he belong to the human realm. He escapes to the jungle to shun human society: 'Brothers and sisters, the lizard's wrong, I am one of you, come to live with you. Show yourselves' (p. 356). Yet the eco-crisis disrupts his association with both nature and culture as he becomes isolated, undefined, and non-relational.

Upon this realisation he reflects:

If this self of mine doesn't belong in this world, I'll be my own world, I'll be a world complete in myself. My back shall be ice-capped mountains, my arse mount Meru, my eyes shall be the sun and moon, the gusts of my bowels the four winds, my body shall be the earth, lice its living things, but why stop there? I'll be my own milky way, comets shall whizz from my nose, when I shake pearls of sweat shall fly off and become galaxies, what am I but a miniature universe stumbling around inside this larger one. (p. 350)

Animal's loss of self is due to the environmental disaster's disruption to systems of being and definition. He cannot exist in any reciprocal context and therefore cannot draw identity and meaning through otherness, similarity, or difference. In a review of the novel, Jesse Oak Taylor notes how the environmental disaster complicates the notion of the body as separate and closed, suggesting it as porous and mutable instead:

Becoming one of 'Animal's people' means surrendering the notion of a bordered body, impervious to its surroundings, and instead 'imagining human corporeality as trans-corporeality, in which the human is always intermeshed with the more-than-human world, underlies the extent to which the substance of the human is ultimately inseparable from "the environment"' even, and perhaps especially, when that environment is toxified through human action.³⁵

³⁵ Jesse Oak Taylor, 'Powers of Zero: Aggregation, Negation, and the Dimensions of Scale in Indra Sinha's *Animal's People*', *Literature and Medicine*, 31 (2013), pp. 177-198, (p. 185).

The disaster not only physically disables Animal, it also impinges upon each strand of his existence: 'Our wells are full of poison. It's in the soil, water, in our blood, it's in our milk. Everything here is poisoned. If you stay long enough, you will be too' (p. 108). Pollution affects everything. As ecology teaches us, everything is connected in webs of influence, and so the poisons can be found everywhere. The harmful consequences extend beyond the material significance of the environment and impact upon the people in terms of their thinking and sense of place and self: 'the poison in Khaufpur's not only in the soil and water, it's in people's hearts' (p. 196). Nixon comments on the toxicity of Khaufphur and how this impacts upon its modes of reference:

Leakages suffuse the novel: gas leakages and category leakages, porous borders and permeable membranes, the living who are semi-dead and the dead who are living specters. What, the novel asks across a variety of fronts, are the boundaries of identity? Where do identities part or merge? How much change must an entity (an individual, a community, a corporation) undergo before it can assume the name of categorical difference, drawing a line across time?³⁶

Here we find that references are lost through the blurring of boundaries induced by the ecological disaster. As Nixon notes, 'Animal has forgotten his childhood human name: it's as remote, as inaccessible as Khaufpur's culturally rich, prelapsarian, pre-toxic past.'³⁷

³⁶ Nixon, p. 458.

³⁷ Nixon, p. 450.

Far North

Far North is set within Siberia and climate change has eliminated a large majority of the world's population. Its survivors are mostly tribal groups or slaves. The protagonist, Makepeace, narrates the story retrospectively for her unborn child. Her character is tough and uncompromising. Hope is briefly renewed when she befriends the pregnant Ping. However, after the death of Ping and her newborn, Makepeace loses this hope and resolves to drown herself. During her attempt, an aeroplane flies overhead; Makepeace interprets this as a sign that somewhere civilization must still exist and she is once again renewed with hope, setting out to discover this civilization. During this mission she is captured and spends many years at a work camp, though she is eventually promoted to the status of a guard. The aeroplane, her emblem of hope, carries the leader, Eben, of the camp she has been enslaved to. Eben is also her original enemy and the man who abused her as a teenager. The camp is set near 'the Zone', a toxic and dangerous place that was once a great city. The slaves must harvest its lost technologies in hope of returning civilization. Makepeace eventually delivers her revenge upon Eben, killing him, and returns to her original habitat, the now empty Quaker settlement. The story ends with the birth of her daughter and reflections over her future within this world.

Disappearing words are also a source of anxiety in *Far North*. Yet attempts to evade this by salvaging items of culture and books are ultimately futile:

What must they have meant to him, that he went to the trouble of carrying all that paper out there with him, and keeping it, year after year, where there was no one to share it with, not an instrument, only the silence, and the little creaks and whirr of his own body failing bit by bit.³⁸

Makepeace shoots Ping when she believes that she is attempting to steal her books to be used as fuel. Makepeace obsessively preserves the books, even though she realises that 'all those books I save will end up mulch and bird's nests' (p. 184). She hopes that it might prevent a certain loss of meaning:

We had been so prodigal with our race's hard-won knowledge. All those tiny facts inched up from the dirt. The names of plants and metals, stones, animals and birds; the motion of the planets and the waves. All of it fading to nothing, like the words of a vital message some fool had laundered with his pants and brought out all garbled. (p. 184)

Makepeace recognises this loss through changes to nouns, the result of which distances her further from her environment. Her world becomes more difficult to perceive without the tool of language to conceptualise it:

The stars once had names, every one, and once shone down like the lights of a familiar city, but each day they grew a little stranger [...] The sky was becoming a page of lost language. Things as a race we'd witnessed and named forever were being blotted out of existence. (p. 183)

The landscape becomes more alien to her and her isolation more profound as the linguistic relationship is reduced: 'once these rivers all had names, the

³⁸ Marcel Theroux, *Far North* (London: Faber and Faber Limited, 2009), p. 168. Further references [to this edition, etc.] are given after quotations in the text.

hills too, maybe even the smaller dinks and folds in the pattern of the landscape' (p. 183). This is experienced as a form of reduction, 'the world has shrunk to simple facts' and the 'whole world is a barer and less interesting place' (pp. 199 & 139). With fewer nouns to make sense of the landscape, and to bring her into Heideggerian dwelling, the land is no longer a place but instead just a space and habitat: '*This was a place once*' (p. 183). Surroundings become insignificant without naming to bring important associations. The declining vocabulary brought through environmental destruction causes a diminished sense of place, as the importance of developing a rich place vocabulary for forming a meaningful relationship with our environment becomes clear.

Landmarks

The wider philosophical assumptions that arise from the discussion of these climate novels tell us that culture and thought are tied to the land. Variety and biotic richness are crucial to linguistic flourishing. From the principle of interconnectedness that underlies ecology, we are able to draw further relationships of reliance between landscape and consciousness. Ecological destruction destroys more than just the physical; environmental destruction can also be experienced as a cultural crisis. We find reciprocal patterns: place, inclusive of nonhuman species, is integral to words and meaning, yet we must also possess rich nature vocabulary in order to distinguish the wonder of place and therefore protect it. The following

discussion of Robert Macfarlane's *Landmarks* highlights the importance of having such full nature diction.

In his most recent book, *Landmarks* (2015), Macfarlane creates a series of glossaries that documents British and Irish nature terminology. Macfarlane suggests that we are losing the ability to describe and name natural processes and entities through an increasing alienation from nature. I add to this, suggesting that our current ecological crisis further exacerbates this by changing the fabric of our language. I compare the words Macfarlane compiles in his glossaries to the existing lexicon of climate change, to show how the lexis of climate change must also generate aesthetic and poetic terms, in order to bring the issue into 'imaginative circulation'.³⁹ I suggest that climate novels are critical to developing a poetic richness for naming our environment, as well as preserving our current diverse nature terminology. They can release such new and old terms into the imagination, and weave the existing climate lexis into their prose. Novels are important spaces to create and preserve such naming.

Landmarks attends to our 'astonishing lexis' for naming the landscape in Britain and Ireland. Macfarlane describes himself as a 'word-hoard', collecting dialect and poetic terms for 'islands, rivers, strands, fells, lochs, cities, towns, corries, hedgerows, fields and edgelands' (p. 1). His

³⁹ Robert Macfarlane, *Landmarks* (London: Penguin, 2015), p. 3. Further references [to this edition, etc.] are given after quotations in the text.

book concerns the power within words to inspire awe in relation to the natural world. It is a call to reengage with the natural world through words. Yet such terms are in danger of being lost. Our decreasing use of this terminology reflects the modern alienation from the natural world. Therefore the glossaries in *Landmarks* present us with are more than just a collection of natural terms, but an activist measure to combat such obscuring of nature and consequently environmental destruction, as Macfarlane notes, 'to celebrate the lexis of landscape is not nostalgic, but urgent' (p. 10)

One of the key focuses of *Landmarks* is collecting words that have fallen into disuse. Macfarlane discusses 'a culling of words concerning nature' from the Oxford Junior Dictionary (p. 3). Oxford University Press decided to eliminate words that no longer felt relevant to childhood today; some of these include *bluebell*, *buttercup*, *dandelion*, *lark* and *newt*. They were replaced by words such as *MP3 player*, *inbox* and *voice-mail*. Macfarlane comments that fewer people are able to name natural phenomena and entities, claiming that a 'basic literacy of landscape is falling away up and down the ages' (p. 4). For Macfarlane there are serious consequences associated with our disappearing nature vocabulary. He regards it as both symptom and cause of an increasing separation from nature. It has also further fuelled environmental destruction, as he states that 'once a landscape goes undescribed and therefore unregarded, it becomes more vulnerable to unwise use or improper action' (p. 27). As I have

discussed, the natural world is critical to our ability to name, yet Macfarlane shows how our naming is also critical to protection of the natural world. As 'we further deplete our ability to name, describe and figure particular aspects of our places', he writes, 'our competence for understanding and imagining possible relationships with non-human nature is correspondingly depleted' (p. 24).

Macfarlane argues that we need to 're-wild' language. This is the process of rediscovering or maintaining the variety, depth and wonder we have in language for describing our natural world. The words he collects are ones that can 'bring new energies to familiar phenomena' (p. 5). He looks for a 'euphonious vocabulary' (p. 4), which allows us to not only glimpse something but to also understand and see the world as more than a resource. Macfarlane describes these words as 'buried treasure' (p. 2), suggesting that they are precious and valuable. This prompts us to think about the innate power these words possess for connecting us to the land. They are more than mere labels for the ecosystem, but a language that can enhance our experience of the environment and show a depth that would otherwise go unseen. They produce experience and develop a sense of place, also encouraging a healthy, symbiotic and non-destructive relationship with nature. These rich, creative words do more than simply describe.

We might ask, then, what is particular to such words? Those that Macfarlane compiles in his glossaries often detail a specific feature of the natural world, like *bugha*, which means a ‘green bow-shaped area of moor grass or moss, formed by the winding of a stream’ (p. 39). Many are playful, like *hob-gob* (p.173), which depicts a dangerously choppy sea, or *snow-bones*, which are the white, long thin tracks of snow, left after a thaw (p. 90). The words are usually vivid and sensuous, such as *zwer*, which refers to the ‘whirring sound made by a covey of partridge taking flight’ (p. 49). They can be compelling to say aloud, like *fizmer*, which is the whispering sound of wind in reeds or grass (p. 48). They often evoke a particularity of a place, natural process, specie or season. For instance, *Grimlims* describes the midsummer night hour when dusk blends into dawn. This is an Orkney expression, and it is only in such northerly locations that one would experience so few hours of night that dusk and dawn appear to blend (p. 224). The term conjures an aesthetic image in our minds. We can see how such words might come into existence through creativity and how they are compelling to the imagination.

The words Macfarlane compiles are ones that with precision, for instance the Sussex dialect noun, *smesus*, which describes a gap in the hedge made by the regular passage of small animals (p. 5). The word draws our attention to a specific detail about a hedge and reveals its role within a wider network of species, showing creaturely activities and the life that might

dwell within and around it. In my concluding chapter I argue that a climate novel's ability to attend to the particularities of place is critical to the ecological imagining it seeks to develop. It is in such precision that we can realise the variety and wonder of nature. Such terms can evoke the complexity of nature's invariable processes without trying to 'know' them. The emphasis is on relating to our natural world rather than fully grasping it. Scientific diction communicates an objective way of understanding the land, but can lack the enchantment found in more poetic terms. However, these specific, creative terms need not replace scientific diction, but rather exist alongside and embellish it, so that ideas of climate change might be brought closer into the imagination.

Macfarlane also includes words such as *pillbox* or *bulwark*, which relate to our seas and are a register of the threat associated with them (p. 5). The inclusion of social terms suggests how humans alter, yet are a part of the landscape. Macfarlane does not regard nature as a pure category. We also find that not all nature words are poetic or innocent. Macfarlane reminds us that the term *forest* originally meant land set aside for deer hunting; hence the term is inclusive of land right issues. Nor are his glossaries simply products of high culture; many of the terms are ones belonging to workers and farmers. It is not simply in poetry that we might generate ways of seeing and naming the environment. Those working closely with the land have their own, often creative, ways of naming it.

Michel Foucault showed how the science of sexology produced its own discourse about sex.⁴⁰ We also find new modes of speech emerging from climate change, with terms such as *acclimatization*, *afforestation*, *aquifer*, *black carbon*, *barrier*, *climate feedback*, *coral bleaching*, *desertification*, *emissions quota*, *energy tax*, *food insecurity*, *ice shelf*, *Kyoto Protocol*, *ocean conveyer belt*, *rangeland*, *reforestation*, *renewals* and *seawall*.⁴¹ In the first IPCC report the use of economic related terms, such as *capital costs*, *commercialization*, *cost-effective*, *discount rate*, *economic potential* and *market damages*, outweighed ones that refer more directly to natural entities and processes.⁴² Although these terms are vital for understanding the issue, their aesthetic appeal and ability to create an ecological enchantment is more doubtful. It is the production of new poetic terms, alongside discourses of science, policy, media and technology, which is essential for imagining climate change in more dynamic ways. The aim of this language is to understand climate change in more various frameworks, as it is currently dominated by an economic focus and tends to view nature from an instrumental perspective. By bringing these terms into the creative depictions of the novel, we can remove climate change from its isolated

⁴⁰ 'There was a steady proliferation of discourse concerned with sex – specific discourses, different from one another both by their form and by their object: a discursive ferment that gathered momentum from the eighteenth century onward.' Michel Foucault, *The History of Sexuality, Volume 1: An Introduction*, trans. by Robert Hurley (New York: Vintage, 1990)

⁴¹ 'Glossary of Terms Used in the IPCC Third Assessment Report', *IPCC Third Assessment Report* (2001) <<https://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>> [accessed 8 September 2015]

⁴² 'Climate Change: A Glossary by the Intergovernmental Panel on Climate Change, 1995', *IPCC* <<https://www.ipcc.ch/pdf/glossary/ipcc-glossary.pdf>> [accessed 8 September 2015]

scientific context. This also integrates it within our wider concepts of understanding. We need to weave the current climate diction alongside new creative descriptions, so that we have more dynamic ways of relating to climate change. The focus is not so much on increasing scientific knowledge, but more on discourse to function in imaginative ways, so that it can become more immediately personal, heterogeneous, and relevant. Climate novels, with their fictional capacities, have a core role in developing creative climate change diction. I suggest that in order to bring climate change into the imagination we also need to develop our own particular way of naming it, which involves creatively recasting its current diction, drawing from our existing cache of nature words and creating new ones. Climate change is a vast, global crisis of incommensurable events and processes. How it impacts upon places, beings and lives varies greatly, as does the experiences of it. Hence, a diverse, rich and creative vocabulary is needed.

Conclusion

Climate change alters language, but language can shape and enrich our sense of place. The natural world forms a basis to our language, as depicted in the novels, however, ecocide withdraws a certain capacity to name or gather 'benchmarks' from the environment and the protagonists experience a diminution of their vocabulary. Climate change generates its own discourse; with many scientific terms to describes its processes, as well as various policy and technological terms for thinking about mitigation

strategies. Such new diction needs to become part of our cultural and creative imaginings in order for us to respond to and consider the importance of climate change. Macfarlane shows us how we already have a rich vocabulary for naming our environment, and it is one that can enchant us with place and help counteract environmentally destructive behaviours. These particular words assist with developing an ecological consciousness. However, their use is declining and they are in danger of being lost. I argue that climate novels have a vital role to preserve such a distinct vocabulary. But they must also incorporate the new emerging climate diction to make the issue more personal and relevant to us, beyond its financial, governmental and scientific frameworks. Alongside this, we must add to and develop our existing vocabulary so that we have more imaginative and creative ways for speaking about climate change.

We find, then, that a particular diction is needed for speaking about climate change. It needs to be poetic and rich to draw us into to relation with the environment and contemplate the sense of loss associated with its destruction. The words must also be specific and local; this avoids the oversimplification of climate change endemic in many representations and carves a greater sense of place. The outcomes of this chapter suggest the centrality of language, with its environmental symbiosis and ability to forge ecological enchantment. The climate novel then becomes a critical means to

develop such language, consolidating a sense of place and imaginatively recasting the discourse of climate change.

Climate Change and Ineffability
How Environmental Disasters Elude Representation in *The Death of Grass*, *White Noise* and *Get a Life*

Despite the growing and prominent literary movement, which aims to address and re-evaluate texts based upon their depiction of nature and dialogue with the natural world, much of ecocriticism's focus still remains limited to nature writing, pastoral or Romantic work. There is a lack of critical work dealing with climate change and creative environmental writing that goes beyond merely seeking an aesthetic appreciation of nature. This has been noted elsewhere, as Cheryll Glotfelty claims:

If your knowledge of the outside world were limited to what you could infer from the major publications of the literary profession, you would quickly discern that race, class, and gender were the hot topics of the late twentieth century, but you would never suspect that the earth's life support systems were under stress.¹

Scott Sanders similarly states, 'what is missing from much recent fiction, I feel, is any sense of nature, any acknowledgement of a nonhuman context'.² He continues to argue that nature in literature is marginalised to either science fiction or travel writing, 'that a deep awareness of nature has been largely excluded from "mainstream" fiction is a measure of the narrowing and trivialization of that fashionable current'.³ Timothy Clark also calls to attention the marked lack of engagement, creative or critical, with environmental issues, 'the relative absence in ecocriticism of its most serious issue seems

¹ Cheryll Glotfelty, 'Introduction', *The Ecocriticism Reader*, ed. by Cheryll Glotfelty and Harold Fromm (Georgia: University of Georgia Press, 1996), p. xvi.

² Scott Russell Sanders, 'Speaking a Word for Nature', *The Ecocriticism Reader*, ed. by Cheryll Glotfelty and Harold Fromm (Georgia: University of Georgia Press, 1996), p. 183.

³ Sanders, p. 192.

more to do with the novelty and scope of the problem than with personal failing, a measure of how starkly climate change eludes inherited ways of thinking'.⁴ As Clark identifies, it seems to be more a problem with the capacity to depict climate change, than a lack of concern or awareness.

Richard Kerridge identifies an 'impasse' in environmental writing. This is where climate novels fail to engage with contemporary environmental issues precisely because the concerns remain difficult to conceptualise. Kerridge writes:

Environmental questions are large-scale and long-term. They are usually rumours, things scientists disagree over; things happening elsewhere, or very locally; disasters we hear about only once they have happened. For those who are not activists, it is hard to make 'the environment' real or tangible in daily life. Environmentalism seems to be about contemplating the vast and infinite. The only changes that might make a difference seem to be changes to the way we live so huge as to sound fanciful.⁵

Morton gives the example of evolution to illustrate the perceptual difficulty of climate change. Evolution, like climate change, is unavailable to sense and 'we cannot see, touch or smell evolution. It pervades our perception – it takes place on spatiotemporal scales far in excess of one, or even a million, human life-times, and it involves processes such as DNA replication that are

⁴ Timothy Clark, *The Cambridge Introduction to Literature and the Environment*, (Cambridge: Cambridge University Press, 2011), p. 11.

⁵ Richard Kerridge, 'Introduction', *Writing the Environment: Ecocriticism and Literature*, ed. by Richard Kerridge and Neil Sammells (London: Zed Books Ltd, 1998), p. 2.

too small to be seen with the naked eye.⁶ Our logic and notions would strangely alter if we were able to incorporate evolution into our perception:

Suddenly, things that you think of as real – this cat over here, my cat, whose fur I can stroke – becomes the abstraction, an approximation of flowing, metamorphic processes, processes that are in some sense far more real than the entity I am stroking [...] The real thing is the evolutionary process – the cat is just an abstraction!⁷

However, it is impossible to gain a perspective. There is no perceptual distance to see evolution:

There is thus no place outside of evolution from which to view it objectively – that is, as a totally determined process whose features we can readily predict. In Lacanian jargon, this means that ‘there is no metalanguage,’ and that the ‘Big Other’ – some idealized reference point from which everything makes sense – does not truly exist. You simply cannot see the whole thing at once – it has no outside – yet it consists precisely in an unbroken flow of DNA (and other replicators).⁸

Morton’s discussion draws attention to the division between visible and invisible nature. The latter can disrupt our held notions and categories of distinction. What’s more, this is said with the assumption that we find a perspective to bring together the material and the invisible into view.

Therefore, writing and thinking about climate change is problematic. This is because it features outside normal cognitive boundaries. Climate change is vast, sometimes invisible and latent, as well as trans-spatial and trans-temporal. Fundamentally, it is most challenging to the imagination as it possesses a degree of translucency; it is often multiple and unspecific. Many

⁶Timothy Morton, ‘The Mesh’, *Environmental Criticism for the Twenty-First Century*, ed. by Stephanie LeMenager and others (New York: Routledge, 2011), p. 20.

⁷ Morton, p. 20.

⁸ Morton, p. 21.

aspects of environmental issues are not typically adhesive to our ways of knowing. For instance, they complicate the nature-culture divide, they do not fit within our conception of temporality, they are unpredictable, and they are not bound to specific space as consequences might be delivered anywhere.

In this chapter I seek to understand how we lack the concepts for understanding natural processes, ecosystems and climate change. I argue that there is a degree of ineffability in confronting environmental issues. We lack the means to wholly grasp ecocide; furthermore it has been argued that the inability to fully conceptualise it perpetuates ecologically destructive behaviour.⁹

I examine the climate novels *The Death of Grass* (1956), *White Noise* (1984) and *Get a Life* (2005). These novels represent a diverse sample from the canon. They are used to illuminate aspects of environmental issues that are difficult to cognise, such as its scales. A form of ecological disaster takes place in each of the narratives. The novels have been selected since the disasters occur in the present setting of the narration. More commonly however, and arguably due to ineffability, climate novels tend to speak post-apocalyptically about environmental issues. Such novels can only ever present ecocide through the distanced lens of survival

⁹ See G. Ereat and N. Segnit, 'Warm Words: How We are Telling the Climate Story and Can We Tell it Better', *Institute for Public Policy Research*, London (2006); A. Kollmuss and J. Agyeman, 'Mind the Gap: Why do People act Environmentally and What are the Barriers to Pro-Environmental Behaviour?', *Environmental Education Research*, 8 (2002) pp. 239-260.

fantasy and are, therefore, inadequate for exploring climate change. The first novel, *The Death of Grass*, a strangely prophetic story, offers a valuable introduction to thinking about the latency, invisibility and intangibility of a virus that contaminates the world's food crops. The second text, *White Noise*, perhaps one of the most commonly discussed novels by ecocritics, provides a more complex interpretation of environmental disasters. Several events take place, culminating in the largest disaster -- the 'toxic airborne event'. I address the invisibility of the toxic disaster and the lack of narrative coding for it to be brought into significance, either for the characters or the plot. Whilst *White Noise* struggles to find a perspective or viewpoint for conceptualising the environmental disaster, *Get a Life* conveys the many perspectives belonging to environmental issues. Narrating the environment from a racial, political, economic, global and local perspective, Gordimer presents ecological events as deeply intertwined and embedded, unlike their abstraction in *White Noise*. In doing so, she attempts to bring into view the complexity, temporality and spatiality of environmental issues. By selecting texts that deal with the immediacy of environmental issues, we can see that even then they remain obscured from view, even in Gordimer's instance, where she attempts to map ecocide across its various scales and contexts.

Temporality, Spatiality and Immateriality

In *Ethics*, Spinoza employs the terms *Natura naturans* and *Natura naturata*; these refer to the two sides to nature.¹⁰ *Natura naturans* is active and productive nature, such as its forces and generative capacities. *Natura naturata* is its products, such as sheep, mountains and trees. The difference between *Natura naturata*, which is observable, and *Natura naturans*, which is not available to sense, is an important distinction to make as this chapter is especially concerned with the imperceptible aspects of climate change and what these mean for writing about it. A second relevant notion is Jakob Von Uexkull's *umwelt*, which explains the various perceptual worlds in which different organisms exist. The term suggests how a species is constituted by the phenomena within its environment. *Umwelt* highlights the various temporal registers across species; each is unique. For instance, Uexkull compares how a tick's temporal register can be experienced as moments lasting as long as eighteen years, whereas a humans' experience is made up of moments lasting 1/18th of a second.¹¹ Though they share the same environment, they have different *umwelten*. Similarly, processes belonging to climate change involve temporalities and registers beyond our own and this contributes to one of the central difficulties of cognising climate change.

¹⁰ Baruch Spinoza, 'Proposition 29', *Spinoza: Complete Works*, trans. by Samuel Shirley, ed. by Michael L. Morgan (Cambridge: Hackett Publishing Company, Inc, 2002), (1632-1677) pp. 234-235.

¹¹ Jakob Von Uexkull, 'A Stroll Through the Worlds of Animals and Men: A Picture Book of Invisible Worlds,' *Instinctive Behavior: The Development of a Modern Concept*, trans. and ed. by Claire H. Schiller (New York: International Universities Press, 1957; repr. *Semiotica* 89:4, 1992) pp 319-391

Addressing differing temporalities has gained increasing focus in recent ecocriticism.¹² Robert Markley's contribution in *Telemorphosis*, a fascinating collection of essays addressing how climate change modifies the boundaries of disciplines, suggests that sustainability is rather a particular way of perceiving time. According to Markley, sustainability concerns an idealized co-opted living between the environment and humans, where ecosystems remain unaffected by humans over millennia, which, he argues, has never really existed. Markley notes:

Climatological time, measured in millennia, exists beyond daily experiences of the weather, beyond the duration of individual lifetimes, beyond the accumulated memories of generations, and beyond the technologies of observation, inscription, and recording.¹³

He points to the various registers. Climatological time is not only beyond a possible way of experiencing it, but also beyond our technologies of observation. He argues that 'the time-scales of climatic change cannot be experienced viscerally but only imagined'.¹⁴ I argue, however, that they even impose limits to the imagination, as we have little to draw on in comparison to envisage these scales.

¹² Rob Nixon's *Slow Violence and the Environmentalism of the Poor* (2013), which I shall discuss in further detail towards the end of this chapter is an example. Also, it is a reoccurring focus in Richard Kerridge's work, for instance see Richard Kerridge, 'Ecocriticism and the Mission of 'English'', *Teaching Ecocriticism and Green Cultural Studies*, ed. by Greg Garrard (Hampshire: Palgrave Macmillan, 2012).

¹³ Robert Markley, 'Time: Time, History, and Sustainability', *Telemorphosis: Theory in the Era of Climate Change*, Volume 1, ed. by Tom Cohen (Michigan: Open Humanities Press, 2012), p. 56.

¹⁴ Markley, p. 57.

In addition to the temporality and invisibility of climate change, a third critical notion for considering how it is perceptually recalcitrant is its spatiality. Here, I suggest that climate change eludes ideas of borders and boundaries. Effects are unpredictable where they are delivered. For instance, typhoon Haiyan that landed in the Philippines may be the result of intense carbon emissions from another place, namely somewhere in the West; thus nation states become irrelevant. Or, its scales are both at once vast (the warming of an ocean) and micro (molecules of carbon). Timothy Clark argues that climate change leads to a derangement of scales. He gives the example of how environmentalism brings together boiling the necessary amount of water in a kettle with the end of civilisation. Clark writes that the 'overall force is of an implosion of scales, implicating seemingly trivial or small actions with enormous stakes while intellectual boundaries and lines of demarcation fold in upon each other.'¹⁵ Distinctions, boundaries and scales are confounded by climate change.

Contemporary sociologist, Barbara Adam, argues that our industrial and economic conception of time and space limits our ability to comprehend environmental issues. Adam's work comes before the ecocritical turn towards these issues and though somewhat generalised, it does highlight the main facets of this argument. Adam explains how our construct of time is not coherent with natural rhythms of the earth; rather our notion of it is

¹⁵ Timothy Clark, 'Scale: Derangements of Scale', *Telemorphosis: Theory in the Era of Climate Change*, Volume 1, ed. by Tom Cohen (Michigan: Open Humanities Press, 2012) p. 152.

cultural. The temporality of existence is highly complex and multiple, compounded in a matrix of incalculable natural processes, whereas our industrial time is reduced to 'the invariable beat of the clock'.¹⁶ Environmental strategies would improve with a greater understanding of this temporal complexity. Adam notes, 'industrial time is centrally implicated in the construction of environmental degradation and hazards; second, as a panacea it worsens the damage. Industrial time, in other words, is both part of the problem and applied as a solution.'¹⁷ Furthermore, due to our 'traditional habits of mind with their exclusive focus on nature as product', we 'decontextualize' environmental problems and only view them in their visible, material states.¹⁸ Failing to see the wider network of space, time and inanimate forces, means they remain abstracted and only partially understood. Contemporary thinking stands in stark contrast to sustainable thinking.¹⁹ We need to rethink environmental issues in their temporal terms. Adam argues that we need a 'timescape' perspective to 'enable us to see the invisible'.²⁰

Yet climate change does possess visible, tangible aspects, once its symptoms manifest. There are numerous quantifiable statistics given by

¹⁶ Barbara Adam, *Timescapes of Modernity: The Environment and Invisible Hazards* (London: Routledge, 1998) p. 11.

¹⁷ Adam, p. 9.

¹⁸ Adam, p. 12.

¹⁹ Inherited from Newtonian physics, it favours fact, certainty and objectivity. This scientific viewpoint is mechanical, and regards nature in isolation and as abstract. Whereas, identifying environmental problems is based upon predictions and uncertainty. Newtonian science, Adam argues, has become naturalised as an unquestioned habit of mind.

²⁰ Adam, p. 19.

scientists. For instance, research from NASA tells us that the oceans have risen by 17 centimetres in the last century and warmed by 0.302°F since 1969. Greenland lost 36 to 60 cubic miles of ice between 2002 and 2006. The latest measure of carbon dioxide in the atmosphere is 399.73 parts per million. While the upper layers of the ocean absorb two billion tons of carbon dioxide per year.²¹ Global surface temperatures have increased by 0.74°C since the late nineteenth century, and the last eight years have been the warmest on record.²² These are all quantifiable and physical manifestations of climate change. At the point of crisis, climate change becomes perceptible through some form of measure – yet, only at the point of crisis. The lack of resolve from nations to seriously tackle the issue, the continued expulsion of carbon dioxide into the atmosphere and the upward trend of temperatures, and even with commensurable manifestations, show that it is still not being fully imagined. The limited literary responses also points to this. Another reason, as Rob Nixon identifies, is that climate change is an example of ‘slow violence’, an event that lacks spectacle to garner media attention.²³ We find then that even when it has materialised, as symptomatic, it continues to be obstructive to narration or conceptualisation. Though no longer invisible, environmental issues remain intangible because they are ‘reordering’,²⁴ they usually need technological equipment to measure them, and their spatial-

²¹ ‘Global Climate Change: Vital Signs of the Planet’, NASA
<<http://climate.nasa.gov/evidence>> [accessed 2 March 2015]

²² ‘Global Warming’, *National Climatic Data Center, National Oceanic and Atmospheric Administration* <<http://www.ncdc.noaa.gov/about-ncdc>> [accessed 2 March 2015]

²³ Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, Massachusetts: Harvard University Press, 2013).

²⁴ My fourth chapter discusses how climate change reorders ways of knowing and displaces ontological certainty.

temporal scales are untraceable. Furthermore, these quantifiable statistics tend to exist as statistics alone. A single centigrade rise in temperature is barely perceptible to our senses or a time-lapse image of melting Arctic sea-ice still presents an unknown landscape. The climate novel, therefore, has the challenge of making climate facts personal, meaningful and engaging.

The Death of Grass

The Death of Grass is about a virus that infects all forms of grass crops, such as rice, wheat, barley, oats and rye. The outcome rapidly leads to famine and anarchy. It is first identified in China and named the 'Chung-Li' virus. It quickly spreads across Asia, while the 'Western world looked on with benevolent concern' and 'a barely credulous horror'.²⁵ At first the West believes the virus can be contained and defeated, yet it eventually spreads to post-war Britain,²⁶ sending it into chaos and dividing the country into criminal gangs. The book is centred on a patriarchal family: John, Ann and their children Mary and Davey.²⁷ The family attempts to flee London; which is to be imminently bombed, along with all other major cities, to reduce the population so that remaining food supplies might stretch further. They head north to John's brother's farm, an ancient stronghold. His brother, David, with sensible hindsight, has planted potato crops and reared pigs in order to

²⁵ John Christopher, *The Death of Grass* (London: Michael Joseph, 1956; repr. London: Penguin Books, 2009) p. 27 & 31. Further references [to this edition, etc.] are given after quotations in the text.

²⁶ The novel **was** written two years after the end of rationing in Britain, as it was entering a new age of prosperity. It was written during rising Cold War tensions; the post-apocalyptic scenario is perhaps evocative of these tensions.

²⁷ The novel typically represents 1950s gender constructs and stereotypes.

survive the virus. Along the way, their group grows in number and the story turns into a brutal tale of survival. It ends with John killing David and sieging his farm.

The Death of Grass is an obscure novel, which received little critical attention or gathered much popular appeal, though it was adapted into a film in 1970.²⁸ It was written when climate change was not yet part of public consciousness. Rachel Carson's *Silent Spring*, often cited as awakening environmentalism, was not to be published for another six years and the term 'global warming' was not commonly used until 1988.²⁹ It is highly unlikely that the novel was written to raise consciousness about climate change and is therefore an unusual choice for discussion. Yet, its representation of the environmental crisis and particularities of the virus, as latent and invisible, offer a valuable lens to examine the aspects of climate change that are challenging to cognition. In the novel's introduction, Robert Macfarlane discusses its relevance to current environmental issues:

The Death of Grass is also remarkably prescient. Christopher's worries at the impact of human activity on the environment were a decade ahead of their time, and his account of pandemic panic was prescient by half a century or so. The rise in the 1990s of GM crops; the spread of monoculture (prompting the establishment of the Svalbard Global Seed Vault); the pathogenic consequences of factory farming; climate change; insecure food, water and energy supplies; the spectre of the end of oil, and the drastic collapse of the supply chain that this would

²⁸ Retitled 'No Blade of Grass', dir. by Cornel Wilde (USA, 1970).

²⁹ According to Erik M. Conway, 'global warming' became the popular term after June 1988, when NASA climate scientist James Hansen used the term in a testimony to Congress. Erik Conway, 'What's in the Name? Global Warming vs. Climate Change, NASA, 5 December 2008. <http://www.nasa.gov/topics/earth/features/climate_by_any_other_name.html> [accessed 5 November 2013]

bring about – all of these developments have made his account of a shattered England feel increasingly possible.³⁰

Macfarlane also notes that there is ‘a new and contemporary hunger for the novel, and the grim clarity of its scenario’.³¹ Though unremarked upon after its initial release, this novel now speaks to a contemporary readership with a renewed interest.

The novel opens with lengthy descriptions of a pastoral England, ‘the valley’s richness was the more marked; green wheat swayed inwards with the summer breeze, and beyond the wheat, as the ground rose, they saw the lush green of pasture’ (p. 2). It creates an impression of a seemingly indestructible and unchangeable land of bounty. Yet, this pre-disaster world is soon dismantled to exist only as a past and improbable utopia. As Macfarlane notes, ‘[t]his is post-rationing, pre-viral England: a lazy, decent and chlorophyll-rich idyll. Christopher ticks off the clichés of Englishness with relish, in anticipation of their destruction.’³² Christopher sets out a variety of juxtapositions, which emphasise the characters’ incredulity towards the impending ecocide. We see society continuing as normal, for instance: ‘A trolley pushed past them, laden with assorted cheeses [...] John waved an arm. “It’s difficult to imagine anything denting this [...] Quite undentable, I agree”’ (p. 39). The virus remains unimaginable for them, especially when they are not yet dealing with the direct consequences of it, ‘there’s such a

³⁰ Robert Macfarlane, ‘Introduction’, *The Death of Grass* (London: Michael Joseph, 1956; repr. London: Penguin Books, 2009) p. xi.

³¹ Macfarlane, p. xii.

³² Macfarlane, p. ix.

richness everywhere. Look at all this, and then think of the poor wretched Chinese' (p. 12). An unwavering faith in technology and science prevents them from taking the environmental destruction seriously. They believe it will only pose a temporary hindrance until a solution is found, as Roger and John's conversation reflects:

We found out how to use coal and oil, and when they showed the first sign of running out we got ready to hop on the nuclear energy wagon. The mind boggles at man's progress in the last hundred years. If I were a Martian, I wouldn't take odds even of a thousand to one on intellect of that kind being defeated by a little thing like a virus. (p. 24)³³

Denial, nonchalance or disbelief is the given attitude towards the virus, 'it's hard to believe...isn't it – that it really does kill all the grass where it gets a foothold?' (p. 30). The increasing evidence of famine and mass crop failure from the East does not stir these opinions. Christopher takes his time to reinforce their incredulity towards the virus being of any significance, before dedicating the rest of the novel to the collapse of society and their reversion into a primordial tribe.

It is the spatial and temporal complexities of the virus that makes it so perceptually recalcitrant. Adam's discussion of radiation provides an analogy for the 'Chung-Li' virus:

Invisibility, vast, incredibly fast, and variable time-spans of decay, networked interdependence and the fact that effects are not tied to the time and place of emission, therefore, make radiation a cultural

³³ Their comments highlight their imperialistic attitudes as they presume that Britain will be more capable than China at defeating the virus. Christopher, throughout, critiques such problematic, imperialist thinking.

phenomenon that poses problems for traditional ways of know and relating to the material world.³⁴

The virus is comparable to this description of radiation owing to the impossibility of its scale and timeframe, 'they stand in time's eye like principalities and powers, only on a shorter scale' (p. 46). They are unable to control, predict or gain a measure of the virus. It is marked by latency and complexity:

From what I've heard viruses are funny brutes. Now, if they'd found a virus resistant rice, that would have solved the problem properly. You can almost certainly find a resistant strain of anything, if you look hard enough or work on a large enough scale [...] Apparently, it was a complex virus. They've identified at least five phases by now. When they came up with 717 they had found four phases, and 717 killed them all. They discovered number five when they found they hadn't wiped the virus out after all. (p. 22)

The virus still cannot be defeated despite naming and dividing it into identifiable phases. It continues to escape their ability to sense or apprehend it. They crucially fail to understand the temporal realm of the virus, and regard it only in terms of its spatiality. Like climate change, where seven per cent of its effects 'will still be occurring one hundred thousand years from now as igneous rocks slowly absorb the last of the greenhouse gases', the temporal life of the virus astounds conceivability.³⁵ It could be epic and existed long before its symptoms arose. For instance, when they eventually create a counter-virus, another phase is discovered, rendering it useless and hence failing to fully grasp its various temporal states. Its processes remain hidden and latent until a further stage becomes apparent. The forces

³⁴ Adam, p. 10.

³⁵ Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013), p. 59.

working within it are hidden and therefore un-representable. The virus is made up of both observed and unobserved features. It is a compound of interactive processes and interconnected forces, and only recognisable when manifested into 'splotched and putrefying grass' (p. 16).

Reliance on a technocratic solution hampers effective mitigation strategies being emplaced, 'meanwhile, the laboratory fight against the virus was still on. Every day was one day nearer the moment of triumph over the invisible enemy' (p. 31). This is also an issue within our current ecological crisis.³⁶ Response is hindered precisely because it is an 'invisible enemy'.³⁷ It seems David, the farmer, is the only person who takes the virus seriously and recognises its potential destruction. He avoids the abstract 'laboratory' knowledge by observing and working closely with the land:

The combination of news of an answer to the virus and news of the imposition of rationing produced an effect both bracing and hopeful. When a letter came from David, its tone appeared almost ludicrously out of key.

He wrote:

'There isn't a blade of grass left in the valley. I killed the last of the cows yesterday – I understand that someone in London has the sense to arrange for an extension of refrigeration space during last winter, but it won't be enough to cope with the beef that will be coming under the knife in the next few weeks. I'm salting mine. Even if things go right, it

³⁶ See Jennie C. Stephens, 'Time to Stop Investing in Carbon Capture and Storage and Reduce Government Subsidies of Fossil-Fuels', *WIREs Climate Change*, 5 (2014), pp. 69–173.

³⁷ Furthermore, this reference to a 'laboratory fight' points to the paradigms of Western scientific epistemology. Here science is associated with objectivity, certainty and evidence. However indeterminacy, prediction and uncertainty are particularly features of climate change. This makes the virus and climate change particularly problematic to traditional scientific investigation. See Simon Shackley and Brian Wynne, 'Representing Uncertainty in Global Climate Change Science and Policy: Boundary Ordering Devices and Authority', *Science, Technology, & Human Values*, 21 (1996), pp. 275-302.

will be years before this country knows what meat is again – or milk, or cheese.

And I wish I could believe that things are going to go right. It's not that I disbelieve this report – I know the reputation of the people who have singed it – but reports don't seem to mean very much when I can look out and see black instead of green.' (p. 41)

Ann responds to his letter with, 'he's still taking it all terribly seriously, isn't he?' (p. 41). Despite the official creed, David can observe the effects of the virus and, perhaps as a farmer, better understand its terrible consequences. We might argue that David's capacity to see and recognise the virus extends from his 'traditional environmental knowledge'.³⁸

As it spreads across Asia, eliminating its population, those dwelling in Europe still fail to fully consider the virus. Even after the virus arrives upon their land and with increasing visual evidence, the stark and dead fields, they still cannot conceive its tenacity and it remains outside of their imagination. There are many occasions in the novel where they objectively observe the visible symptoms and still deny its capacity to impact upon them, for instance: 'The car travelled past a place where, for a space of ten or fifteen yards, the grass has been uprooted leaving bare earth: another minor battlefield in the campaign against Phase 5. "No, I don't think so, really. It couldn't happen, could it?"' (p. 30). And later:

It was a strange journey through a land showing only the desolate bareness of virus choked ground, interspersed with fields where the abandoned grain crops had been replaced by potatoes. But the roads themselves were as thronged with traffic, and it was as difficult as ever to find a not too crowded patch of coast. (p. 43)

³⁸ Brian Wynne, 'Misunderstood Misunderstanding: Social Identities and Public Uptake of Science', *Public Understanding of Science*, 1 (1992), pp. 281-304.

As Ann remarks, 'Our minds can't grasp it properly, can they?' (p. 80). There exists no possible articulation or measure to understand the impact of an invisible virus. It is only after human-led consequences -- rape, murder, anarchy and government led genocide -- when they begin to comprehend the extreme seriousness of the grass contamination.

Elaine Scarry's discussion of the inexpressibility of physical pain offers a comparison for understanding why the environmental destruction is greeted with disbelief. Her descriptions of pain are poignantly suggestive of the attributes belonging to the 'Chung-Li' virus and environmental issues at large.³⁹ Scarry draws attention to the 'unsharability' of pain; although the victim irrefutably knows its presence, it remains evocatively hidden to the non-sufferer:

So, for the person in pain, so incontestably and unnegotiably present is it that 'having pain' may come to be thought of as the most vibrant example of what it is to 'have certainty,' while for the other person it is so elusive that 'hearing about pain' may exist as the primary model of what is it 'to have doubt'. Thus pain comes unsharably into our midst as at once that which cannot be denied and that which cannot be confirmed.⁴⁰

We see in *The Death of Grass* a similar sense of doubt towards the virus.

The contaminated earth must always remain as other for the citizens, they

³⁹ However, by using pain as a metaphor for climate change, we provide it with a means to imagine it. And, therefore, partly overcome its ineffability. The use of metaphor for overcoming the intangibility of ecocide is something that could be explored further.

⁴⁰ Elaine Scarry, *The Body in Pain: The Making and Unmaking of the World* (Oxford: Oxford University Press, 1987), p. 4.

cannot know or empathise with it. Both the suffering body and the suffering earth are elusive and abstracted.

Pain does not have any referential content; it cannot be objectified and remains outside of language. As Scarry explains:

Whatever pain achieves, it achieves in part through its unsharability, and it ensures this unsharability through its resistance to language [...] physical pain – unlike any other state of consciousness – has no referential content. It is not *of* or *for* anything. It is precisely because it takes no object that it, more than any other phenomenon, resists objectification in language.⁴¹

Pain is language destroying because it is a totality and beyond verbal objectification. The characteristics of the virus, pain and climate change -- unsharability, invisibility and totality -- position them outside of language. Pain cannot be seen in the context of other events. Therefore, referents for it cannot be drawn through comparison. Scarry argues the need to develop our linguistic tools to express pain: 'A great deal, then, is at stake in the attempt to invent linguistic structures that will reach and accommodate this area of experience normally so inaccessible to language.'⁴² Similarly, I emphasise the importance of the climate novel developing concepts to imagine climate change.

The Death of Grass's initial details about the virus are illuminating, although the novel becomes more of a survival fantasy and human behaviour is the catalyst for action rather than the virus. After the opening

⁴¹ Scarry, pp. 4-5.

⁴² Scarry, p. 6.

descriptions of the environmental destruction, it is quickly sidelined from the central narration and the focus shifts to human responses and the barbarity in competing for survival. This novel highlights the difficulty of maintaining the issue at the forefront of the tale, a general issue we see across many climate novels. This quote captures one of the precise problems owing to the conceptualisation of the virus:

The fields on either side of them were potato fields planted for the hopeful second crop; apart from the bareness of hedgerows empty of grass, there was nothing to distinguish the scene from any country landscape in a thriving fruitful world. (p. 75)

The reality and implication of it always remains isolated and abstracted from the actual veracity of the virus itself. It is never brought into cognition because of its resistance to language. Even when the effects of it do eventually manifest, the narration only ever renders them into the anthropocentric dimensions of morality. The virus is consequently diverted away from environmental significance. This suggests the importance of foregrounding the environment in climate novels and developing a more ecocentric, holistic and interconnected narration.

White Noise

White Noise has become the object of broad discussion and criticism, particularly for its interrogation of postmodernism, representation of ecological disasters and reflection of the 1980s 'toxic consciousness'.⁴³ It is

⁴³ Cynthia Deitering, 'The Postnatural Novel: Toxic Consciousness in Fiction of the 1980s', *The Ecocriticism Reader*, ed. by Cheryl Glotfelty and Harold Fromm (Georgia: University of Georgia Press, 1996), pp. 196-203.

a complex novel, wherein it can be argued that either many events take place or not very much happens – this definition of what events are is addressed later in my discussion. The story follows Jack Gladney, a middle-aged professor of ‘Hitler studies’. One of the central events, and the one I am most concerned with, is a chemical spill that causes a giant toxic cloud to form. This combination of poisonous gases contaminates Jack. He and his wife, Babette, share an obsessive fear of their own mortality and the story develops into a narrative about the reality of death and the failure to repress it.

The chemical spill poses a number of problems to perception. Again, like the virus, it remains largely intangible since it has unseen properties. It is also a problem for the narrative and narration because it fails to have any significance, and the reader and characters are always positioned outside the environmental disaster. The premise of gaining a perspective and understanding the ‘toxic event’ is something that both the text and characters struggle with. The theme of the real and the seen in contrast with the unreal and unseen is repeated throughout the novel. This book is particularly useful for thinking about how ecological events can escape understanding due to their imperceptibility.

The ‘toxic event’ is not the sole incident of environmental concern; rather this anxiety about unseen or unknown poisons penetrating the body is

frequented throughout the novel. It begins with Jack's anxiety that his son's premature hair loss may be due to some unidentified pollutant:

Heinrich's hairline is beginning to recede. I wonder about this. Did his mother consume some kind of gene-piercing substance when she was pregnant? Am I at fault somehow? Have I raised him, unwittingly, in the vicinity of a chemical dump site, in the path of air currents that carry industrial wastes capable of producing scalp degeneration, glorious sunsets?⁴⁴

This introduces the tone of the novel: notions of the real are always being disrupted by the unseen. This creates a crisis of sense and renders certain events as difficult for the imagination. The theme is continued; later the local school is evacuated on account of an unidentifiable contamination:

They had to evacuate the grade school on Tuesday. Kids were getting headaches and eye irritations, tasting metal in their mouths. A teacher rolled on the floor and spoke foreign languages. No one knew what was wrong. Investigations said it could be the ventilating system, the paint or varnish, the foam insulation, the electrical insulation, the cafeteria food, the rays emitted by micro-computers, the asbestos fireproofing, the adhesive on shipping containers, the fumes from the chlorinated pool, or perhaps something deeper, finer-grained, more closely woven into the basic state of things. (p. 41)

The long list suggests the multitude of harmful and potential contaminants to be found within an ordinary school, all of which are too varied, too multiple and too hidden to correlate with direct understanding and identification of the cause. They cannot be known by our senses and even the 'men in Mylex suits and respirator masks [who] made systematic sweeps of the building with infrared detecting and measuring equipment' cannot fathom the origins of the problem (p. 41). As unidentifiable to sense and technology, effective articulation of this invisible, unknown toxin is essentially unfeasible. This idea

⁴⁴ Don DeLillo, *White Noise* (New York: Viking Press, 195; repr. London: Picador, 2011) p. 25. Further references [to this edition, etc.] are given after quotations in the text.

is repeated in the central event of the novel – the ‘airborne toxic event’, wherein most of the debate and concern is in trying to name it:

‘The radio calls it a feathery plume,’ he said. ‘But it’s not a plume.’
‘What is it?’
‘Like a shapeless growing thing. A dark black breathing thing of smoke. Why do they call it a plume?’
[...]
‘They’re not calling it the feathery plume anymore,’ he said, not meeting my eyes, as if to spare himself the pain of my embarrassment.
‘I already knew that.’
‘They’re calling it the black billowing cloud.’
‘Good.’
‘Why is that good?’
‘It means they’re looking the thing more or less squarely in the eye. They’re on top of the situation.’
[....]
‘They’re not calling it the black billowing cloud anymore.’
‘What are they calling it?’
He looked at me carefully.
‘The airborne toxic event.’
He spoke these words in a clipped and foreboding manner, syllable by syllable, as if he sensed the threat in state-created terminology. (pp. 130, 134 & 136)

This conversation takes place between Jack and Heinrich. For Jack, the preoccupation with finding an apt name equates to the success of its defeat. He takes comfort from this large, toxic mass being provided with an official terminology, as though the name itself possesses a degree of control over it. However, each name given to it provides it with an ominous and mysterious depth. These names only further distance it from tangibility. It is ‘shapeless’ and the chemical it produces, “Nyodene D”, is colorless, odorless and very dangerous, except no one seems to know exactly what it causes in humans or in the offspring of humans’ (p. 153). This description illuminates its conceptual difficulty. Its appearance, characteristic and effects are all

unknown. Furthermore, the scale of 'Nyodene D' is outside any possible measure and it is at once everywhere and nowhere: it enters the pores of Jack's body, yet cannot be seen or felt. And, as Heinrich continues explaining, its effects are latent, concealed and completely unpredictable:

Once it seeps into the soil, it has a life span of forty years. This is longer than a lot of people. After five years you'll notice various kinds of fungi appearing between your regular windows and storm windows as well as in your clothes and food. After ten years your screens will turn rusty and begin to pit and rot. Siding will warp. There will be glass breakage and trauma to pets. After twenty years you'll probably have to seal yourself in the attic and just wait and see. (p. 153)

The toxic event and climate change are, to use Timothy Morton's phrase, hyperobjects. These are defined by their perceptual opaqueness: 'The more we know about hyperobjects, the stranger they become'.⁴⁵ They are contradictory and uncanny. They can be immediately close and distant at the same time: 'I do not feel "at home" in the biosphere. Yet it surrounds me and penetrates me'.⁴⁶ Morton describes their nonlocality:

When I look at the sun gleaming on the solar panels of my roof, I am watching global warming unfold. Carbon compounds and other molecules in the upper atmosphere magnify the burning intensity of the sun in the Great Central Valley of California. Yet I do not see global warming as such. I see this brilliant blade of sunlight burning the top of my head as I watch it with half-closed eyes reflecting off the burnished, sapphire surface of the solar panels. The manifold that I witness is not merely a 'subjective impression,' but is rather just this collusion between sunlight, solar panels, roof, and eyes. Yet global warming is not here. Hyperobjects are *nonlocal*.⁴⁷

Locality becomes an abstraction. We cannot see a hyperobject all at once, only pieces of it. Hence, the sunrays on a roof are not climate change *per se*

⁴⁵ Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013), p. 6.

⁴⁶ *Hyperobjects*, p. 28.

⁴⁷ *Hyperobject*, p. 38.

and ‘the reason why they appear nonlocal and temporally foreshortened is precisely because of this transdimensional quality. We only see pieces of them at once, like a tsunami or a case of radiation sickness.’⁴⁸ Like the toxic event, though it cannot be seen or known, it does possess an objective reality. Yet, hyperobjects can only be understood in abstraction.

The toxic event and climate change are comparable to Kant’s sublime. Kant asserts that the sublime causes an affront to the imagination precisely because it is ineffable. It is ineffable in many of the same ways that ecological issues are. ‘The Sublime, on the other hand, is to be found in a formless object, so far as in it or by occasion of it *boundlessness* is represented, and yet its totality is also present to thought’.⁴⁹ Here Kant describes the sublime as ‘formlessness’ and ‘boundlessness’, also features of the chemical spill. Climate change, also, presents a totality to the mind in the way it lacks referentiality. Kant argues that the sublime exists beyond cognition and it inflicts ‘violence to the Imagination’.⁵⁰ There are not any particulars owing to the sublime, rather notions of it lie ‘in its chaos or in its wildest and most irregular disorder and desolation, provided size and might are perceived’.⁵¹ Again, by this account, it can be compared to the toxic event, because its scale and capacity cannot be fully comprehended. The toxic event is at once so large to spread and contaminate all in its vicinity

⁴⁸ *Hyperobjects*, p. 70.

⁴⁹ Immanuel Kant, *Critique of Judgement*, trans. by J. H. Bernard, 2nd edn (New York: Dover Publications, Inc., 2005), (1892), p. 61.

⁵⁰ Kant, p. 62.

⁵¹ Kant, p. 63.

and yet small enough to enter the body, and its life span and vitality are beyond our temporal register, for instance: 'This death would penetrate, seep into the genes, show itself in bodies not yet born' (p. 135). It is therefore beyond any possible measure or comparison. This generates its ineffability since the novel's characters have no way to cognise it. Kant explains that the sublime is great, not referring to size but rather how it is an absolute that has no comparison:

But to cognise *how great* it is always requires some other magnitude as a measure. But because the judging of magnitude depends not merely on multiplicity (number), but also on the magnitude of the unit (the measure), and since, to judge of the magnitude of this latter again requires another as measure with which it may be compared, we see that the determination of the magnitude of phenomena can supply no absolute concept whatever of magnitude, but only a comparative one.⁵²

There is no way to fully understand it, only in abstraction. Since we lack the means of measure or comparison to gauge a sense of it. Jack's reaction to the toxic cloud is like someone experiencing the sublime. He finds it at once tremendous, terrible, and 'immense almost beyond comprehension'. He remarks upon it having almost mythical properties, 'through the stark trees we saw it, the immense toxic cloud, lighted now by eighteen choppers-immense almost beyond comprehension, beyond legend and rumor, a roiling bloated slug-shaped mass' (p. 184).

⁵² Kant, p. 64.

To be able to apprehend the sublime, Kant argues we need an 'aesthetical estimation of magnitude'.⁵³ Reliance alone on either imagination or mathematical valuation is inadequate for apprehending it:

But in aesthetical estimation of magnitude the concept of number must disappear or be changed, and the comprehension of the Imagination in reference to the unit of measure (thus avoiding the concepts of a law of the successive production of concepts of magnitude) is alone purposive for it. — If now a magnitude almost reaches the limit of our faculty of comprehension in an intuition, and yet the Imagination is invited by means of numerical magnitudes (in respect of which we are conscious that our faculty is unbounded) to aesthetical comprehension in a greater unit, then we mentally feel ourselves confined aesthetically within bounds. But nevertheless the pain in regard to the necessary extension of the Imagination for accordance with that which is unbounded in our faculty of Reason, viz. the Idea of the absolute whole, and consequently the very unpurposiveness of the faculty of Imagination for rational Ideas and the arousing of them, are represented as purposive.⁵⁴

The sublime has a profound effect upon our minds because it is 'super-sensible'. Yet, Kant argues, this allows us to find aesthetic potential within ourselves and permits a free play of the imagination. Jack remarks upon a similar notion, 'the toxic event has released a spirit of imagination' (p. 179). This concept will be useful later for thinking about the importance of creativity when engaging with environmental issues. We can argue, therefore, that climate change invokes similar feelings as the sublime, due to its scale, magnitude, formlessness and sense of force. It therefore takes a great depth of imagination, and thus induces artistic potential, to escape such unspeakability of climate change.

⁵³ Kant, p. 70.

⁵⁴ Kant, p. 74.

Lawrence Buell describes the toxic event as failing to be critical to the novel. Instead it becomes comparably insignificant and trivial for both the characters and narrative:

For awhile the novel seems to have crystallized around this scene of awakening. But the prospect of ecocatastrophe seems to be invoked mainly to be reduced to the status of catalyst to the unfolding of the culturally symptomatic vacuousness of this professor of 'Hitler Studies,' as the denouement turn to focus on his and his wife's chronic, narcissistic, long-standing death obsessions, which seems no more than tenuously linked to the precipitating event. Unless one reads the event itself and the characters' subsequent discomfiture as, for example, a deliberate nonevent precipitating a scene of bad risk management whose significance lies in precisely nothing more than 'the totality of its simulations,' it is hard not to conclude that a very different sort of 'event' might have served equally well: a crime scare, a rumour of kidnapping by aliens, whatever.⁵⁵

Non-events become the defining feature of this novel and it is littered with pseudo-disasters: the averted plane crash, Jack's attempted murder of Willie, Wilder's dramatic highway crossing, and even Jack's impending death is dwindled into triviality, 'there's something artificial about my death. It's shallow, unfulfilling' (p. 325). Interestingly, the ecocatastrophe receives a similar narration as the earlier averted plane crash. In both situations they fail to be confirmed as real events, since the media does not process them. They respond to the traumatic experience of a near plane crash with 'they went through all that for nothing' as it does not feature in the media (p. 110). The toxic event receives the same reaction and thus a diminution into inconsequence:

⁵⁵ Lawrence Buell, *Writing for an Endangered World: Literature, Culture, and Environment in the U.S. and Beyond* (Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 2001), p. 51.

There's nothing on the network [...] Not a word, not a picture. On the Glassboro channel we rate fifty-two words by actual count. No film footage, no live report. Does this kind of thing happen so often that nobody cares anymore? Don't those people know what we've been through? We were scared to death. We still are. We left our homes, we drove through blizzards, we saw the cloud. It was a deadly spectre, right there above us. Is it possible nobody gives substantial coverage to such a thing? Half a minute, twenty seconds? Are they telling us it was insignificant, it was piddling? (p. 188)

Buell suggests that this is because it is also a non-event and could be substituted by any other kind of incident. Yet, placing the environmental disaster alongside other non-events and regarding it as a pseudo-disaster demonstrates the problematic treatment of the imperceptible. It should not mean that imperceptibility equates to non-reality, as often happens in this novel. It gets lumbered with these non-events because it is difficult to cognise. In actuality, however, the event is very much a real and serious environmental disaster. The toxic event's unseen effects render it into insignificance; this is similar to the way in which the virus in *The Death of Grass* is met with nonchalance.

In *White Noise* we are faced with a failure of the real. The real is associated with tangibility, yet the catastrophe disrupts and confuses this, and consequently produces something outside cognition. This theme runs throughout the novel. It is first noted during Heinrich and Jack's conversation in the car, where they debate whether one must be able to feel rain to affirm that it is raining. This marks that perception and sensible experience of something does not necessarily equate to its reality. Jack's questioning over

the symptoms of exposure to the toxic cloud asks if something can exist if it does not possess a material reality:

Which was worse, the real condition or the self-created one, and did it matter? I wondered about these and allied questions. As I drove I found myself giving and taking an oral examination based on the kind of quibbling fine-points that had entertained several centuries' worth of medieval idlers. Could a nine-year-old girl suffer a miscarriage due to the power of suggestions? Would she have to be pregnant first? Could the power of suggestions be strong enough to work backward in this manner, from miscarriage to pregnancy to menstruation to ovulation? Which comes first, menstruation or ovulation? Are we talking about mere symptoms or deeply entrenched conditions? Is a symptom a sign or a thing? What is a thing and how do we know it's not another thing? (p. 147)

The disaster is treated as a simulation, reflecting on the problem of understanding reality in the face of the super-sensible:

'But this evacuation isn't simulated. It's real.'
'We know that. But we thought we could use it as a model.'
'A form of practice? Are you saying you saw a chance to use the real event in order to rehearse the simulation?' (p. 162)

Richard Kerridge argues that this failure of the real in confronting the ecological disaster is because they can only ever be spectators of it.

Kerridge argues:

Jack clings to his ironic detachment, but this description which recognizes how the event will be made into simulacrum: how, because the apocalypse is not now, not yet, such events enter the system of exchange, always becoming signifiers of something else, never constituting end-points.⁵⁶

As such, there can be no perspective of the ecological disaster. It is always transferred and comes to signify something other than its own reality, because its own reality cannot be perceived. Kerridge writes:

⁵⁶ Richard Kerridge, 'Small rooms and the ecosystem: environmentalism and DeLillo's *White Noise*', *Writing the Environment: Ecocriticism and Literature*, ed. by Richard Kerridge and Neil Sammells (London: Zed Books Ltd, 1998), p. 194.

The plots of these novels hold out, continually, the tantalizing threat of convergence, of an impending moment of truth when things will cohere and be seen whole. This will be a moment of death, when the self is fixed to the materiality of the body, and the body penetrated by the outside world. The tip of an immensely confused conspiracy, the point where it all comes together, is the bullet which enters John Kennedy's brain. But to the reader or television viewer, who has not yet reached this moment, the assassination becomes an image played back again and again, as singularity of meaning dissolves once more into endless possibilities.⁵⁷

Meaning is constantly diverted. This will be the case whilst it must be substituted with another form of representation and so long as the language we have for it is limited. There is no way of seeing or knowing the event and we cannot get any distance that will allow us to do so. It must always be inconceivable and other, because it is outside language, reality, imagination, significance and sensibility. The ecological disaster must be forever subsumed into something else as no perspective can be gained.

In both novels, the virus and the toxic event are examples of 'slow violence'. This explains why they are perceived as non-events and do not receive the appropriate level of concern. According to Nixon, disasters possess varying levels of appeal, 'falling bodies, burning towers, exploding heads, avalanches, volcanoes, and tsunamis have a visceral, eye-catching and page-turning power that tales of slow violence, unfolding over years, decades, even centuries, cannot match.'⁵⁸ Nixon comments upon our inattention to calamities that are slow and long lasting, as we live in a

⁵⁷ Kerridge, p. 190.

⁵⁸ Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, Massachusetts: Harvard University Press, 2013), p. 3.

spectacle driven world. Both the virus and toxic event are low 'in immediate drama but high in long-term consequences'.⁵⁹ They therefore fail to be newsworthy or eye-catching. For Nixon, we need to overcome the privileging of highly visible acts. We must also rethink what we classify as violence. Yet, though climate change is slow and lacks a visceral impact, my following chapter demonstrates how translating it into a dramatic spectacle can also pose problems to how we conceptualise it. Though Nixon advises the development of 'arresting stories', I consider his suggestion of how 'writer-activists' help us imagine acts of slow violence to be more effective, as I discuss more closely in the Conclusion.⁶⁰

Get a Life

Nadine Gordimer's late novel, *Get a Life* is an intricate and complex tale. It has received much criticism for its unusual and difficult style,⁶¹ whilst there has been comparatively less conversation about its depiction of transnational, contemporary environmental issues. Precisely because it is difficult to read, a fraught and fractured narrative, suggests the

⁵⁹ Nixon, p. 131.

⁶⁰ 'Writer-activists can help us apprehend threats imaginatively that remain imperceptible to the senses, either because they are geographically remote, too vast or too minute in scale, or are played out across a time span that exceeds the instance of observation or even the physiological life of the human observer. In a world permeated by insidious, yet unseen or imperceptible violence, imaginative writing can help make the unapparent appear, making it accessible and tangible by humanizing drawn-out threats inaccessible to the immediate senses. Writing can challenge perceptual habits that downplay the damage slow violence inflicts and bring into imaginative focus apprehensions that elude sensory corroboration. The narrative imaginings of writer-activists may thus offer us a different kind of witnessing: of sights unseen.' Nixon, p. 15.

⁶¹ See Julián Jiménez Heffernan, 'Unspeakable Phrases: The Tragedy of Point of View in Nadine Gordimer's *Get a Life*', *Research in African Literatures*, 41 (2010), pp. 87-108.

issue of communicating topics about ecology that are part of an intricate web of factors and relations. The novel's protagonist, ecologist Paul Bannerman, is recently diagnosed with thyroid cancer and must spend a period of time in isolation, because the radioactive iodine, which destroys any rogue cancerous cells left after his thyroidectomy, makes him radioactive. His cancer, however, is used within this novel as a means to examine the wider context and impetus of environmental issues, rather than a catalyst for narrative action. The novel proceeds to explore the lives of the Bannerman family. Gordimer uses the locus of the family to examine wider issues, such as ecology, development ethics, globalisation, and racial and political tensions in post-apartheid South Africa.

A useful means to understand the narrative style is Jane Bennett's definition of 'vibrant matter', as we can argue that *Get a Life* attempts to bring into view the interrelation between all things and the notion of unseen forces (the radiation Paul emits) running through animate and inanimate objects. *Vibrant Matter* argues for the need to recognise the participation of nonmaterial forces in and around all things. Bennett states that a 'vital materiality', an imponderable force, runs through the bodies of humans and nonhumans, and in both organic and inorganic things. This force is self-organising, a 'thing-power' acting upon, shaping and determining all to be found within this world. However, we typically regard matter as inert,

inanimate or dead. Such a perception fuels environmentally destructive behaviour:

Why advocate the vitality of matter? Because my hunch is that the image of dead or thoroughly instrumentalized matter feeds human hubris and our earth-destroying fantasies of conquest and consumption. It does so by preventing us from detecting (seeing, hearing, smelling, tasting, feeling) a fuller range of the nonhuman powers circulating around and within human bodies.⁶²

We are blind to this other depth and energy belonging to everything. Recognition of this force will shift our outlook and assist in diminishing the intangible aspects of the environment.

Bennett discusses previous attempts given to naming and speaking about this 'vital materialism':

The idea of thing-power bears a family resemblance to Spinoza's *conatus*, as well as to what Henry David Thoreau called the Wild or that uncanny presence that met him in the Concord woods and atop Mount Ktaadn and also resided in/as that monster called the railroad and that alien called his Genius. Wildness was a not-quite-human force that addled and altered human and other bodies. It named an irreducibly strange dimension of matter, *anout-side*. Thing-power is also kin to what Hent de Vries, in the context of political theology, called 'the absolute' or that 'intangible and imponderable' recalcitrance?⁶³

De Vries refers to it as 'an absolute' and 'that which refuses to dissolve completely into the milieu of human knowledge'.⁶⁴ This absolute has a destructive effect upon thought and language: it is beyond intelligibility, detached from everything and cannot come into conception. Bennett

⁶² Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010), p. xi.

⁶³ Bennett, p. 3.

⁶⁴ Bennett, p. 3.

suggests providing a linguistic apprehension to this instance, so that it might become retainable by thought:

I will try, impossibly, to name the moment of independence (from subjectivity) possessed by things, a moment that must be there, since things do in fact affect other bodies, enhancing or weakening their power. I will shift from the language of epistemology to that of ontology, from a focus on an elusive recalcitrance hovering between immanence and transcendence (the absolute) to an active, earthy, not-quite-human capaciousness (vibrant matter). I will try to give voice to a vitality intrinsic to materiality, in the process absolving matter from its long history of attachment to automatism or mechanism.⁶⁵

However, this vitality is heterogeneous and rendering it within noun-specificity may obscure its reality as unstable, fleeting and multiple. Therefore, perhaps an alternative epistemology serves better in the place of a homogenising, limiting noun. Bennett suggests shifting this understanding into an ontological dialogue, which would be better for presenting it as active.

In *Get a Life*, Gordimer attempts to capture these invisible and intangible features of the environment. Three key environmental issues are at the forefront of the novel: a dam project in the Okavango Delta, the campaign against the development of the pebble-bed nuclear reactor, and the Pondoland national toll road and mineral extraction scheme. Yet, the main ecological event is Paul's cancer, since it becomes used as an analogy for exploring environmental issues in general.⁶⁶ Paul's body is deployed as a

⁶⁵ Bennett, p. 3.

⁶⁶ Gordimer's choice of using cancer as a metaphor to represent ecological issues is, however, a controversial one. Susan Sontag's *Illness as Metaphor* highlights precisely why creating metaphors for illness is unhelpful. Her argument focuses particularly on cancer and tuberculosis. Sontag writes, 'My point is that illness is *not* a metaphor, and that the most truthful way of regarding illness—and the healthiest way of being ill—is one most purified of, most resistant to, metaphoric thinking.' (Susan Sontag, *Illness as Metaphor* (New York:

microcosm of the ecosystem. This is a means for Gordimer to convey, in a compacted mode, the intricacies and complexities of the ecosystem at large. Through the framework of his illness, he becomes an incarnation of his work and the environmental disasters he attempts to prevent, for instance he refers to himself as 'I'm my own experimental pebble-bed nuclear reactor'⁶⁷ and his wife considers him to be a 'threatened specie' (p. 47). Gordimer examines something operating invisibly, internally and beyond sense through the body of Paul and his radioactive treatment:

Radiant.

Literally radiant. But not giving off light as saints are shown with a halo. He radiates unseen danger to others from a destructive substance that has been directed to counter what was destroying him. Had him by the throat. Cancer of the thyroid gland. In hospital he was kept in isolation. Even that of silence; he had no voice for a while, mute. Vocal cords affected. He remains, he will be still, out of his control, exposing other and object to what he emanates, whomever and whatever he touches. (p. 4)

Environmental issues are also subject to 'unseen dangers'. Paul appears to be in good health since cancer is an invisible threat, until symptomatic:

Both were confronted with what would be the evidence to challenge, postpone whatever this mutilation was going to be: look at the man, the clear architrave of the rib cage containing the rise and fall of life-breath beneath the muscular pads of pectorals, the smooth hard contour of biceps, the strong lean forearms – nature's complete evolutionary

Farrar, Straus, Giroux, 1978), p. 3). Many of the stories, notions and personifications attributed to cancer, an invasion, a form of demonic possession, a 'crusade' against it, can terrify the patient. That it is not a mere disease being treated can 'make cancer not just a lethal disease but a shameful one' (p. 57). Sontag gives the direct example of ecological associations aligned with cancer, 'cancer signifies the rebellion of the injured ecosphere: Nature taking revenge on a wicked technocratic world.' (p. 70). This causes 'the mistaken feeling that cancer is a distinctively "modern" disease.' (p. 71) Therefore using Paul's illness as a method to explore ecological issues can seem somewhat reductive and misplaced when taken into the context of furthering the problematic cultural attitudes towards it.

⁶⁷ Nadine Gordimer, *Get a Life*, (London: Bloomsbury, 2005), p. 59. Further references [to this edition, etc.] are given after quotations in the text.

construction for all functions. There's a pretty phrase for it that's obsolete: the picture of health. (p. 8)

The housekeeper, Primrose, does not maintain the quarantine assigned to Paul. She cannot conceive of any associated danger:

This man is not the barely-literate woman; he's scientifically literate, awareness of the insidious power of radiation is in his daily field. Primrose does not believe in what she cannot see; he knows what is not to be seen as it exudes from one who is his Chernobyl, his own Koeberg experimental nuclear reactor. (p. 60)

Again, it worth noting the parallels drawn between Paul's work as an ecologist the 'radiation is in his daily field', the environmental disaster, Chernobyl, and his body. Gordimer discusses the thyroid gland in detail. It reflects this sort of unseen vibrancy running through the body, an actant that influences and shapes it:

You take it that your type of intelligence is decided by the size and composition of your brain – that's it. But there are these other little pockets of substances whose alchemy influences, and interferes – even directly – in what you *are*. Many other abstruse details about the component now missing from his neck, a scar at the spot where it once secretly functioned and where the cells turned rogue in crazy proliferation. (p. 21)

This draws attention to the importance of both the material, the brain, and the unseen – the 'little pockets of substances'. The Okavango Delta provides an ecological comparison, as unseen forces determine it. It is also complex, intricate, and operates from incalculable symbiotic processes:

He realised he knew too abstractly, himself limited by professionalism itself, too little of the grandeur and delicacy, cosmic and infinitesimal complexity of an eco-system complete as this. The Okavango could never have been planned on a drawing-board by the human brain. Its transformations, spontaneous, self-generated, could not have been conceived. And this is no evidence to be claimed by religious or other creational mysticism, either. The innovation of matter is greater than

that of any collective of minds, faiths. As Thapelo would say, Yona ke yona – this is it! The capacity to visualise this complex, let alone create it, as a *project* of a multinational team of genius hydrologist engineers is as limited in scale as taking the hippo's part in maintaining the system as something that can be understood without the to-and-fro, in-and-out, problem-solving of the infinite whole. The Okavango delta in co-existence with a desert is a system of elements contained, maintained – by the phenomenon itself, unbelievably, inconceivably. The Okavango is a primal feature of creation, so vast it can be seen by astronauts from Outer Space. (p. 91)

Again, the description remarks how the Okavango Delta is 'inconceivable'. Therefore, Paul's illness becomes a device for exploring and enabling us to speak about the trans-temporal and spatial aspects of ecological issues. This device shrinks the scale to that of his body. It also reduces the temporal realm, from an infinitude, the 'Okavango left to itself will renew eternally' (p. 182), to a quantifiable human lifespan. We gain a better sense of measure through the framework of the human body and therefore increase the tangibility of such processes.

Yet, the invisibility of the radiation emitting from Paul's body still remains. The cancer and radiation are unseen, self-organising forces acting within his body. They cannot be objectified or cognised due to their lack of visibility. This causes Paul to feel alienated from himself:

Paul's confrontation with an unimaginable state of *self*. She sees it in his face, the awkwardness of his body as if he feels the body does not belong to him, when he speaks, his choice of words, of what there is that can be said among all that cannot. (p. 67)

The difficulty of conception persists, owing to this 'force' and because, as Bennett explains:

The vitality of matter is real, it will be hard to discern it, and, once discerned, hard to keep focused on. It is too close and too fugitive, as much wind as thing, impetus as entity, a movement always on the way to becoming otherwise, an effluence that is vital and engaged in trajectories but not necessarily intentions.⁶⁸

Even after being brought into some form of representation, its tangibility is compromised by its vivaciousness and imperceptivity.

Get a Life attempts to perceive the ecological from each associated context: social, political, economic, domestic, national. Bennett asks for ‘a polity with more channels of communication between members’,⁶⁹ members being actants. Gordimer also attempts to bring these varying positions and aspects into dialogue with each other, so that the broader picture of the environment can be better perceived. Her characters become symbolic of the various the many contexts associated with environmental issues. For instance, Paul’s wife, Berenice, represents development and globalisation; his mother, Lyndsay, law; and himself science, conservation and environmental action. This interweaves social, racial and political dynamics between characters. The narration is voiced through the different discourses belonging to these categories. For example, the language of Paul’s cancer is used to describe his father’s adultery, ‘look, this isn’t the unbelievable of someone radiant with emanating danger; it’s an ordinary human situation, if painful’ (p. 133). Lyndsay’s law idiom is employed in another instance, ‘the affair is over. Case closed; it has not been reopened for long years’ (p. 161).

⁶⁸ Bennett, p. 119.

⁶⁹ Bennett, p. 104.

Using alternating vernaculars provides a fresh lens and suggests the interconnection between what appears to separate contexts. It conveys them as in relation through causal idiomatic means. By doing so, she attempts to expose the unobserved and wider factors that contribute to environmental destruction. Another technique is framing opposites together, such as innocence and harm: 'this radioactive iodine treatment is dangerous to others who come into contact with the individual who has received it. Iodine, the innocent stuff dabbed on a child's scratched knee' (p. 17), or 'Paul was in a helicopter monitoring the terrible floods in the Okavango, and related the progress of Nicholas swimming over-arm instead of dog-paddling' (p. 151). In these instances, the social and ecological are brought into dialogue with each other. Though they are intricately related, it is often impossible to see such interconnections. This device emplaces the environmental within a familial framework. Relocating the environment into a different context can provide an alternative form of conception and representation. This also allows it to be presented in dialogue with other things and thus subliminally exposes the web of interconnection. The following description of the pebble-bed nuclear reactor brings into view two things that are linked but appear as opposites: 'The proposed reactor based on the harmless pebble a small boy takes home from the beach is a component in the productions of Weapons' (p. 100). Through this method, Gordimer is able to call to attention potential threat, even when it remains invisible – a longstanding issue in addressing environmental questions. This also embellishes a cognitively challenging

subject further by giving it an alternative perspective. This is especially advantageous when the linguistic capacity we have for speaking directly about environmentally issues is crucially limited.

Interconnection is a major theme in *Get a Life*. The novel attempts to reflect an imponderable reality: of all phenomena belonging within a large, tangled web of relations. For instance, the effect of Paul giving off radiation brings to attention the relationship between social, ecological and racial issues all at once:

What is the threshold of risk to be decreed for different people – what about the paper plates touched by radiant saliva on spoons and forks, got rid of. Thrown away in the trash to lie on waste dumps picked over by kids from black squatter camps. What is 'rid off' in terms of any pollution, it's a life's work to inform us that it's not only what is cast into the sea that comes back to foul another shore, no matter whose it is. (p. 60)

Mapping this scale of relevance also depicts how environmental issues are comprised of not only visible and material aspects, but also possesses unseen and cultural implications. However, attending to this web and attempting to expose such a reality may only increase convolution, since the links between these are far-reaching and complex. There is an impossibility of seeing all contexts and relations in a single relative picture. The issue, then, becomes one of gaining an appropriate distance. Elaine Scarry identifies this as being problematic in writing and thinking about environmental issues, especially climate change:

Either the time frame is too long, as with global warming, or too short, as with the on-off button of the nuclear weapon, for people to

comprehend the enormity of the problem. I guess it's a little bit like the idea of aesthetic distance in the theatre. It was often said (there are lots of exceptions to this) that in the theatre you have to be at the right aesthetic distance in order to experience the play. If you're too close, you see the safety pins on the costumes and it ruins the effect, and if you're too far away everything is miniaturized and so you can't accept it.⁷⁰

As discussed in *White Noise*, the toxic event was too distant, abstracted and could not be brought into relevance or relation to anything. In contrast, environmental issues in *Get a Life* are excessively brought into relation to the personal or political. For this novel then, the aesthetic distance is, possibly, too close. Bennett argues that we need to 'horizontalize' our perspective, to look across and see how things interrelate:

Materiality is a rubric that tends to horizontalize the relations between humans, biota, and abiota. It draws human attention sideways, away from an ontologically ranked Great Chain of Being and toward a greater appreciation of the complex entanglements of humans and nonhumans.⁷¹

We can argue that the narration of *Get a Life* attempts to do this, as it meshes viewpoints, converges idioms, draws parallels between seemingly unrelated things and uses Paul's body as a microcosm of an ecosystem. Yet, we can also argue that we still cannot gain a perspective, as such 'horizontalizing' remains obscured and beyond the remit of language. This is because we cannot gain an appropriate distance and have no 'metalanguage' for depicting these things. There are several references throughout the novel to 'Outer Space', for instance, 'the Okavango. As astronauts grasp from Outer Space the beauty of this cosmic scale of

⁷⁰ Elaine Scarry, 'An Interview with Elaine Scarry', *Environmental Criticism for the Twenty-First Century*, ed. by Stephanie LeMenager et al (New York: Routledge, 2011), p. 273.

⁷¹ Bennett, p. 112.

waterways' (p. 101). For comprehending the ecological, and especially a system such as the Okavango Delta, this insinuates that it is only possible with such a perspective that can see the whole thing in relation, as one could from Outer Space, to speak figuratively. As rooted firmly on earth, there is no such way to do this, perhaps as Gordimer recognises herself. Creating a narrative that is something like concentric circles, where meaning, characters and events are layered and overlap, might be the closest we can get, from our anthropocentric, earth bound perspective, to perceiving the ecological fully. Bennett's discussion of Adorno informs such an idea:

Theodor Adorno claimed that it was not possible to 'unseal' or parse a concept into its constituent parts: one could only 'circle' around a concept, perhaps until one gets dizzy or arrives at the point at which nonidentity with the real can no longer be ignored.⁷²

Gordimer's enveloping and enmeshing narrative allows us to circle around the imperceptible aspects belonging to environmental issues. Yet we can never quite get to the inner circle -- to continue with the concentric circle motif -- due to the impossibility of such a perspective. The novel claims, 'where to begin understanding what we've only got a computerspeak label for, *ecosystem?*' (p. 91). This suggests our vocabulary for the environment is restricted to mere labels, which can only ever suggest something of it and never fully represent it. For as long as our terms remain limited, we can never access a full and graspable perception. As suggested in the previous chapter, this demonstrates the importance of developing terms and concepts

⁷² Bennett, p. 31.

that can adequately and richly name our environment, a language beyond 'labels'.

We can argue that Gordimer's narrative is aware of its limits in being able to speak about environmental issues. This is both stylistically and thematically represented. The failure of communication is a major theme in this novel.⁷³ Paul and his wife cannot communicate or understand each other's perspective. They are contrasted by their ecological integrity:

When he was in a wilderness her city place did not exist for him, as at her console in that city space his wilderness did not exist for her. Neither does. Both equally unreachable. He's the receded. It's him. Far away. (p. 16)

Paul's cancer forces him into a silence and isolation.⁷⁴ Both literally -- his vocal cords are affected after the thyroidectomy and he must spend a period of time in quarantine -- and symbolically -- the experience is unsharable, 'shut out of that process that was taking him over; herself detained in the prison of safety. She could not imagine what this kind of isolation would be like' (p. 12). We can argue that the narration also represents a failure of communication, as it is oblique and difficult. This has been noted elsewhere:

⁷³ We might argue this is also a commentary on the Truth and Reconciliation Commission. <<http://www.justice.gov.za/trc>> [accessed 1 June 2013]

⁷⁴ Again in correlation with the broader theme of interconnection, Julián Jiménez Heffernan argues that this offers an allegorical reading of apartheid: 'Paul sees himself as occupying a position previously reserved for blacks, the position of the plagued and outcast. His existentialist predicament, the leap into a new state of existence, has turned him suddenly sensitive to modes of painful isolation otherwise unreachable. He undergoes a process of de-familiarization from what is natural in his life, thus gaining a critical awareness that has been dormant or anaesthetized by apartheid.' Julián Jiménez Heffernan, 'Unspeakable Phrases: The Tragedy of Point of View in Nadine Gordimer's *Get a Life*', *Research in African Literatures*, 41 (2010), p. 96.

The fragmentary and interruptive style of Nadine Gordimer's novel *Get a Life* has met some critical resistance. This article defends the continuity of Gordimer's late-modernist writing and accounts for stylistic anomalies by invoking the narrative productivity of free indirect style. In Gordimer's expert hands, this device serves the broader ideological agenda of dramatizing a plural consciousness ailed by dislocation, inertness, and unspeakableness.⁷⁵

As Heffernan claims, this is part of an intentional style and reflects the broader theme of unspeakability. The narration is self-conscious and refers to itself, for instance: 'So that was a whole new section and paragraph thereof to be added to the code' (p. 74). The reference to the narrative as a code is notable. Due to the unusual style, tenuous links made between things and characters acting as devices and metaphors, the narration does require a certain deciphering in order to understand the wider impetus of the story. These emulate the same demands made of us in order to holistically regard environmental issues. Wherein gaining a view resembles this jigsaw of a narration and we might only ever perceive the environment in pieces, until we possess the linguistic means to bring it into coherence. This coding suggests that there is no direct access to understanding. Rather, like the layering of this story, we must attempt to bring together elements to find a perspective. This also suggests that the climate novel cannot expect to achieve a direct representation of climate change, rather it might convey it in fragmented, symbolic or stylised ways, and hence we find that the climate novel lends itself to avant-garde practices.

⁷⁵Julián Jiménez Heffernan, 'Unspeakable Phrases: The Tragedy of Point of View in Nadine Gordimer's *Get a Life*', *Research in African Literatures*, 41 (2010), p. 87.

In *Get a Life* narrative devices are used in an effort to bring environmental issues into cognition. For instance, using Paul's body as a microcosm of the ecosystem is a means to talk about the complexity, temporal-spatial realms and invisible forces within environmental disasters. Gordimer also creates juxtapositions in an attempt to expose the web of interconnections between all things. However, as in each of the novels discussed, the issue remains how to speak about something which has no referents. We might ask how we can begin to incorporate such ineffability into the climate novel. Is naming it enough to bring it into cognition?

Conclusion

Cognising climate change poses several challenges for the climate novel. It must find ways to represent something that can be considered a hyperobject, possesses temporalities beyond our cultural understanding of time, and is multiple, invisible, latent, and a global concern, yet one that can only be experienced locally. We lack the concepts to cognise climate change. Again developing a richer, imaginative climate discourse brings it closer into the realm of concern, meaning and relation. Yet its temporal and spatial complexities need to be addressed in more innovative ways, which often rather concern the form of the novel. The analysis of *The Hungry Tide* in my fifth chapter examines how this work approaches such difficulties. *The Hungry Tide* uses a variety of human and nonhuman perspectives and timeframes; this also conveys the network of relations found belonging to

climate change. My conclusion offers further suggestions; for instance Fredric Jameson's notion of cognitive mapping is particularly relevant here. Cognitive mapping is a device that provides an imaginary representation of something that ultimately cannot be represented.

The following chapter will examine the consequence of this imperceptibility upon current environmental discourses. Climate change is a challenging subject to write about, as a result, climate novels often generate limited creative responses. I argue that we rely excessively on outworn tropes, overused imagery, and empty words to divert the unspeakability of environmental issues. Yet, it is precisely the creative capacities of fiction that are needed to generate new concepts, modes of writing, and forms of measure to allow us to imagine the perceptually challenging aspects of climate change. The realm of climate novels is apt for such imaginative endeavour.

Outworn Climate Change Discourse
How *Solar* and *Odds Against Tomorrow* Expose Impoverished Climate Language

Discussions about climate change are prone to an impoverishment of language. Frequently used terms become hollow, they lack impetus and are over-saturated with other meanings. Furthermore, these words have an anesthetising effect upon the mind; their usage does not provoke thought and they are passively absorbed into cognition. This is because our climate discourse is often reliant on pre-ordered phrases. It lends itself to the frequent use of these because the issue is difficult to articulate. It is often quicker and easier for the writer to pluck such phrases than grapple with the subject's complexity. This chapter explores how and in what way climate discourses are outworn.

Before providing literary examples, this chapter examines climate repertoires found within the public sphere, which tend to be limited to a particular set of words and phrases. These can be euphemistic, politically loaded or doublespeak (saying one thing whilst meaning another). Therefore, climate discourse often fails to refer to the subject directly, but instead speaks more about its cultural, social and economic associations. Throughout this chapter I use several phrases recurrently to describe environmental discourse and representation. I describe it as *impoverished*, *degraded*, *outworn* or as *dead*. Each of these terms aims to convey the idea

of the gap between the object and its representation, which has occurred because the phrases have become over-saturated with other referents, so over-used that they fail to rouse thought, or that they are embedded in other political, social or cultural notions. We find in these examples how they fail to represent or initiate contemplation about the ecological phenomena they supposedly refer to.

I discuss how Ian McEwan's *Solar* (2010) and Nathaniel Rich's *Odds Against Tomorrow* (2013) expose outworn language through their use of narrative and postmodern irony. I first examine *Solar* and the techniques it employs to prevent itself from becoming victim to 'dead climate speech' when engaging with climate change. After, I look at Jean Baudrillard's theory of simulacra alongside Nathaniel Rich's *Odds Against Tomorrow*. A central theme to this novel is how climate change representation has come to overwrite the experience of it. Comparisons can be drawn between Don DeLillo's *White Noise* and *Odds Against Tomorrow*, as both can be read productively in conjunction with Baudrillard's philosophy. However, there has been already been a great deal of analysis undertaken of *White Noise* in relation to Baudrillard's theories.¹ Therefore, I provide an alternative

¹ For instance: Laura Barrett, "How the Dead Speak to the Living": Intertextuality and the Postmodern Sublime in *White Noise*, *Journal of Modern Literature*, 25 (2002), pp. 97-113; James Berger, 'Falling Towers and Postmodern Wild Children: Oliver Sacks, Don DeLillo, and Turns against Language', *PMLA*, 120 (2005), pp. 341-361; Jeanne Hamming, 'Wallowing in the "Great Dark Lake of Male Rage:" The Masculine Ecology of Don DeLillo's *White Noise*', *Journal of Ecocriticism*, 1 (2009), pp. 26-42; Dana Phillips, 'Don DeLillo's Postmodern Pastoral', *Reading the Earth: New Directions in the Study of Literature and the Environment*, ed. by Michael P. Branch and others (Idaho: University of Idaho Press, 1998), pp. 235-246; Annjeanette Wiese, 'Rethinking Postmodern Narrativity: Narrative Construction

perspective on Baudrillard's theory by discussing it with *Odds Against Tomorrow* and introducing his notions to environmental representation. The focus of this chapter examines how outworn, stale imagery is generated and what the effects of it are.

Climate Repertoires

In a bid to understand the lack of significant action taken to mitigate climate change, more research is being undertaken to recognise how climate repertoires function. This research has made evident that environmental apathy is not due to a lack of awareness and knowledge about climate change, but rather the way we are communicating it.² The inertia surrounding pro-environmental behaviour was initially understood as the result of an information deficit; however, increased knowledge of environmental issues does not equate to a greater ecological integrity.³ Therefore, focus should be drawn to how environmental topics are being narrated, rather than intensifying the dissemination of environmental

and Identity Formation in Don DeLillo's *White Noise*', *College Literature*, 39 (2012) pp. 1-25; Leonard Wilcox, 'Baudrillard, DeLillo's "*White Noise*," and the End of Heroic Narrative', *Contemporary Literature*, 32 (1991), pp. 346-365.

² Though there are other factors relating to environmental apathy, than it being solely an issue of communication. Anja Kollmuss and Julian Agyeman's study examines the gap between pro-environmental behaviour and the possession of environmental knowledge and awareness. They argue that this is a very complex question: why some people behave in a positively environmental way and others do not. Some of the factors they include in the analysis are ones relating to the individual's altruism, empathy and prosocial behaviour. Other aspects that can influence pro-environmental behaviour are demographic factors, which can be external ones, such as institutional, economic social, cultural, or internal, such as motivation, environmental knowledge, awareness, values, attitudes, emotion, locus of control, responsibilities and priorities. See Anja Kollmuss and Julian Agyeman, 'Mind the Gap: Why do People Act Environmentally and What are the Barriers to Pro-Environmental Behavior?', *Environmental Education Research*, 8 (2002), pp. 239-260.

³ Susan Owens, 'Engaging The Public: Information And Deliberation In Environmental Policy', *Environment and Planning*, 32 (2000) pp. 1141-1148.

knowledge. The *Tyndall Centre for Climate Change Research* has begun to include social and cultural analysis for further understanding the causes of climate change.⁴ Much of this research aims to better understand how public perceptions of climate change are influenced by its repertoires.

In their analysis of UK press, Doulton and Brown identify five broad discourses relating to climate change:

The first position views climate change as beneficial for development, a position which all the other positions oppose. The second position affirms that climate change is a low development priority and it will be better to deal with it as it occurs. A third position suggests that the key to preventing serious consequences for development is mitigation, though the conforming discourses differ in their understanding of which countries should take action and who is to blame for stalled negotiations. Next comes a set of crisis narratives that insist climate change will have disastrous impacts on development, but differ in how those consequences are represented and the appropriate solutions suggested. A final position holds that tackling climate change is an opportunity to achieve clean and sustainable development for the poor.⁵

However, they state that the discourse of 'potential disaster' is the most common coverage of climate change in the press.⁶ Ereaut and Segnit carry out similar, but broader, research, including analysis of websites, television,

⁴ The *Tyndall Centre* is an organisation that brings together scientists, engineers, economists and social researchers to gain a trans-disciplinary perspective of the options to mitigate and adapt to climate change. It is in partnership with the University of East Anglia, University of Cambridge, Cardiff University, University of Manchester, Newcastle University, University of Oxford, University of Southampton, University of Sussex and the University of Fudan.

⁵ Hugh Doulton and Katrina Brown, 'Ten Years to Prevent Catastrophe? Discourses of Climate Change and International Development in the UK Press', *Tyndall Centre Working Paper*, 111 (2007), p. 14.

⁶ Doulton and Brown, p. 34.

radio adverts, and British press and magazines.⁷ They deduce that the most common voice for climate change is ‘alarmism’, which ‘is typified by an inflated or extreme lexicon, incorporating an urgent tone and cinematic codes. It employs a quasi-religious register of death and doom, and it uses language of acceleration and irreversibility.’⁸ Other less frequent repertoires include, ‘small actions’, usually found in campaigns, which offers a pragmatic attitude that climate change is manageable and unproblematic if we take action to reduce our CO² expenditure; and the ‘settlerdom’ discourse, which ‘rejects and mocks the alarmist discourse – and with it climate change – by invoking “common sense” on behalf of “the sane majority” in opposition to “the doom-mongers”.’⁹ Climate change in the public sphere, therefore, tends to be narrated from a restricted and repetitive series of discourses. Such predictable representations mean that it is conceived through a recurring perspective, allowing for little reflection or variation in and around the topic. This, essentially, closes down avenues for debate. Furthermore, the usage of these repertoires tends to communicate more about the ideological positioning of the source or writer, rather than engaging and comprehensive information. As Doulton and Brown find:

Climate change was ideologically constructed, with profound difference in its portrayal across different newspapers, differences which both represented and reinforced existing ideologies. Newspaper ideologies also mediated the influence of politics and science: newspapers were

⁷ G. Ereaut and N. Segnit, ‘Warm Words: How We are Telling the Climate Story and Can We Tell it Better’, *Institute for Public Policy Research*, (2006), p. 6.

⁸ Ereaut and Segnit, p. 7.

⁹ Ereaut and Segnit, p. 8.

sensitive to shifts in these arenas, but only within the bounds of their ideologies.¹⁰

Public thinking about the environment, then, is restricted to certain value laden or ideological notions.

Research from the *Tyndall Centre* tells us that the public mostly gains their understanding of climate change from the media, which holds a significant influence over opinions:

The general public garners most of its knowledge about science from the mass media. Therefore the role of the media is significant in the public's cognition and perception of climate change issues. The ways in which television, radio and newspapers communicate complicated issues of science, technology and politics to the public has reached a critical point in post-industrial society as the media has become highly influential and immensely powerful. Its sway over the public psyche is evident in all sectors with public understanding of science in particular being communicated by media eager for topical news.¹¹

Yet, articles are often selected for their 'newsworthiness' and capacity to generate interest. 'Alarmism', commonly used for presenting climate change, appeals to sensationalism and provides entertainment value similar to that found in disaster narratives. Yet, 'popular claims and media "spin" amplify the science beyond proportion' and consequently there is a disjuncture between scientific meaning and media narration.¹² Though the information does need to be digested in some form, since the majority of the public are not climate experts. Thomas Lowe's research suggests that the methods for

¹⁰ Doulton and Brown, p. 45.

¹¹ Thomas Lowe and others, 'Does Tomorrow Ever Come? Disaster Narrative and Public Perceptions of Climate Change', *Tyndall Centre Working Paper*, 72 (2005), p. 3.

¹² Thomas D. Lowe, 'Is this Climate Porn? How does Climate Change Communication affect our Perceptions and Behaviour?', *Tyndall Centre Working Paper*, 98 (2006), p. 4.

presenting climate change adhere to that which is entertaining and easily apprehensible. This fails to increase understanding of the subject despite appealing more broadly to interests and being more 'digestible':

When judged against the extensive body of social psychological research which examines the persuasiveness of any communication (Breakwell, 2000), popular portrayal of climate change ticks many of the boxes. Breakwell (2000) suggests that to maximise impact, risk communications must have a content which triggers attention, is unambiguous, definitive and easily interpretable. Thus, contemporary representations appear well suited perhaps not to educate the public but more to tap into the accessible parts of psychological function. However, at the same time, such approaches fall short of being a conventional risk communication tool by frequently departing from the realms of reality and failing to offer audiences a basic understanding of causes and measures for mitigation.¹³

We find here that climate change is often presented without advice on how to mitigate it or understanding of its causes; the overall effect rather gives the sense of something that is vague, overwhelming and fearful. Media framing of climate change manipulates its meaning through a value-laden and newsworthy filtering. Therefore the discourse is degraded even prior to its dissemination and consumption.

Climate discourse is comprised of a seemingly narrow set of words and phrases, such as *eco*, *eco-friendly*, *green*, *global warming*, *ozone layer*, *natural resources*, *energy*, *carbon*, *carbon offsetting*, *carbon footprint*, *carbon tax*, *carbon neutral* and so forth. Yet, with closer attention, it becomes evident how the means and context in which these terms are used saturates them with meanings other than ecological ones. The examples are

¹³ Lowe, p. 5.

ubiquitous.¹⁴ Here, I will draw examples from the 2013 Conservative Party Conference.¹⁵ David Cameron, whose party claims to be the 'greenest government ever'¹⁶ and campaign slogan was 'vote blue and go green',¹⁷ stated, 'with its wind and wave power, let's make the Humber the centre of clean energy. With its resources under the ground, let's make Blackpool the center of Europe for the shale gas industry'.¹⁸ Here we find a paradox: placing a renewable energy source alongside a fossil fuel. The necessity for developing a renewable energy project is undermined by that of the other carbon-emitting scheme. It also underlies the superficiality in proclaiming 'green' credentials. At the same conference the energy minister, Michael Fallon, when asked his personal views on climate change responded, 'You're getting me into theology now.'¹⁹ Greg Barker, Minister of State for Energy and Climate Change, expressed his opinion that rather than encouraging the development of clean and renewable energy, the 'Councils

¹⁴ As can be found in the many websites dedicated to listing examples of greenwashing (a marketing device that deceptively promotes something as 'environmentally-friendly' or natural) for instance: *The Sins Greenwashing* (2013)

(<<http://sinsofgreenwashing.org/findings/index.html>>; *Greenwashing Index* <<http://www.greenwashingindex.com/>>; *GreenPeace* <<http://www.stopgreenwash.org>>

¹⁵ This took place between 29 September and 2 October 2013 in Manchester, shortly after the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report in Stockholm (23-26 September 2013). At the time of writing, this was the most recent example of climate change discourse in the public sphere.

¹⁶ David Cameron, 'Prime Ministers Speech at the Department of Energy and Climate Change', 14 May 2013. *Gov.uk*. <<https://www.gov.uk/government/speeches/pms-speech-at-decc>> [accessed 10 October 2013]

¹⁷ Simon Clewer, *Conservative Home/Tory Diary*, 20 April 2006, <http://conservativehome.blogs.com/torydiary/2006/04/vote_blue_and_g.html> [accessed 10 October 2013]

¹⁸ Damian Carrington, 'David Cameron's Speech Encapsulates Tory Doublespeak', *The Guardian*. 2 October 2013.

¹⁹ Paul Waugh, 'Energy Minister Michael Fallon, when I asked his personal vw [sic] on climate change: "You're getting me into theology now"'. *Twitter*. (7 June 2013) <<https://twitter.com/paulwaugh/statuses/342986243619033088>> [accessed 12 October 2013]

need to “have a bit more backbone” and curb the building of large solar power sites in the rural areas.’²⁰ Secretary of State for Environment, Food and Rural Affairs,²¹ Owen Paterson’s response to climate change was: ‘People get very emotional about this subject and I think we should just accept that the climate has been changing for centuries’. The disparity between the Conservative party’s claim to be the ‘greenest government ever’ and the opinions held by its members demonstrates how ‘green’ rhetoric can be readily employed without actual pro-environmental intent, thus contributing to the decline of climate discourse. *Green* is an easy term to use because it lacks substance and is simply perceived as something desirable. It does not require understanding or correlation to climate science. Therefore, one might claim to be *green* without having to commit to or consider the challenges of mitigating climate change. Contradictions in the Party’s agenda make this climate speech, here, impoverished.

Many terms found within climate discourse share this vagueness. Either this, or their intended meanings are lost, or their usage fails to correlate with the seriousness of climate change. For instance, the numerous associations with carbon dioxide tend to convey more about culture than its chemical nature. For instance, the notion of a ‘carbon footprint’ is suggestive of an individual’s moral standing, ‘carbon offsetting’ of marketing devices, and ‘carbon tax’ of international politics. *Carbon* becomes

²⁰ Joel Gunter, Conservative Party Conference 2013, *The Telegraph*. 30 September 2013.

²¹ Since writing this chapter, Liz Truss has now been appointed this role.

a multifaceted term due to its excessive cultural sublimation. The findings of Whistmarsh et al suggest that the word does not necessarily prompt thought about climate change:

In order to prompt links between carbon and climate change, the survey asked ‘When you hear statements such as “carbon emissions are increasing” or “the company is aiming to become carbon neutral” what do you understand by the word “carbon”?’ Although the most common response term (by 26.5% of respondents) was ‘carbon dioxide’ or ‘CO²’, many responses were less technical and suggested moral or cultural concepts.²²

Sustainability is another ambiguous term, gesturing towards something morally desirable, as surmised here:

While ‘sustainability’ puts itself forth as an ethical argument about intergenerational fairness, it ultimately bows to economic realism. Scientists and policy makers debate long and hard about the level and timeframe of a carbon threshold, but the overall structure of parallel tracks remains stable: on one side, mitigate emissions and store up carbon; on the other side, pursue research and development of alternative sources of energy — ideally forms that will not require vast new infrastructures but can be inserted into existing shells (biofuels in gas tanks, for instance, with little or no modification to the internal combustion engine) — so as not to disrupt in any violent manner national and global forces of production, distribution and consumption.²³

As Karen Pinkus explains, sustainability is conceived as a proactive, radical alternative, yet the term is often dubbed to initiatives and products that are not a truly sustainable substitute. The term is used rather to convey the sense of something good, whilst delaying possibilities to generate real sustainable solutions. It makes the appearance of doing something without actually doing it.

²² Lorraine Whitmarsh and others, ‘Carbon Capability: What does it mean, how Prevalent is it, and how can we Promote it?’, *Tyndall Centre Working Paper*, 132 (2009), p. 8.

²³ Karen Pinkus, ‘Carbon Management: A Gift of Time?’, *The Oxford Literary Review*, 32 (2010), pp. 51- 70, (p. 54).

Steven Poole, in *Unspeak: Words are Weapons*, examines terms found commonly in the press and political speeches. Many words belonging to the environmental repertoire would fall within Poole's definition of 'unspeak'. He explains that terms such as *pro-life* and *tax-relief* are examples of 'unspeak', because they are 'not a neutral name. It is a name that smuggles in a political opinion'.²⁴ They are a pre-loaded and efficient form of persuasion. He also explains that:

[Such terms] represent an attempt to say something without saying it, without getting into an argument and so having to justify itself. At the same time, it tries to *unspeak* – in the sense of erasing, or silencing – any possible opposing point of view, by laying a claim right at the start to only one way of looking at a problem.²⁵

The rise of mass media has inaugurated the spread of 'unspeak', since it conveys a maximum amount of persuasion within a minimal space: 'the ever-more-confining structure of television and radio newsbites, in particular, makes Unspeak the ideal vehicle for the dissemination of propaganda'.²⁶ Poole notes that politicians have taken advantage of the media's 'inbuilt structure bias towards the snappy phrases'. They intentionally offer up such phrases that will be readily adopted by television and newspapers. 'Unspeak' should not be mistaken for doublespeak, since 'unspeak' 'says one thing while *really meaning that thing*, in a more intensely loaded and revealing way than a casual glance might acknowledge'²⁷ (though the neologism of

²⁴ Steven Poole, *Unspeak: Words are Weapons* (London: Abacus, 2006), p. 3.

²⁵ Poole, p. 3.

²⁶ Poole, p. 12.

²⁷ Poole, p. 4.

‘unspeak’ is certainly evocative of Orwell). In response to Poole’s book, a website has been founded to catalogue examples of manipulative language.²⁸ It lists the term *oil spill*, arguing ‘to call the release of millions of gallons of crude oil into the ocean from a drilling rig or tanker a ‘spill’ — like a coffee spill — is to plead that it was merely an inconvenient accident. Questions of responsibility are quietly swept under the carpet.’²⁹ The phrase *natural disaster* similarly diminishes the gravity of the event:

The term ‘natural’ usually helps to make things sound benign (‘natural flavourings’ in food), but the phrase ‘natural disaster’ ascribes all the blame for the devastation caused by an earthquake, volcano or hurricane to the inscrutable and irresistible force of Nature — even though human decisions both before and after the event often make things much worse.³⁰

Many words within climate discourse belong to this example of speech and a closer enquiry into the terms *natural resources*, *biodiversity*, *eco-friendly*, *global warming*, *climate change*, *energy* and *biofuel* will tell you this. In these phrases we can find examples where their usage does not correlate to the intended meaning, they are more culturally than environmentally suggestive, or they are over-simplistic.

The term *climate change* is one of the most exemplary for thinking about this type of ineffective discourse. It was coined after ‘global warming’

²⁸ *Unspeak* <http://unspeak.submarinechannel.com/episodes/words_are_weapons> [accessed 4 October 2013]

²⁹ ‘Oil Spill’, *Unspeak* <http://unspeak.submarinechannel.com/dictionary/oil_spill> [accessed 4 October 2013]

³⁰ ‘Natural Disasters’, *Unspeak* <http://unspeak.submarinechannel.com/dictionary/natural_disasters> [accessed 5 October 2013]

was considered too sinister and doom orientated.³¹ The term is problematic and often invokes feelings and understanding not necessarily conducive or relative to its denotation. The findings from research tell us that ‘climate change’ may be a less effective term than *global warming*:

[Global warming] is associated more readily with heat related impacts, ozone depletion and human causes than ‘climate change’, which is more often seen as having natural causes and a range of impacts; furthermore, ‘global warming’ is seen as more important and concerning than ‘climate change’.³²

They also remark that:

Understanding about environmental issues tends to be limited to abstract or vague concepts; for example while most people are aware of the main causes of climate change, understanding about the relative contribution of different activities to causing climate change is lower and there is confusion associated with emissions related terminology (e.g., carbon dioxide, carbon, carbon equivalent) and difficulty visualizing quantification of emissions [...] In general, there is a tendency to conceptually integrate climate change and other (similar) environmental phenomena or problems [...] many participants were unable to distinguish terms such as the ozone layer, greenhouse gases and carbon emissions from the perceived ‘science babble’.³³

The understanding of climate change and what the term actually implies is vague. The terms frequently used in this context succeed in conjuring notions about the environment, but fail in being specific about what they actually mean. This notion of ‘science babble’ points to how it comes to be perceived in a public sphere, as homogenised and indistinct, and conveying general associations rather than direct understanding.

³¹ Lorraine Whitmarsh, ‘What’s in a Name? Commonalities and Difference in Public Understanding of “Climate Change” and “Global Warming”’, *Public Understanding of Science*, 18 (2009), pp. 401-320.

³² Lorraine Whitmarsh and others, ‘Public Engagement with Carbon and Climate Change: To what Extent is the Public ‘Carbon Capable?’’, *Global Environmental Change*, 21 (2011), pp. 56-65, (p. 58).

³³ Whitmarsh, p. 58.

It is only by paying further attention to these words and phrases that we can reveal such redundancy, contradiction, and over-saturation within them.³⁴ Climate change tends to be discussed within a limited framework, and one that is informed by social, economic and ideological biases. The other various associations climate discourse denotes prevent us from gaining a useful understanding of the issue.³⁵

Solar

Ian McEwan's novel *Solar* is distinct within the genre of climate fiction: it is set in the present, whereas eco-fiction tends to be set in the post-apocalyptic future; it employs realism, rather than relying on science-fiction imagery; it is a comedy; sustainability and climate science are central to the narrative;³⁶ and, most notably, no environmental catastrophe takes place. Selecting such an uncharacteristic novel may seem an unlikely choice for a chapter addressing the consequence of repetitious environmental discourse; yet, it is one of the only novels that attempt to engage with current climate debates and science. That so few climate novels engage with climate science, suggests that incorporating science into fiction may limit the novel's artistic capacity, as I discussed in the introduction. Also, it points to the

³⁴ *Over-saturation* is intentionally evocative of Guy Debord, who suggests that authentic social life has been replaced by the mass accumulation of spectacles. Guy Debord, *Society of the Spectacle*, trans. by Ken Knabb (Paris: BuchetChastel, 1967; repr. London: Rebel Press, 2004)

³⁵ A 'useful understanding', as defined here, is one that is able to provoke thought and contemplation about climate change.

³⁶ Many climate novels are set in the aftermath of a global environmental disaster, and do not provide detail about sustainability, mitigation strategies or climate change.

complexity and difficulty of the science and conveying it to a non-scientific audience. Most climate novels conform to predictable disaster imagery, without offering any immediate commentary or reference to the climate debate. *Solar* is therefore useful for thinking more directly about climate discourse. There has been considerable debate about the artistic merit and success of this novel; therefore I will examine how far the novel itself is a victim of impoverished environmental speech. In *Solar*, McEwan makes use of the hollowness found in climate discourse for his plot and character formation. As such, I also ask if McEwan's unconventional rendering of the genre offers a critique of climate discourse.

Solar's protagonist, Michael Beard, is a repellent, misanthropic and morally bankrupt physicist, or rather pseudo-physicist. Though he won a Nobel science prize for his 'Beard-Einstein conflation' theory -- the details of which are left suitably hazy -- 'decades have passed since he last sat down in silence and solitude for hours on end, pencil and pad in hand, to do some thinking'.³⁷ Instead he has coasted through the remainder of his career via reputation alone, achieving very little work. The novel opens with the breakdown of Beard's fifth marriage. His current wife, Patrice, is having an affair with the builder, Rodney Tarpin. Meanwhile, Beard is the head of a research centre in Reading, where they are developing the WUDU project (Wind Turbine for Urban Domestic use). Beard is unenthused about the

³⁷ Ian McEwan, *Solar* (London: Jonathan Cape, 2010), p. 15. Further references [to this edition, etc.] are given after quotations in the text.

project and which is exacerbated by the contrasting eagerness of Tom Aldous, postdoc and Beard's chauffeur. Aldous shares ideas on climate change and a solar energy project during car journeys, which Beard finds tedious. Beard decides to join an expedition to the arctic to 'see global warming for himself' (p. 46), and as a distraction from his ennui. He returns home to find Aldous on his sofa and wearing his bathrobe; Aldous is also having an affair with Patrice. In the scene that follows, Aldous in a freak accident slips and falls onto a glass table. Beard frames Tarpin as Aldous's murderer, enabling him to take revenge against Tarpin and steal Aldous's work. The narrative advances five years to 2005, where Beard, passing off Aldous's work as his own, is implementing the artificial photosynthesis project. To his dismay, he finds out his current partner, Melissa, is pregnant with his first child. The novel skips ahead to 2009, Beard now somewhat older, fatter and in considerable poor health, is underway with his project to create abundant, renewable energy. It is here, at the opening ceremony of the project's first site in New Mexico, that the chaos of Beard's life accumulates: Tarpin, newly released from prison after falsely serving a sentence for Aldous's death, comes and sabotages the plant; Melissa arrives with their three-year-old child in a bid to save their relationship, after she discovers that Beard is having an affair with Darlene, a brash waitress from New Mexico; a patent lawyer, after Beard is revealed for stealing Aldous's work, also arrives; along with the onset of a heart attack. It is in the culmination of these events that the novel ends.

In March 2005, McEwan, along with a crew of artists, journalists and scientists, embarked upon a trip to Tempelfjorden, North Pole. The premise for *Solar* originates from this trip. The aim of the expedition was:

To think about the ways we might communicate our concerns about climate change to a wider public; we will think about the heady demands of our respective art forms, and we will consider the necessity of good science, and shall immerse ourselves in the stupendous responsibilities that flow from our stewardship of the planet.³⁸

In an interview McEwan described the petty disorder found onboard the ship:

It was chaos. There was no malice, but people were careless and would inadvertently borrow each other's stuff. Clothes and equipment there to save our lives, which we should have been able to look after very easily, would go missing, and I thought, for all the fine words and good intentions, maybe there was a comic inadequacy in human nature in dealing with this problem.³⁹

McEwan wrote an essay, 'A Boot Room in the Frozen North', about his time spent in the arctic. It is not so much the northern landscape or conversations amongst artists and scientists that leads to McEwan's response, but rather the state of the boot room. The boot room eventually becomes symbolic of the inadequacies inherent in human nature for addressing environmental concerns successfully. The expedition is parodied in *Solar*, though Beard's cynicism, 'He could not stand it, the optimism was crushing him. Everyone but Beard was worried about global warming and was merry, he was uniquely morose' (p. 67), contrasts with McEwan's enthusiasm, who 'adored

³⁸ Ian McEwan, 'A Boot Room in the Frozen North', *Cape Farewell* (2005) <<http://www.capefarewell.com/climate-science/comment-opinion/ian-mcewan.html>> [accessed 16 October 2013]

³⁹ Nicholas Wroe, 'Ian McEwan: "It's good to Get Your Hands Dirty a Bit"', *The Guardian*, 6 March 2010.

that trip' and the 'idealistic conversation'.⁴⁰ In reading *Solar* as an environmental text, it becomes significant that it is the boot room, the 'wasteland of broken dreams', rather than the 'retreating glacier', which prompts McEwan into thinking about climate change.⁴¹ The 'wasteland' is relocated to the confines of the ship; it is not the rapidly disappearing arctic. Human behaviour becomes McEwan's focus, as after all climate change is a human caused phenomenon. McEwan states that:

The issue [climate change] challenges our nature. Individually, we're competitive. Nations are competitive. They have to collaborate on this, and they can only do this if they exercise their rationality and agree on a set of rules within which they can compete.⁴²

We must learn more about human nature to tackle climate change. We cannot expect to take successful action or reach agreements about how to reduce our emissions until we first understand our behaviour and motivations. From this, McEwan concludes that: 'All boot rooms need good systems so that flawed creatures can use them well. Good science will serve us well, but only good rules will save the boot room.'⁴³ Technology and scientific knowledge can only help so far, as long as we act according to our individual wants and desires.

Beard is 'flawed creature' and his character becomes the archetypal figure for thinking through destructive human nature. *Solar* gives a very

⁴⁰ Wroe.

⁴¹ McEwan, 'A Boot Room in the Frozen North'.

⁴² Ian McEwan. "A Thing One Does", *Conversations with Ian McEwan*, ed. by Ryan Roberts (Jackson: University of Mississippi Press, 2012), p. 191.

⁴³ McEwan, 'A Boot Room in the Frozen North'.

protagonist orientated account and it has been criticised for lacking an environmental perspective. Evi Zemanek's article highlights how the novel is commonly regarded as a failed and disappointing attempt to explore climate change. She suggests that climate change acts as little more than a plot advancer:

At the appearance of his latest novel, *Solar* (2010), the successful British author was already anticipating significant misunderstandings among his readers. These might be fuelled by descriptions of his book such as 'the book on climate change' (Walsh). Although the protagonist works in clean energy research and offers some insight into his discipline or rather his business, his turbulent private life clearly catches more attention. Thus, the claim that the novel focuses on climate change is, strictly spoken, as inaccurate as the assertion that the novel is just using it as a framework for its plot.⁴⁴

Yet, the novel's meticulous description and presentation of the flawed protagonist may speak more broadly about climate change than necessarily perceived. It is through the human that McEwan explores climate change. This technique also offers a means to examine climate change free from the repetitious and typical environmental tropes, as I discuss later.

There is a degree of pathos and comedy in the descriptions of Beard, 'that foolish thatch of earlobe-level hair that buttressed his baldness, the new curtain-srag of fat that hung below his armpits, the innocent stupidity of swelling in gut and rear' (p. 6). Beard is an unremarkable, unattractive, middle-aged man. He is defined by his gluttony, growing alcoholism, and an extraordinary capacity for constructing a life around a

⁴⁴ Evi Zemanek, 'A Dirty Hero's Fight for Clean Energy: Satire, Allegory, and Risk Narrative in Ian McEwan's *Solar*', *ECOZON@*, 3, (2012), pp. 51-60, (p. 51).

series of fragile lies, which do eventually erupt. He lacks genuine environmental concern, as comically captured here, 'in fact, greenery in general – gardening, country rambles, protest movements, photosynthesis, salads – was not to his taste' (p. 87). Yet it is this character who is the champion for sustainability and environmental action. In spite of Beard's selfishness, dishonesty, general vileness and lifestyle, which are at odds with ecological integrity, he is the central locus through which climate change is explored. The mundane and 'un-eco' protagonist presents the theme of climate change through an alternative lens. The novel is not just another disaster narrative wherein the environmental focus is erased by hero orientation. As Zemanek notes:

He refrains from presenting examples of ecological behaviour as in stereotypical Eco-Thrillers, in which the good opposes and finally wins over the bad. Instead, he creates an ambivalent, complex protagonist who publicly puts on the mask of a warner, but truly is a sceptic and anti-environmentalist.⁴⁵

Beard impersonates an environmentalist since it suits his career, reputation and finances. This characterisation and perspective of Beard reveals the internal contradictions found within environmentalism. Beard's attitude towards climate change is conveyed here:

Beard was not wholly sceptical about climate change. It was one in a list of issues of looming sorrow, that comprised the background to the news, and he read about it, vaguely deplored it and expected governments to meet and take action. And of course he knew that a molecule of carbon dioxide absorbed energy in the infrared range, and that humankind was putting these molecules into the atmosphere in significant quantities. But he himself had other things to think about.

⁴⁵ Evi Zemanek, 'A Dirty Hero's Fight for Clean Energy: Satire, Allegory, and Risk Narrative in Ian McEwan's *Solar*', *ECOZON@*, 3, (2012), pp. 51-60, (p. 58).

And he was unimpressed by some of the wild commentary that suggested the world was in 'peril', that humankind was drifting towards calamity, when coastal cities would disappear under the waves, crops fail, and hundreds of millions of refugees surge from one country, one continent, to another, driven by drought, floods, famine, tempests, unceasing wars for diminishing resources. There was an Old Testament ring to the forewarnings, an air of plague-of-boils and deluge-of-frogs, that suggested a deep and constant inclination, enacted over the centuries, to believe that one was always living at the end of days [...] When that did not happen, and after the Soviet empire had been devoured by its internal contradictions, and in the absence of any other overwhelming concern beyond boring, intransigent global poverty, the apocalyptic tendency had conjured yet another beast.⁴⁶ (p.16)

For Beard, the apocalyptic depiction of climate change is simply due to a lack of alternative worries. Yet, his contemplation does bear some resonance for the way that climate change is held in the public imagination. Climate change is most frequently depicted through disaster and sensationalist imagery. In being so, it is homogenised along with other global issues. The images fail to be striking in their ubiquity. The depictions of refugees, flooding and famine dilute it into the predictable. The repetitious and recurring narrative forms and imagery fail to promote engagement or attention to the issue. Such excess of repetitious images is evocative of Guy Debord's critique of our 'spectacular society'. According to Debord the present is structured by 'an immense accumulation of *spectacles*. Everything that was directly lived has receded into a representation.'⁴⁷ The over-saturation of the spectacular, which refers to the mass media, replaces

⁴⁶ McEwan himself has some assertive, if not problematic, views about the danger of apocalyptic thought which he links to rise of religious fundamentalism, see his long essay: Ian McEwan, 'The Day of Judgement', *The Guardian Review*, 31 May 2008.

⁴⁷ Guy Debord, *Society of the Spectacle*, trans. by Ken Knabb (Paris: BuchetChastel, 1967; repr. London: Rebel Press, 2004) p. 7.

'authentic social life' with its representation, 'the real world is transformed into mere images, mere images become real beings [...] a world that can no longer be directly grasped'.⁴⁸ This spectacular consumption affects human perceptions, which leads to a degradation of knowledge and hinders critical thought.⁴⁹

Solar is entirely narrated from the perspective of Beard. It seems almost claustrophobic in its centralisation around this particular character. The reader is never provided with an alternative voice or viewpoint, we only ever receive Beard's.⁵⁰ A review claimed the single-voice narration feels as though 'you are locked inside an echo chamber, listening only to the reverberations of the one same sound – the groan of a fat, selfish man in late middle age eating himself'.⁵¹ Yet, this approach frees the novel from didacticism or moralising, and instead allows readers to form their own reflections. The narration also serves a technical function, which liberates the novel from reliance on pre-existing environmental speech. When it does employ such environmental speech, it is in an ironic, self-conscious way. It often presents environmental clichés and rhetoric through the disingenuous voice of Beard. The novel both highlights the usage of such language and saves itself from being insincere by reframing such discourse within satire.

⁴⁸ Debord, p. 11.

⁴⁹ I discuss how such a saturation of images can deflect critical engagement more closely in *Odds Against Tomorrow*.

⁵⁰ However, McEwan's use of irony in the presentation of Beard allows for an implicit critique of the voice.

⁵¹ Jason Cowley, 'Solar by Ian McEwan', *The Observer*, 14 March 2010, <<http://www.theguardian.com/books/2010/mar/14/solar-ian-mcewan>> [accessed 15 October 2013]

This subversion means the novel can purposefully deploy environmental rhetoric and avoid becoming subject to its anesthetising effects. Placing back the hollow discourse into the mouth of the sceptic highlights the ineffectiveness and shallowness of such rhetoric. This technique can be compared to 'détournement' or as it more commonly known – 'culture jamming'. Debord considers this to be an antidote to the spectacle, because it disrupts its flow. Détournement turns expressions of the system, such as logos or slogans, against itself. Here, Debord describes the device:

Détournement is the flexible language of anti-ideology. It appears in communication that knows it cannot claim to embody any definitive certainty. It is language that cannot and need not be confirmed by any previous or supracritical reference. On the contrary, its own internal coherence and practical effectiveness are what validate the previous kernels of truth it has brought back into play. Détournement has grounded its cause on nothing but its own truth as present critique.⁵²

It uses the same language and style as that which it seeks to subvert and this reinstates the discourse with a critical force.

The very character of Beard is an allegory; his gluttony, for example, points to the relationship between over-consumption and environmental destruction. The novel is littered with allegories, both as a narrative technique and feature of the plot. The episode in which Beard mistakenly eats a packet of crisps belonging to another train passenger is a comic and detailed scene, expanding over several pages. It is first left to the reader to contemplate the significance of this scene, yet it is later re-employed by Beard in an internal parody of itself. There are several similar

⁵² Debord, p. 114.

examples in the novel, where the narrative mirrors and satirizes itself. Beard later uses this 'crisp' example to encourage shareholders to invest in future renewable energy projects. He states:

What I discovered on Paddington station was, first, that in a grave situation, a crisis, we understand, sometimes too late, that it is not in other people, or in the system, or in the nature of things that the problem lies, but in ourselves, our own follies and unexamined assumptions. And second, there are moments when the acquisition of new information forces us to make a fundamental reinterpretation of our situation. (p. 155)

The thematic and narrative parodies are essential to the functioning of the novel and its ability to comment on degraded environmental speech without succumbing to it. The novel is self-mocking; it operates on several convoluted levels of self-reference to its own narrative, protagonist and the wider environmental movement and discourse. Greg Garrard, however, regards the novel's allegorical content as a failure:

Beard's personification of the split between what we know and what we do – its characteristic rationalisations, evasions and delusions – is promising in theory but annoyingly schematic in practice. The emotion norms of comic allegory are too narrow; its relationship to hegemonic strategies of denial too oblique and accepting. Remember 'carborexnic', Clarkson's neologism for prophets of self-denial like George Monbiot? McEwan, too, relies on a cruelly comic analogy between physical weight and carbon emissions that implies both obesity and global warming are failures of self-discipline – a convenient untruth that exonerates the fast food and fast fuel industries. Yet, the grotesque body, dominated by distended, insatiable mouth and semi-autonomous penis, is virtually a requirement of any comic personification of excess.⁵³

⁵³ Greg Garrard, 'The unbearable lightness of green: air travel, climate change and literature', *Green Letters*, 17:2, (2013) p. 181

As Garrard claims, there are moments in the novel that seem overdone, for instance its character description or crude humour. A review of the novel points to its excess and vulgarity:

Solar feels as if it has been stretched far beyond its natural length. Much of the first part, which is set in 2000 and culminates in the death of the student, reads like an exercise in extended scene-setting, to no obvious purpose or effect. The protracted episode in which Beard travels with a group of scientists, artists and green activists to the Arctic, played mostly for laughs – he pisses outside and his penis freezes; he is menaced by a polar bear – is laboriously over-described. There is, sentence by sentence, an uncharacteristic verbosity.⁵⁴

The novel's tone of satire and comedy, at times, seems misplaced. For this technique to be successful, the reader must be attentive to the use of allegory and self-parody. The novel demands a certain kind of reading in order to function as an environmental text. Zemanek argues that the narrative style can be described as 'satiric-allegorical risk-narrative' that 'is not only aesthetically more attractive, but has a greater potential to incite reflection and discussion because of its risky ambiguities'.⁵⁵ She defends McEwan's style and instead 'argues for the consideration of the satiric-allegorical risk narrative as a new form of eco-fiction'.⁵⁶ Perhaps McEwan's rendering of the climate novel genre is the only way to narrate the tale free from outworn environmental speech. *Solar* also offers a platform for scrutinizing the deployment of environmentalism in the ordinary realm of an average citizen, concerned with more immediate things, such as his divorce,

⁵⁴ Jason Cowley, 'Solar by Ian McEwan', *The Observer*, 14 March 2010, <<http://www.theguardian.com/books/2010/mar/14/solar-ian-mcewan>> [accessed 15 October 2013]

⁵⁵ Zemanek, p. 59.

⁵⁶ Zemanek, p. 52.

and beyond that of the already green activist. It presents an unfamiliar territory for such exploration and moves beyond the over-prescribed environmental tropes.

Climate change, arguably, must always be communicated by frames.⁵⁷ There is not a neutral, ideological and value free way to discuss it. It is therefore often subject to mediation. In *Solar*, climate change is always presented through a character's perspective, for instance, the idealistic, if not abstract, conversation onboard the ship:

The Gulf Stream would vanish, Europeans would freeze to death in their beds, the Amazon would be a desert, some continents would catch fire, others would drown, and by 2085 the Arctic summer ice would be gone and the polar bears with it. Beard had heard these predictions before and believed none of them. And if he had, he would not have been alarmed. A childless man of a certain age at the end of his fifth marriage could afford a touch of nihilism. (p. 75)

The focus of it quickly shifts back to Beard, diminishing any risk of didacticism. The conversation is continued with a tone of contrariness:

Other themes flourished symphonically: what was to be done, what treaties were to be made between the quarrelsome nations, what concessions, what gifts should the rich world self-interestedly make to the poor? In the mess room's humid after-dinner warmth, it seems to the owners of full stomachs sealed with wine that it was only reason that could prevail against short-term interests and greed, only rationality could draw, by way of warning, the indistinct cartoon of a calamitous future in which all must bake, shiver or drown.

The statehood-and-treaty talk was worldly in comparison with another leitmotiv that summoned a cooling measure of austere

⁵⁷ George Lakoff discusses the various frames belonging to climate change. These frames might connect to emotions, or characterize political ideologies. Words are activated by their frames. Therefore, the solution for effective environmental discourse is not so much doing away with frames but by carefully building appropriate ones. George Lakoff, 'Why it Matters How We Frame the Environment', *Environmental Communication: A Journal of Nature and Culture*, 4 (2010), pp. 70-81.

plainsong, a puritanical air from the old conservation days, distrustful of technological fixes, determined that what was required was a different way of life for everyone, a lighter tread on the precious filigree of ecosystems, a near-religious regard for new rules of human fulfilment in order to flourish beyond supermarkets, airports, concrete, traffic, even power stations – a minority view, but heard with guilty respect by all who had steered a stinking snowmobile across the pristine land. (pp. 75-76)

This perspective highlights the (mostly unavoidable) hypocrisy found in environmental speech, and the impasse between lifestyle and environmental intentions. The conversation lingers around environmental issues, but Beard wonders in how much it is just an artistic indulgence. Though Beard fills the role of cynic, he maintains a voice of pragmatism and not that of 'fashionable' ecological concern. His view, though problematic, does allow for conscious and critical engagement with the subject, rather than an adoption or adherence to it without thought. A similar technique for exploring climate change is presented here:

After outlining what he expected to read next year in the third IPCC report, Aldous told Beard – and was the fiftieth person to do so in the past twelve months – that the last ten years of the twentieth century had been the warmest ten, or was it nine, on record. Then he was musing on climate sensitivity, the temperature rise associated with a doubling of CO₂ above pre-industrial levels. As they entered London proper, it was radiative forcing, and after that the familiar litany of shrinking glaciers, encroaching deserts, dissolving coral reefs, disrupted ocean currents, rising sea levels, disappearing this and that, on and on, while Beard sank into a gloom of inattention, not because the *planet* was in peril – that moronic word again – but because someone was telling him with such enthusiasm. This was what he disliked about political people – injustice and calamity animated them, it was their milk, their lifeblood, it *pleasured* them. (pp. 35-36)

This passage demonstrates a problem with climate discourse. Though climate change denial is problematic, it is a separate concern here from that

of outworn environmental language. Environmentalism motivated by fashionable, political or financial motivations contributes to the generation of degraded environmental speech. Beard complains of the monotony of the concern. Aldous is the 'fiftieth person' to tell him about it and, as a result, the subject becomes like 'white-noise' for Beard. The reoccurring motifs and imagery fail to provoke and induce contemplation ('the *planet* was in peril – that moronic word again') and instead irritate Beard.

At the very centre of the novel Beard delivers a speech to an audience of pension-fund managers. The speech is of greater significance than other more dramatic plot events, such as Aldous's death or Tarpin's sabotage. Just before giving his speech, Beard gorges himself on smoked-salmon sandwiches. The talk is intersected with descriptions of his nausea; tension is built into this scene by the prospect of Beard vomiting on stage. The seriousness of the speech is juxtaposed with the slapstick humour of Beard's gluttony. He begins:

'The planet,' he said, surprising himself, 'is sick.' There was a groan, followed by a susurrus of dismissal from his audience. Pension-fund managers preferred more nuanced terms. But using the work 'sick', rather like vomiting itself, gave Beard some instant relief. (p. 148)

The speech is long and detailed, expanding over several pages. McEwan does not summarise the scene but rather sets it out in full, despite it holding no immediate relevance to the main plot. The speech is like an interlude in the novel. It takes place between dramas, it shifts the pace of narration to a near halt, and the reader meanders through the scene with Beard, becoming

like an audience member herself as she is delivered the precise content of the speech. Beard draws upon the metaphor of the planet as sick. Its medicine is the sustainability projects and technological developments:

Curing the patient is a matter of urgency and is going to be expensive – perhaps as much as two per cent of global GDP, and far more if we delay the treatment. I am convinced, and I have come here to tell you, that anyone who wishes to help with the therapy, to be a part of the process and invest in it, is going to make very large sums of money, staggering sums. (p. 148)

The emphasis on being ecologically minded is about financial gain. This is, for this audience, a more persuasive means than intrinsic valuing of the environment. Beard continues his speech with the tone of prospect, using words such as *golden days*, *revolution*, *lucrative*, *vitality*, *growth*, and *dreams*:

These are golden days in the global markets and sometimes it seems the party will never end. But you might just have overlooked one sector that is outperforming the rest by doubling every two years. You may have noticed, you may have turned away. Not quite respectable enough, a mere passing fashion, you may have thought, too many of those post-hippie plutocrats from Stanford involved. But also involved are BP, General Electric, Sharp, Mitsubishi. Renewable energy. The revolution has begun. The market will be even more lucrative than coal or oil because the world economy is many times bigger and the rate of change is faster. Colossal fortunes will be made. The sector is seething with vitality, invention – and, above all, growth. It has thousands of unquoted companies positioning themselves with new techniques. Scientists, engineers, designers are pouring into the sector. There are log jams in the patent offices and supply chains. This is an ocean of dreams, of realistic dreams of making hydrogen from algae, aviation fuel from genetically modified microbes, of electricity out of sunlight, wind, tides, waves, cellulose, household waste, of scrubbing carbon dioxide from the air and turning it into a fuel, of imitating the secrets of plant life. An alien landing on our planet and noticing how it was bathed in radiant energy would be amazed to learn that we believe ourselves to have an energy problem. (p. 153)

Beard borrows a direct analogy from Aldous and as the speech continues he begins to quote Aldous directly. For example, Beard reemploys Aldous's earlier conversation, even though he initially dismissed it as farcical, boring and grandiose:

If an alien arrived on earth and saw all this sunlight, he'd be amazed to hear that we think we've got an energy problem. Photovoltaics! I read Einstein on it, I read you. The Conflation is brilliant. And God's greatest gift to us is surely this, that a photon striking a semiconductor releases an electron. The law of physics are so benign, so generous. And get this. There's a guy in a forest in the rain and he's dying of thirst. He has an axe and he starts cutting down the trees to drink the sap. A mouthful in each tree. All around him is a wasteland, no wildlife, and he knows that thanks to him the forest is disappearing fast. So why doesn't he just open his mouth and drink the rain? Because he's brilliant at chopping down trees, he's always done things this way, and he thinks that people who advocate rain-drinking are weird. That rain is our sunlight, Professor Beard. It drenches our planet, drives our climate and its life. (p. 27)

Beard takes the genuine, engaged and honest remarks belonging to Aldous and re-channels them into his speech about financial gain through climate change. This process places an effective discourse into the repertoire of dead speech; first by the act of repetition and then by reemploying it with a different intention. It is no longer about genuine environmental regard and Aldous's intended meaning is lost and it rather used to discuss economics and industry.

In his essay, *Politics and the English Language* (1946), Orwell identified faults found commonly in language that led to the incapacity of thought. He argued that political regeneration is reliant upon a regeneration of language. Our current state of discourse readily uses phrases or idioms

that do not necessarily convey meaning. Much of our discourse, particularly political, has become empty due to a reliance on outworn modes of speech. Due to this decay of language, when trying to communicate a particular meaning, both the listener and communicator become subject to an emptiness of thought. Neither is really thinking and they become subject to an immobility and anaesthetisation of the mind. It produces a state of vagueness. Language that relies on pre-made metaphors, idioms, similes, and leans towards jargon is subject to this decline. Stale, overused and premade phrases are used without requiring thought and by doing so they begin to replace the original intent of meaning with incoherence:

Throwing your mind open and letting the ready-made phrases come crowding in. They will construct your sentences for you – even think your thoughts for you, to a certain extent – and at need they will perform the important service of partially concealing your meaning even from yourself.⁵⁸

Environmental discourses largely belong to this category of outworn language. In looking at Beard's speech we find examples similar to the ones Orwell lists. Firstly the 'staleness of imagery', which Orwell describes:

The writer either has a meaning and cannot express it, or he inadvertently says something else, or he is almost indifferent as to whether his words mean anything or not. This mixture of vagueness and sheer incompetence is the most marked characteristic of modern English prose, and especially of any kind of political writing. As soon as certain topics are raised, the concrete melts into the abstract and no one seems able to think of turns of speech that are not hackneyed: prose consists less and less of *words* chosen for the sake of their meaning, and more and more of *phrases* tacked together like the sections of a prefabricated henhouse.⁵⁹

⁵⁸ George Orwell, 'Politics and the English Language', *Horizon*, London, April 1946
<<https://www.mtholyoke.edu/acad/intrel/orwell46.htm> > [accessed 23 September 2013]

⁵⁹ *Ibid.*

Beard realises that his speech is ineffective as ‘he was hearing dismissive whispers from separate quarters of the room, which had begun, he thought, on his words “warming the planet”’ (p. 150). His environmental repertoire has become part of this outworn discourse. His prefabricated phrases are met with similarly unconsidered responses, despite the gravity of the topic. As an audience member comments, ‘The Stone Age didn’t end because of a shortage of stones’ (p. 156). Such a response is banal and gives no genuine reflection or correlation to the climate debate. It is also an example of what Orwell describes as a ‘dying metaphor’:

A newly invented metaphor assists thought by evoking a visual image, while on the other hand a metaphor which is technically ‘dead’ (e.g. *iron resolution*) has in effect reverted to being an ordinary word and can generally be used without loss of vividness. But in between these two classes there is a huge dump of worn-out metaphors which have lost all evocative power and are merely used because they save people the trouble of inventing phrases for themselves.⁶⁰

Again, the deployment of a ‘dying metaphor’ does not demand reflection from the individual.

Orwell notes that ‘pretentious diction’ also contributes to redundant language:

Words like *phenomenon*, *element*, *individual* (as noun), *objective*, *categorical*, *effective*, *virtual*, *basic*, *primary*, *promote*, *constitute*, *exhibit*, *exploit*, *utilize*, *eliminate*, *liquidate*, are used to dress up a simple statement and give an air of scientific impartiality to biased judgements.⁶¹

⁶⁰ Ibid.

⁶¹ Ibid.

Beard calling the renewable energy industry a *revolution* is an example of 'pretentious diction'. Lastly, and perhaps most commonly found in climate discourse, are 'meaningless words'. This is where writing 'consists in gumming together long strips of words which have already been set in order by someone else [...] The attraction of this way of writing is that it is easy'.⁶² The complexity of climate change means that its repertoire is particularly prone to this type of usage. In the political and social discourses that surround climate change it 'is normal to come across long passages which are almost completely lacking in meaning'.⁶³ The speaker does not attempt to understand fully the words he is employing; therefore the reader cannot be expected to comprehend it either. As Orwell states, 'the great enemy of clear language is insincerity. When there is a gap between one's real and one's declared aims, one turns as it were instinctively to long words and exhausted idioms'.⁶⁴ This is exemplified throughout *Solar* and mostly by Beard, who feigns environmental concern for profit. One example of this is when Beard attempts to reassure his colleague that the solar energy project will be lucrative:

Here's the good news. The UN estimates that already a third of a million people a year are dying from climate change. Bangladesh is going down because the oceans are warming and expanding and rising. There's drought in the Amazonian rainforest. Methane is pouring out of the Siberian permafrost. There's a meltdown under the Greenland ice sheet that no one really wants to talk about. Amateur yachtsmen have been sailing the North-West Passage. Two years ago we lost forty per cent of the Arctic summer ice. Now the eastern

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Ibid.

Antarctic is going. The future has arrived...It's a catastrophe. Relax! (p. 217)

The only real and genuine environmentalist, Tom Aldous, is killed early on and by a dead polar bear. There is some obvious and ineloquent satire taking place here, 'it came alive. As his right foot landed on the bear's back, it leaped forward, with its open mouth and yellow teeth bucking into the air' (p. 89). By slipping on the polar bear skin rug, the order of death is reversed and subverted and the animal, emblematic of green campaigns and which Aldous the environmentalist is intent upon saving, instead kills him. The irony of Aldous's death is perhaps just a poor joke, yet it does speak about the precarious capacity of the environmentalist. Aldous is rendered voiceless; Beard steals Aldous's speech and uses it for his personal gain by playing the environmentalist. This is suggestive of how the environmentalist's discourse operates in the public sphere, where climate change is often entangled in political leanings, economics and ideology. During Beard's expedition to the arctic, in false alarm he fears he will be devoured by a polar bear. The story becomes material for a comical anecdote, 'in the account he would give for the rest of his life, the one that become his true memory, a polar bear with open jaws was twenty meters distant and running at him when the snowmobile started forward' (p. 71). It is when he returns home, to the urban environment of London, that the polar bear proves to be fatal. Such swapping of events suggests that climate change mitigation must begin at home, in the domestic setting and with the

self. Also, the repetitious image of the polar bear as evocative of climate change is unhelpful since it conforms to predictable environmental imagery. We would initially expect Aldous to be the story's hero, yet he is killed off to allow Beard to continue with his deceitful schemes. The novel defies expectations and predictability, constantly subverting the expected. However, for the novel to work, the reader must remain conscious and active in their reading. This in itself is a device against the impact of outworn, anesthetizing environmental speech. However, the mixed reception to the novel and the difficulty of its tone does mean that comedy and irony are risky strategies.⁶⁵

The novel's more profound environmental moments come in its unique observations, when it has managed to free itself from idiomatic discussion of climate change. It is when reflection springs from sincere contemplation, rather than the regurgitation of environmental clichés. One such moment is when Beard is looking down over the London cityscape:

How, wondered Beard as his plane at last quitted the stack on a banking hairpin tangent and lined itself up north of the Thames to begin its descent, how could we ever begin to restrain ourselves? We appeared, at this height, like a spreading lichen, a ravaging bloom of algae, a mould enveloping a soft fruit – we were such a wild success. Up there with the spores! (p. 111)

⁶⁵ Inger-Lise Kalviknes Bore and Grace Reid argue that satire and comedy are useful methods for engaging people with climate change and should be utilised as core devices. Inger-Lise Kalviknes Bore and Grace Reid, 'Laughing in the Face of Climate Change? Satire as a Device for Engaging Audiences in Public Debate', *Science Communication*, 36 (2014), pp. 454–478.

This description even borrows from nature imagery, though not the conventional aesthetic kind, but that of mould and invasive species, which, however, is more fitting for the topic of environmental destruction.⁶⁶ It offers a moment of genuine reflection from Beard, and perhaps his only one, suggesting that the mitigation of climate change is reliant upon our population learning restraint. This also deviates from the broader technocratic solution that the premise of the novel appears to advocate. It is in the subtle and fleeting reflection that the novel engages with environmental destruction free from degraded speech, because a process of contemplation invokes it.

Beard attempts to be a representative of the Baconian paradigm of objective, neutral science, for instance 'he was aggressively apolitical to the fingertips' (p. 39). For Beard, art is a frivolous and inane pursuit:

Beard would not have believed it possible that he would be in a room drinking with so many seized by the same particular assumption, that it was art in its highest forms, poetry, sculpture, dance, abstract music, conceptual art, that would lift climate change as a subject, gild it, palpate it, reveal all the horror and lost beauty and awesome threat, and inspire the public to take thought, take action, or demand it of others. (p. 77)

Beard is found 'caring little for art or climate change, and even less for art about climate change' (p. 73). Cowley's review of the novel suggests that McEwan's work has the tendency to dichotomise science and art:

⁶⁶ This also resonates with Timothy Morton's idea of 'Dark Ecology', which attends to the ugly and horrifying aspects of ecology. See Timothy Morton, *The Ecological Thought* (Cambridge, MA: Harvard University Press, 2010).

Perhaps McEwan should have written against expectation by choosing as his protagonist a scientist who has a profound artistic sensibility in the model of his friend Richard Dawkins, or an artist who is articulate in the language of science, as McEwan is himself. As it is, he remains a determined binarist; what continue to interest him are stark dichotomies, the clash and interplay of stable oppositions. Repeatedly in his fiction he sets reason against unreason, science against art, the mind against the body, technology against nature.⁶⁷

Though Cowley claims that McEwan sets art against science, *Solar* points more to the need to reconcile them. McEwan has been quoted saying, 'leave nothing to idealism or outrage, or even good art – we know in our hearts that the very best art is entirely and splendidly useless'⁶⁸ and 'I don't think it [art] can do much. And I don't think it can do much about climate change. I suppose it can reflect the problem and pose the problem in terms that might be useful to people.'⁶⁹ Art is not going to resolve climate change directly; it does however play a function of allowing us to explore it and bringing it into the imagination. Beard is lacking humanity, which ultimately leads to the failure of his project. Art would move the project beyond the realm of just data, into relevance and meaning, especially for communicating it to non-scientific audiences. Artistic sensibility would make Beard a less repugnant character, as it may also allow him to recognise the intrinsic value of his work.

⁶⁷ Jason Cowley, 'Solar by Ian McEwan', *The Observer*, 14 March 2010, <<http://www.theguardian.com/books/2010/mar/14/solar-ian-mcewan>> [accessed 15 October 2013]

⁶⁸ Ian McEwan, 'A Thing One Does'.

⁶⁹ McEwan, 'A Thing One Does'.

The solutions we are presented with in the novel do not come in the form of art, however, but rather that of technocratic fix:

The day after tomorrow a new chapter would begin in the history of industrial civilisation, and the earth's future would be assured. The sun would shine on an empty patch of land in the boot heel of south-west New Mexico, strike the Plexiglas tubes and split water, the storage tanks would fill with gas, the fuel-cell generator would turn and electricity would be ready to flow. (p. 213)

This describes the artificial photosynthesis project, now complete and ready to be launched at the close of the novel. It does not end as simply as one might expect though, and hopes for an alternative source of energy are quite literally quashed. Rather, the novel ends:

Someone's taken a sledgehammer to the panels. They've gone down the rows and taken them all out. Shattered. We've lost all the catalysts. Electronics. Everything [...] We, you, already owe three and a half million. Tomorrow's going to cost another half million. You can go down there yourself and explain to all the good people. Also, Braby is going to take you for everything you have and will ever have. And in the UK that dead boy's father had persuaded the authorities to move against you on criminal charges, basically theft and fraud. (p. 277)

The novel is on the cusp of presenting us with a solution for our energy needs and a significant move in mitigating climate change. The new technology is just about to come into action, yet it does not, nor does there seem any hope in the sudden accumulation of Beard's entropy. We might ask what such an ending means for a climate novel. It seems to suggest that such technological solutions cannot be successfully implemented without a greater understanding of our humanity, as McEwan's boot-room reflections also seem to suggest. Exploration through art allows such understanding. I also suggest that the climate novel is an important form for exploring climate

change in more various and dynamic ways, beyond its scientific and technical contexts.⁷⁰

Odds Against Tomorrow

A major environmental catastrophe is the primary focus of Nathaniel Rich's *Odds Against Tomorrow*, yet it is darkly comical, borrowing Kafkaesque tropes and postmodern irony. Mitchell Zucker, the novel's protagonist, evaluates and quantifies everything in terms of its threat and disaster-potential; he exists in an acute state of anxiety and fear. As a talented mathematician, he uses these skills to predict the likeliness of catastrophes. Whilst working in the Empire State Building, he is asked to calculate the cost of a large-scale disaster for the company. He enlists the help of a financial consulting firm 'FutureWorld'. The company's chairman, Alec Charnoble, in turn hires Mitchell, when he recognises his capacity for fear and paranoia of the unexpected. 'FutureWorld' specialises in disaster insurance. It offers consultations and 'worst-case scenario' predictions, which enables its clients, through a legal loophole, to be exempt from paying out compensation in the event of a disaster. The business is highly successful and Mitchell becomes very wealthy. Charnoble employs Jane Eppler as the company expands. Mitchell maintains an intense but entirely epistolary relationship with his previous college peer, Elsa Bruner. Elsa suffers from Brugada, a rare heart condition, which causes fainting episodes and means her heart might stop at any moment. Despite her condition, she

⁷⁰ Richard Kerridge, 'The Single Source', *EcoZon@*, 1.1 (2010), pp. 155 – 160

founds a remote agricultural commune in Maine. Mitchell considers her to be a 'walking worst-case scenario'.⁷¹ Meanwhile, New York is suffering from a lingering drought and intense heatwave. Eventually, and to the jubilation of its inhabitants, a storm arrives. Mitchell does not join the celebrations, as he knows periods of drought are often followed by intense rainfall, and thus flooding. To make matters worse, Hurricane Tammy is not far behind. In a succession of weather events, a huge flood destroys most of Manhattan. Jane and Mitchell fail to evacuate in time. They are however rescued by Mitchell's ornamental canoe. They reach safety and Mitchell travels to Maine to rescue Elsa, who has been in a coma. After failing to find her (she is presumed dead) he returns to the now vacant and destroyed Manhattan. He finds dry land, where he plants vegetables to begin a self-sufficient lifestyle. Inadvertently he founds a growing community of people following his example. Mitchell becomes known as 'the prophet', as rumours quickly spread that he foresaw the devastation. He becomes an iconic figure, his face appearing on T-shirts and regularly in the media. Mitchell however avoids all contact, becoming a recluse. At the end of the novel, it is revealed Elsa is alive and studying environmental law; Jane is starting up her own business 'Future Days', with Mitchell acting as a figurehead; and New York is being rebuilt.

⁷¹ Nathaniel Rich, *Odds Against Tomorrow* (New York: Farrar, Straus and Giroux, 2013), p. 10. Further references [to this edition, etc.] are given after quotations in the text.

The focus of this analysis is the way in which environmental disasters are represented and conceptualised. The process through which they become a part of the public imagination is important in understanding the functioning of environmental discourses. *Odds Against Tomorrow* captures how the significance and reality of the flood is misplaced by its media portrayal. By looking at Baudrillard's theory of simulacra, we can understand how the flood gets inserted into a representational code and is reordered to only point to further disaster tropes. It is processed into a spectacle and the reality of it is subsumed under representation. The eco-catastrophe is entwined and assimilated into mass schemas, only to bear more association with entertainment codes than an ecological event. By entering the system wherein the model is precedent the content is dissolved. This rendering and representation of the environmental disaster adds to the degradation of climate discourses. This is because actuality and meaning are subsumed and diverted. Climate change is assimilated into a grand, all-encompassing narrative, where difference and impetus are eradicated. It is homogenised by a particular way of seeing and comes to signify something other than its own reality. As a result, a disjuncture opens between representation and meaning. Climate change gets attached to the spectacle and becomes evocative of only this. This process means it is quickly absorbed into the consciousness, as it is instantly recognisable and there is no need for contemplation. Eventually the discourse surrounding climate change only refers to other referents. It ends up becoming a repetition,

echoing what has come before and is already part of the model. In *Odds Against Tomorrow* the reality and significance of the flood is soon shirked. No attention is afforded to its cause and implication; rather the iconic celebrity association of 'Mitchell the prophet' engulfs all accounts. Through its representation the catastrophe is also inserted into the wider discourse of every other tragedy as it replicates the tropes of these. It becomes part of the same predictable disaster imagery and the implication of the flood is lost to phantasmagoria and dramaturgy. By examining this process of 'virtualising' the environmental disaster, we can understand how its discourse arrives at emptiness and fails to provoke contemplation.

Baudrillard argues that in postmodern society the code or model structures our social reality. Signs are replaced by simulacra and the real by hyperreality. Furthermore arbitrary and artificial signs have proliferated, and the artificial subsumes the real. We have become trapped in a universe of simulacra, in which it is impossible to distinguish between spectacle and the real. Life is governed by a system of models, signs and representation. They constitute our reality, which erodes the distinction between the model and the real. Baudrillard describes us as living in the 'age of simulation' which begins 'with a liquidation of all referentials – worse: by their artificial resurrection in systems of signs'.⁷² Referents are re-entered into a system of signs and their relationship to an object or idea is eroded. Truth is eventually

⁷²Jean Baudrillard, *Simulations*, trans. by Paul Foss and others, (New York: Semiotext(e) Inc, 1983), p. 4.

lost, as signs of the real become a substitute for the real itself. Everything becomes part of this abstraction; the only measure is taken from other signs. It becomes an endless system of exchange. Meaning is derived from reference to other signs and not by external, outside value. Content is dissolved in an endless refraction between signs and the indefinite reoccurrence of simulation. Truth becomes impossible in an endless, disconnected spiral and weightless play of simulation and hyperrealism becomes a state of existence. Within hyperrealism the separation between the real and imaginary is eradicated, and 'the unreal is no longer that of dream or of fantasy, of a beyond or a within, it is that of a *hallucinatory resemblance of the real with itself*.⁷³ Existence is constituted by this self-perpetuating and all absorbing mode of reality, consuming distinction into its own sphere. Application of Baudrillard's theory highlights how some environmental discourses have become redundant through their representation and conceptualisation.

Prior to the novel's setting, a major earthquake takes place in Seattle, with huge financial implications for its companies:

The loss of life, though regrettable, they could overcome. It was the loss of capital that brought the chief executives to their knees. Even before the ground stopped trembling, the families of the earthquake victims had enacted that uniquely American mourning ritual: they filed class action lawsuits. (p. 14)

This environmental catastrophe is quickly rendered into financial quotients.

The numbers of dead are primarily an economic concern: 'The exchange

⁷³ Baudrillard, *Simulations*, p. 142.

rate was brutal [...] The corporations' insurance plans were worthless. This was a catastrophe in itself. "My God, what did we do to deserve this?" said one business leader' (p. 15). The catastrophe holds more significance in relationship to the companies' profits and its reality is displaced by this economic focus. In reaction to the earthquake, Alec Charnoble founds 'FutureWorld', a consulting firm that 'specialize in minimizing losses that may result from unforeseen or worst-case-imaginable scenarios [...] we can indemnify you against liability claims brought against you in the wake of a catastrophe' (p. 21). As Mitchell asks, 'so FutureWorld protects the company against disaster? That's impossible' (p. 26). 'FutureWorld' however operates on a system of charades, in which both company and client benefit:

'So we would pay for the right to blame you.'
'Exactly,' said Charnoble. 'So you can't be accused of negligence. This is, in legal terms, a buck-passing. A ripcord. FutureWorld serves as a get-out-of-jail-free card.' (p. 27)

Therefore the company operates via a simulation alone and is only a façade of taking action. It is comparable to 'Simuvac' (simulated evacuation) in *White Noise*, wherein the residents of Iron City rehearse the disaster to protect themselves against the real one. With both FutureWorld and Simuvac, the artificial replaces the real. They both present us with an empty referent, one that does not correlate to the real, as scenarios are constructed without an origin and serve an artificial purpose.

During the consultation session Charnoble, Jane and Mitchell construct disaster scenarios. Mitchell proves to be very successful at these

sessions, as Charnoble comments to Mitchell, 'the challenge is to scare them during the hopeful times, in the lulls between catastrophic events, when FutureWorld's services start to seem like an unnecessary luxury. When I look at you I start to believe that another disaster is fast approaching' (p. 31). The consultations rely on performance; Mitchell imitates the 'street preachers' who revel in the prospect of an apocalypse. The content of these sessions is entirely irrelevant; it becomes about the medium. They create a stage, with the use of illusions and special effects, 'big spaces with small furniture create a mood of dread [...] It also helped when they sweated. Whenever Mitchell held client meetings in his office, Charnoble turned the thermostat five degrees higher' (pp. 53 & 75). The spectacle and use of clichés conceals the emptiness of their speech:

The earthquakes, floods, wildfires, and tsunamis...

There were also the threats of a solar storm that would reset the planet's magnetic field, a deep freeze, hailstorm, hurricanes, tornado, asteroid, volcano.

'There is no volcano in New York,' said Nybuster.

'That's what you'd like to believe,' replied Mitchell. 'You would like to believe that very much.'

A few sessions – a reprieve, really – on minimal, localized assaults: employee sabotages company's finances; employee leaks industry secrets to competition; employee blows his brains out at his desk; employee goes on office-wide shooting rampage. A gun is fired in the United Nations. Sarin gas is released into the subway system. An aqueduct that supplies drinking water to the city is poisoned. The complications he explored were extravagantly detailed, tendinous, delicious.

Finally, large-scale fiscal fiasco: the dollar collapse; a major foreign currency fluctuates violently; the real estate market slides righty percent; the World Bank files for bankruptcy; commodities soar, leading to food riots and political instability. And peak oil millenarianism: electric grid crash; the collapse of industrial agriculture, travel, and international trade; a return to premodern agrarian life; mass starvation; the wilding of the suburbs. (p. 73)

Mitchell brusquely directs his client through the scenarios, shifting from environmental disasters, massacres, contamination, financial collapse, anarchy and famine, the tales of which are all deployed under the same category and conceptualised by the same code, therefore assimilating and neutralising it, so that it all becomes banal.

Only Mitchell is serious about the scenarios, his 'fear, on the other hand, was real, hot, viral' (p. 25). FutureWorld's clients approach them with intrigue and rapture; however, only in reaction to the spectacle, as they are indifferent about the reality of such events. Mitchell wants to move the consultations from an act of simulation into having substance and purpose:

Unlike Charnoble, he was not a cynic. Wouldn't these consultations perform a valuable service for his clients, apart from indemnification? He would force them to look out the window of their skyscrapers and see what was going on. Inside the glass towers it was the twenty-first century – fiber optics, silent supercomputers, temperature control to the tenth of a degree Fahrenheit. (p. 63)

As someone not entirely submerged in the hyperreality of his work, Mitchell thinks he can make his clients take note, escape the simulacra and recognise the possibility of a disaster. Even if this means simply looking out of the window to momentarily escape the artificial office environment. He hopes the consultation will prepare them for a real emergency and not just a simulated one. Aware of FutureWorld's charade, Mitchell plays with its idioms reflecting on the hollowness and farce of the company: 'At the end of

the tunnel – more tunnel [...] Bad things come to those who wait [...] it's a matter of death and death' (pp. 113, 114 & 115).

Another environmental disaster, which is delivered in a sort of prologue, precedes the novel's pinnacle event – the flood and hurricane. It seems that an alternative eco-catastrophe at the opening of the novel may detract from the flood. The Seattle earthquake functions within the plot simply as a backdrop to how the narrator, Elsa and Mitchell are acquainted: sharing a lecture theatre when news of the earthquake is delivered. The reporting and conceptualisation of the earthquake can be paralleled to the flood. Poignantly it is assimilated into spectacle; with the flood following the same tropes of narration. The mirroring of the events reflects how separate and different disasters are adapted into the same representational space, to eventually become indistinguishable, part of the same code, and their signs interchangeable. They lose relevance, meaning and heterogeneity as they are inserted into a larger meta-narrative. Yet, the repetition is even further interwoven. The reporting of the event to the lecture audience is interjected into the Professor's discussion of Pushkin's 'Bronze Horseman':

'Professor *Olesha*,' said another student. Someone coughed.
Someone choked.

It was no use. Olesha, in his clotted voice, read from the poem:

*'Rushing through the empty square
He hears behind him as it were
Thunders that rattle in a chorus
A gallop ponderous, sonorous
That shakes the pavement.'*

'Olesha!'

The professor looked sharply down from the stage, a lock of hair falling over one eye.

‘What is this?’ The disgust was plain on his face.

‘Professor? There has been a huge earthquake. In Seattle.’

Olesha squinted. ‘Explain yourself.’

‘Seattle. The city is destroyed.’ (p. 7)

The flood also duplicates the events of the poem. In ‘Bronze Horsemen’ the river Neva in St Petersburg bursts its banks, flooding the city. The protagonist, Evengii, rows to rescue his girlfriend, but upon arriving at her home finds it has been destroyed and he presumes she is dead. In *Odds Against Tomorrow* Mitchell, similarly, rows through the flood, he also finds Elsa’s home, the commune, has been destroyed and presumes she is dead. The poem precedes the actual event of the New York flood and Mitchell re-enacts it. This stylistic rendering of events comments on how the flood fails to be experienced as unique and original. Through its representation, the real is rendered as a duplication of the artificial and is fictionalised by its narrative ordering (though whether Mitchell experiences the actual event this way is doubtful). The flood is pre-ordered by the other event and a certain reality of it is removed. The flood, as central to the novel, becomes less significant as the opening scene transcribes it into a mere repetition. This speaks more broadly for environmental disasters in general. Events lose their heterogeneity through the large cultural milieu surrounding them. The recycling of their codes inserts them into a state of hyperrealism. These codes subsequently begin to constitute our sense of the real, whilst further eradicating the ecological meaning of these disasters. Under representation, events come to look similar through the deployment of repetitive codes, as

we 'decode it according to the same code, inscribed within each message and object like a miniaturized genetic code'.⁷⁴

The earthquake is comprised of and recognised by certain iconic imagery, which could become stock material for other large-scale disasters:

The reporter's voice was loud and hoarse in the speakers. We saw incoherent flashes of flame, glass, metal, sea [...] A naked child, covered in ash, walking dazed through a mountain of rubble. A helicopter, its blades spinning frantically, sinking slowly into the Sound. A convertible impaled on a stoplight. A dozen bodies running madly in every direction, silhouetted against a swelling wall of flame. The news reporter, no doubt in shock himself, stopped talking. (pp. 7-8)

The recounting of this event misplaces its reality. Though the event is real for those directly experiencing it and this is evident by the reporter being 'no doubt in shock'. And, as with Baudrillard's controversial proclamation, 'The Gulf War Did Not Take Place',⁷⁵ he rather means that there is a difference between the war and its representation: it *did* take place, but not for us. Similarly, the issue remains with climate change's representation. In *Odds Against Tomorrow* the earthquake comes to define a period and is a tool for quick recognition: 'When we graduated in June, the panic raised by the Puget Sound earthquake had become part of us. It was slapped across our faces like a birthmark. We were dubbed Generation Seattle' (p. 11). It has been noted that Rich is being intentionally suggestive of the September 11 attacks: 'This event appears to be set at roughly the same time as 9/11, and there are hints that perhaps *Odds* is an alternate history where a natural

⁷⁴ Baudrillard, *Simulations*, p. 126.

⁷⁵ Jean Baudrillard, *The Gulf War Did Not Take Place* (Bloomington: Indiana University Press, 1995).

disaster defines Mitchell's generation rather than an act of terrorism.⁷⁶ Like the collapsing towers, the earthquake undergoes a similar repetition of its iconic images:

The juries saw images of the bonfires that engulfed the Seattle Art Museum and the white geyser of glass that shot into the clouds when the Central Library imploded. A dozen times they were forced to watch the famous video of the Space Needle falling, its tip piercing the dome of the planetarium, popping it like a blister. (p. 15)

The ultimate effect, the pierced planetarium, becomes a trope of the disaster and a repeated spectacle.

The storm that takes place in *Odds Against Tomorrow* bears striking resemblances to Hurricane Sandy. Several reviews of the novel have remarked upon the uncanny similarities.⁷⁷ A review in *Rolling Stone* notes how Rich felt as though he had predicted Hurricane Sandy:

Rich was editing the final proofs of *Odds Against Tomorrow*, his irresistible literary thriller about a near-future New York consumed by a Category 3 hurricane, when superstorm Sandy arrived. 'I felt like the

⁷⁶ Annalee Newitz, 'End Times: A New Novel Looks at What Comes Next After Natural Disaster', *The Slate Book Review*, 3 May 2013, <http://www.slate.com/articles/arts/books/2013/05/nathaniel_rich_s_the_odds_against_tomorrow_reviewed.html> [accessed 1 October 2013]

⁷⁷As discussed in *The New York Review of Books*: 'Let's just, right away, recognize how prescient this charming, terrifying, comic novel of apocalyptic manners is. Nathaniel Rich wrote *Odds Against Tomorrow* well before Hurricane Sandy and its surge crashed onto the isle of Manhattan, well before the streets were flooded and the subways drowned, only the Goldman Sachs building sparkling above the darkened avenues. Years before the cold weeks without heat or electricity or transportation, Rich described a city engulfed first by greed, then by water. Cathleen Schine, 'A Genius for Disaster', *The New York Review of Books*, 25 April 2013 <<http://www.nybooks.com/articles/archives/2013/apr/25/genius-disaster-nathaniel-rich/>> [accessed 1 October 2013]. It is also discussed in *The New York Times*: 'Rich is no *arriviste*. Not only has he been writing nonfiction articles on similar subjects for years, but according to publicity materials, galleys of his prescient book, whose cover depicts Manhattan underwater, were delivered when his publisher's offices reopened after Sandy's devastation. (Rich also made some technical revisions after the storm to reflect reality more accurately.)' Teddy Wayne, 'Grave New World', *The New York Times*. 11 April 2013 <http://www.nytimes.com/2013/04/14/books/review/odds-against-tomorrow-by-nathaniel-rich.html?pagewanted=all&_r=0> [accessed 2 October 2013]

book had been adapted for television by every cable news station,' Rich says. 'All of the sudden there were these images everywhere of a flooded Manhattan. It was horrible. And it had all been predicted.'⁷⁸

The represented appears to precede the real event, which is fitting for the wider themes of this novel. And, to such an extent that the footage of Hurricane Sandy seems like the book has been 'adapted for television' and the real comes to serve as a representation of the fiction. This shows how the 'coded' portrayal of Hurricane Sandy lends itself to a predictable depiction. It can be almost entirely interchangeable with a separate event, and a fictional one at that. In reaction to Hurricane Sandy, Rich 'had to hastily revise his proofs in its wake. But his account was so prescient, and so well-observed, that the book comes across as far more believable in the real-life storm's aftermath'.⁷⁹ Hurricane Sandy is referred to in the novel:

In late October 2012, Hurricane Sandy, though only a Category 1, brought a near fourteen-foot tide to Battery Park, flooded sections of lower Manhattan, and left 850,000 people without electricity. Staten Island and south Queens suffered the greatest damage; the Rockaway Beach boardwalk was stripped to its piers. The New York Stock Exchange closed for two consecutive days for the first time since 1888, schools shut down for a week, and it was more than two weeks before the subway service was fully restored. The lessons of Sandy were soon forgotten, however, even though conditions continued to deteriorate in the years following the storm. (p. 123)

Rich employs Hurricane Sandy as another example where the rendering of events absorbs them into spectacle and thus their wider significance (which, in these examples, is climate change) is quickly forgotten. He gives other

⁷⁸ Julia Holmes, 'Odds Against Tomorrow' Review: The Future is Upon Us', *Rolling Stone*, 15 April 2013. <<http://www.rollingstone.com/culture/news/odds-against-tomorrow-review-the-future-is-upon-us-20130415>> [accessed 2 October 2013]

⁷⁹ Annalee Newitz, 'End Times: A New Novel Looks at What Comes Next After Natural Disaster', *The Slate Book Review*, 3 May 2013 <http://www.slate.com/articles/arts/books/2013/05/nathaniel_rich_s_the_odds_against_tomorrow_reviewed.html> [accessed 1 October 2013]

examples, for instance:

‘What, was Galveston badly damaged?’
‘Damaged?’ Mitchell laughed – or choked. He couldn’t tell which.
‘Galveston disappeared. The city completely disappeared.’ (p. 138)

Even New York’s geographical reality is concealed:

In the days when Times Square was a red maple swamp and St. Mark’s Place a hickory forest populated by hawks and ravens, more than forty brooks and streams covered the island of Manhattan [...] Even during a drought Manhattan’s natural water table gushed thirteen million gallons of groundwater into the subway tunnels daily – water that once had been absorbed by roots, marshes, and streams. Every day, eight hundred electric-powered municipal pumps diverted the excess water into the sewer system. (pp. 132 & 126)

A certain ecological origin is removed and forgotten and without this knowledge, the flood is even more catastrophic.

Mitchell feels inundated by the amount of disaster information available: ‘it was astonishing how much bad news was generated every day. You had only to pay attention – subscribe to the right newsletters and academic journals – and you could see the information accrete, like matter spiralling around a black hole’ (p. 65). The description of the ‘black hole’ suggests the infinite absorption of information. This corresponds to Baudrillard’s argument, wherein the proliferation of signs and saturation of media images have collapsed meaning. Baudrillard asks, ‘should we initiate an information dietetics? Should we thin out the obese, the obese systems, and create institutions to uninform?’⁸⁰ This mass of images is problematic, as it blends everything into the indistinguishable and the overload has an

⁸⁰Jean Baudrillard, *Selected Writing*, ed. by Mark Poster, (Cambridge: Polity Press, 1988), p. 190.

anesthetising effect. Mitchell uses his work, the excess of information, as a therapeutic means to numb his brain from thought and thus anxiety: 'The thousands of facts he ingested daily kept out Brugada, his parents, and the emptiness of his spooky, squalid orange-lit apartment [...] Work, his old saviour, would clear his brain' (pp. 68 & 128). The saturation of data and his absorption into it means that 'after a while he began to feel that he was the information' (p. 70). Such excess and common place of images removes the heterogeneity of events. It also dilutes any available impetus. This 'saturation' and mass of images can make such environmental disasters cognitively inaccessible as they 'disappear behind the television screen'.⁸¹ The media imagery of the Manhattan flood quickly forms and adds to this saturation of images. Despite the disruption and chaos of the disaster, the media remains incessant. The event undergoes transubstantiation through its media depiction:

Switching on the radio, Mitchell had expected to hear inchoate wailing, the brass crashing machinery, the rush of cascading water. But even a catastrophe of this proportion, it turned out, could be described in simple English – word after word, sentence after sentence. A barbaric nausea passed over him. The storm was being discussed in the same way that one might recount the highlights of a ball game, a summit meeting between prime ministers, a recipe for butternut squash. Chaos was seeping under the cracks of doors and through the seams in the carpentry, wrathful Kali was dancing at the door, the Valkyries were hurtling through the air with flashing spears, chanting their death hymns – yet somehow a story could still be told. Even on the precipice of hell, here was introduction, thesis, cliff-hanger, conflict, resolution. Somewhere in the world, possibly as close as Newark, there existed a radio studio in which a woman sat at a desk wearing a business suit; makeup, perhaps. (p. 162)

⁸¹ Baudrillard, *Selected Writing*, p. 213.

The disaster is assimilated into a narrative code with a 'cliff-hanger, conflict, [and] resolution'. It seems absurd to Mitchell how the 'story could still be told' and the flood enters the 'simulation machine' as it becomes material for the media. Its indescribable reality, the 'hell', is rendered into a discussion that could also be about a 'ball game'. Its significance is annulled through the representation of it and it simply becomes another news event.

According to Baudrillard, the condition of postmodern society favours the spectacle and content is dissolved in pursuit of it. He claims that the masses idolise the play of signs and concern themselves only with spectacle. Similarly in *Odds Against Tomorrow*, the environmental disaster comes only to constitute and serve as spectacle. In doing so, space given for scientific commentary is removed, and reflection is subsumed by entertainment value. 'The signal had been restored. It was the first service to come back, before running water and hospitals and even dry ground' (p. 202), and the citizens, despite experiencing the flood only hours before, are now able to relive it through the medium of spectacle. The flood and hurricane are reordered into a series of images. In 'the society of the spectacle', it is the only way they can comprehend it.⁸² Personal experience seems inadequate, so it must be reconfigured and confirmed by the media to become 'real':

⁸² To use Debord's phrase 'the society of the spectacle'. Guy Debord, *Society of the Spectacle*, trans. by Ken Knabb (Paris: BuchetChastel, 1967; repr. London: Rebel Press, 2004)

A generator was activated, and a television screen that had been rolled into a corner of the gymnasium zapped on. The national news aired hallucinatory images of flooded New York. A traffic light bent like a cheap spoon. A frenzied school of orange carp fed on the torn garbage bags outside a half-submerged Chinese restaurant on First Avenue. A Gramercy Park brownstone had caught fire; because the adjacent buildings had crumbled, the brownstone appeared to be standing alone in the water, a fiery monolith. And finally the watery outlines of bodies floating like lily pads. (p. 202)

The flood's 'hallucinatory images' are suggestive of its transference into hyperreality. The event becomes a series of images that that could constitute any disaster. The images become an abstraction; the bodies described like 'lily pads' points to a diminution of the horror. This is ultimately realised in the scene where the footage they are watching is fake. The footage depicting a boy saved by a police helicopter is later exposed as a special effect:

'The problem is that you can't tell which of those pictures is fake.'
'Fake? How?'
'You seen the Swimming Boy?'
They had...The clip was an instant smash; it had already been viewed online half a billion times. (p. 233)

The images of the real catastrophe are replaced by Hollywood material:

Producer in Hollywood has politician friends. He had footage that never made it into some old disaster picture. Does a little touch-up to make it look like New York. Then the government sends it to the news programs. (p. 234)

Meaning and content are emptied, as everything becomes pure effect. This also serves as an example of Žižek's 'virtual reality', where the real culminates in its supposed opposite – theatrical spectacle. Žižek describes 'virtual reality' as 'offering a product deprived of its substance...just as decaffeinated coffee smells and tastes like real coffee without being real

coffee, Virtual Reality is experienced as reality without being so'.⁸³ For those who did not directly experience the event, the collapsing of the World Trade Centers provides an example where reality is experienced as a virtual entity:

What happened on September 11 was that this fantasmatic screen apparition entered our reality. It is not that reality entered our image: the image entered and shattered our reality (i.e. the symbolic coordinates which determine what we experience as reality). The fact that, after September 11, the openings of many 'block-buster' movies with scenes which bear a resemblance to the WTC collapse (tall buildings on fire or under attack, terrorist acts...) were postponed (or the films were even shelved) should thus be read as the 'repression' of the fantasmatic background responsible for the impact of the WTC collapse. Of course, the point is not to play a pseudo-postmodern game of reducing the WTC collapse to just another media spectacle, reading it as a catastrophe version of the snuff porno movies; the question we should have asked ourselves as we stared at the TV screens on September 11 is simply: *Where have we already seen the same thing over and over again?*⁸⁴

Zizek describes the collapsing towers as something too closely resembling the sensationalism of a disaster film. The attacks of September 11 were, in a sense, already imagined in Hollywood disaster movies, complicating the divide between reality and fiction. Rich shared a similar experience when writing the novel, as Hurricane Sandy, like the collapsing of The World Trade Center, interrupted the 'real'. It does not mean that these events are simply a media spectacle, but rather distinction is lost in their conveyance. The 'object of fantasy' took place and is inscribed before the event happened. The manipulated image of the rescued boy exemplifies, as Zizek terms, the 'thrill of the Real'.⁸⁵ The flood is remembered not by the actual event, but by its

⁸³ Slavoj Zizek, *Welcome to the Desert of the Real*, (London: Verso, 2002) p. 11.

⁸⁴ Zizek, p. 17.

⁸⁵ Zizek, p. 12.

spectacle. It becomes something else, distanced and refracted and 'somehow acquires the features of a staged fake'.⁸⁶

Climate change lacks visual appeal for it to be newsworthy; therefore its more dramatic disasters -- tsunamis, earthquakes, and landslides -- come to represent it almost entirely. They enter cognition with little regard to the distinctions, local experiences, and complexities of climate change. This also makes climate change subject to a process of virtualization and it is forged into the realm of non-reality. The climate novel can represent climate change in diverse ways, which avoids this oversimplification and homogenization of it. We see how in *Odds Against Tomorrow* the flood quickly becomes part of the meta-disaster narrative and loses its meaning and distinction as caused by anthropocentric climate change. Its 'unreality' haunts Jane and gives her the compulsion to repeat the memory, she explains that 'maybe the very unreality of it all is what's making me come back again and again to the same terrible thought. I just can't shake it' (p. 191). Žižek explains that the 'Real' is impossible to integrate into our mental framework: 'precisely because it is real, that is, on account of its traumatic/excessive character, we are unable to integrate it into (what we experience as) our reality, and are therefore compelled to experience it as a nightmarish apparition.'⁸⁷ Similarly for Mitchell, even though he witnesses the hurricane and flood directly, it exceeds cognition, he describes it as being 'worse than anyone could

⁸⁶ Žižek, p. 14.

⁸⁷ Žižek, p. 19.

imagine. Like all major catastrophes, it surpassed the limits of imagination' (p. 234). The Real disrupts and disorients a sense of normality. The disaster can only be represented by assimilating it within the code of the spectacle.

Yet this also inserts it into the realm of fantasy. Zizek notes that:

We should not mistake fiction for reality – we should be able to discern, in what we experience as fiction, the hard kernel of the Real which we are able to sustain only if we fictionalize it. In short, we should discern which part of reality is 'transfunctionalized' through fantasy, so that, although it is part of reality, it is perceived in a fictional mode.⁸⁸

It seems the Real becomes absorbable only through representation. Yet, such a process is important for our comprehension of events as, arguably, we can only access climate change through representation. Also, it does not mean that the issue merely becomes representation. Yet, as Zizek highlights, we must maintain a sense of the distinction between reality and fantasy.

Due to the nature of his work, narrating disasters, Mitchell unsurprisingly discusses a flood scenario. Yet, because this event does actually take place, he is ordained the 'prophet' and regarded as a hero with supernatural foresight, 'they want to talk to the man they're calling the Prophet [...] now I see you're some kind of national celebrity' (pp. 203 & 207). As a result, Mitchell, or rather the concept of him, becomes simulacrum. He becomes iconic of the disaster that takes place, replacing the reality of the flood and hurricane to a narrative about a mysterious, messiah figure:

⁸⁸ Zizek, p. 19.

But nearly every time Mitchell walked by this television, his own picture appeared on the screen...

HE CAME FROM THE FUTURE

WHY DIDN'T WE LISTEN?

THE MAN WHO KNEW TOO MUCH. (p. 244)

The portrayal of the event through this framework diverts original meaning and content from it, particularly its ecological meaning. Its substance is subsumed by a more spectacular story. He becomes symbolic and represented by an array of merchandise, 'all the posters and magazine photographs and T-shirts bearing Mitchell Zukor's own face' (p. 4). At the end of the novel, it is revealed the narrator is writing a biography about Mitchell and the reader is addressed as though already fully aware of 'the Mitchell story'. Even the relaying of the Seattle earthquake is reordered into the mythic telling of Mitchell: 'It's been written that Mitchell saw it coming, Seattle' (p.5). There is no correlation between these events, yet a fiction is inscribed into them and becomes the way in which they are imagined. This unfolding of the disasters is suggestive of how, as Baudrillard argues, the media acts as a key simulation machine. Following Marshall McLuhan, Baudrillard states that the 'medium is the message'.⁸⁹ It is the form rather than content that is important. The individual withdraws understanding, or rather mere recognition, through identification with the code, 'it is useless to dream of revolution through content, useless to dream of a revelation through form, because the medium and the real are now in a single nebula

⁸⁹ Marshall McLuhan, *Understanding Media: The Extensions of Man*, (New York: McGraw-Hill, 1964).

whose truth is indecipherable'.⁹⁰ The medium, which is generic and pliable to the system of signs, is the focal point. All association revolves around this, content is eroded and meaning annulled, because 'where we think that information produces meaning, the opposite occurs.'⁹¹ The instantaneously recognisable replaces any need for genuine contemplation. The use of coded, generic representation of climate change is frequent. The complexity of the subject makes it particularly prone to such deployment of that which captures without depth. As we see in *Odds Against Tomorrow*, sincere regard for the reality and 'truth' of the flood is replaced and it speaks more about the celebrity cult surrounding Mitchell and disaster movie iconography. Our capacity to conceptualise and represent climate change is reliant on presenting codes, yet these fail to convey the complexity of the subject. The saturation of its imagery also means it is particularly ingrained in an iconic mode of representation.

The inaccessibility of meaning through saturation with others is perhaps the most salient outcome of simulacra. Baudrillard claims that 'we live in a world where there is more and more information, and less and less meaning.'⁹² The erosion of referents sends everything into a state of vagueness. We arrive at a neutralisation of everything, because it is only the same play of signs that contribute what we know. It is the homogenising and

⁹⁰ Baudrillard, *Simulations*, p. 83.

⁹¹ Baudrillard, *Simulations*, p. 80.

⁹² Jean Baudrillard, *Simulacra and Simulation*, trans. by Sheila Faria Glaser, (Michigan: The University of Michigan Press, 1981; repr. 1994)

blending of differences, the collapsing of separates, such as the real and its representation, which causes the loss of meaning and the generation of simulation. Form takes over, as content is devoured:

Uncertainty, even about fundamentals, drives us to a vertiginous overmultiplication of formal qualities. Hence we move to the form of ecstasy. Ecstasy is that quality specific to each body that spirals in on itself until it has lost all meaning, and thus radiates as pure and empty form.⁹³

We arrive at an impossibility of content, information and communication. This is exemplified in response to the news of the storm. During the long drought and heatwave, the public become frenzied for news of rain. TV audiences begin to associate the current crisis with the weather forecasters, placing blame on them: 'The weathermen, their credibility shot, were taking a beating' (p. 120). Fantasy takes over and truth is misplaced, as it is presumed that the meteorologists are the ones determining the weather, not simply predicting it. Again we see the medium replaces the content, reality is more associated with those who represent it. News of a coming storm sends weatherman, Big Henry D., into a state of happy frenzy:

Tammy was rapidly coalescing, and now seemed poised to pursue its weaker predecessor up the coast. Over on Channel 4, Big Henry D.'s eyes were spinning, mini-cyclones. In his high-pitched ecstasy he swayed back and forth, his legs pressed tightly together, like Tweedledum. (p. 120)

Yet, when another meteorologist suggests that the storm might intensify and cause widespread disaster, the citizens and news-anchor refuse to have their glee diminished and cannot conceive this reality:

⁹³ Baudrillard, *Selected Writings*, p. 187.

‘Dr. Walsh, with all due respect to your expertise, do you actually mean to suggest that rain is a bad thing?’

‘Rain in and of itself is not a bad thing. But all the analytics indicate that this storm is going to bring excessive rain. The drought has inhibited the land’s ability to accommodate sudden large amounts of precipitation. The soil simply cannot absorb it. Especially at this stage in the tidal cycle, when we’re two days short of a full moon –’

‘Dr. Walsh? Thank you for your time. We’re going to have to cut away –’

‘Please, Vivian? You need to inform the public that they must retreat from the coasts –’

‘We’re going live now to Central Park, where an improbable display of jubilation has broke out on the Great Lawn.’ (p. 121)

The citizens refuse to believe the storm is a threat and it has no conceivable reality for them:

What to make of the mayhem on the streets, the adults frolicking like children under a park sprinkler? Was this what everybody had been waiting for? A sign of divine intervention? On television it seems so: the weathermen were in ecstasies. After so many empty predications of advancing storms, their jobs – if not their entire scientific discipline – had been on the line. Now they appeared live on every station, enjoying the bliss of exoneration. They gesticulated manically in front of their painted maps, fist-bumping their amused anchormen. Their speech was infected with grand metaphors and metrologically themed clichés. (p. 119)

The citizens cannot acknowledge the risk despite its conspicuousness because the media, the simulated, constitutes reality more than their observation of their physical environment. The response to the alternative commentary of the storm is met with disavowal. It does not conform to the prescribed, so cannot be integrated into their outlook. In the repetition and play of signs, which are limited to a self-perpetuating form, responses are similarly predictable. It becomes about reproducing what is already inscribed and not about genuine reflection. The capacity to be political, informed, and opinionated is removed. The contentless information produces a similarly

annulled and thoughtless mass only concerned with conformity to the given model:

For the masses are also made of thus useless hyperinformation which claims to enlighten them, when all it does is clutter up the space of the representable and annul itself in a silent equivalence. And we cannot do much against this obscene circularity of the masses of information. The two phenomena fit one another: the masses have no opinion and information does not inform them.⁹⁴

It leads to a passive absorption of images. Such processing does not invoke active engagement or questioning. The saturation of climate change imagery means it is similarly subject to this passive absorption. It is the overused and outworn representation that adds to this un contemplated response, allowing the reality of climate change to be back-dropped into the arena of saturated images. I suggest that the generation of fresh imagery would provoke reflection of the issue. The task is particularly suitable to creative environmental writing found within the climate novel.

Mitchell compares the flood to 'Noah's Ark', he says, "Noah took two of every animal," he said at last. He reached into the box for another cracker. "So did I" (p. 187). Like the Biblical tale, this flood also offers renewal and purges Mitchell of his paranoia. He abandons his previous existence and begins an agricultural utopia: 'He would live, in other words, the life that Elsa Bruner had wanted. It was her ideal scenario: self-reliant, sovereign, irreproachable [...] he would create his own self-contained universe' (pp. 288-289). Mitchell hopes to return to a certain original reality,

⁹⁴ Baudrillard, *Selected Writings*, p. 211.

one free from alienation and the hyperrealism of late capitalist society. There is a shift in the tone and style of narration; a *New York Observer* review describes the prose as ‘detailed yet sterile, measured but unpretty, and thoroughly *televised*: it scans like a novelization of the film version of *The Fountainhead*’.⁹⁵ This journalistic, prosaic narration, described as ‘televised’, imitates a postmodern style. However, when discussing Mitchell’s new self-sufficient existence, the tone becomes almost Thoreauvian; it is no longer that of the abstracted:

The first thing he noticed were the mushrooms, orange with caps the size of buttons, projecting from the walls of the crevasse. Their fleshy undersides were lined with gills that ruffled like lace. These gills secreted a toothpasty substance that branched into a plexus of lines that descended deep into the trunk’s core. But that was just the beginning. When Mitchell moved closer, he saw eruptions of brightly petaled clover; exotic spindly-legged spiders with bodies the same exact hue as the tree itself; a flesh-colored worm as long as his arm; a fiery procession of red mites snaking between piles of school-bus-yellow spores and thick, translucent bubbles of slime; a downy pink fungus like a speck of cotton candy; a bark beetle sheathed in an iridescent shell; and canals of thick syrup in which tiny flies had gotten stuck, flapping their broken wings and twitching in panic. What had appeared to be no more than a dead log was everywhere crawling, munching, slurping, rotting, liquefying, cannibalizing – a grotesque insectopolis. (p. 291)

It adopts the language of nature writing, as attentive, creative and intuitive with his physical surroundings. It is writing that is the opposite to empty, outworn discourse. His alternative lifestyle also liberates him from the aspects that contribute to outworn environmental speech. It is this type of writing that is needed to overcome meaningless environmental discourse:

⁹⁵ Jonathon Kyle Sturgeon, ‘Work of Ark: Nathaniel Rich’s Latest Novel Puts New York Underwater’, *The New York Observer*, 16 April 2013
<<http://observer.com/2013/04/work-of-ark-nathaniel-rich-puts-new-york-underwater/>>
[accessed 2 October 2013]

that which is creative, imaginative and inventive. Mitchell's 'return to nature' allows for such a literary, lingering tone. A reality is re-inscribed into his existence and he becomes connected and observant, alive and present, and no longer alienated. It is this use of intentional and poetic language that is critical here, and can be considered as central to the climate novel to avoid reliance on impoverished climate imagery.

Conclusion

Both *Solar* and *Odds Against Tomorrow* expose the effects of outworn climate representation. *Solar* examines the personal motives that can complicate responses to climate change. Underlying the novel is a call to better understand human behaviour, so that we can more effectively implement solutions to climate change. Beard's egotism and deceitfulness shows that climate change is not simply a neutral domain of ecological concern in need of a technological fix. It is rather entrenched in issues of power, poverty, inequality and social justice, as well as entwined with geopolitical, social and economic factors. Its discourse is usually saturated with these other meanings, which speak more largely about these factors than directly about the issue. Furthermore, because of the complexity of climate change, pre-ordered phrases are used excessively. Such phrases enter the consciousness without the need for consideration, and the issue remains recognised but not imagined. *Odds Against Tomorrow* shows how the experience of climate change is overwritten by its representation. Its

significance is diverted and replaced by the mass schemas of disaster narratives. Climate change typically falls under the same patterns of narration, which overlook the distinctiveness and complexity of the issue. It ends up becoming a repetition, echoing what has come before and is already part of the model. Therefore it becomes predictable and instantly recognizable. Many climate novels repeat clichéd and sensational disaster narratives, and as such provoke little contemplation or sustained reflection about climate change itself. To bring climate change into the imagination, novels must avoid inserting it into wider entertainment codes. The analysis of *Solar* and *Odds Against Tomorrow* highlights why the climate novel must be innovative and develop fresh concepts for imagining climate change. Therefore original and creative engagement with climate change is critical to raising consciousness about it.

To avert the effects of outworn environmental discourse we must also look towards the regeneration of its language. Žižek states that 'language should be tortured to tell the truth. It should be twisted, denaturalized, extended, condensed, cut and reunited, made to work against itself.'⁹⁶ It is not allowing the imagery and idioms surrounding climate change to become overused or saturated. Once again we find that a rich vocabulary is needed in the climate novel. Innovative and intentional use of climate language prevents reliance on pre-existing outworn phrases. Phrases should

⁹⁶ Slavoj Žižek, 'Language, Violence and Nonviolence', *International Journal of Žižek Studies*, 2 (2004), p. 4.

be used consciously, so as not to convey something other than their intended meaning. Equally they should be received with a similarly considered response, to ensure empty phrases are recognised for being so.

Adorno notes:

This is precisely how the objects of information are organized today. Their indifferent character predestines their being and they are incapable of transcending the abstract fact of possession through any immanent quality of their own. As facts they are arranged in such a way that they can be grasped as quickly and easily as possible. Wrenched from all context, detached from thought, they are made instantly accessible to an infantile grasp.⁹⁷

As Adorno explains, it is the easy conception and detachment from context, allowing information to be quickly sublimated into thought, which generates moribund discourses.

Viktor Shklovsky's notion of 'defamiliarisation' is also relevant here and the climate novel might adopt this in order to avoid such hackneyed, trite or formulaic expressions. Shklovsky makes an important distinction between 'recognition' and 'seeing'. 'Recognition' is simply understanding an object based on convention: 'we do not see them, we merely recognise them by their primary characteristics.'⁹⁸ Shklovsky refers to a 'process of automatization'⁹⁹ wherein something becomes so habitual that it is experienced unconsciously. 'Seeing' however is an active form of perception, wherein the object is revealed by the artist's technique. We must

⁹⁷ Theodor Adorno, *The Culture Industry* (Abingdon: Routledge, 1973; repr. 2001) p. 85.

⁹⁸ Viktor Shklovsky, *Theory of Prose*, trans. by Benjamin Sher, (London: Dalkey Archive Press, 1991), (1929), p. 5.

⁹⁹ Shklovsky, p. 5.

see the object and not simply *recognise* it. Endowing something with strangeness, such as removing it from its linguistic and perceptual conventions, allows us to see it. A consideration of Shklovsky's method suggests the innovations needed for the climate novel in avoiding generating outworn climate speech. These include "enstranging" objects and complicating form', the employment of 'poetic speech' which 'ought to have the character of something foreign, something outlandish about it' and using '*impeded, distorted*' language.¹⁰⁰ Shklovsky's techniques suggest that the climate novel needs to subvert traditions and adopt more radical forms to address climate change. I discuss this and further concepts as to how the novel might be innovated to cognise climate change in the final chapter.

Climate change, already a particularly ineffable subject, is moved even further from the imagination by the impoverishment of its language. Regenerating its language will renew the discourse and bring it into genuine, concentrated reflection. By refreshing and 'defamiliarising' it, we can liberate environmental discourse from a repetitive and ready-made monotony of given notions. It is suggested that representation of climate change is carried out in a creative, imaginative and contemplated manner, so the matter itself does not become overlooked as it fades into the background of disaster din.

¹⁰⁰ Shklovsky, pp. 5, 12 & 13.

New Ways of Knowing in *Into the Forest and Flight Behaviour*

The current ecological disaster, which we know about only because of very sophisticated interdisciplinary science, has torn a giant hole in the fabric of our understanding.¹

Underlying the major part of environmentalist thought is the urge to adopt a new outlook. We find this proposal reiterating itself, whether in ecocriticism, conservation and sustainability debates, environmental philosophy, ethics or politics. The early North American environmental movement, as established in works by Henry David Thoreau and John Muir in the mid-nineteenth century, emphasised finding a reconnection to nature. Such thinking called for a 'return to nature', by re-introducing a greater sense of place and forging an ecological consciousness. This, they believed, might be achieved in the experiencing of 'wilderness'. Yet, the 'wilderness' paradigm is outmoded to our current crisis. Such a notion of wilderness further entrenches the nature-culture dualism by assuming that nature only exists as something pristine, separate and other to humans. This approach to protecting nature seems based on excluding humans, which does little for building a regard towards the human-nature relationship.² Norwegian philosopher Arne Naess, a crucial figure in the environmental movement who coined the term Deep Ecology, proposes a full paradigm shift. Deep Ecology is, perhaps best

¹ Timothy Morton, *The Ecological Thought* (Massachusetts: Harvard University Press, 2010), p. 14.

² J. Baird Callicott is a vocal critic of the perceived wilderness idea. He has also claimed that in countries such as North America and Australia National Parks, which are created to preserve wilderness, erase a collective memory of its indigenous peoples. See J. Baird Callicott and Michael P. Nelson, eds, *The Great New Wilderness Debate* (Athens: University of Georgia Press, 1998).

illustrated through its antonym, Shallow Ecology. The latter suggests that humans are the only source of value and that the nonhuman world functions purely for instrumental use. Shallow Ecology considers humans as separate from their environment and ecological efforts are to preserve the planet only for a continued consumption of it. Deep Ecology rejects this anthropocentric thought for an ecocentric one; humans are simply another species, or 'knot', within a network of relations.³ Deep Ecology questions the existing social, political and economic situation and calls for the ideology of economic growth to be replaced with a more sustainable one, associated with frugality and an emphasis on care of place.⁴ Other seminal texts of the environmental movement, such as James Lovelock's *The Revenge of Gaia* (2006), argue for a radical change in human values, as in Deep Ecology, but to also supplement this with technocratic solutions, such as nuclear energy. The duality of the approaches -- ideological and technocratic -- conflict, and is only one indication of the complexity and convolutedness of these varying approaches.

Timothy Morton's proposition is narrower, arguing that the very term 'nature' -- which he understands as a transcendental notion -- has become problematic to ecology. Morton suggests that we remove our concept of nature, stating that 'the point is to go against the grain of dominant,

³ Warwick Fox, 'Deep Ecology: A New Philosophy of Our Time?' *Environmental Ethics*, ed. by Andrew Light and Holmes Rolston III, (Oxford: Blackwell Publishing, 2003).

⁴ Arne Naess, 'The Deep Ecological Movement: Some Philosophical Aspects', *Environmental Ethics*, ed. by Andrew Light and Holmes Rolston III, (Oxford: Blackwell Publishing, 2003), p. 265.

normative ideas about nature, but to do so in the name of sentient beings suffering under catastrophic environmental conditions.⁵ Faults with our conceptualisation of nature have been the critical focus of other works. For instance, William Cronon in *Uncommon Ground: Rethinking the Human Place in Nature* (1996) demands a rethinking of the terms we use for the environment, such as 'wilderness', so that they become more coherent with an ecological reality and integrity. Dale Jamieson, however, argues that we need to regard climate change as a moral issue and should apply values to the climate debate. He states:

Science has alerted us to a problem, but the problem also concerns our values. It is about how we ought to live, and how humans should relate to each other and to the rest of nature. These are problems of ethics and politics as well as problems of science.⁶

Our current value system is inadequate for addressing climate change; it is individualistic whilst the global crisis demands a collective response. Therefore, 'reforming our values is part of constructing new moral, political, and legal concepts'⁷ and we must address climate change 'both as political actors and as everyday moral agents.'⁸ Climate novels would offer a medium in which such values could be explored and developed. Yet, as with many approaches they need to be part of a broader and more cohesive approach to the issue.

⁵ Timothy Morton, *Ecology Without Nature*, (Cambridge, MA: Harvard University Press, 2007), p. 12.

⁶ Dale Jamieson, 'Ethics, Public Policy, and Global Warming', *Environmental Ethics*, ed. by Andrew Light and Holmes Rolston III, (Oxford: Blackwell Publishing, 2003), p. 37.

⁷ Jamieson, p. 377.

⁸ Jamieson, p. 377.

Remodelling the economic order is central to many environmentalist debates. Rather than posing moderate changes that preserve the current model, these arguments call for deeper solutions that permeate across categories of thought and value, as well as economic structures. Moving from an individualistic, capitalistic paradigm into one inclusive of the biotic community and concerned with justice, sustainability and the collective, is the emphasis of this new economic order.⁹ Consumption and growth have underpinned industrialized Western society, necessitating a sustained reliance on fossil fuels. Such a system, these approaches posit, is incompatible with ecological health.

Approaches such as ecofeminism have sought to connect changing ecologically damaging social structures to a reconfiguration of ideology. Ecofeminism identifies patriarchy as not only oppressive to women, but also associated with environmental destruction. Patriarchy associates itself with reductionist knowledge that encourages binary distinctions such as male/female, culture/nature and mind/body. Ecofeminists Carolyn Merchant, Val Plumwood, Vandana Shiva and Maria Mies all identify a mutual relationship between female and ecological subjugation.¹⁰ In *Ecofeminism*,

⁹ John B. Cobb, Jr, 'Toward a Just and Sustainable Economic Order', *Environmental Ethics*, ed. by Andrew Light and Holmes Rolston III, (Oxford: Blackwell Publishing, 2003); Bernard Stiegler, 'Care: Within the Limits of Capitalism, Economizing Means Taking Care', *Telemorphosis: Theory in the Era of Climate Change*, Volume 1, ed. by Tom Cohen, (Michigan: Open Humanities Press, 2012).

¹⁰ Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution*, (San Francisco: HarperCollins, 1980); Val Plumwood, *Feminism and the Mastery of Nature*, (London: Routledge, 1993); Maria Mies and Vandana Shiva, *Ecofeminism*, (London: Zed Books Ltd, 1993).

Shiva and Mies map the relationship between post-colonialism, patriarchy and reductionist science, relating each to Western male hegemonic control. Within such thought, women, nature and non-white people are seen as raw material. Women and plant reproduction are regarded as the last colonies in the eyes of capitalist patriarchy, 'the devaluation of the contribution from women and nature goes hand-in-hand with the value assigned to acts of colonization as acts of development and improvement.'¹¹ Biotechnologies, such as GMOs, can be considered a colonization of nature's regenerative capacities. For Shiva, a move towards a way of thinking beyond this capitalistic, technological and patriarchal world-view would entail better ecological care and social justice:

The industrial revolution and the capitalist economy are the philosophical, technological and economic component of the same process [...] reductionist science is at the root of the growing ecological crisis, because it entails a transformation of nature that destroys its organic processes and rhythms and regenerative capacities.¹²

She argues 'experience of interdependence and integrity is the basis for creating a science and knowledge that nurtures, rather than violates, nature's sustainable systems.'¹³ Hegemonic and societal structures must be radically overhauled; the emphasis here is on capitalist patriarchy. Shiva's critique regarding protecting organic rhythms would be something rejected by Morton. Though eliminating environmental destruction motivates both theorists we find differences in their thinking. That climate change induces

¹¹ Vandana Shiva, 'Reductionism and Regeneration: A crisis in Science', *Ecofeminism*, ed. by Maria Mies and Vandana Shiva (London: Zed Books Ltd, 1993), p. 25.

¹² Shiva, pp. 24-25.

¹³ Shiva, p. 34.

such broad discrepancies in approaches across philosophies, strategies and movements, which all, ultimately, share the same goal, illustrates the complexity and magnitude of the problem. It also suggests then that a single narrative would be inefficient. Therefore climate novels must encompass a variety of imaginative interpretations to engage with such divergent thinking. Reconciling these views and adopting a single approach seems unrealistic given the scale and complexity of climate change; rather exploring and representing such variety of opinions is a priority for climate novels. No doubt though, each, whether it is values, technological, philosophical, ideological or economical re-appropriation, demands a shift in our thinking and epistemologies. This challenges the climate novel to imagine compelling alternative models for us to explore and envision these scenarios and new ways of knowing, behaving and relating.

In order to be environmental, we must not only adopt individual pragmatic and quantifiable measures, taking up cycling and installing solar panels, or socially introducing new models of economics and governance, for example, but we must culturally also realign our thinking. Yet, more than this focus on transforming ideology in relation to environmental action, my analysis is concerned with how such changes to ways of knowing are a consequence of the destruction wrought by climate change. As Timothy Clark suggests in his latest book, which examines the inadequacy of our concepts in encountering climate change, the 'Anthropocene blurs and even

scrambles some crucial categories by which people have made sense of the world and their lives.¹⁴ I continue with a discussion of how environmental change *forces* us into a position of cognitive realignment. I discuss this in relation to Jean Hegland's *Into the Forest* (1996) and Barbara Kingsolver's *Flight Behaviour* (2012). *Into the Forest* is a typical climate novel, providing a post-apocalyptic account of an undefined environmental crisis. The story follows the disaster's impact upon the lives of two adolescent sisters. *Flight Behaviour* is set within a small Tennessean community, and rather offers a realist and detailed depiction of how a migrating butterfly species disrupts the normal order of events for a young family. In both novels the protagonists must revise their habitual ways of thinking in order to cognise the ecological events. For the sisters in *Into the Forrest* this is also intrinsic to their survival.

From the research of this chapter we find that climate change does not only mean integrating new categories of knowledge and adopting alternative behaviours, yet that the fabric of understanding and meaning-making is thrown into disarray. Therefore, the climate novel, as well as imaging alternative models, must also innovate its form to account for the breakdown of inherited thought.

¹⁴ Timothy Clark, *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept*, (London: Bloomsbury, 2015), p. 9.

Into the Forest

Set shortly after a major environmental disaster, *Into the Forest* tells the story of two sisters living in a remote Californian forest clearing. The elder of the two, Nell, narrates it, as she documents the mundane aspects of their lives and gradual adaptation for survival. The novel little regards the cause of the catastrophe, the most detail being given in the following passage:

Sometime in January we heard that a paramilitary group had bombed the Golden Gate Bridge, and less than a month later we read that the overseas currency market had failed. In March an earthquake caused one of California's nuclear reactors to melt down, and the Mississippi River flooded more violently than had ever been imagined possible. All last winter the newspapers – when we could get them – were choked with news of ruin, and I wonder if the convergence of all those disasters brought us to this standstill.

Then, too, there were all the usual problems. The government's deficit had been snowballing for over a quarter of a century. We had been in an oil crisis for at least two generations. There were holes in the ozone, our forests were vanishing, our farmlands were demanding more and more fertilizers and pesticides to yield increasingly less – and more poisonous – food.¹⁵

This points to a culmination of disasters, led by climate change, pollution and resource depletion. Their father gradually ceases to enter the increasingly dangerous town, with fuel also becoming scarce. Instead the sisters seek the sanctuary of their isolated home and become progressively detached from society. Whilst their father is alive (he is later killed by a chainsaw accident and their mother died of cancer before the crisis), they live abundantly from a fresh water supply, orchard, chickens and vegetable patch. However, when the father dies, bringing to an end their food source, and Eva, the younger

¹⁵ Jean Hegland, *Into the Forest* (New York: Bantam Books, 1996), p. 16. Further references [to this edition, etc.] are given after quotations in the text.

sister, is raped and becomes pregnant, they can no longer survive by staying at the house. The novel ends as they enter the forest to embark upon a new, survivalist gatherer existence.

For Nell and Eva, the environmental disaster presents itself as an interruption to their normal existence. They experience it as a temporary interlude, wherein a sense of being is lost in the interim: '*This is our fugue state – the lost time between the two halves of our real lives*' (p. 12). This experience of environmental destruction, which entails a feeling of loss, interruption and a halting of a way of being, suggests that they cannot regain an ontological certainty until they have revised their imagining. They wait expectantly for the return of their previous life, regarding it as 'weathering the storm'; believing that they 'would have our power back soon' (p. 87). They enter a period of what feels like an existential void:

For what came next were days of complete inertia, when we played Backgammon or assembled puzzles like a couple of Alzheimer's patients waiting dumbly for something they've forgotten [...] Round and round we circled with our markers, travelling, getting safely nowhere, while we waited for the phone to ring or the power to come back on, waited for night to fall so we could cross another blank day off the calendar in the kitchen, waited to be rescued from the mistaken detour our lives had taken. (p. 96 & p. 36)

It is the waiting for an identifiable way of being, for instance for 'the power to come back', which prevents them from the necessary redefinition of their beings to continue and escape from their ennui and oblivion. Edward Casey explains how memory is synergetic to the external environment: it is always situated in place, it is almost impossible to remember something without

association with its setting. Such memories allow us to orientate and dwell in the present and they also determine and dictate our current relationship to environment and being. To be 'implaced' and inhabit we are reliant on the familiar, 'we only inhabit that which comes bearing the familiar; and the familiar in turn entails memory in various forms.'¹⁶ For these memories, in which our present sense is dependent, place is vital:

Places are potently receptive and preservative of memories, which they hold to keep. As much as body or brain, mind or language, place is a keeper of memories – one of the main ways by which the past comes to be secured in the present, held in things before us and around us.¹⁷

Therefore, Nell describes them as 'Alzheimer patients' trapped in a non-existence, because their place has been radically changed and their memories can no longer relate to the familiar.

Conceptions of the past perpetuate a false and problematic notion of the consequences of the environmental destruction:

We listened to talk about the sacrifices and hardships of the Pilgrims and the pioneers [...] I was even imagining carts and horses, as though, while we were waiting for the life we had known to start back up again, everyone had decided to play at retuning to a quaint and picturesque older world. (p. 17 & p. 79)

Nell believes it might be an opportunity to re-establish a present based on nostalgic, historic ideals. Yet the situation demands an entire new vision with no relation to previous forms. A backward perspective becomes restrictive:

The bewildered way that people clung to habit long after habit ceased to make sense – housewives trudging out every morning to check the

¹⁶ Edward S. Casey, *Remembering: A Phenomenological Study* (Bloomington: Indiana University Press, 1987), p. 191.

¹⁷ Casey, p. 231.

mail half a year after the last delivery, men polishing their cars on Sunday afternoons even though it had been months since there had been water pressure enough to wash them or gas to drive them. (p. 114)

By employing tropes and notions based upon a past sense and imagining, they can only continue in cognitive and locative displacement. As Nell notes, by staying at home and avoiding the town, 'some recognizable shape remains – even now – to our interrupted lives' (p. 18). Yet it is exactly that they remain attached to the 'recognizable shape' that leads to near existential and physical demise. They must find a new mode of thought in order to live in the present. David Wood, in an essay on Derrida and the conception of the future, suggests that the ecological crisis forces us to relate differently to the future:

And yet, for there to be hope at all, indeed for there to be life and experience here-and-now, we have no alternative but to go back to the future, and relate to it differently. It may not best operate as a legitimating horizon for projective planning, but we cannot but attempt a new dispensation, a new way of figuring the future.¹⁸

Similarly, the sisters, only at the end of the novel begin to survive and dwell, after they recreate their understanding of their future and detach themselves from a previous understanding of their being.¹⁹ They, as Wood claims the crisis enforces, 'reinvent in order to take forward.'²⁰ The characters also display symptoms of 'Anthropocene disorder', as coined by Timothy Clark.

¹⁸ David Wood, 'On Being Haunted by the Future', *Research in Phenomenology*, 36 (2006), pp. 274-298, (p. 275).

¹⁹ I use the phrase 'dwell' often and with Heidegger's conception of the term. Dwelling goes beyond merely occupying or inhabiting space, but refers to belonging, living and existing in that space in the meaningful notion of Being. Heidegger's notion of dwelling is important in ecological terms, since it implies living on the earth with integrity and care for it; dwelling within it allows us to do this, rather than just occupying space.

²⁰ Wood, p. 275.

This is a psychic syndrome caused by a disjuncture in thought between planetary collapse and the inadequacy of measures taken to avert it. The result of this disorder makes 'everyday life part of a mocking and incalculable enormity.'²¹ Climate change is psychologically unsettling due to it 'deranging scales'.

Part of the sister's limited capacity to dwell in the new ecological reality of their present is because of their dependency on fossil fuel. The novel engages with a post-carbon imagination and calls for an existence beyond fossil fuel dependency. In this novel, fossil fuel is parodied as integral to physical and emotional survival. The sisters are fixated by their desire for fuel, believing that it will alleviate them from their nonexistence: 'what I really wanted to give Eva was gasoline. Just a little gas – enough to run the generator so she could play even a single CD' (p. 7). It is comparable to 'breathing', as intrinsic and inseparable from daily existence, 'when electricity still seemed as natural as breathing' (p. 45). After believing that there is no more gas, the sisters discover a canister, 'we found the source of power and travel, the fluid that changes everything! Today we found gasoline! I could fill this entire notebook with exclamation points and still not show how happy we are' (p. 97). With knowledge of the fuel they are enabled to, temporarily, continue in an artifice of their previous existence. Eva carries on with her ballet training and Nell with her preparation for her

²¹ Timothy Clark, *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept*, (London: Bloomsbury, 2015), p. 140.

Harvard entry exam, both pursuits seeming absurd considering the societal collapse:

That's what keeps me going. I keep dancing because I know we have that gas [...] That gas keeps it all close enough to believe in. Do you know that sometimes I sneak it out just to look at it? Sometimes I even open the cap and dab a little on me like perfume. (pp. 141-142)

Yet this knowledge entombs them psychologically, since they continue to conceptualise their existence in its previous form. Ziser suggests that understanding how energy informs our current sense of reality and finding a new way to envisage our lives without it is critically important:

Understanding the aesthetics of the new environmental Age of Transition to a lower-intensity energy regimes requires us to reflect on the parameters set by what William S. Burroughs (2000, 240) called the 'gasoline crack of history' in order to reimagine them for the future.²²

As we see in the novel, in order to survive the sisters must seek a world beyond fossil fuel dependency. Fossil fuel is represented as cognitively paralysing; it prevents them from leaving their home, the sight of demise and danger, and retains them in the past. Martin McQuillan argues that a new philosophy is needed to adapt to our future existence, 'effectively the post-carbon epoch has already begun, since it is now a task of the critical imagination to envisage a world beyond the fractal distillation of petroleum.'²³

Undoubtedly a society that does not use fossil fuels would look very different. In contemporary society these sources of energy have predicated

²² Michael G. Ziser, 'Home Again: Peak Oil, Climate Change, and the Aesthetics of Transition', *Environmental Criticism for the Twenty-First Century*, ed. by Stephanie LeMenager and others, (New York: Routledge, 2010), p. 182.

²³ Martin McQuillan, 'Notes Toward a Post-Carbon Philosophy: "It's the Economy, Stupid"', *Telemorphosis: Theory in the Era of Climate Change*, Volume 1, ed. by Tom Cohen, (Michigan: Open Humanities Press, 2012), p. 271.

our thinking, forming a basis for our culture, economy and globalized world. A new thinking and envisaging must develop. As McQuillan notes, such thinking must overcome its stricture in nonrenewable energies:

Rather, the task for thinking relates to the sort of world, being in the world, and thought concerning the world that an economy and culture based on the exploitation of hydrocarbons has given rise to, and what its prospects might be as this economy and culture inevitably weans itself off of petroleum and onto some other alternative energy source, while living with the inheritance of a century of intensive hydrocarbon use.²⁴

In the penultimate scene of the novel, the sisters come to a similar realisation and use the gas to burn their home. It is only when home -- a symbol of a previous civilisation -- and gas are depleted that the girls are able to find the means to survive in a new, sustainable existence. It liberates their imagination and they can begin to conceptualise their lives anew.

A binary is set up between the home and the forest. The sisters associate the forest with danger, as 'there're ticks and rattlesnakes and poison oak in the forest' (p. 50). Their mother warns them, 'don't you girls ever eat anything wild' (p. 51). The home is considered a place of protection and safety. The opposition reverses, however. Initially they regard the forest as a worthless expanse, 'beyond our clearing there is nothing but forest, a useless waste of trees and weeds, wild pigs and worms' (p. 43). Yet, gradually, the relationship changes. Richard Kerridge notes that 'as they grow, their changing feelings about the forest recapitulate many of the

²⁴ McQuillan, p. 272.

historical shifts in attitude of Western civilisation'.²⁵ As they start to revise and learn to relate to their new world, the forest begins to have meaning for them. Nell begins to recognise the life and abundance associated with it:

After all this rain the woods were humid – steaming and voluptuous in the sudden gift of sunlight, and I felt both bewildered and newly alive, as though I had just woken after a long illness. Water dripped from every leaf and twig, a bright after-rain that sounded like a far-off stream, while the nearby stream ran riotous as a river. The redwoods' needles were glistening, and everywhere the hard, tight knobs of buds, like tiny fists or taut nipples. The air washed our lungs. We squinted in the blaze of wet light and headed up the stream. (p. 117)

Meanwhile, the home becomes associated with danger: 'inside we feel both exposed and trapped' (p. 146). The concern is of something deeper: the home is representative of a previous world, an ecologically unviable one. It becomes the source of danger, whilst the forest, representative of nature and sustainable living, becomes a refuge. Kerridge identifies how in entering the forest they pass out of culture's range, 'this final movement into the forest, out of "logos", is – or at least aspires to be – a step across a threshold that language and culture cannot cross'.²⁶ It severs connections to their prior notion of human civilization. Nell leaves behind her diary and, as it is the form in which we are narrated the story, as readers we are also severed from communication. For their survival the narrative cannot continue, since they must come to exist and dwell in their new ecological present in a way that is no longer communicable to us. The novel ends just before they cross the threshold into the forest, from which the reader cannot follow them, it

²⁵ Richard Kerridge, 'Narratives of Resignation: Environmentalism in Recent Fiction', *The Environmental Tradition in English Literature*, ed. by John Parham, (Hampshire: Ashgate Publishing Limited, 2002), p. 93.

²⁶ Kerridge, p. 96.

concludes: 'Now the wind rises and the baby wakes. Soon we will cross the clearing and enter the forest for good' (p. 241). To enter they must relinquish old imagining since 'the past is gone. And it was wrong, any way' (p. 232).

Fossil fuel dependency and frivolous consumption must cease, and Nell comes to recognise this:

I never knew how much we consumed. It seems as if we are all appetite, as if a human being is simply a bundle of needs to drain the world. It's no wonder there are wars, no wonder the earth and water and air are polluted. (p. 135)

The novel aligns itself to principles of Deep Ecology: revising their mental outlook, forging a sense of connection to the earth and adopting a new, simple lifestyle. Yet the change is more than one of lifestyle as they must relinquish associations and imaginings relating to their previous existence, finding a new way of conceptualising to survive, not only physically but also ontologically. However, the efficacies of the solutions as presented in the novel are questionable given our age of extreme short-termism. Kerridge claims that the 'novel's environmentalism is of a kind that recognizes no possibility of compromise or dialogue between environmental values and those of modernity.'²⁷ The demands that Deep Ecology sets forth deeply conflict with our consumerist culture and seem entirely incompatible.²⁸

²⁷ Kerridge, p. 96.

²⁸ Deep Ecology's Platform:

1. The well-being and flourishing of human and nonhuman life on Earth have value in themselves (synonyms: inherent worth, intrinsic value, inherent value). These values are independent of the usefulness of the nonhuman world for human purposes.
2. Richness and diversity of life forms contribute to the realization of these values and are also values in themselves.
3. Humans have no right to reduce this richness and diversity except to satisfy vital needs.

However to reach any realistic degree of ecological integrity, some sort of compromise must be found. Though the ideological and regime change implied by this novel and Deep Ecology would fail to resonate with a general audience, climate novels should and need to assist with the task of developing a post-fossil fuel imagination. Combining with other approaches, such as environmental pragmatism, may speak more effectively and realistically to a wider audience, and not just existing advocates of environmentalism.²⁹

Flight Behaviour

In the 2012 novel, *Flight Behaviour*, nearly the entire monarch butterfly population descends upon a local Christian community in the Appalachian Mountains, Tennessee. As a result of a series of events induced by climate change this species has, for the first time in its known evolutionary history, migrated to the wrong location. As such, the future of this creature is under threat. Yet the butterflies create an awesome

4. Present human interference with the nonhuman world is excessive, and the situation is rapidly worsening.

5. The flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of nonhuman life requires such a decrease.

6. Policies must therefore be changed. The changes in policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present.

7. The ideological change is mainly that of appreciating life quality (dwelling in situations of inherent worth) rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between big and great.

8. Those who subscribe to the foregoing points have an obligation directly or indirectly to participate in the attempt to implement the necessary changes.

Devall, W. and G. Sessions, *Deep Ecology: Living As if Nature Mattered* (Salt Lake City: Gibbs M. Smith, Inc, 1985), p. 70.

²⁹ Environmental pragmatism seeks to implement practical solutions, and considers theoretical debates to be a hinder to action. See Anthony Weston, 'Beyond Intrinsic Value: Pragmatism in Environmental Ethics', *Environmental Ethics*, 7, (1985), pp. 321-339.

spectacle: an orange pulsating mass carpeting the landscape. They enrapture the local citizens, who find religious significance in the event. The previously unknown town becomes renowned among tourists, journalists and scientists who travel to witness the spectacle. *Flight Behaviour* follows a frustrated mother and part-time farmer, named Dellarobia. With her family -- husband, Cub, and young children, Cordie and Preston -- she lives on a failing sheep farm. Her life, until the arrival of the butterflies, is predictable, narrow and dull. Yet, Dellarobia's sense of self and understanding of the world are radically altered with the butterflies' arrival.

Dellarobia undergoes a revision of her imagined world as a result of the butterflies' (mis)migration. It forces her into a position of questioning in which she confronts her axioms. At first Dellarobia cannot distinguish the sight of the butterflies:

The path steered out of the shadow into bright overlook on the open side of the slope, and here she slammed on her brakes; here something was wrong. Or just strange. The trees above her were draped with more of the brownish clumps, and that was the least of it. The view out across the valley was puzzling and unreal, like a sci-fi movie. From this overlook she could see the whole mountainside that lay opposite, from top to bottom, and the full stand of that forest was thickly loaded with these bristly things. The fir trees in the hazy distance were like nothing she'd ever seen, their branches droopy and bulbous. The trunks and boughs were speckled and scaly like trees covered with corn flakes. Nearly all the forest she could see from here, from valley to ridge, looked altered and pale, the beige of dead leaves. These were evergreen trees, they should be dark, and that wasn't foliage. There was movement in it. The branches seemed to writhe.³⁰

³⁰ Barbara Kingsolver, *Flight Behaviour*, (London: Faber and Faber, 2012), p. 13. Further references [to this edition, etc.] are given after quotations in the text.

It is disorientating, yet majestically beautiful. The dire meaning of the visual is still unknown to her. The culmination of the orange winged creatures appear as a burning forest:

The flame now appeared to lift from individual treetops in showers of orange sparks, exploding the way a pine log does in a campfire when it's poked. The sparks spiralled upward in swirls like funnel clouds. Twisters of brightness against gray sky in broad daylight with no comprehension, she watched. (p. 14)

The butterflies alter Dellarobia's connection to place, as they erase her previous modes of relating to it. By turning to place theory, we can understand how the loss or alteration of a known, inhabited surrounding can bring about changes to the self.

It is useful to distinguish place from space: place is when a setting is imbued with meaning, inscription and interaction. It is not just the physical terrain, but rather site constituted by a multitude of interactions, memories, actions, emotions, by all those that inhabit it – human and nonhuman. It is formed in reciprocation. Various theorists, including Henry Lefebvre, Doreen Massey and Edward Soja, write about place; each argue that it is not a closed and defined terrain, but rather constituted by social, economic, cultural factors.³¹ All identify the importance of place in contributing meaning. For this analysis, however, it is the work of Edward Casey that offers the most significance for thinking about how particularly environmental

³¹ Henri Lefebvre, *The Production of Space*, trans. by Donald Nicholson-Smith, (Oxford: Blackwell Publishing, 1991); Doreen Massey, *For Space*, (London: Sage Publications Ltd, 2005); Edward Soja, *Postmodern Geographies: The Reassertion of Space in Critical Social Theory*, (London: Verso, 1989).

destruction impacts upon ways of knowing. His theories suggest how consciousness is informed by place. Much of this is based upon a phenomenological relationship, some of the key theoretical underpinnings of which have been outlined in chapter one. Therefore, the focus here will be how change in place causes an ontological shift.

Describing body memory and its unacknowledged ubiquity, Casey writes:

When I settle into a chair in which I have been accustomed to do most of my reading and writing for the past several years, I am shocked to discover a different cushion pressing against me: suddenly my ongoing existence is destabilized, disoriented.³²

Body memory relates to our external environment: it is formed by and symbiotic with it. It is vital to place and perception. Body memory offers a locus through which to orientate:

As presupposed, habitual body memories serve as our *familiaris* in dealing with our surroundings – as a constant guide and companion of which we are typically only subliminally aware. They are always already in operation in our ongoing lives. We could not initiate actions, much less continue them, unless we could count on such memories [...] Habitual body memories are also deeply *orienting* [...] But their value is more than purely utilitarian: they allow us to discern the sense of a which they may give rise.³³

Yet, the butterflies radically alter a perceptible sense of the landscape:

The golden darts filled the whole of the air, swirling like leaves in a massive storm. Wings. The darts underfoot also were wings [...] It was a whole butterfly forest, magically draped with dark, pendulous clusters masquerading as witchy tresses or dead foliage. (p. 53 & 94)

³² Edward S. Casey. *Remembering: A Phenomenological Study*. Bloomington: Indiana University Press, 1987. p. 146

³³ Casey, *Remembering*, pp. 149 & 151.

The effect causes Dellarobia to venture beyond the familiar. It erases her capacity for 'body memory', thus inducing her displacement.

Place can harbour immaterial entities, such as thoughts and memories, which are provoked in the experiencing of it. It is part of how we know and define our being. Yet, when place is destroyed, the ways in which it holds memories, thoughts and meaning are undone. Casey discusses the severity of the loss of place: 'to lose one's land is tantamount to losing one's existence [...] not to be in place is not only to be nowhere; it is not to exist.'³⁴ Hence, Dellarobia experiences an ontological unravelling. The change in her local environment causes her to feel that 'the world in Dellarobia's mind took a tumble, and nothing in it felt true at all [...] She felt like a blind person grappling for the doorway' (p. 383). The descent of the butterflies distorts Dellarobia's way of knowing, eventually forcing her to reconfigure her sense of place.

Dellarobia begins to define herself before and after the disaster. Though her routine continues as before, she can no longer relate to the world in the same way:

Whatever had gained purchase on her vision up there felt violent, like a flood, strong enough to buckle the dark roof and square white corners of home and safety. But no, it was still there. The life she had recently left for dead was still waiting. The sheep remained at their posts, huddled in twos and threes. The neighbors' peach orchard still rotted in

³⁴ Edward S. Casey, *Getting Back into Place: Towards a Renewed Understanding of the Place-World*, (Bloomington: Indiana University Press, 1993), p. 37.

place on its perfect grid, exposing another family's bled-out luck. Not a thing on God's green earth had changed, only everything had. (p. 17)

Her selfhood seems separate and unknowable from that which existed prior to the modification of her landscape; she talks of 'the impossible idea of returning to her previous self.' Her outlook has shifted: 'her strange turnaround on the mountain had acted on her like some kind of shock therapy' (p. 22).

A conversation between Dellarobia and Ovid,³⁵ the biologist, describes climate change as forging a new world, wherein we must learn to relate differently and rethink how we know and define:

'Where will they go from here,' he repeated...Finally Ovid said, 'Into a whole new earth. Different from the one that has always supported them. In the manner to which we have all grown accustomed. This is not a good thing, Dellarobia,' he added. 'A whole new earth.'

'I know,' she said. A world where you could count on nothing you'd ever known or trusted, that was no place you wanted to be. Insofar as any person could understand that, she believed she did. (p. 325)

The pair are discussing the progress of the butterflies and their continued migration. They must, as a result of the environmental destruction, enter and find a new way of surviving; they must alter their ancient migratory patterns. Dellarobia recognises the gravity of this as it parallels her own situation. Dellarobia manages, like the butterflies at the end, to (ontologically) survive. In reconsidering her relationship with her environment, she is able to

³⁵ Kingsolver's choice of name, 'Ovid', perhaps refers to the Roman poet and his work *Metamorphoses*. Varying levels of symbolism can be read from this: Dellarobia's transformation and the biological process of a caterpillar becoming a butterfly. Symbolism is used throughout the novel, for instance the reoccurring colour of orange, which is evocative of Dellarobia's stillborn child and the butterflies. He is described as being covered in an orange 'pelt of fur' (p.10), suggestive of the butterflies, and also representative of deceased children in Mexican folklore (p.42).

consider a reality of such a 'new world'. As a result, she escapes her narrowed, restrictive and frustrated existence:

The person who'd lit out one day to shed an existence that felt about the size of one of those plastic eggs that pantyhose came in. From that day on, week by week, the size of her life had doubled out. (p. 342)

She learns new information, gaining new opportunities and skills, and this allows her to 'reinvent' her existence. For instance, Ovid concedes that she has 'scientific' opinions: 'Never in her life had anyone spoken to her this way, and now someone had, and it made her a different sort of person. Someone she would like to keep on being' (p. 258). Through reforming her outlook she finds a way to dwell:

Watercress she had never noticed grew up through the surface of this creek, frozen to blackness in the air above but still green underwater, and also alive in a narrow zone an inch above the surface of the moving creek. She had heard him say the word *thermocline*, and now she could see that too. She had begrudged the clubbish vocabulary at first, but realized now she had crossed some unexpected divide. Words were just words, describing things a person could see. Even if most did not. Maybe they had to know a thing first, to see it. (p. 250)

She ultimately finds an ecological consciousness, as outlined in environmentalist thought. Her new ability to name and recognise her environment leads to place enchantment; this is also illustrative of my discussion in chapter one concerning naming our environment. Dellarobia successfully adapts to such change in place through a combination of ecological interaction and scientific knowledge. However, it remains a conceptual hurdle for the wider community who, unlike Dellarobia, maintain accepted views without rethinking their axioms.

Flight Behaviour is set within a community of climate sceptics. Dellarobia constantly encounters incredulity that the butterfly phenomenon is linked to climate change:

‘There’s more to it than just these butterflies, a lot of things are messed up. He says it’s due to climate change, basically.’

‘What’s that?’

She hesitated. “Global warming.”

Cub snorted. He kicked up a cloud of dusty frost. ‘Al Gore can come toast his buns on this.’ It was Johnny Midgeon’s line on the radio, every time a winter storm came through. (p. 260)

Kingsolver explores the factors leading to a denial of climate change. The cause is not simply a narrowness and lack of knowledge. Instead, climate change is rejected for not sitting within the established categories of knowledge:

‘They all came here for the winter, and they shouldn’t have, because the winter’s too cold here. But they came because of things being too warm. Or I guess we don’t know because of what. But he says it’s something gone way wrong.’

‘Now see, I don’t hold with that,’ Cub said. Exactly as she’d expected. Cub would not be disposed to this way of thinking, any more than the people in town or Tina Ultner and her national broadcast audience. (p. 259)

Kingsolver offers analogies for the climate debate throughout the novel. Here she parallels the disparities between two differently perceived worlds:

Hester almost smiled. ‘That child surely has ideas about what to do with a telephone. Everything but talk on it.’

Dellarobia studied the toy – bulky body, cord, receiver, dial – and realized it did not resemble any telephone that existed in Cordelia’s lifetime. Phones lived in people’s pockets, they slid open, they certainly had no dials.

‘Why would she talk into it? She doesn’t know it’s a telephone.’

Hester wouldn’t get this, of course. In her eyes it was a phone, and that was that. Dellarobia could barely get herself. She’d seen something so plainly in this toy that was fully invisible to her child, two

realities existing side by side. It floored her to be one of the people seeing the world as it used to be. (p. 134)

As noted here, 'seeing the world as it used to be' hinders Hester's, Dellarobia's mother-in-law, ability to bring climate change into her mode of thought. The child's alternative outlook means she conceptualises an external reality differently. In relevance to the climate debate, then, a different way of perceiving is needed to adopt new truisms.

Timothy Clark suggests that Derrida overlooked the issue of climate change in his late work, despite it being especially pertinent to his theories.

Clark argues:

Is there something a bit suspicious in the ease with which one can adapt an account of the challenges posed by climate change to some now familiar Derridian arguments? We could describe the current state of the world as a generalisation of the condition of aporia in countless domains of life and thought, many never previously conceived as political or as involving decisions of much consequence at all (e.g. use of air conditioning) and so, one might continue, we are presented at every turn with a situation no longer intelligible in terms programmable by the past, one, that is, now calling for genuine decision and responsibility amid the incalculable which is both their condition and moral necessity. In thus forcing a drastic rethink of the terms of innumerable inherited practices and thought, climate change could be said to open a new space for reconsideration and invention, etc.³⁶

Clark suggests that the consequences of climate change point to the need for reinvention; it renders certain terms no longer applicable and their relevance diminished by the crisis. Clark notes that 'the environmental crisis is inherently deconstructive, viciously so, of current modes of thought in

³⁶ Timothy Clark, 'Some Climate Change Ironies: Deconstruction, Environmental Politics and the Closure of Ecocriticism', *The Oxford Literary Review*, 32, (2010), pp. 131-149, (p. 132).

politics, economics and cultural and literary theory.³⁷ It collapses terms and demands a renewed attention to be paid towards preconceived notions. Climate change enacts deconstruction, since, as Clark notes, 'a geographical and geological contingency, the finitude of the earth, now compels us to trace the anthropocentric enclosure of inherited modes of thinking and practice.'³⁸ His description identifies some of the ways in which is it specifically problematic for contemporary referential frameworks:

Climate change seems a peculiarly monstrous cultural/political/economic/ philosophical/ethical and scientific hybrid in Bruno Latour's sense. That is, the phrase works as a condensed cipher for the destabilisation of such previously decisive dyads as nature/culture, science/politics, fact/value. Collapsing the broadest upon the smallest scale, merging the trivial and the catastrophic, its planetary scale compels us to think and act as if already citizens of a world polity, even as it undermines the credibility of any such thing. 'Deconstruction' in the sense identified with Derrida seems to undergo a new and initially 'deranging' revision of its contexts, a variously disconcerting or exciting upping of the ante.³⁹

Climate change breaks down arenas of knowledge. It suddenly draws connections between seemingly unrelated and distinct things, such as switching on a light in London and the drowning of a Bangladeshi village. It renders distinct spaces, a waste dump and suburban town, as connected. For instance, Dellarobia's sense of geographical distinction and borders is rendered nonsensical in correlation to the environmental disaster. Prior to the arrival of the butterflies, nation-state borders neatly order her sense of space. Her world is contained within the town's boundaries and the chief of

³⁷ Timothy Clark, 'Towards A Deconstructive Environmental Criticism', *Oxford Literary Review*, 30, (2008), pp. 44-68, (p. 46).

³⁸ Clark, 'Some Climate Change Ironies', p. 134.

³⁹ Clark, 'Some Climate Change Ironies', p. 137.

her concerns are 'the sheep in the field, the Turnbow family land, the white frame house she had not slept outside for a single night in ten-plus years of marriage: that was pretty much it' (p. 2). The disaster begins to unravel the artifice of her town as enclosed and separate. An expanse of interconnections is revealed, demanding that Dellarobia reconceptualise her sense of borders and boundaries. The monarch butterflies, normally migrating to Mexico, come to Tennessee: 'are you saying they used to be down there, and now they're all coming up here to live?' (p. 98). Yet, it is not only the butterflies that are displaced. Local inhabitants are too:

'If you don't mind my asking, why didn't you stay there?'
Dellarobia asked.

'No more. It's gone.'

Dellarobia leaned forward, hands pressed between her knees, strangely dreading what comes next. Miracle or not, this thing on the mountain was a gift. To herself in particular, she'd dared to imagine. Not once had she considered it might have been stolen from someone else. 'Do you mean the butterflies stopped coming?' she asked. 'Or just the tourists stopped coming?'

'*Everything* is gone!' the girl cried, in obvious distress. 'The water was coming and the mud was coming on everything....*Un diluvio.*' (p. 101)

This reveals a correlation between various distinct social and ecological factors. Dellarobia meets the Mexican family whose home is destroyed by a mudslide; it is also the location of the butterflies' usual migration destination. Suddenly Dellarobia finds her modes of separation and means of distinction are no longer applicable: as in the event connections are woven between the Mexican family, butterflies, mudslide and herself. One principle of Deep Ecology suggests that nation-states should be replaced by bioregions, which would more actively represent the geographical reality in which humans and

nonhumans live.⁴⁰ Jason Groves argues that our accounts for ordering spaces are becoming increasingly inadequate:

The radical and relatively recent changes in the spatial distribution of both human and nonhuman life have delegitimized the retrograde nativisms and oversimplified dichotomies (native vs. exotic; invasive vs. non-invasive; indigenous vs. non-indigenous) with which biology has accounted for these shifts.⁴¹

Groves focuses specifically on 'bioinvasion' as dismantling 'the myth of continents', arguing that it leads to a continental liquidation.⁴² Such impacts upon the environment, such as the relocation of the monarchs, 'point to a fundamental shift in the organization of the biophysical'.⁴³ Likewise, Dellarobia's space loses its containment and her sense of geographical borders, for instance between the US and Mexico, disappear. As Groves notes, 'containment—whether cartographic, conceptual, conservationist, or indemnificatory—increasingly is frustrated.'⁴⁴

Dellarobia is forced to consider how a thwarted migration attempt can cause the entire demise of a species: 'that this roosting colony is a significant proportion of the entire North American monarch butterfly population [...] All hope and future lost in a day [...] So if they die here, they die' (pp. 227-228). Yet, the capacity of such thinking is challenging, given the vastness of their number, the unobserved and critical importance of their

⁴⁰ Warwick Fox, 'Deep Ecology: A New Philosophy of our time?', *Environmental Ethics*, ed. by Andrew Light and Holmes Rolston III, (Oxford: Blackwell Publishing, 2003).

⁴¹ Jason Groves, 'Nonspecies Invasion: The Eco-logic of Late Capitalism', *Telemorphosis: Theory in the Era of Climate Change*, Volume 1, ed. by Tom Cohen, (Michigan: Open Humanities Press, 2012), p. 185.

⁴² Groves, p. 186.

⁴³ Groves, p. 190.

⁴⁴ Groves, p. 185.

survival, and the significance of their extinction. The butterflies have followed the same migratory path since their origin, yet it is suddenly interrupted: 'Monarchs have wintered in Mexico since they originated as a species, as nearly as we can tell. We don't know exactly how long that is, but it is many thousands of years' (p. 148). Such abrupt ecological shifts mean that predictability and reliance on prior modes of meaning are collapsed. Climate change creates chaos out of previously stable ways of knowing, as drawn from the external world. Clark argues that 'climate change disrupts the scale at which one must think, skews categories of internal and external and resists inherited closed economies of accounting or explanation'.⁴⁵

Further to this, climate change complicates our previous distinction between nature and culture. A person's daily habits might be linked to catastrophic events: the consuming of dairy with the loss of the Amazon rainforest, or the spraying of deodorant with a hole in the ozone. Disparate things are drawn into connection. Bill McKibben argues that we have radically altered nature, to such an extent that it no longer exists within our present definition for it. Rather than its forces dominating us, 'we *are* those larger forces'.⁴⁶ We have erased any possible nature-culture distinction through our environmental modification:

⁴⁵ Timothy Clark, 'Scale: Derangements of Scale', *Telemorphosis: Theory in the Era of Climate Change*, Volume 1, ed. by Tom Cohen, (Michigan: Open Humanities Press, 2012), p. 153.

⁴⁶ Bill McKibben, *The End of Nature* (New York: Random House, Inc., 1989; repr. 2006), p. xviii.

Now that we have changed the most basic forces around us, the noise of that chain saw will always be in the woods. We have changed the atmosphere, and that will change the weather. The temperature and rainfall are no longer to be entirely the work of some, separate, uncivilizable force, but instead in part a product of our habits, our economies, our ways of life. Even in the most remote wilderness; where the strictest laws forbid the felling of a single tree, the sound of that saw will be clear, and a walk in the woods will be changed-tainted-by its whine. The world outdoors will mean much the same thing as the world indoors, the hill the same thing as the house.

An idea, a relationship, can go extinct, just like an animal or plant. The idea in this case is "nature," the separate and wild province, the world apart from man to which he adapted, under whose rules he was born and died.⁴⁷

The term we have for nature is no longer relevant in its current context and it must be redefined. The butterfly phenomenon obscures previous dichotomies by bringing together human, nonhuman and inanimate actants. The variety of factors leading to the butterflies' diversion points to a network of relations; of humans influencing and damaging conceptions of nature:

The monarchs had to leave the Mexican roost sites earlier every year because of seasonality changes from climatic warming. She wondered whether any of this was proved. Climate change, she knew to be wary of that. He said no one completely understood how they made these migrations. Hundreds of factors came into play. Fire ants, for example, had now come into Texas, where the monarchs were vulnerable. Ants ate the caterpillars. And farm chemicals were killing milkweed plants, another worry he mentioned. She wondered if she should tell Ovid about the landslide in Mexico. But the students were jumping into the conversation, rendering it less than comprehensible. Bio-geography, roosts, host plants, overwintering zones, loss of something – communities, devastation. (p. 147)

By locating the narrative within a small, close-knit community, Kingsolver is more able to show the disruptive effects of an ecological event. Climate change scepticism underpins the majority of this community, with

⁴⁷ McKibben, p. 41.

Dellarobia the exception. She undergoes a transformation, first by the impact of the butterfly phenomenon, which disrupts her sense of place, and then as she develops an ecological consciousness. *Flight Behaviour* shows that through a combination of ecological enchantment and scientific knowledge, Dellarobia is able to bring climate change into her imagination. The novel offers a more nuanced solution than that given in *Into the Forest*, wherein the sisters must entirely abandon all associations with modernity in order to live with ecological integrity. Yet, it is the process of acquiring new knowledge and revising one's relationship to place that unites both works.

Conclusion

Since climate change sits outside currently dominant modes of thought, complicates referential frameworks, and breaks down ways of drawing meaning, we, therefore, find certain notions requiring reinvention. Climate change not only complicates transcendental factors, such as a sense of being, but also more concrete notions, for instance geophysical borders. Addressing climate change means reconceptualising and reconfiguring both pragmatic and philosophical matters. It also asks us to receive new paradigms that favour ecological integrity. The discussion of *Into the Forest* and *Flight Behaviour* show the necessity of integrating new categories of knowledge and ways of knowing in order to relate to a place affected by ecocide and cognise climate change.

The climate novel can assist with exploring and developing concepts for such imagining. Importantly it can engage in a post-carbon imagination and explore what a truly sustainable existence might look like. It can allow us to creatively envisage a future beyond fossil-fuel dependency. Finding an alternative ways of existing in relation to the nonhuman world is largely purported by environmentalist thinking. The creativity and experimentation afforded by the novel allow us to explore such alternative scenarios, and re-imagine our future and philosophical frameworks. Yet, innovation of the novel's conventions is also needed. Whilst reimaging societal models concern the novel at the level of its content, the disruption of inherited ways of thinking challenges its formal features. The climate novel must then test boundaries to explore new forms, styles and methods of meaning making. Clark recognises the Anthropocene as 'intellectually liberating'; hence it lends itself to innovation of the novel.⁴⁸ Paradoxically, we find that experiment and innovation is afforded by the limits to our thinking.

⁴⁸ Timothy Clark, *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept*, (London: Bloomsbury, 2015), p. xi.

The Hungry Tide and Bringing Climate Change into the Imagination

The resistance of climate change to the imagination has been explored throughout this thesis. We find then that there is a significant thread between ecocide, words and thinking. This concluding chapter will consider possible solutions to the issues of cognising and writing about climate change. As climate change is undeniably a large and complex issue, it demands various responses: technological solutions, such as carbon capture and storage; lifestyle changes, like recycling and flying less; developing renewable energy and moving away from fossil fuel dependency; forging a new economic system that is not reliant on growth; these are all important examples. However the response to climate change addressed here is literary. I consider what form narratives about environmental destruction should take if they are to both engage and inform. Aiming to recover and recuperate the language of climate change, these narratives will have several functions. There are many existing stories and methods for representing climate change, yet as I have argued, many of these are ineffective for allowing contemplation. The recommendations given here are a preliminary indication of possible narrative methods for exploring and engaging with climate change. Which must combine with other, worldlier solutions; responses to environment change must extend beyond the cultural sphere to that of the political, economic and others. A narrative response is valuable as part of a wider global response. The narratives bring climate

change into the imagination and provide a way to discuss the issue in a relevant and personal way. Narratives about climate change renew critical thought by overcoming the predictable discourse that characterises much contemporary coverage of it.

This chapter first summarises the issues associated with cognising climate change as identified in the preceding chapters. I then examine Amitav Ghosh's *The Hungry Tide* (2005). I consider the novel to be one of the most successful examples from the canon of climate fiction in representing and imagining climate change. From the analysis of this novel and summary of the chapter findings, I identify possible ways to represent climate change. The efficacy of a climate novel is less to do with its literary merit, though a considered factor, but more its capacity to give imagination to and invigorate the imagery of environmental destruction, in a way that can account for an understanding of the factors leading to ecocide, valuing of the environment, and encourage pro-environmental action, all whilst the narrative does not implicate itself in the various tensions and contradictions inherent in ecological thinking. Therefore the task set out for future authors is certainly not simple or straightforward. Yet the challenge can instigate creativity and imaginative contributions, reviving both ecological writing and literary endeavour more generally. A new genre emerges from one of the most important and critical issues that human and nonhumans have encountered.

I began this thesis by addressing the genre and form of the climate novel, in which I sought to establish the definition and function of a climate novel. From this, we find that the very form of the novel is problematic to climate fiction's subject and conflicts with its proposed outcomes. The roots and emergence of the novel are associated with factors that have also been identified with the origins of climate change, such as the rise of individualism, the Enlightenment and Industrial Revolution. The typical focus of a novel tends to be the accomplishments and advancement of the individual. Extended focus on the character's interior world is often the centre of the narrative's focus, while a more realistic, biotic networked set of relations required for an ecological portrayal is ignored. The environment typically functions in the novel as a setting or backdrop to the action. A decentring of the narrative, from the individual's inner, personal concerns to a wider holistic depiction pushes the expectations and function of the novel into a different direction. The concerns of a climate novel are thus rather different from the conventional novel. This narrative shift needed for novels to be ecological mirrors a similar cognitive shift demanded by environmentalism: from the individual to the greater concerns of the human and nonhuman community. With only a handful of exceptions, many climate novels lack literary and aesthetic merit. Instead, they are predictable, sensationalist and mediocre. Nearly all depict apocalyptic disasters. This also prompts questions about the ability to artistically engage with the issue. Though the

subject has, thus far, proved rarely able to attain literary or aesthetic appeal, whether the author should choose to prioritise it as a work of art or device to prompt environmental engagement is debatable. Since the climate novel sets out to generate ecological sensitivity within its reader, we might find it necessary to not value it in terms of its literariness but rather seek a different set of evaluations.

This thesis thinks about the relationship between language and environment. It draws on the close, shared relationship between natural phenomena and forces and the origins of human language and thought that emerge from these. In doing so, this chapter adopts an eco-phenomenologist approach, which suggests that words and naming arise from the world surrounding us. I push this notion further, asking how climate change might affect our vocabulary. Might we begin to lose nouns and methods for explaining, giving descriptions, making comparisons, and thinking? From this we can understand that the destruction of the natural world leads to a related cognitive destruction. Language, as a tool for thought, is reduced through the consequences of climate change; for instance methods for measurement are reduced and therefore ways to understand our humanness, as we define it in relation to the other. Yet, I also ask how truly symbiotic is this relationship: does the loss of language also lead to environmental destruction? My research finds that climate change might be better mitigated through linguistic embellishing, which

includes finding new terms, narratives and ways of imagining it, as well as preserving our current, rich nature vocabulary. The main obstacle to imagining climate change is its certain ineffability. Climate change is vast, latent, unpredictable, and, until it manifests itself, invisible. Its scales and timeframes confound thinking and its processes, whether minuscule and unobservable, or immediate and almighty, operate at levels undetectable to human senses. Therefore our current terms and narrative devices are inadequate. We lack the concepts to cognise climate change, developing these would bring it closer into the imagination. Its resistance to language means it is shrouded in intangibility, and remains in a state of 'not here and not now'. Therefore, in asking how language furthers environmental destruction, we realise, at least, that the current climate discourse lacks the necessary richness, precision, variety and aptness to properly engage with climate change. We need to enrich the discourse of climate change to both mitigate its worse effect and, paradoxically, to preserve that language itself.

Our current climate discourse has, indeed, become inadequate, because of the overuse of clichés as well as intentional and unintentional inaccuracies. Due to its particular resistance to thought and language the subject is highly susceptible to the use of familiar tropes and recycled phrases, which fail to directly communicate it. We find that we cannot even begin to think about climate change since the words we have for it divert thinking. Certain phrases are empty and might only convey a political

alignment. The limited repertoire is overused, so that it no longer prompts a reaction but rather a pre-determined response. There is an existing gap between the reality of climate change and the representation of it such that, to use Baudrillard's term, it has become simulacra. Furthermore, climate change has entered the arena of the spectacle and is further distanced from reality, wherein disaster movie tropes are its main mode for visualising it. The discourses have an anesthetising effect: wherein the topic becomes like white noise within a mass of disaster imagery. To refresh the discourse -- selecting the words with careful consideration and aptness -- avoids repetitive and ineffectual language.

Finally the last area for consideration in understanding the barriers to cognising climate change is how it exceeds our definitions and the means we have for understanding our world. Climate change sits outside inherited modes of thinking. It complicates the distinctions we give things; for instance, it reveals the artifice of the dichotomy between nature and culture or climate change demands that we revise our understanding of timeframes and spatiality. It renders previous modes for defining these as obsolete. Many of our given conceptions relating to the economy, lifestyle, consumption and behaviour need to be reconsidered. Innocent acts become ominous: driving to the supermarket implicates the individual in a global crisis. Geophysical borders seem arbitrary when the emissions from one continent cause acid rain in another. Climate change asks us to rethink *a priori* knowledge, terms

and habits in order to mitigate it. Yet, its processes and destruction also mean that the words, terms and methods we have for understanding are made nonsensical or irrelevant. Therefore to both mitigate the crisis and maintain ontological meaning, we must revise certain, previously held understandings to fit with such a new and ecologically different world. Each of the issues identified in the previous chapters demands refreshing language, finding ways to represent climate change and revising definitions. The climate novel is a particularly adept imaginary space for this: it is a creative, yet flexible medium that provides lengthy consideration, can blend facts with fiction, and gives poignancy and relevance to the subject matter.

The Hungry Tide

Amitav Ghosh's *The Hungry Tide* is the focus of this discussion since it is, among other climate novels, most able to engage creatively with complex ecological issues. It is rare in its ability to create an enthralling, full and detailed story whilst also accounting for the various social, ecological and political factors relating to environmental issues. The novel creates a vibrant sense of the local community whilst also depicting the global forces at play. This narrative develops a deep sense of place, drawing on its meaning and value, ultimately contributing towards an ecological enchantment. It is also distinct in being able to portray nature poignantly, meaningfully and candidly; it does not create a problematic 'othering' of it as pristine and separate, nor offer an excessive, and ultimately unrelated,

ecocentric perspective. Rather the novel depicts a balanced and symbiotic encountering of the human and nonhuman worlds, which neither simplifies this relationship nor fails to represent it. Though such attributes are found in other climate novels, none possesses the encompassing achievements found in Ghosh's work.

The Hungry Tide is set in the Indian region of the Sundarbans, bordering Bangladesh. The Sundarbans is the world's largest tidal mangrove forest. The region is also the most cyclonic in the world, as Ghosh himself notes 'two of the most devastating hurricanes in human history have been visited upon the coast of Bengal, in 1737 and 1970. Each of these cyclones claimed over 300,000 lives, a toll higher than Hiroshima and Nagasaki combined.'¹ It is a UNESCO world heritage site, tiger reserve and national park, and also possesses a turbulent political past. In 1979 the Left Front government evicted tens of thousands of Dalit refugee settlers from the island of Marichjhapi. Though the figure is unknown, it is considered that thousands were killed.² This eviction was justified on ecological grounds. The islands have been subject to numerous ill-advised conquests; in the early nineteenth century the British Empire hoped to create a grand port here that would replace Calcutta. The port however was swamped by a storm in 1867.³ Presently private company Sahara Parivar hopes 'that it will open

¹ Amitav Ghosh, 'A crocodile in the Swamplands', *Outlook*, 18 October 2004.

² Ross Mallick, 'Refugee Resettlement in Forest Reserves: West Bengal Policy Reversal and the Marichjhapi Massacre', *The Journal of Asian Studies*, 58 (1999), pp. 104-125.

³ Ghosh, *Outlook*, 18 October 2004.

“virgin” areas to tourists. But the islands of the Sundarbans are not “virgin” in any sense. The Indian part of the Sundarbans supports a population of close to four million people – equivalent to the entire population of New Zealand’.⁴ Their aim is to transform this volatile, fluctuating land, also home to the world’s largest tiger population, into a playground for the affluent. With its unique environment, neo-colonial, social and political tensions, the setting of Ghosh’s novel is immediately entrenched in a complex interplay between development and conservation issues, and human and nonhuman relations. The narrative that takes place is similarly intricate, blending various perspectives and timeframes.

The novel opens with Piya, an American marine biologist of Indian descent. She is in the Sundarbans to collect data about the Orcaella, an endangered river dolphin. On her way to Canning, Piya encounters Kanai, an arrogant businessman from Delhi. He is also travelling to the Sundarbans, to collect the bequeathed memoir of his deceased uncle, Nirmal. Nirmal’s account becomes another story within the narrative; it is set thirty years earlier during the massacre on the island of Marichjhapi. Nirmal’s story gives a historic, social and mythical account of the islands. Fokir, an illiterate fisherman who rescues Piya from drowning and later sacrifices his own life to save hers, features in both the present and past narratives. His mother, Kusum, is central to Nirmal’s writing, as she is killed in the island

⁴ Ghosh, *Outlook*, 18 October 2004.

evictions. Though they share no common language, Fokir and Piya develop a close bond. Kanai attempts, unsuccessfully, to compete for Piya's affection. The narrative culminates in a massive cyclone that kills Fokir, inspiring Piya to remain on the island and fully investigate the disappearing dolphins, while prompting Kanai to reconsider his neo-colonial ideologies.

Form and *The Hungry Tide*

The form of *The Hungry Tide* is its great success as an ecological text. The structure and narration imitates the unique tidal landscape of the Sundarbans. Critic Jen Martin Gurr remarks how the environment in the novel functions as more than just a setting, but is the central motif in which everything -- content, themes, characters, style -- is organised around and influenced by: 'The underlying "deep structure" of ebb and flood, land and water, not only structures the text in terms of form, but is closely mirrored and echoed in the constellation of characters and also directly propels the plot.'⁵ The ecological world influences the characterisation and forms part of the characters' identity, 'rivers ran in our heads, the tides were in our blood.'⁶ The role of the landscape as character or agent has been the focus of many discussions about the novel; for instance Roman Bartosch remarks: 'The landscape not only represents a structural basis for the plot but is depicted

⁵ Jens Martin Gurr, 'Emplotting an Ecosystem: Amitav Ghosh's *The Hungry Tide* and the Question of Form in Ecocriticism', *Local Natures, Global Responsibilities: Ecocritical Perspectives on the New English Literatures*, ed. by Laurenz Volkmann and others (Amsterdam, Rodopi, 2010), p. 70.

⁶ Amitav Ghosh, *The Hungry Tide* (London: HarperCollins, 2004), p. 164. Further references [to this edition, etc.] are given after quotations in the text.

as an environmental-textual agency in itself since its changing form significantly governs the form of the narrative.⁷ The novel is divided into two parts, 'The Ebb' and 'The Flood'. These divisions are significant across the structure, themes, content, characterisations, and style of the novel. In the first part, 'The Ebb', the narration is clear and detailed like a receding tide in which things seem momentarily still and exposed by the drawn-back water. The narration is systematic and clear in how it moves between different focalisations. Like the tide, the narrative flows between Kanai's, Piya's, Nirmal's and Fokir's perspectives.

This style changes in 'The Flood' however. As though submerged under water, the perspectives become gradually less distinct. The pace of the novel also changes with the incoming flood and storm. Initially the novel provides scrupulous and lengthy topographic details and we gain a thorough sense of the landscape and movements of the tidal country. Conversations between characters are also carefully narrated, such as Kanai's and Piya's on the train into Canning, even when much of the information and observations seem superfluous. This creates the sense of a clear and full picture, yet a novel slow in pace. Elsewhere the same stories are repeated and re-narrated, for instance we learn about the legend of Bon Bibi, the goddess of the forest, several times. This circling and repeating of information feels when reading like the repetitive movements of the tide in

⁷ Roman Bartosch, *Environmentality: Ecocriticism and the Event of Postcolonial Fiction* (Amsterdam: Rodopi, 2013), p. 98.

and out of the swamplands.⁸ The second part of *The Hungry Tide* however becomes more rapid as the storm moves closer.

Nirmal's retrospective account disappears with the descent of the cyclone and it is literally lost as the transcript is washed away by the flood, reflecting 'how skilful the tide country is in silting over its past' (p. 69). Without Nirmal's account the narrative blends entirely into the present. It is often remarked how the islands' history is recurrently forgotten, for instance 'the speciality of mangroves is that they do not merely recolonize land; they erase time' (p. 50). The perspectives merge and no longer oscillate; this reflects the coming flood and destructive and erasing effects of the cyclone.⁹ The carefully crafted initial narrative, with its boundless typographical details, gives over to a very rapid ending. The most dramatic event of the novel, Fokir's death, is easy to miss. As the pace and organisation of the novel becomes more chaotic with the cyclone, giving a sense of homogenisation and blurring, we also find a shift in how the characters interact and relate to one another. In a final scene and at the very centre of the storm, Piya and Fokir are able to understand one another: 'he had seemed to understand her, even without words' (p. 393). As the storm floods the landscape, submerging the individual islands, there also reaches a temporary moment

⁸ I later suggest how this novel intentionally deploys these particular details whilst skimming over other more supposedly critical events, such as the love affair between Piya and Fokir, **to challenge the** novel to move it from a typically anthropocentric form into a more ecologically aware and holistic account.

⁹ This is also suggestive of the philosophical point I make in my first chapter: that environmental destruction incurs a loss of sense, measure and understanding.

of singularity, not only in landscape but also of focalisations and physical bodies:

Their bodies were so close, so finely merged, that she could feel the impact of everything hitting him, she could sense the blows raining down on his back. She could feel the bones of his cheeks as if they had been superimposed on her own; it was as if the storm had given them what life could not; it had fused them together and made them one. (p. 390)

The storm becomes an expression for their muted affection. The cyclone also erases the language and cultural differences between Piya and Fokir. Place distinction and sense are swept away by the storm. Gurr notes how the novel succeeds in 'emplotting' an ecosystem, which he argues, should be a criterion for all eco-narratives to properly reflect environmental concerns and bring about an ecological consciousness:

Rather, it seems to me that Ghosh's novel can, in a very precise sense, be seen as the emplotment of an ecosystem and that studying the formal and structural engagement of a text with an ecosystem should complement discussions of eco-narratives in terms of content and ethical concerns.¹⁰

Interlinking the landscape and narrative moves the environment beyond its purely symbolic role. Instead we see how the environment is an active agent that influences, alters and transforms, propelling the plot and structuring it. Throughout, the novel's form, plot and landscape intertwine and influence one another.

The novel offers many different focalisations, oscillating between them to create an overall picture. It retells stories in altering versions. The

¹⁰ Gurr, p. 79.

narrative also blends many different styles through the incorporation of Bangla, idioms, local vernaculars, song and rhyme. It weaves between timeframes, has several subplots, mixes fact and fiction, incorporates mythology, social and colonial history, and personal accounts. As Bartosch has argued, these techniques all contribute to the novel's ecological form. Bartosch notes: 'it turns the narrative design into a meaningful environmental device: while multiperspective focalisation is common in narrative fiction in general, in connection with the tidal movement, it becomes an environmental trope.'¹¹ This method of narration layers multiple ways of seeing and perceiving, whereas an overarching single voice would fail this novel as an ecological text. Employing this multi-perspective viewpoint, the novel is more able to reflect the complexity, variety and interconnection owing to the environment.

Encompassing different perspectives and viewpoints is central to ecological thinking. Firstly, the disparity of different chronotopic scales of environmental issues means thinking cannot be linear and definitive. Secondly, it allows for the incorporation of distinct forms of knowledge, whether scientific, or traditional. I shall discuss later how the Tiger Project demonstrates that incorporating different ways of knowing is more effective for addressing and mitigating environmental destruction.¹² Valuing individual

¹¹ Bartosch, p. 101.

¹² Brian Wynne's discussion of the radioactive contamination on Cumbrian farms caused by the Chernobyl disaster is particularly illuminating for this point. The article discusses how if governing bodies and scientists incorporated the farmers' 'lay' or traditional environmental

ways of knowing and connecting to the environment is also important in such an ecological outlook, since nature holds different interpretations and relevance across cultures. This narrative technique, which intermingles different reference points and perspectives, presents us with a new mode of thinking and knowing. This aims to include different viewpoints, voices, ways of seeing and knowing into a perspective, which is ultimately a more appropriate method for addressing environmental issues. In part, the environmental crisis has been exacerbated by restrictive ways of knowing, for instance a pure empirical scientific approach fails to account for complexities and wider social and political factors. The 'intermingling' avoids an imperialistic and 'correct' way of knowing, and allows understanding of the environment to be open to interpretation and different methods of relating to it. The narration resists a homogenised and single way of seeing. It effectively blends perspectives to create an ecological form.

Bartosch describes the ending of *The Hungry Tide* as 'downright flat'.¹³ It is abrupt and questionably cynical, and could be understood as a failing of the novel. The sudden tying up of events seems unsuited to such a meticulous narrative. Piya's befriending Fokir's wife 'betrays a certain lack of interest in human psychology',¹⁴ Bartosch argues. Her decision to move in with Kanai's aunt is improbable and the foundation to memorialize Fokir is

knowledge they would have successfully averted the huge economic losses suffered by the farmers: see Brian Wynne, 'Misunderstood Misunderstanding: Social Identities and Public Uptake of Science', *Public Understanding of Science*, 1 (1992), pp. 281-304.

¹³ Bartosch, p. 125.

¹⁴ Bartosch, p. 126.

atypically sentimental. Such closure is unconvincing and unseemly. The character and plot harmony seems too anthropocentric in its concerns for what has been, up to now, such an ecocentric rendering of events. This redirects the story into conventionality and conformity with Western novelistic expectations, but Bartosch suggests this ending brings into relief a harmony between ecocentric and anthropocentric priorities. That it is only in a realisation of the two that ecological thinking can be achieved, since both priorities must be given due consideration:

That such an ending is literally prosaic (just as Nirmal criticised his wife as being) is another truth to be incorporated in the dialogical net of environmental truths, and it highlights another side of the coin of the ecological conscience established in the novel. While the tidal rhythm has governed the overall narrative and thus maintained an ecocentric orientation and tone, the ending can now be read as a harmonising employment of ecocentric and anthropocentric environmentalist notions because, ultimately, Nilima's pragmatism leads back to human responsibility and 'prosaic' action.¹⁵

This too tidy, ill-fitting closure, I suggest, is both a device and cynical critique of the anthropocentric form of the novel as a genre. It brings to attention how the form does not fit with ecological principles. With the tidal flow that structures the prose throughout, to abruptly halt this rhythm and shift the focus to the individual and their concern makes a statement about the clash between novelistic conventions and a newer, less tested, ecological form of narrative.

With closer attention to the presentation of characters throughout the novel, we find instead that they are often decentred from the

¹⁵ Bartosch, p. 130.

narrative and are typically given flat and minimal representations. This is done despite the extensive typographic detail. In fact, there is limited attention to character psychology; rather it presents them as networked and significant only in their wider community, hence avoiding individualistic exploration of them and their inner thoughts. Much of our understanding of the characters is derived from dialogue. The ending, which appears to lack an understanding of its own characters, is perhaps more fitting than initially granted. Less developed characters function to diminish an excessive prioritisation of them over the wider realm of beings. Such unwarranted precedence of human wants is after all a central cause of the contemporary environmental crisis. The following passage is typical of the narrative mode:

Rivers like the Ganga and the Brahmaputra shroud this window with a curtain of silt: in their occluded waters light loses its directionality within a few inches of the surface. Beneath this lies a flowing stream of suspended matter in which visibility does not extend beyond an arm's length. With no lighted portal to point the way, top and bottom and up and down become very quickly confused. As if to address this, the Gangetic dolphin habitually swims on its side, parallel to the surface, with one of its lateral fins trailing the bottom, as though to anchor itself in its darkened world by keeping a hold on its floor.

In the open sea Piya would have had no difficulty dealing with a fall such as the one she had just sustained. She was a competent swimmer and would have been able to hold her own against the current. It was the disorientation caused by the peculiar conditions of light in the silted water that made her panic. With her breath running out, she felt herself to be enveloped inside a cocoon of eerily glowing murk and could not tell whether she was looking up or down. In her head there was a smell, or rather a metallic savor, she knew to be not blood but inhaled mud. It had entered her mouth, her nose, her throat, her eyes — it had become a shroud closing in on her, folding her in its cloudy wrappings. She threw her hands at it, scratching, lunging and pummeling, but its edges seemed always to recede, like the slippery walls of a placental sac. (pp. 54-55)

This is a dramatic scene in which Piya nearly drowns, yet is intersected by a new chapter describing a dolphin's perspective instead. The tone becomes naturalistic, recounting how the dolphin swims on its side to overcome the silted conditions of the Sundarbans' water. It gives factual, biological information relating to how a dolphin perceives its world. Despite the drama and tension, the novel pauses for environmental detail and renders Piya's ordeal as an opportunity to learn more about the dwelling of the river dolphin. This structuring foregrounds the environment. The narrative frequently moves away from the individual, detailing the wider scene and not just the character's experience, allowing for a more holistic account. This gives precedence to both human and nonhuman worlds. This style also moves beyond the individualistic, anthropocentric form typical of the novel and into a more appropriately ecological and interconnected one. The environment is constantly the overarching frame, the human is always presented as in their environment; it is never allowed to slip into a mere setting. Both the crude ending and minimal character exploration create the same effect: these techniques allow for a broader and more balanced depiction of ecological and human worlds. The novel suggests a decentring of the anthropocentric perspective. The unsuitability of the ending also suggests something about the way in which a novel is approached and read: that focusing only on the content and concerns of the characters thwarts ecological sensibility. The novel's divergence from character development and its attention to forming a

deep understanding of place suggest that expectation of this novel must be different and attention to its form is also essential to gathering meaning.

Representations of Nature in *The Hungry Tide*

Textual representations of nature are, as has been considered in this thesis and elsewhere by other critics, typically limited.¹⁶ In climate fiction, nature is most often depicted as an avenging force, seeking destruction after continued maltreatment from mankind. In *The Hungry Tide*, however, nature is represented as more multifaceted, capturing its many scientific, cultural, mythological and religious associations. Nor, does the novel claim a single, correct way of relating to and understanding nature. The novel rather portrays the complexity of the human relationship with nature: showing how we are both part of and separate from it. It also seeks to represent nature, animals and the environment as vibrant, important and wondrous. This develops an ecological enchantment.

The Hungry Tide does not have a pedagogical motive for imparting information about climate change nor is it the novel's central precept. Instead, notions relating to climate change are subtly interwoven throughout. Therefore the story is engaging and dynamic and not distracted by a difficult, jargon-filled and ineffable subject. Yet, it is still able to attend to the importance of the issue. Climate change is presented in a similar way to how

¹⁶See: David Demerit, 'What is the "Social Construction of Nature"? A Typology and Sympathetic Critique', *Progress in Human Geography*, 26 (2002), pp. 767–790.

the reader might experience and understand it – through subtle, local observations; since it is too vast, multiple and fragmented to gain a complete picture. Climate change details in the novel typically come in the form of fleeting remarks: ‘there isn’t as much water in the river nowadays and at low tide it gets very shallow’ (p. 25). This lucidly claims an environmental change, yet through the only perceptible detail available to an individual. Changes in habitat are one of the more translucent ways in which climate change might filter into our perceptibility. Engaging with the topic as an abstract issue only contributes to its imperceptibility. It is through examples of, experience and attention to the local that the issue can become relevant and real. Nirmal experiences environmental change through small observations:

I remembered how, when I first came to Lusibari, the sky would be darkened by birds at sunset. Many years had passed since I’d seen such flights of birds. When I first noticed their absence, I thought they would soon come back but they had not. I remembered a time when at low tide the mudbanks would turn scarlet with millions of swarming crabs. That color began to fade long ago and now it is never seen anymore. Where had they gone, I wondered, those millions of swarming crabs, those birds?

Age teaches you to recognize the signs of death. You do not see them suddenly; you become aware of them very slowly over a period of many, many years. Now it was as if I could see those signs everywhere, not just in myself but in this place that I had lived in for almost thirty years. The birds were vanishing, the fish were dwindling and from day to day the land was being reclaimed by the sea. What would it take to submerge the tide country? Not much — a minuscule change in the level of the sea would be enough. (p. 215)

It is attention to the local and the subtle that can speak for and reflect the more drastic, global crisis. This shows that giving awareness to that which surrounds us is vital to an ecological engagement. Whereas most climate

novels strive to capture climate change as a single, overarching topic, with immediate and dramatic change, the novel focuses on its effects in a particular, knowable place. A recent study suggests that this local focus, of Nirmal's for example, is a more effective means through which to engage with climate change than just factual transmission:

There is nonetheless current and convergent evidence that perceived direct experience of environmental changes or events deemed to be manifestations of climate change influences psychological responses such as risk perception, acceptance, belief certainty, distress, and psychological and behavioural adaptation. These findings suggest that such experiences, for many, foster a contextualized and more personally meaningful realisation of what climate change portends, implies, and ultimately means, locally and globally.¹⁷

Nirmal's reflections are alarming but not overwhelming, unlike the typical apocalyptic depiction of climate change. Rather, they are poignant and engaging. These observations allow for a deeply political and scientific issue to be communicated without didacticism and offer a more nuanced aesthetic engagement to the novel. These details serve to embellish a sense of the natural world and do not distract from the narrative by trying to capture a complex global issue.

The conversation between Kanai and Fokir's wife, Moyna, frames the contemporary crisis -- the global decline of fish-stocks -- with personal concerns:

'Because Tutul has to go to school, doesn't he?' she said sharply. 'I don't want him growing up catching crabs. Where's the future in that?'
'But that's what Fokir does.'

¹⁷ Joseph P. Reser and others, 'Encountering Climate Change: "Seeing" is More than "Believing"', *WIREs Climate Change*, 5 (2014), pp. 521-537.

‘Yes, but for how long?’ she said. ‘Mashima says that in fifteen years the fish will all be gone, what with the new nets and all.’

‘What new nets?’

‘These new nylon nets, which they use to catch chingrir meen — the spawn of tiger prawns. The nets are so fine that they catch the eggs of all the other fish as well. Mashima wanted to get the nets banned, but it was impossible.’

‘Why?’

‘Why else?’ she said. ‘Because there’s a lot of money in prawns and the traders had paid off the politicians. What do they care — or the politicians, for that matter? It’s people like us who’re going to suffer and it’s up to us to think ahead. That’s why I have to make sure Tutul gets an education. Otherwise, what’s his future going to be?’ (pp. 133-134)

As we see here, these issues do not exist in isolation. Correlations are made between political corruption, Tutul’s education and the decline of fish stocks. The crisis is shown as a loss of livelihood, yet it still conveys a global crisis concerning decline in biodiversity and depletion of food sources. Environmental issues are central to the narrative of *The Hungry Tide*, yet are always discussed in context and in relation to tangible events and processes. They are brought into a framework of meaning and relevance and so the matter becomes more immediate and pressing, rather than something separate, far off and unrelated.

The swampland is allocated as a wildlife reserve to protect the endangered tiger population. Yet this environmental management strategy is complicated by neo-colonialism, destructive development and a lack of understanding of human-animal relations. The novel offers a critique on the current paradigm of development and conservation. The islands are ‘forcibly depopulated in order to make room for wildlife conservation projects’ (p. 59),

demonstrating the dangers of overlooking the interrelation between humans and nonhumans in considerations of the ecological. Kusum's story exemplifies this:

The worst part was not the hunger or the thirst. It was to sit here, helpless, and listen to the policemen making their announcements, hearing them say that our lives, our existence, were worth less than dirt or dust. 'This island has to be saved for its trees, it has to be saved for its animals, it is a part of a reserve forest, it belongs to a project to save tigers, which is paid for by people from all around the world.' Every day, sitting here with hunger gnawing at our bellies, we would listen to these words over and over again. Who are these people, I wondered, who love animals so much that they are willing to kill us for them? Do they know what is being done in their name? Where do they live, these people? Do they have children, do they have mothers, fathers? As I thought of these things, it seemed to me that this whole world had become a place of animals, and our fault, our crime, was that we were just human beings, trying to live as human beings always have, from the water and the soil. No one could think this a crime unless they have forgotten that this is how humans have always lived — by fishing, by clearing land and by planting the soil. (pp. 261-262)

There is a great disparity between the ethical intentions of the aid project and the way in which it overlooks the people living on the land. Although an environmental novel, it claims that human and environmental needs must be balanced and prioritised equally. Here, we see how a single-perspective approach to environmental management can have devastating consequences. As the novel's narrative form suggests, a holistic approach that takes into account all influences and uses on the land is to be aimed for. The project originates from a Western attempt to alleviate guilt for complicity in ecocide. It also corresponds to neo-liberal and neo-colonial thinking:

'Because it was people like you,' said Kanai, 'who made a push to protect the wildlife here, without regard for the human costs. And I'm complicit because people like me — Indians of my class, that is — have chosen to hide these costs, basically in order to curry favor with their

Western patrons. It's not hard to ignore the people who're dying — after all, they are the poorest of the poor. But just ask yourself whether this would be allowed to happen anywhere else. There are more tigers living in America, in captivity, than there are in all of India — what do you think would happen if they started killing human beings?' (p. 301)

Critic Jonathan Steinwand explains that 'Ghosh is encouraging readers to consider what Ramachandra Guha calls "the paradox of global environmentalism": namely, that those who worry the most about the destruction of nature are usually those who are making the problem worse.'¹⁸

The islanders live in fear and are vulnerable to attacks from the tiger:

'Think of it, Kanai — over four thousand human beings killed. That's almost two people every day for six years! What would the number add up to over a century?'

'Tens of thousands.' (p. 240)

The novel is careful to see all viewpoints and create a nuanced picture. It balances the various concerns and reflects how ecological perspectives are embedded within political and ideological factors. Piya believes it is our obligation to protect a species we've harmed, yet the tigers kill the villagers, and the conservation project kills and displaces the inhabitants. This novel suggests that a thorough understanding of the interconnections and networked relations between humans and nonhumans would enable a better environmental strategy.

An overriding theme of the novel is this understanding of nature and culture as symbiotic. Effective ecological management, the novel

¹⁸ Jonathan Steinwand, 'What the Whales Would Tell Us: Cetacean Communications in Novels by Witi Ihimareta, Linda Hogan, Zakes Mda, and Amitav Ghosh', *Postcolonial Ecologies: Literatures of the Environment*, ed. by Elizabeth DeLoughrey and George B. Handley (Oxford: University of Oxford Press, 2011), p. 194.

suggests, requires it to be acknowledged that humans both live in and are a part of nature. The understanding that nature should be a pristine and separate wilderness is what makes the tiger project so calamitous.¹⁹ Richard Kerridge argues that an ecological novel is one that is able to convey the interrelation between the human and nonhuman world and vitality of the environment: 'I am concerned with the literary representation, in novels, of landscape as ecological process: landscape, that is, as constituted by ecological relations reaching across the world in complex networks.'²⁰ It may be that Kerridge would find such a depiction of networked ecological relations in Ghosh's work. Piya's musing about the island's crab population demonstrates their role both within the ecosystem and in connecting her and Fokir:

They were a sanitation department and a janitorial team rolled into one: they kept the mangroves alive by removing their leaves and litter; without them the trees would choke on their own debris...

To nature, in short — for who was it who had said that the definition of 'nature' was that it included everything not formed by human intention? But it was not her own intention that had brought her here today; it was the crabs — because they were Fokir's livelihood and without them he would not have known to lead her to this pool where the Orcaella came. (p. 142)

The obscure creature is both an actant to the plot and ecosystem. Piya also observes how the fishermen and dolphins work together to catch fish:

The fishermen pulled in the net and a wriggling, writhing mass of silver spilled out and lay scattered around the deck: it was as though a piñata

¹⁹ See: William Cronon, 'The Trouble with Wilderness; or, Getting Back to the Wrong Nature', *Uncommon Ground: Rethinking the Human Place in Nature* (New York: W. W. Norton & Co., 1995), pp. 69-90.

²⁰ Richard Kerridge, 'Environmental Fiction and Narrative Openness', *Process: Landscape and Text*, ed. by Catherine Brace and Adeline Johns-Putra (Amsterdam: Rodopi, 2010), p. 66.

had burst, releasing a great mass of tinsel. The dolphins, meanwhile, were celebrating a catch of their own. In sinking to the bottom, the net had pushed a great number of fish into the soft floor of the river; the dolphins were now free to feast on this underwater harvest. They fell to it with gusto, upending themselves in the water, creating a small thicket of wriggling flukes.

Piya was awestruck. Did there exist any more remarkable instance of symbiosis between human beings and a population of wild animals? (pp. 168-169)

This captures a remarkable and enchanting moment of cooperation across species. The novel also presents profound and optimistic moments of human interaction with the environment and not only cynical ones showing destruction, as is the usual stance in climate novels. Nirmal believed ‘that everything which existed was interconnected: the trees, the sky, the weather, people, poetry, science, nature’ (p. 282). His narrative is in a sense the anchor to the story and it is this sentiment that underlies both the plot and telling of it. He does not only pay attention to the physical interconnections, of how human existence is reliant on the natural world, but how these interconnections also bear ontological resonance; he asks:

What do our old myths have in common with geology? [...] Look at the size of their heroes, how immense they are — heavenly deities on the one hand, and on the other the titanic stirrings of the earth itself — both equally otherworldly, equally remote from us. Then there is the way in which the plots go round and round in both kinds of story, so that every episode is both a beginning and an end and every outcome leads to others. And then, of course, there is the scale of time — yugas and epochs, Kaliyuga and the Quaternary. And yet — mind this! — in both, these vast durations are telescoped in such a way as to permit the telling of a story. (p. 180)

Nirmal suggests that the scales of myths are very similar to ones found in the natural world. Geology is a methodology for communicating the more indescribable aspects of nature. He emphasises the ‘otherworldly’, ‘remote’

and thus the unknowability of nature. Noticeably, nature remains as other: the novel does not attempt to anthropomorphise or create empathy with its creatures as a method of relating to them. Rather it simply reflects upon them. This drive to 'know' the environment is part of a dominant and thus destructive relationship with it.²¹ Simply recognising a relationship of mutability and interconnection, as well as the intrinsic value of nature, is how the narrative represents nature, rather than a mimetic account of it. The novel also suggests that a sentimentalising attitude towards nature is harmful, as Steinwald explains:

The renunciation of sentimental attachment to charismatic megafauna is also an issue in Ghosh's *The Hungry Tide*. Although it is through our attachments that we care for the environment, it is naïve and sometimes dangerous to neglect the complexity and diversity of the local ecosystem.²²

The novel warns us against a possessive, domineering or sentimental view of nature. Rather we need to seek one that is balanced, regarding how humans and nature can and should live together.

Although the topographic details and unique ecology create a distinct sense of place, human myths and stories are also significant to giving place meaning. The legend of Bon Bibi told throughout the novel is particularly important for developing a relationship with the land. Nirmal is surprised when the illiterate, young Fokir is able to recite the legend:

²¹ See 'Dominion Over Nature' in Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (New York: HarperCollins Publishers, 1983), pp. 164-192.

²² Steinwald, p. 192.

My uncle was amazed by this feat, because then, as now, Fokir did not know how to read or write. But Nirmal recognized also that for this boy those words were much more than a part of a legend: it was the story that gave this land its life. That was the song you heard on Fokir's lips yesterday. It lives in him and in some way, perhaps, it still plays a part in making him the person he is. This is my gift to you, this story that is also a song, these words that are a part of Fokir. (p. 354)

In this passage Kanai has transcribed Fokir's chant as a gift for Piya. The song strongly forms a part of Fokir's being and connects him to place. Ghosh claims that literature, legends and folklore influence our response to nature. Here he discusses the legend of Bon Bibi:

This story, almost unknown outside the Sundarbans, saturates the lived experience of those who inhabit the mangrove forest. Travelling theatre companies go from village to village, staging Ramlila-like re-enactments of the legend; the verse narrative is recited every time the worship of Bon Bibi is celebrated. Although these rituals are Hindu in form, they begin always with the Muslim invocation 'Bismillah'. In a region where several hundred people are annually killed by predators, no local person will ever venture into the forest without invoking the protection of Bon Bibi. But Bon Bibi's indulgence is not easily granted, it must be earned by the observance of certain rules that derive from the parables contained in the legend. Take for instance the belief that the wild parts of the forest are the domain of Dokkhin Rai: the corollary of this is the idea that to leave signs of human penetration is to invite retribution from the demon. So powerful is this prohibition that villagers will not urinate, defecate or spit while collecting honey or firewood. And let there be no doubt that the fear of the demon's wrath is far more effective than secular anti-littering laws - for in the order of preventive sanctions, a municipal fine can scarcely be counted the equal of the prospect of death by agency of storms and floods, tigers and crocodiles.²³

The story is spiritually important for the islanders and informs an understanding of their land; it is powerful enough to develop ecological responsibility. As Ghosh notes:

The one place where tigers have held their own is in the Sundarbans where, despite an inordinate number of animal-related fatalities, people

²³ Amitav Ghosh, 'Wild Fictions', *Outlook*, 22 December 2008.

still display a general willingness to co-exist with the species –for which more is due, in all probability, to the Bon Bibi legend than to any governmental Project.²⁴

Myth, stories and legends have a role in connecting us to the environment. This suggests that developing a cultural appreciation of nature is also important. This points to alternative ways of connecting and understanding; it is not only scientific interpretation and knowledge of the ecosystem that does this. Scientific observation alone is too limited to truly gain a sense of the environment; nor is an exact mimetic representation of nature, as nature writing commonly strives for, which is needed. Rather, it is the intermingling of perspectives and meanings, attention to interconnections, legends, folklore and science that together create a vivid sense able to value and understand place. Much like Nirmal's assertion, as discussed earlier, myth and geology can make the invisible visible.

The novel creates a dialectic between scientific knowledge, represented by Piya, and traditional, local knowledge, represented by Fokir. Piya's scientific outlook is of a Western tradition: 'She recalled the mythologies of discovery that had attracted her to the sciences as a child, and how the most miraculous seemed always to be those that had the most quotidian origins — Archimedes and his bathtub, Newton and his apple' (p. 126). However, postcolonial writer Pablo Mukherjee argues that her way of knowing is embedded in imperialistic power structures:

²⁴ Amitav Ghosh. 'Wild Fictions', *Outlook*, 22 December 2008.

Piya's 'deep ecological' conservationism has similar blind spots. Like Nirmal's Daniel Hamilton, a host of benevolent imperialist knowledgegatherers – William Roxburgh, Edward Blyth, even the great J.E. Gray ('of *Gray's Anatomy*') – are Piya's intellectual and ideological role models. To her, these eighteenth and nineteenth-century British naturalists, geographers and scientists are very much a part of the heroic narrative of the European Enlightenment – selflessly working in hostile environments for the extension of the frontiers of knowledge. But the particularities of colonial and imperial knowledge-gathering are left out of this narrative: how is the classification of species also a part of the world-view of imperialism? What lines of power connect naturalists such as Edward Blyth, the dolphins he studies, and the crowd of Indian onlookers and helpers? How do the museums and botanical gardens (we recall *Kim's jadoogarh* here) created by these botanists also create an information map for empire? Piya herself, kitted out with the latest GPS monitor, range finder, depth sounder and binoculars, is the embodiment of the panoptic knowledge that was generated by, and in turn sustained, capitalist colonialism. As a result, she is unable to see 'nature' as being continuous with specific historical, political and cultural dimensions or environment as the sum of these constituent parts.²⁵

Her limited mode for understanding the environment also means that she initially fails to understand Fokir and the value of his local knowledge. This also makes Piya complicit in the associated failings of the tiger project for overlooking wider knowledge and cultural differences. Kanai retorts:

'You shouldn't deceive yourself, Piya: there wasn't anything in common between you then and there isn't now. Nothing. He's a fisherman and you're a scientist. What you see as fauna he sees as food. He's never sat in a chair, for heaven's sake. Can you imagine what he'd do if he was taken on a plane?' Kanai burst out laughing at the thought of Fokir walking down the aisle of a jet in his lungi and vest. 'Piya, there's nothing in common between you at all. You're from different worlds, different planets. If you were about to be struck by a bolt of lightning, he'd have no way of letting you know.' (p. 268)

²⁵ Upamanyu Pablo Mukherjee, *Postcolonial Environments: Nature, Culture and the Contemporary Indian Novel in English* (New York: Palgrave Macmillan, 2010) p. 120.

Following Kanai's sentiment, it seems that there are irresolvable differences between their mutual outlooks. Mukherjee explains that their differences embody the various political and historical tensions between them:

She has to accept that 'nature' means very different things to her and Fokir, and this difference is constituted through the vastly different kinds of capital and labour they command. But the difference is also generated by the specifics of the colonial and postcolonial histories that divide them.²⁶

Piya idealizes Fokir as the 'natural man',²⁷ and Kanai ripostes to her 'Did you think he was some kind of grass-roots ecologist? He's not. He's a fisherman — he kills animals for a living' (p. 297). Her outlook not only essentialises Fokir as somehow more 'natural', but also means she does not fully understand the relationship between him and his environment. Piya initially also fails to take account of the significance of the tiger and cultural ways of being on the island:

There was a cumulative absurdity about these propositions that made her smile. To include him in the joke, she made her hands into claws, as if to mime a tiger. But before she could complete the gesture, he clamped his hands on her wrists, vehemently shaking his head, as if to forbid her from making any reference to the subject. (p. 98)

By shifting her outlook, Piya eventually comes to understand the importance and value of Fokir's knowledge. Together, they represent the intersection between local and global knowledge and it is in the combining of them that a full understanding can be gathered, 'You saw how he spotted that dolphin back there, didn't you?' she asks, continuing:

It's like he's always watching the water — even without being aware of it. I've worked with many experienced fishermen before but I've never

²⁶ Mukherjee, p. 118.

²⁷ Mukherjee, p. 131.

met anyone with such an incredible instinct. It's as if he can see right into the river's heart. (p. 267)

Literary critic Laura White suggests that 'all of the knowers in this novel are partial'.²⁸ Therefore the encountering and incorporation of different ways of knowing is necessary. Piya undergoes a transformation from a narrow scientist, only concerned with the single species, into a symbiologist, capable of the way of knowing needed for full and non-destructive environmental thought. We see how Piya's and Fokir's knowledge eventually combines:

At the start she had thought they might end up disrupting each other's work — that her soundings would get in the way of his fishing or the other way around. But to her surprise no such difficulties arose: the stops required for the laying of the line seemed to be ideally timed for the taking of soundings. What was more, the line acted like a guide rail, keeping the boat on a straight and unvarying tack, and at the end of each run it led them right back to the precise starting point. In other circumstances Piya would have had to use the Global Positioning System to be sure of this, but here the line served the same purpose. She needed her monitor only to make sure that each run began at a point fifteen feet farther along the quadrant. This was just as much to Fokir's advantage as it was to hers, since it ensured that his line never fell twice in the same place.

It was surprising enough that their jobs had not proved to be utterly incompatible — especially considering that one of the tasks required the input of geostationary satellites while the other depended on bits of shark bone and broken tile. But that it had proved possible for two such different people to pursue their own ends simultaneously — people who could not exchange a word with each other and had no idea of what was going on in one another's heads — was far more than surprising: it seemed almost miraculous. Nor was she the only one to remark on this: once, when her glance happened accidentally to cross Fokir's, she saw something in his expression that told her that he too was amazed by the seamless intertwining of their pleasures and their purposes. (p. 141)

²⁸ Laura A. White, 'Novel Vision: Seeing the Sunderbans Through Amitav Ghosh's *The Hungry Tide*', *Interdisciplinary Studies in Literature and Environment*, 20 (2013), p. 527.

Piya loses her data sheets in the flood, but ultimately her more crucial and useful information comes from Fokir's expert knowledge, gained through close observation of the land, rather than this GPS mapping. Piya limits her scope of understanding when she attempts to translate the natural world and Fokir only within her own epistemological framework. We see that an imperialist, panoptic knowledge is unproductive and there are hints throughout the novel of the necessity to decolonize knowledge.

The Hungry Tide is able to overcome many of the issues associated with thinking and speaking about climate change. As such, it reads very differently from the majority of climate novels. Importantly, it does not repeat the sensationalist disaster plots characteristic of the genre. It is thus able to more closely and deliberately give attention to nature. The novel is able to foreground the environment not only as a feature in its plot, but also as a constant determinant of its structure, style and characterisation. Central to the novel's success is its ability to keep the environment in focus throughout, yet always as various, complex and remaining resistant to homogenisation and anthropocentric appropriation. The novel does not mention climate change, yet manages to closely reflect upon the issue through landscape and species observation. This opens the literary space to imaginative interaction, since it is neither didactic nor predictable in its presentation of ecocide. This textual creativity overcomes outworn climate discourse. Ultimately, it allows the reader to engage with the issue and think

about it anew. The slow pace permits reflection about the topic; whereas the typically dramatic rendering of events in climate fiction whisks the reader through a hero-narrative with little philosophical contemplation of what environmental destruction means. *The Hungry Tide* creates a deep and layered narrative holding multiple interpretations and perspectives. It does not present a single viewpoint or way of knowing. The novel interweaves and exposes the various tensions relating to environmental issues: human-animal relations, neo-colonial and geopolitical, neo-liberalism, globalisation and development. The story successfully captures how these are interrelated and impact upon one another. By allowing the tidal movements to structure the novel, it embellishes it with a timeframe other than the human's. One of the main barriers to conceptualising climate change is its micro/macro scales and timeframes, yet, this novel successfully merges both frameworks with its human narrative and ecological form. The novel reflects the networked relationships across the human and nonhuman worlds, conveying the complexity of nature as multiple and effervescent rather than single and particular. *The Hungry Tide* is also interested in cultural, mythical and religious understandings of place and shows attentiveness to the importance of developing imaginative narratives about nature, suggesting that scientific fact is not the only means for understanding and connecting with the issues. The novel balances different ways of seeing in creating an ecological way of knowing and perceiving. It does not attempt to simplify environmental issues or nature to fit a digestible narrative. It attends to the complexities and

multiple interpretations and is able to do so by using various frames of reference to build a holistic, ecologically aware account.

Conclusion

When setting out to research this thesis I was initially motivated to find a climate novel that 'works': a novel that could somehow express what climate change is, whilst inspiring environmental consciousness, in other words. Yet, as I learned more about climate change -- its genesis, implications, and mitigation -- I realised the complexity and misguidance of this task. There can be no ideal story to inspire action because divergent ideologies and experiences mean that how it bears relevance varies. The issue is too vast and heterogeneous to be described by one overarching perspective. This is also said with the assumption that a novel could be capable of such a utilitarian function in the first place. Besides, Timothy Clark warns against over-exaggerating the importance of a novel's environmental agency and asks whether 'environmental criticism [is] vulnerable to delusions that the sphere of cultural representations has more centrality and power than in fact it has?'¹ Furthermore, prescribing the perfect novel is a defeatist task, as any such imagery or tropes would soon become outworn.² And those devices that are able to generate mass appeal are often ones that subsequently numb critical engagement, sensationalise the issue, or render it as merely another story amongst countless other disaster narratives. Rather, climate

¹ Timothy Clark, *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept*, (London: Bloomsbury, 2015), p. 21.

² As the research from the third chapter about impoverished climate discourse demonstrated, we must continuously refresh and reinvent our discourse and ways of imagining the issue.

change is an ongoing, slow, unfolding issue, thus 'fast', dramatic depictions fail to see climate change as an interconnected and accumulating event.

Nor do I consider it the role of the climate novel to warn or inform; it should not be didactic. To do this there might be the temptation for the author to cite statistics and offer scientific explanations, which would detract from the narrative. As the Irish writer Eavan Boland explains, didacticism in the novel is difficult to negotiate, 'if the voice of a character in a fiction speaks too clearly with the anger and hindsight of an ethical view of history, then the voice may be made louder by argument but grow less convincing through being less imagined.'³

Still, the story-telling process of climate change, allowing it to enter our cultural imagination, is important. Climate change is one of the most prominent, unparalleled issues in our age and culture should be in dialogue with it. The novel provides us with the concepts to think and speak about what it means to us. It is a valuable literary form for its imaginative capacities and extended focus. Climate change demands imagination since it clashes with our inherited ways of knowing, our understandings of time and space, and neoliberal ideologies associated with growth and progress. Furthermore, the climate novel can offer a space for reflective engagement with climate change. Many of its existing representations fail to stimulate contemplation.

³ Eavan Boland, 'Desolation Angel'. *Village Voice*. 6 February 1966. Also quoted by Rob Nixon in *Slow Violence and the Environmentalism of the Poor* (Cambridge, Massachusetts: Harvard University Press, 2013).

Precisely because it is a difficult subject, climate change is communicated by a formulaic set of words and imagery wherein reflection is not needed or encouraged. Viktor Shklovsky's concept of 'defamiliarisation', which encourages the reader to 'pause in his reading, [and] dwell on the text,'⁴ suggests a more abstract style that the climate novel might orientate itself towards. How to create such a space within the novel, which cultivates thought in relation to the environment and brings climate change into the imagination, is the concern of the following discussion.

An unexpected facet to emerge from this thesis suggests that climate novels should be aesthetic; wherein the climate imagination can be renewed and developed.⁵ However, many climate novels would be classified as genre fiction (also known as mass or popular fiction) and such works are typically unaesthetic. Whilst the diminishing of genre fiction as simply a product to entertain is an already exhausted debate, it is worth reviewing this argument to consider some of the climate novel's limitations. Though Ken Gelder highlights the value of giving genre fiction critical attention -- for instance he suggests that the *Lord of the Rings* trilogy offers an articulation of global terrorism -- he also offers a useful summary of the difference between genre and literary fiction. Gelder explains how literary fiction might be defined as

⁴ Viktor Shklovsky, *Theory of Prose*, trans. by Benjamin Sher (London: Dalkey Archive Press, 1991), (1929), p.120.

⁵ To use *aesthetic* with reference to its etymological origins: 'things perceptible by the senses,' as given in the Oxford English Dictionary. It is this, making climate change available to the senses, which is important. This also means possessing something beyond just factual knowledge of it. This relates to my findings in my second chapter, which suggests that aesthetic language can illuminate the wonder and vitality of the nonhuman world, as well as develop a meaningful relationship with it.

art, and by its creativity and originality. It requires a culturally educated reader and its commercial success is not a priority. Whereas genre fiction is conscious of the views of its reader, is determined to please them, and dictated by the marketplace. Gelder writes:

Two key words for understanding popular fiction are *industry* and *entertainment* [...] Literary fiction is ambivalent at best about its industrial connections and likes to see itself as something more than 'just entertainment', but popular fiction generally speaking has no such reservations.⁶

The common assumption is that genre fiction lends itself to escapism. Gelder also comments that the 'reader of Literature is contemplative, while the consumer of popular fiction is "distracted".'⁷ According to this definition, it seems that genre fiction is simply a product created for consumption, another factor conflicting with the novel's ecological capabilities.⁸ Therefore, we can raise questions as to how appropriate these novels, as belonging to genre fiction, can be for the task of ecological engagement. Most do not lend themselves to the practices required from an effective climate novel, which is, foremost, allowing for contemplation; we might also call this 'slow' reading.⁹ This notion of 'slowness' offers an antidote to a world of immediacy, growth and speed, which are also components of our global

⁶ Ken Gelder, *Popular Fiction: The Logics and Practices of a Literary Field* (Abingdon: Routledge, 2004), p. 1.

⁷ Gelder, p. 37.

⁸ As I discuss in the first chapter, the genre of the modern novel, originating within industrial capitalism, is at odds with ecological integrity. I also discuss how the ideologies of capitalism, growth, consumption, individualism, also conflict with environmentalism.

⁹ The 'Slow Movement', which includes 'Slow Food' and 'Slow Travel', is a cultural shift against the notion that fast is always better. It also attempts to counteract things like the detachment from place and nature, which are symptoms of Westernised societies. The movement is inherently environmental. See Carl Honore, *In Praise of Slowness* (San Francisco: Harper, 2004).

ecological crisis. As Nixon comments, this pursuit of immediacy means that in the media environmental concerns are often overlooked for more dramatic ones:

Fast is faster than it used to be, and story units have become concomitantly shorter. In this cultural milieu of digitally speeded up time, and foreshortened narrative, the intergenerational aftermath becomes a harder sell. So to render slow violence visible entails, among other things, redefining speed: we see such efforts in talk of accelerated species loss, rapid climate change, and in attempts to recast ‘glacial’—once a dead metaphor for ‘slow’—as a rousing, iconic image of unacceptably fast loss.¹⁰

Interestingly, Nixon notes the reduction of ‘story units’ and ‘foreshortened narrative’. The novel then, as a long form and thus the ‘slow reading’ it demands, becomes a particularly pertinent antidote to the ‘milieu of digitally speeded up time’.

This is not to simply denigrate the common climate novel for being lowbrow. The issue that remains is rather with the formulas and devices that it relies upon, which result in dogmatism, individualistic disaster narratives, and clichéd, dualistic depictions of nature. These fail to foster ecological enchantment or simulate contemplation. I have also emphasised that artistic works, which develop and employ rich, poetic nature diction, inspire a sense of place and build upon a healthy relationship with the nonhuman world. And, as Gelder suggests, it is literary rather than genre fiction that is defined by its creativity.

¹⁰ Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, Massachusetts: Harvard University Press, 2013), p. 13.

Roger Luckhurst's essay, *Beyond Trauma*, demonstrates how the blending of forms and styles can have efficacy in representing traumatic experiences. Many of the ways in which he describes trauma, for instance 'outside the bounds of normal experience', are comparable to climate change.¹¹ Luckhurst describes the 'aporetic injunctions' relating to the experience of trauma, similarly I have shown how climate change resists representation.¹² He discusses the violent cinematic depictions of torture, and suggests that these images 'literally assault the spectator, leaving him or her no space for reflection'.¹³ Likewise, the lack of space for reflection is a similar concern I raise with climate novels. Luckhurst identifies a particularly modernist aesthetic used for representing trauma, marked by its non-linearity, fragmentation, refusal of identification, and resistance to closure, and he suggests the need to move beyond this aesthetic. Instead, Luckhurst looks towards how tropes and narratives of genre can be useful devices for representing the unspeakability of trauma. Providing the example of the fantasy film, *Pan's Labyrinth* (2006), he suggests how generic anomaly 'enables the text to generate powerful insights into overcoded violent histories'.¹⁴ The blending of genres and forms, like 'Guillermo del Toro's *Pan's Labyrinth* [which] utterly confuses categories: a fairy tale, a child's quest romance, and a historical war film towards the end of which two scenes of graphic torture appear', invades the space, bringing it into stark

¹¹ Roger Luckhurst, 'Beyond Trauma Torturous Times', *European Journal of English Studies*, 14 (2010), pp. 11-21, (p. 11).

¹² See chapter two, which discusses the ineffable aspects of climate change.

¹³ Luckhurst, p. 17.

¹⁴ Luckhurst, p. 17.

awareness, and evades the silencing associated with traumatic experience.¹⁵ To 'distend generic orders of representation' is to bring forward and disrupt the anesthetised space of typical representation.¹⁶ Again, it is precisely this prompting of reflection that I consider vital to the climate novel. Luckhurst also notes that 'Piety might still exist about aesthetic representation, but I would rather move beyond that, and follow the extraordinary flowering of cultural work that is using every register to assess these torturous times.'¹⁷ Similarly, I suggest that climate change representation should be continuously renewed, and not reliant on particular modes of representation. The blending of styles is also essential to addressing an issue like climate change because it is a vast and complex issue, entailing heterogeneous experiences and locations. Though Luckhurst is critical of the modernist aesthetic used in trauma representation, some of its aspects are useful for the climate novel. Avant-garde works, which push and subvert boundaries, and constantly renew styles in order for a continued reflection and attentive reading, can be part of creating a more ecological form of the novel.

Attending to both the local and global features of environmental issues is one the central difficulties for the climate novel. For a narrative to be engaging it must foster a story with personal relevance, detail and intimacy. Yet, since climate change is a vast, global issue it is easy for

¹⁵ Luckhurst, p. 17.

¹⁶ Luckhurst, p. 18.

¹⁷ Luckhurst, p. 19.

climate novels to fail to create a detailed narrative with a sense of place. Often they lose sight of the wider web of interconnections and become entirely focused on the endeavour of an individual in a depersonalized and abstracted global catastrophe. They must instead adopt a narrative that attends to the fabric of the local, yet frame the wider, global interconnections at play as well. The vastly distributed spatiality and temporality of these issues is another difficulty for the novel to contend with. Fredric Jameson's notion of 'cognitive mapping' is applicable to these climate novel problems. Cognitive mapping concerns the quandary of how to represent the unrepresentable. This is especially the richness and local dimension of subjective experience against the complexity of global forces. Jameson describes the difficulty of finding ways to conceptualise this, as such 'new and enormous global realities are inaccessible to any individual subject or consciousness.'¹⁸ How to present a meaningful and personal tale, capturing the sensibilities of place, whilst also discussing a vast, deeply complex issue such as climate change, is at the core of developing a successful climate novel. And as Jameson suggests, it is in literary endeavours that we can find ways to express these complexities. The issue of representation concerns how to present a totality that is not fixed, definitive or concrete, but rather multidimensional and constantly changing. Cognitive mapping can be understood as a navigational aid. Cognitive mapping is not about creating a simple mimetic relation to reality; rather it is always an act of interpretation.

¹⁸ Fredric Jameson, 'Cognitive Mapping', *The Jameson Reader* (Oxford: Blackwell Publishers, 2000), p. 279.

Jameson considers it to be an aesthetic operation. The climate novel's task is not to convey an objective truth and direct representation of climate change, but rather to offer an aesthetic practice that provides an imaginary, situational representation. Hence, the goal is not to arrive at Truth, but to produce adequate knowledge of it. For Jameson, his cognitive mapping offers a way of being and orientating the self in the world. Jameson's concept of cognitive mapping seems especially applicable for addressing the disparate spatial and temporal aspects in the climate novel. Jameson argues for the need to create a sense of spatiality:

[Cognitive mapping] seeks to endow the individual subject with some new heightened sense of its place in the global system – will necessarily have to respect this now enormously complex representational dialectic and invent radically new forms in order to do it justice. This is not then, clearly, a call for a return to some older kind of machinery, some older and more transparent national space, or some more traditional and reassuring perspectival or mimetic enclave: the new political art (if it is possible at all) will have to hold to the truth of postmodernism, that is to say, to its fundamental object – the world space of multinational capital – at the same time at which it achieves a breakthrough to some as yet unimaginable new mode of representing this last, in which we may again begin to grasp our positioning as individual and collective subjects and regain a capacity to act and struggle which is at present neutralized by our spatial as well as our social confusion. The political form of postmodernism, if there ever is any, will have as its vocation the invention and projection of a global cognitive mapping, on a social as well as a spatial scale.¹⁹

Jameson here describes the aesthetic associated with cognitive mapping, which find roots in the postmodern, since it blends the various forms and scales. The issues might be expressed in 'distorted and symbolic ways'.²⁰ Jameson also notes, importantly, inventing 'radically new forms', a recurrent

¹⁹ Fredric Jameson, *Postmodernism, or The Late Cultural Logic of Late Capitalism* (Durham: Duke University Press, 1991), p. 54.

²⁰ Jameson, p. 279.

notion in my work. It is only such new forms that might be suitable for the task of conveying a deeply complex subject, moving beyond an anthropocentric form, and constantly renewing climate imagery to achieve a reflective space.

Rob Nixon's *Slow Violence* is also, similarly, concerned with the imaginative challenges of the temporal dislocations that permeate the neoliberal globalized age. Nixon presents examples of where writers have successfully conveyed this. He offers the following description of 'writer-activists' and how their work can be utilised to represent environmental issues:

Writer-activists can help us apprehend threats imaginatively that remain imperceptible to the senses, either because they are geographically remote, too vast or too minute in scale, or are played out across a time span that exceeds the instance of observation or even the physiological life of the human observer. In a world permeated by insidious, yet unseen or imperceptible violence, imaginative writing can help make the unapparent appear, making it accessible and tangible by humanizing drawn-out threats inaccessible to the immediate senses. Writing can challenge perceptual habits that downplay the damage slow violence inflicts and bring into imaginative focus apprehensions that elude sensory corroboration. The narrative imaginings of writer-activists may thus offer us a different kind of witnessing: of sights unseen.²¹

Here writing concerns perceptibility, its 'imaginative focus' can make aspects of climate change that are unavailable to sense more tangible. Nixon discusses the work of Ken Saro-Wiwa, a writer-activist, and argues that the success of his writing extends from his use of hybridized discourses which 'borrowed largely from the West (and often through personal exposure to

²¹ Nixon, p. 15.

America), is frequently blended with local discursive traditions and, in these melded forms, adaptively redeployed as a strategic resource.²² Such transnational ‘meldings’ allow the ‘environmental poor’ (victims of slow violence) to be seen and heard internationally and to prevent ‘rich-nation media that might otherwise dismiss them as obscurely local conflicts’.²³ Again, such techniques reinvent the traditional to allow for expression.

A particularly interesting work Nixon discusses for overcoming tempo-spatial issues is Abdelrahman Munif’s *Cities of Salt* (1984). Nixon explains that the paradoxical success of this novel owes to how it ‘fails’ at form and depiction of character. Nixon’s analysis opens up questions about the expectation of genre in relation to transnational literature. According to Nixon, John Updike strongly disliked Munif’s novel:

Updike’s more elaborate quarrel concerns Munif’s formal incompetence. Acknowledging the epic potential of the oil theme, Updike laments that this Arab author is ‘insufficiently Westernized to produce a narrative that feels much like what we call a novel.’ Here the bogeymen of authenticity and progress narratives both rear their heads again: Updike’s proprietary ‘we’ casts Munif as an uncomprehending outsider, peripheral to the central narrative of the novel’s development.²⁴

Yet, the success of Munif’s work is because it does not conform to the Western tradition of the novel. Nixon continues discussing Updike’s response to the novel:

The markers of this foreigner’s insufficiency, Updike argues, are twofold: he fails at character and he fails at voice. Above all, the novel

²² Nixon, p. 36.

²³ Nixon, p. 36.

²⁴ Nixon, p. 86.

doesn't work because Munif botches character: 'no single figure acquires enough reality to attract our sympathetic interest. . . . There is none of that sense of individual moral adventure . . . which, since *Don Quixote* and *Robinson Crusoe*, has distinguished the novel from the fable and the chronicle; *Cities of Salt* is concerned, instead, with men in the aggregate.' The effect, Updike concludes sniffily, is simply 'sociological.'²⁵

Updike's complaints are fascinating because he identifies factors that I advise writers of the climate novel to avoid: primarily conventional use of form and a narrow concern with the individual. To accurately represent the spatial, temporal as well as the transnational pressures, Munif must abandon the dominant tradition of the European and American novel. The novelistic strategies involve spurning 'an individual or familial focus, opting instead for a collective approach to character and form'; herein conventions of the novel are remodelled.²⁶

Nixon gives an example from Arabic literature, later translated into English by Peter Theroux. This thesis, however, has only examined novels written originally in English. Yet the extension of the analysis to translated works would undoubtedly unlock many rich and exciting examples, where other forms and techniques have overcome the restrictions found in the Western tradition. For instance, Mahasweta Devi's *Imaginary Maps* (1995), translated by prominent ecofeminist Gayatri Chakravorty Spivak, is a brilliant example of work that is able to represent the 'occluded relationships' with the

²⁵ Nixon, p. 87.

²⁶ Nixon, p. 88.

intimacy of the local and personal.²⁷ The relationship between deforestation, destructive development, neo-colonialism, and patriarchy are interwoven and manifested within a story about a traditional hunting game. My work has been primarily concerned with the imaginative engagement with climate change and has therefore centred its focus on works of fiction. However, in thinking about how this research could proceed, we might consider looking at environmental writing from nonfiction. Indeed there are many interesting examples; Aldo Leopold's *A Sand County Almanac* (1949) is particularly literary and imaginative in its writing style. Whereas Rachel Carson's *Silent Spring* (1962) has had lasting resonance through its evocative depiction of an ecologically devastated future. Looking towards other genres could illuminate alternative stylistic possibilities; the short story has some exciting examples and there are many in poetry.²⁸ Or towards how visual art has represented climate change, such as the projects led by Cape Farewell.²⁹ Examining how narratives are used in activism and environmental campaigns would have offered another dimension to this work. Asking who is reading these novels, gaining a sense of the audience and their ideologies, and the role of readership habits and practices, for instance when

²⁷ Occluded relationships are what Raymond Williams terms as the vast transnational economic, labour and social pressures that govern the local. Williams called for novels to attend more closely the fabric of the local whilst also tracing these relationships. Raymond Williams, *Writing in Society* (London: Verso, 1983), p. 238.

²⁸ See *Beacons: Stories for our Not So Distant Future* (London: OneWorld Publications, 2013) and *I'm With the Bears: Short Stories From a Damaged Planet* (London: Verso, 2011). In considering poetry, there are some especially interesting examples, which play with the emphasis of sound and space on the page, arrangement of the lines in Harriet Tarlo, ed., *The Ground Aslant: An Anthology of Radical Landscape Poetry* (Exeter: Shearsman Books, 2011).

²⁹ Cape Farewell is an international organisation that instigates cultural responses to climate change.

and how the novels are read and if they demand prior environmental knowledge, could further highlight the function of climate novels. Given more time, I would draw upon a deeper comparative analysis between fictions emerging from different nations. My work in climate policy for the Royal Society has informed some of the perspectives of this thesis. However, a greater collaborative engagement with scientists might be considered to develop this project further.

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