

From *Frankenstein* to *District 9*:
Ecocritical Readings of Classic and Contemporary
Fiction and Film in the Anthropocene
by
Kyndra Turner

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved March 2015 by the
Graduate Supervisory Committee:

Joni Adamson, Chair
Mark Lussier
Claudia Sadowski-Smith

ARIZONA STATE UNIVERSITY

May 2015

ABSTRACT

From *Frankenstein* to *District 9*: Ecocritical Readings of Classic and Contemporary Fiction and Film demonstrates how American studies methodologies, ecological literary criticism, and environmental justice theory provide both time-tested and new analytical tools for reading texts from transnational perspectives. Recently, American literary scholars have been responding to calls for collective interdisciplinary response to widening social disparities and species collapses caused by climate change in the new epoch recently being termed the “Anthropocene.” In response, I analyze canonical texts, such as Mary Shelley's *Frankenstein* and Aldous Huxley's *Brave New World* in juxtaposition with Neill Blomkamp's South African science fiction thriller *District 9* and contemporary US American novels such as William Faulkner's "The Bear" in *Go Down, Moses*, Toni Morrison's *Sula*, and Richard Power's *The Echo Maker* and *Generosity: an Enhancement* to show how writers, filmmakers, and academics have been calling attention to dramatic climate events that consequently challenge the public to rethink the relationships among human beings to other species, and to ecological systems of low predictability, high variability, and frequent extremes. As a whole, this dissertation seeks to make abstract, often intangible global patterns and concepts accessible by providing models for what I call "readings in the Anthropocene" or re-readings of classic and contemporary texts and film that offer insights into changing human behavior and suggesting alternative management practices of local and global commons as well as opportunities to imagine how to live in and beyond the Anthropocene.

TABLE OF CONTENTS

CHAPTER	Page
1 INTRODUCTION	1
2 MALE EXPEDITIONS, MODERN SCIENCE, AND MONSTERS IN MARY SHELLEY'S FRANKENSTEIN; OR, THE MODERN PROMETHEUS AND THE ANTHROPOCENE	14
3 FROM THE GLOBAL NORTH TO THE GLOBAL SOUTH: RETHINKING THE COMMONS IN RICHARD POWER'S <i>THE ECHO MAKER</i>	37
4 NORMALIZED NATURE AND QUEER ECOLOGIES IN WILLIAM FAULKNER'S "THE BEAR" IN <i>GO DOWN, MOSES</i> AND TONI MORRISON'S <i>SULA</i>	58
5 THINKING ACROSS BODIES AND BORDERS IN NEILL BLOMKAMP'S <i>DISTRICT 9</i>	84
6 BIOCHEMICAL ENGINEERING AND ENVIRONMENTAL ETHICS IN ALDOUS HUXLEY'S <i>BRAVE NEW WORLD</i> AND RICHARD POWER'S <i>GENEROSITY: AN ENHANCEMENT</i>	107
7 CONCLUSION	135
REFERENCES.....	141

CHAPTER 1

INTRODUCTION

“From *Frankenstein* to *District 9*: Ecocritical Readings of Classic and Contemporary Fiction and Film in the Anthropocene,” demonstrates how American studies methodologies and ecocriticism provide both time-tested and new analytical tools for reading texts from transnational perspectives. Recently, American Studies scholars have been responding to calls for collective interdisciplinary response to widening social disparities and species collapses caused by climate change. They are entering into innovative transdisciplinary collaborations with other scholars, including scientists. In most literary critical analysis, the expectation is that the critic will focus narrowly on a period, a genre, or a national literature. However, this dissertation gives a deeper, more broadly biospheric view of history, literature and time, by connecting key environmental and social justice themes, from the 18th century to the 21st. The general public must understand trends across time if humans are ever to understand their own impacts on the biosphere and re-imagine their lives, communities, and environments. In response, college classes on climate change are becoming more and more prevalent than ever before. As Professor Stephanie LeMenager at University of Oregon asserts, “the time isn’t to reflect on the end of the world, but on how to meet it. We want to apply our humanities skills pragmatically to this problem” (Pérez-Peña n.pag.). Similar to such courses, the goal of this dissertation is not to collect evidence for climate change as a human-caused crisis, or to measure its effects—but to call upon readers to think about it, prepare for it, and respond to it as we proceed into the Anthropocene with the use of

literature and film as tools for making abstract, often intangible global patterns and concepts accessible to a wider public (Pérez-Peña n.pag).

Following recent literary, anthropological, and scientific studies, my analysis will focus on the geological epoch termed by atmospheric chemist Paul Crutzen and biologist Eugene Stoermer as the “Anthropocene.” According to Crutzen and Stoermer, the “Anthropocene,” began some two hundred years ago (conventionally understood to begin with the invention of the steam engine in 1784) when global patterns of climate, economics, and migration began to change due to human activity. This implies that human activities around the world are increasing the vulnerability not only of human to environmental disaster and risk, but all life on the planet. I will argue that literature, film and the humanities are necessary contributions to this discussion about the Anthropocene because scientists cannot be expected to solve global challenges by themselves. In her article, “What Winning Looks Like: Critical Environmental Justice Studies and Future of a Movement,” ecocritic and scholar, Joni Adamson, asserts, “None of us is fully equipped to address all the facets of the ‘bigger picture.’ We must decompartmentalize. This is not a problem for science or social science alone to solve. Technology cannot provide all the answers. Figuring out our collective responses will be more complicated than we thought” (1258). Everyone, including humanists and ordinary citizens, are called into the discussion and challenged to act and make a difference. Scientists are telling us that such changes in behavior are crucial to “shifting the direction” of rapidly accelerating biogeochemical processes on the planet that are human-caused and which are leading to a warming climate, acidifying and rising oceans, displaced communities, species extinctions, and political conflict.

In the last article she wrote before her death, “Nature in the Active Voice,” ecofeminist philosopher, Val Plumwood spoke passionately about particularly the role of writers in the “Anthropocene.” Plumwood challenged writers to engage in “the struggle to think differently” and to join in a rethink “which has the courage to question our most basic cultural narratives” (126, 111). Due to the current condition of the biosphere, humanists and scientists such as anthropologist and ecocritic Debra Bird Rose are calling for new forms of “writing in the Anthropocene,” by which she means, “writing capable of shaking up our culture, and awakening us to new and more enlivened understandings of the world, our place in it, and the situated connectivities that bind us into multi-species communities” (87). In response to Rose’s call, I approach American studies methodologies, ecological literary criticism, and environmental justice theory from transnational perspectives in order to provide models for what I call “readings in the Anthropocene” or re-readings of classic and contemporary texts that offer insight into changing human behavior and suggesting new practices to audiences both inside and outside academia.

Rather than focusing solely on the “human,” which has been the traditional focus of most literary studies, I examine how the relationships and livelihoods of multi-species communities shape and are shaped by political, economic, and cultural forces. These imaginative literary texts and contemporary films, I assert, provide models for what “readings in the Anthropocene” might offer to those interested in shifting the direction of normative cultural narratives, and consequently, in order to change human behavior and suggest new practices of inhabiting the materials world as we proceed into the twenty-first century. For example, in readings of Shelley’s *Frankenstein*, Toni Morrison’s *Sula*,

William Faulkner's "The Bear" in *Go Down, Moses*, and Richard Power's *The Echo Maker*, I rethink some key cultural narratives in literary history in order to critique normative dualisms and value-hierarchical paradigms which have initiated and perpetuated Western patriarchal ideologies of nature as an uncontested resource for human consumption and development. The examination of Wikus van de Merew's transformation in South African-born director Neill Blomkamp's *District 9* (2009) allows me to illustrate how contemporary filmmakers as well are calling for alternative definitions of "progress" that account for social and environmental factors.

In a final chapter, I assert that both Aldous Huxley's classic *Brave New World* and Richard Power's contemporary *Generosity: an Enhancement*," urge readers to rethink pharmaceutically and genetically altered human and nonhuman biological matter not as commodities for human manipulation and consumption but as matter that is part of the material configuration of the world. Thus, in highly accessible language to audiences both inside and outside academia, I show how creative writers and filmmakers have been calling attention to dramatic climate events that offers a broad general public the opportunity to rethink the relationships of human beings to one another, to other species, and to ecological systems of low predictability, high variability, and frequent extremes, in the local and global commons.

The privatization of resources raises questions about who has access to "the commons" (communal spaces and resources). American ecologist Garrett Hardin's "Tragedy of the Commons," one of the twentieth century's most influential essays, describes the future of the commons metaphorically as an unprofitable and unsustainable "over-grazed pasture." Rob Nixon, who is noted for bridging postcolonial and ecocritical

studies, points out in “Neoliberalism, Genre, and ‘The Tragedy of the Commons’” that according to Hardin’s fable, “a herdsman faced with the temptations of a common pasture will instinctively overload it with his livestock. As each greed-driven individual strives to maximize the resource for personal gain, the commons collapses to the detriment of all” (593). Six years later, Hardin popularized the notion of “lifeboat ethics” in a subsequent paper titled, “The Case Against Helping the Poor.” To make his argument, Hardin uses the metaphor of lifeboats (rich nations) being overtaken with swimmers (poor nations) that would capsize any effort to develop nations sustainably. In 1979, Hardin’s neoliberal notion of the commons helped form the Federation for American Immigration Reform (FAIR), one of the best-established anti-immigration groups in the U.S. Scholars from numerous disciplines have challenged Hardin’s account of the commons. Joni Adamson and Kimberly Ruffin’s coedited work in *American Studies, Ecocriticism, and Citizenship: Thinking and Acting in the Local and Global Commons* examines literary, historical, and cultural examples in order to illustrate notions of the *common*—namely, common humanity, common wealth, and common ground—and the relation of these notions to often conflicting definitions of who (or what) can have access to “citizenship” and “rights.” In the context of recent work by Adamson, Ruffin, Rob Nixon, and Andrew Ross on the “enclosure” of both local and global “commons” in the form of natural resources and capital for the wealthy few, I show how writers and academics have been calling attention to arguments about “the commons” that offer domestic and large-scale understandings about why rapid behavioral development among humans will be necessary not at some ambiguous time in the future, but now.

By engaging with environmental literature and film and by reading across genre and discipline, each chapter provides models for what “readings in the Anthropocene” might offer to those interested in working to address social and environmental injustices in the “local and global commons.” In chapter one, “Rethinking the Commons from the Global North to the Global South in the Anthropocene: Mary Shelley’s *Frankenstein* and Richard Power’s *The Echo Maker*,” I read Mary Shelley’s prescient *Frankenstein* (1818) for what it suggests about the historical role that exploration, science, and nature may be playing in the large and small scale climatic, economic, and human and nonhuman migratory patterns that can be observed in the Anthropocene. This transformation, to use environmental historian, Carolyn Merchant’s words, “shaped and pervades today’s mainstream values and perceptions” (xx). I argue that Shelley provides a cultural critique about human practices, such as science and global commerce and its effects on ecosystems that continue to have explanatory power in the present. Specifically, I examine how Captain Walton’s polar exploration for the magnetic secrets of the North Pole and his contact with Victor Frankenstein and the Monster becomes a metaphor for the ways in which human activities today are impacting the world’s most vulnerable nonhuman species and people groups in the global North.

Of course, Shelley would not have known about today’s rapidly melting glaciers and rising sea levels. However, Shelley was aware of the general distemper in Europe due to harvest failure, riots, starvation, and a global cholera epidemic caused by climate change. In the spring of 1816—the same year Shelley started writing *Frankenstein*—people in Europe, North America, India, and China began to see severe changes in global climate. Worldwide temperatures dropped and patterns of rainfall changed dramatically.

Yet, no one who lived through the extreme climate of 1815-1818 understood what was causing the torrential rain in Europe, the summer snowstorms in New England, the devastating droughts followed by relentless flooding in India, the “purple rainfall” that ruined wheat and broad bean crops in Kunming, China, or the prolonged drought in the eastern United States that convinced many farmers to sell their land and migrate to territories farther west. In North America, 1816 became known as “the year without a summer,” and in New England, “eighteen-hundred and froze to death, while Germans called 1817 “the year of the beggar.” The true cause, which was in fact a three-year climate crisis, was the 1815 volcanic eruption of Mount Tambora on the island of Sumbawa in what was then the Dutch East Indies, now Indonesia. Environmental historian, Gillen D'Arcy Wood, asserts in *Tambora: The Eruption That Changed the World*, that within weeks, Tambora’s massive sulfate dust cloud had circled the planet at the equator, from where it embarked on a slow-moving sabotage of the global commons and climatic systems of the nineteenth century (2-5). For example, due to the volcanic dust that drifted from the equator to the poles by way of wind circulation and North Atlantic Ocean currents, the Arctic drastically warmed. As a result, the British Admiralty launched a costly and ultimately futile 50-year-long campaign to cart a north-west passage from Europe to Asia via the Arctic. Therefore, it is not a surprise that the opening scenes of *Frankenstein* include Captain Walton’s voyage through the frozen North in search of a route to the Pacific and his encounter with the Monster and its creator. Thus, the novel provides a literal record into a 200-year-old event illustrating regional disaster with global effects.

In chapter two, “From the Global North to the Global South: Rethinking the Commons in the Richard Power’s *The Echo Maker*,” I examine how contemporary American authors are addressing topics such as neuroscience and the flight of migratory birds to the Arctic to innovatively illustrate the global North’s technological power of industrial capitalism and the devastating effects of oil extraction and climate change on the natural world. I argue that the sandhill cranes in American National Book Award winning novelist Richard Power’s *The Echo Maker*, radically challenges and provokes the very idea of the local and global commons and as a result, illustrates that human nature is an “interspecies relationship” shaped by political, economic, and cultural forces. For example, nearly 5 years later, Power’s novel seems uncanny for having anticipated the much disputed, proposed Keystone XL pipeline from Canada to the United States. Such an event, to use prominent ecocritic, Joni Adamson, and African American environmental ethics scholar, Kimberly Ruffin’s words, is significant “for the ways in which we understand what shared management of local and global ‘commons’ and ‘ecological citizenship and belonging’ might mean for both human and non-human species” (*American Studies, Ecocriticism, and Citizenship* 4-5). Thus, both these novels, I contend, not only require readers to rethink the global North’s mainstream values, economic priorities, and growing exploitative mentality, but also offer readers insights for understanding how we can use finite global and local resources either in ways that promote justice or in ways that unjustly enclose critical resources to only a few people of means.

In seeking to respond to Plumwood’s challenge “to think differently” and Debra Bird Rose’s call for new forms of “writing in the Anthropocene, in chapter three, I

contrast Toni Morrison's *Sula* to Faulkner's "The Bear" in *Go Down, Moses*, in order to examine how *Sula* serves as a critical rethinking of cultural narratives that reinforce normative dualisms and value-hierarchical thinking which have initiated and perpetuated Western patriarchal ideologies of nature as an uncontested resource for human consumption and development, and consequently, justified human behaviors that today can be recognized as having altered planetary processes and patterns. Even though Toni Morrison's novel *Sula* does not explicitly illustrate homoerotic relationships, I argue that Sula and Nel's relationship to each other and nature highlights, subverts, and critiques dominant pairings of nature with heteronormativity and homophobia by inscribing lesbian desire within nature and through natural and unnatural phenomena. Such inquiry is important in the Anthropocene as it helps to envision and develop, to use ecofeminist Catriona Sandilands and environmental historian Bruce Erickson's words, "sexual politics that more clearly includes consideration of the natural world and its biosocial constitution, and an environmental politics that demonstrates an understanding of the ways in which sexual relations organize and influence both the material world of nature and our perceptions, experiences, and constitutions of that world" (5). Normative dualisms such as nature/natural, have long been waged against women, people of color, and gays and lesbians and used to justify subordination and the undemocratic enclosure of resources / of the commons. Specifically, queer ecology probes challenges how both historical and current relations of sexualities and environments meet and inform one another, which as a result, reveals new, more inclusive perspectives that can help change human behavior and practices of inhabiting the material world at the end of the twentieth century. Thus, I argue that this is what makes Morrison's writing a "re-reading in the

Anthropocene” that is important for offering large term/large scale insights for understanding the structural interconnections between race, gender, and sexual oppressions as historically related forms of subordination and exploitation that continue to shape today’s mainstream values and perceptions.

In chapter four, “Thinking Across Bodies and Borders in Neill Blomkamp’s *District 9*” I will make an important contribution to discussions in the humanities, social sciences and sciences by explicating how contemporary film plays an amazingly transformative role in changing individual and group social justice and environmental behavior. By working across interdisciplinary fields—film studies, cultural studies, and literary studies—I begin forging even deeper connections that can be useful to contemporary audiences living in a globalized world increasingly concerned with “alien” toxins and “alien” refugees on the move due to capitalism, environmental degradation, and elitist resource hoarding. Specifically, I illustrate how Neill Blomkamp’s contemporary film *District 9* points to the economic roots of exploitation and subjugation by examining the transformation of the main character, Wikus van de Merew, from human to “alien” in a landscape that suggests South Africa and recalls the years in that country when apartheid was practiced.

The creation of “wealth” and/or “money” rests on the extraction of materials from the environmental commons and labor from humans to make “capital.” Adamson and Ruffin’s collection *American Studies, Ecocriticism, and Citizenship* addresses the ways in which “the commons,” “once understood as a centrally located tract of land or resource used by a community as a whole [...] has, since 1968, become associated with a metaphor devised by American ecologist Garret Hardin in a much-cited paper, “The

Tragedy of the Commons” (3). Adamson and Kimberly assert that “the metaphor evokes not the challenges of the shared management of common space but the sheer exercise of power and domination that comes with *enclosure* of the commons—the rejection of communal and shared space in favor of privatization, profit, and human dispossession” (xvi). The commons metaphorically is the pasture, but Neill Blomkamp sets his science fiction film in an urban environment in order to show how “common resources” are being enclosed for a wealthy minority. Concerned with society’s tendency to marginalize and separate “otherness,” Blomkamp therefore utilizes the protagonist’s transformation to compel the audience, to use transnational American Studies and border writing scholar, Claudia Sadowski-Smith’s words, to “move beyond dominant conceptualizations of who inhabits and can speak for the border” (*Border Fictions* 11). Using a sci-fi alien population (metaphorically) to convey the ways in which some human ethnic minority or indigenous groups are made to appear as “outsiders,” redirects the internal focus of identity and boundaries towards a wider, global lens that moves beyond traditional conceptions of national identity and notions of “borderlands” to discussions of the “local and global commons.”

In the final chapter, “Biochemical Engineering and Environmental Limits and Ethics in Aldous Huxley’s *Brave New World* and Richard Power’s *Generosity: an Enhancement*,” I read both novels, for what it can tell us about the agency and significance of material forces, such as genetically altered human and nonhuman biological matter and their interface with human corporeality. Following the recent work of material feminist, Stacy Alaimo, I illustrate how predominant conceptions of pharmaceuticals as a “quick fix” are problematic for environmental ethics because it

places the environment, “in the distant background where it plays little, if any, role” (*Bodily Natures* 150). I assert that both authors urge readers to rethink genomics and pharmaceuticals not as commodities for human manipulation and consumption but as matter that is part of the material configuration of the world.

As a whole, the dissertation will seek to contribute significantly to American studies and ecocriticism by providing readers with a cultural critique that spans over 200 years and crosses hemispheres, oceans, and disciplines as it illustrates the reasons why humans must change their behavior if humans are to more justly recognize that the commons are what keep all species alive. The juxtaposition and examination of classic and contemporary texts requires readers to rethink the global North’s “mainstream” values and priorities.

CHAPTER 2

MALE EXPEDITIONS, MODERN SCIENCE, AND MONSTERS IN MARY SHELLEY'S *FRANKENSTEIN; OR, THE MODERN PROMETHEUS* AND THE ANTHROPOCENE

The opening scenes of *Frankenstein* include Captain Robert Walton's voyage through the frozen North in search of a route to the Pacific and his encounter with the Monster and its creator. Well advanced into his voyage, Captain Walton takes note of the "floating sheets of ice that continually pass [...] indicating the danger of the region [...]" and the weather (12). In a letter to his sister Margaret Saville, he notes the "mountains of ice" and the "imminent danger of being crushed in their conflict. The cold is excessive, and many of my unfortunate comrades have already found a grave amidst this scene of desolation" (Shelley 149). In the spring of 1816—the same year Shelley started writing *Frankenstein*—worldwide temperatures dropped and patterns of rainfall changed dramatically. The frigid weather which Shelley also refers to in the Preface of *Frankenstein* as a "cold and rainy" season, was in fact, a three-year climate crisis caused by the 1815 volcanic eruption of Mount Tambora on the island of Sumbawa in what was then the Dutch East Indies, now Indonesia (Shelley 6). Although Shelley was unaware of the volcanic explosion, she was however, aware of the increasing unrest in Europe due to widespread crop failure and famine as well as British expeditions to find a Northwest Passage to the Pacific—all brought on by the extreme weather conditions.

This environmental change brought a brief period of relative warmth to the Arctic, which as a result temporarily opened some polar seas passages. Environmental historian, Gillen D'Arcy Wood, explains that, "one of the paradoxical effects of a major

tropical eruption is that while the planet in general is cooled by the blanket of volcanic dust that drifts from the equator to the poles, the Arctic itself is drastically warmed owing to changes in wind circulation and north Atlantic ocean currents” (n. pag.). As the Arctic began to melt, the British Admiralty began planning a costly and ultimately unsuccessful 50-year-long campaign to chart shorter sea routes linking Europe via the eastern North American coast to Asia. The British could not have known then, of course, that the climatic effects of Tambora would only last three years: “The Arctic refroze just in time for the arrival of Britain’s first polar expedition under Captain John Ross in 1818. Years of fruitless icebound sallies into the polar seas culminated in the tragic Franklin expedition of the 1840’s, when all hands were lost, and the heroic age of British Arctic exploration came to an end” (n. pag.). Therefore, it is not a surprise that the opening scenes of *Frankenstein* include Captain Walton’s voyage through the frozen North in search of a route to the Pacific and his encounter with Victor Frankenstein and his creature. Thus, the novel provides a literal record into a 200-year-old event proving, to use Wood’s words, that “a changing climate changes everything” (n. pag.).

As we proceed into the twenty-first century, most scientists agree that the effects of rapid climate change, exemplified by recent devastating typhoons and rising sea levels, is disproportionately affecting economically vulnerable communities and ecosystems in both the global North and South. “Climate change,” as the International Panel on Climate Change (IPCC) defines it, is a significant shift in the state of weather patterns that can be statistically identified, and that persists for an extended period of time (Solomon et al., 30). Currently, temperature increase is widespread around the globe. However, the warming of the climate system is greater at higher northern latitudes: “Average Arctic

temperatures have increased at almost twice the global average rate in the past 100 years” (Solomon et al., 30). Therefore, communities in the North, such as the Inuit living in Alaska, are disproportionately bearing the costs of the planet’s warming climate as melting sea ice and receding polar glaciers affects populations of marine mammals and the livelihoods of the people that depend on them. In 2000, atmospheric chemist Paul Crutzen and biologist Eugene Stoermer proposed that the Earth might have transitioned from the Holocene into a new human-driven geological epoch. In the International Geosphere-Biosphere Programme (IGBP) newsletter *Global Change*, Crutzen and Stoermer coined the term “Anthropocene” to describe an epoch in which global patterns of consumption, economic development, and migration are increasing the vulnerability not only of humans to environmental disaster and risk, but all life on the planet (17-18). In the 2012, IGBP’s director of communications, Owen Gaffney, acknowledged Crutzen’s and Stoermer’s contribution to illuminating what has become a powerful concept to signify humanity’s impact on the planet: “The concept of the Anthropocene gives people a new perspective of our place in the world. We can no longer consider ourselves at the mercy of great natural forces. We have an active role in global change, in many cases we are driving it” (“Anthropocene: The Geology of Humanity” 10).

With this in mind, in the last article she wrote before her death, “Nature in the Active Voice,” ecofeminist philosopher Val Plumwood spoke passionately about the role of writers in the “Anthropocene.” Plumwood challenged writers to engage in “the struggle to think differently” and have “the courage to question our most basic cultural narratives” (126, 111). In response, anthropologist and ecocritic Debra Bird Rose called for new forms of “writing in the Anthropocene” that would be “capable of shaking up our

culture, and awakening [humans] to new and more enlivened understandings of the world, our place in it [...]” (87). Rapidly changing climate demands an immediate response and, as a result, calls upon writers and academics to contribute to helping the public understand why behavioral change on the part of humans will be necessary. In this chapter, I respond to Rose’s call for “writing in the Anthropocene” by engaging with the iconic North in Mary Shelley’s canonical nineteenth century novel, *Frankenstein; or The Modern Prometheus*, in order to provide models for what “readings in the Anthropocene” might offer to those interested in shifting the direction of “our most basic cultural narratives,” and consequently, in order to change human behavior and suggest new practices of inhabiting the material world at the end of the twentieth century (Plumwood 111).

Focusing on the parts of the novel that are set in the North, I will read Shelley’s prescient *Frankenstein* (1818) for what it suggests about the historical role that exploration, science, and nature may be playing in the large and small scale climatic, economic, and human and nonhuman migratory patterns that can be observed in the Anthropocene. I assert that the frame narrative, set in the Arctic seas where Captain Walton and his crew are undertaking an “expedition of discovery” towards the northern pole also reflects such a mechanistic and self-serving view of nature and indicates Mary Shelley’s warning of its consequences and as a result, suggests new ways of inhabiting the material world as we proceed into the Anthropocene. Thus, in response to the work of Mark Lussier, Anne Mellor, Carolyn Merchant, and others, I approach Mary Shelley’s *Frankenstein* from transnational perspectives in order to provide models for what I call “readings in the Anthropocene” or re-readings of classic and contemporary texts. These

new readings draw readers into discussions of both historical texts and events and contemporary concerns in a way that might begin to mobilize the general public to think about how they might change their own behaviors and/or come into coalition with others interested in confronting the damaging effects of resource extraction and climate change on both local and global ecosystems.

Polar Exploration and Scientific Enterprise in *Frankenstein*

Captain Walton's voyage through the Arctic waters of the North Pole in search of a route to the Pacific echoes eighteenth and nineteenth century British polar expeditions for potential global commerce passages. The polar travel narratives of Captain James Cook, Sir John Barrow, and Constantine John Phipps catalyzed Shelley's apprehension of capitalistic expeditions used to dominate nonhuman natures and cultures. Thus, Captain Walton's voyage through the Arctic waters of the North Pole in search of a route to the Pacific echoes eighteenth and nineteenth century British polar expeditions for potential global commerce passages. Being the daughter of two of Europe's most respected intellectuals, Mary Wollstonecraft and William Godwin, Shelley was also well aware of the scientific research of Luigi Galvani, Humphry Davy, and Benjamin Franklin. British Romanticism critic, Mark Lussier, notes that by exposing ruination and apprehension of these scientific practices to the public gaze, Shelley moves the reader "beyond the deadening effects that Enlightenment thought and its technological by-products exerted on the more-than-human world by recognizing the culpability of self-consciousness in those practices" ("Blake" 259).

However, it is important to note that Mary Shelley did not see all scientific exploration as dangerous and self-serving. On the contrary, as Romantic scholar and

critic, Anne Mellor, points out in her book *Mary Shelley: Her Life, Her Fiction, Her Monsters*, Shelley saw Erasmus Darwin's work on evolution as "good" science—"a careful observation and celebration of the operations of all-creating nature with no attempt radically to change either the way nature works or the institutions of society" (95). For example, Victor's interest in "good" science is first aroused by the sight of lightning destroying an old tree: "I remained, while the storm lasted, watching its progress with curiosity and delight. [...] I eagerly inquired of my father the nature of thunder and lightning" (Shelley 23). However, one can also see Shelley's critique of "bad" science, when Victor manipulates electricity to create a new life-form for his own self-serving purposes, which consequently results in the death of Victor's wife, Elizabeth Lavenza, childhood friend, Henry Clerval, and brother William Frankenstein: "Life and death appeared to me ideal bounds, which I should first break through, and pour a torrent of light into our dark world. A new species would bless me as its creator and source; many happy and excellent natures would owe their being to me" (Shelley 32). Thus, as Mellor argues, Shelley's novel "distinguishes between that scientific research which attempts to describe accurately the functioning of the physical universe and that which attempts to *control* or *change* the universe through human intervention" (90).

The Death of Nature: Women, Ecology, and the Scientific Revolution, Carolyn Merchant's ground-shifting history of science fleshes out Mellor's contentions. Merchant argues that such a detached and heteronormative view of nature can be seen as the result of the Scientific Revolution and it is clear that Shelley, in her fiction, is arguing for something very much along these lines. Merchant writes, "between the sixteenth and seventeenth centuries the image of an organic cosmos with a living female earth at its

center gave way to a mechanistic world view in which nature was reconstructed as dead and passive, to be dominated and controlled by humans” (xvi). Professor M. Waldman describes such an outlook during his lecture at the University of Ingolstadt: “[Scientists] can command the thunders of heaven, mimic the earthquake, and even mock the invisible world with its own shadows” (Shelley 28). In addition, Merchant asserts that the perception of “nature as disorder, called forth an important modern idea, that of power over nature. Two new ideas, those of mechanism and of the domination and mastery of nature, became core concepts of the modern world” (2). Mark Lussier asserts in his book *Romantic Dharma: The Emergence of Buddhism into Nineteenth-Century Europe*, that such mechanistic and arrogant perceptions of the modern world “receives its strongest narrative critique during the Romantic age in Mary’s representation of the ego’s desire to exert control over nature and its willed blindness to the dire consequences of such obsessive attachment to the self-driven will” (86). For example, Lussier elaborates that M. Waldman echoes this outlook during “the chemistry lecture that fired Victor’s imagination, ‘The ancient teachers of this science...penetrated into the recesses of nature, and shew[ed] how she works in her hiding places’” (86). In addition, Lussier points out that Victor mirrors this view in the following chapter, “when he commits to a type of experimentation grounded in the method of Bacon and Descartes that pursues ‘nature [into] her hiding places’” (86).

Writing during the early years of Britain’s industrial and scientific revolution, Mary Shelley engaged with controversial “mechanistic” issues such as magnetism and electricity as well as topical issues such as Arctic exploration and the damaging consequences of a disconnected alienated view of nature. In 1692, while trying to

understand the Earth's magnetic field and anomalous compass readings, English astronomer and physicist, Edmond Halley, proposed that the Earth's interior contained concentric shells, each with magnetic properties. As historian of science, Patricia Fara, asserts in "Education Mary: Women and Scientific Literature in the Early Nineteenth Century," Shelley used this knowledge to emphasize how polar exploration and enterprise "was inseparable from political and commercial questions about scientific expeditions and the value of government of private investment" (18). For example, in Captain Walton's first letter to his sister, Margaret Saville, he asserts, "you cannot contest the inestimable benefit which I shall confer on all mankind to the last generation, by discovering a passage near the pole to those countries, to reach which at present so many months are requisite [...]" (Shelley 8). Captain Walton elaborates that only by undertaking such a voyage "can the secret of the magnet" be attained (Shelley 8). Here Captain Walton verbalizes his desire to dominate nature to serve man's private ends. He believes that such a discovery will give humankind the authority and power to command the elements and passageways in even the remotest parts of the globe, which will expand the British Empire and its global power.

Captain Walton's polar exploration quest for the magnetic secrets of the North Pole and its potential for travel passages for global commerce illustrates the common perception during the nineteenth century of nature, as an uncontested resources for human development. The removal of animistic, organic assumptions about nature illustrates, to use Carolyn Merchant's words, "the most far-reaching effect of the Scientific Revolution"—"the death of nature."

Nature was now viewed as a system of dead, inert particles moved by external, rather than inherent forces, the mechanical framework itself could legitimate the manipulation of nature. Moreover, as a conceptual framework, the mechanical order had associated with it a framework of values based on power, fully compatible with the directions taken by commercial capitalism. (Merchant 193)

The effects of this mechanistic framework that legitimated expeditions that capitalize on nature can be seen in both Captain Walton and Victor Frankenstein's conquests.

Therefore, Shelley provides a cultural critique about human practices, such as global commerce and its effects on ecosystems that continue to have explanatory power in the present. As Lussier asserts, "Romantic writers like Blake Wordsworth, or Shelley foresaw that the Enlightenment episteme [...] would likely create an ecological crisis for futurity [...] culminating a long historical process that anteceded both the scientific and industrial revolutions" (*Romantic Dynamics* 52).

Commercial Profit and Control in the Arctic North and the Anthropocene:

Thus, *Frankenstein* is "prescient" in the sense that Captain Walton's Arctic expedition could be said to "foresee" the current ecological crisis, which is being driven, in part, by the race among Northern nations to privatize natural resources and shipping routes in the Arctic due to melting ice and the extension of the continental shelf.

According to *National Geographic News* journalist, John Roach, the Arctic sea ice has receded about 40 percent since 1979 as a result of global climate change (1). In addition to collecting data formulated by geoscientists, *National Geographic* has also documented the change in sea ice cover through mapping, satellite records, and repeat photography such as image-maker, James Balog's, online "Big Thaw" photo gallery (n. pag.). One can see how the disappearing sea ice could open the way to exploit a bounty of oil, gas, minerals, and fish once protected by their inaccessibility. Furthermore, Arctic countries

such as Denmark, Russia, Canada, Denmark, Finland, Sweden, Norway, Iceland, and the United States, as well as six international organizations representing indigenous peoples, and near-Arctic countries such as China recognize the potential mineral riches of the region.

For example, in a race to claim and develop the Arctic North, in 2004, Denmark announced a 25-million-U.S.-dollar project to scientifically prove that the seabed beneath the North Pole is a natural extension of Greenland's seabed. In 2007, Russia joined the race by staking a symbolic claim to secure potential trans-Arctic shipping routes and the region's natural resources by planting its national flag on the North Pole seafloor. By 2013, Canada had already spent over 200 million dollars on scientific research in an effort to assert its sovereignty in the resource-rich Arctic and submitted an official claim to the U.N. Commission on the Limits of the Continental Shelf. Similarly, Captain Walton's expedition illustrates that he only cares about reputation and human acquisitions. For example, in a letter to his sister he discusses all the potential benefits he expects to procure from his voyage to the "country of eternal light:" "I may there discover the wondrous power which attracts the needle; [...] I shall satiate my ardent curiosity with the sight of a part of the world never before visited, and may tread a land never before imprinted by the foot of man. These are my enticements [...]" (Shelley 7). Thus, by setting the novel into the context of the extension of the continental shelf and the race among Northern nations for potential natural resources and trans-Arctic shipping routes one can see that "writing in the Anthropocene" as "cultural critique" is not a trend that occurs only in contemporary literature, but a trend that writers like Shelley anticipated and began creating as far back as the nineteenth century.

Captain Walton and Victor Frankenstein illustrate that Shelley is musing on the ways in which the human species engages in behaviors that lead to monstrosity by failing to account for negative anthropogenic social, environmental, nationalistic, and economics forces. Captain Walton's scientific theories of "the secret of the magnet" and "passage near the pole," in which he "[studied] day and night" in "good Uncle Thomas's library" (Shelley 8) resembles Frankenstein's arrogant scientific quest "into the recesses of nature" to "shew how she works in her hiding places" (Shelley 29). As a result, to use ecocritic, Joni Adamson's words about the work that the humanities can do, Shelley's novel is revealed to be a "critique of science as a discourse that authorized colonial activities on a scale that today can be recognized as having altered planetary systems" ("Humanities," forthcoming New York University Press). As a "reading in the Anthropocene," or, put another way, by re-reading classic novels such as *Frankenstein* in the Anthropocene, it becomes clear how literature is absolutely critical to discussions about large and small-scale climatic, economic, and human and nonhuman migratory patterns that have changed planetary biogeochemical processes and patterns. To be alive in the years 1816-18, with plummeting temperatures, and disruption to major weather systems, meant starvation, migration, or both: "When the crops failed that year, and again the next, starving rural legions from China to Ireland swarmed out of the countryside to market towns to beg for alms or sell their children in exchange for food" (Wood "1816, The Year without a Summer, 1). Therefore, these "re-readings" from the environmental humanities draw a contemporary audience into discussions of both historical texts and events and contemporary concerns that can be seen, in Adamson's words, as "cultural critique that calls for change and participation in altering the power relations at the root

of social and ecological problems” (*The Middle Place* 112). As a result, this is writing that encourages readers to re-imagine new practices of inhabiting the material world in a new, unprecedented geological age that is threatening all life on the planet.

Captain Walton’s pursuit to exploit nature’s resources for commercial profit and control is shown as being analogous to Victor Frankenstein’s destructive and narcissistic scientific exploration. Throughout the novel, Walton desperately seeks to find a companion. The fact that Walton finds a mirror image of himself in Victor Frankenstein—“I have longed for a friend; I have sought one who would sympathize with and love me. Behold, on these desert seas I have found such a one [...]”—indicates that Shelley saw both forms of exploration as destructive processes driven by male egotism (Shelley 147). In the co-authored book, *Literature, Science, and Exploration in the Romantic Era*, Romantic literary historian, Peter Kitson, asserts, “the ‘secrets of the magnet’ that Walton searches for resemble the secrets of feminine nature, which the masculine science of Frankenstein and his tutor Waldman must discover by ‘penetrating her hiding places’” (Fulford, Lee, and Kitson 170). This perspective and mentality highlights some of the modern, transnational monsters we are facing today as we proceed into the twenty-first century with an insatiable appetite for oil and water. For example, in 2007, Russia joined the race by staking a symbolic claim to secure potential trans-Arctic shipping routes and the region’s natural resources by planting its national flag on the North Pole seafloor. By 2013, Canada had already spent over 200 million dollars on scientific research in an effort to assert its sovereignty in the resource-rich Arctic and submitted an official claim to the U.N. Commission on the Limits of the Continental Shelf.

Both Walton and Frankenstein are products of the scientific revolution and “have been taught to see nature ‘objectively,’ as something separate from themselves, as passive and even dead matter—as the ‘object of my affection’—that can and should be penetrated, analyzed, and controlled. They thus accord nature no living soul or ‘personhood’ requiring recognition or respect (Mellor 110). Such notions of scientific mastery and power produce a disconnection between self and nonhuman nature. For example, Waldman, Victor Frankenstein’s professor at the University of Ingolstadt, explains to Frankenstein that philosophers (not yet “scientists” since the word “scientist” according to Tim Fulford, Debbie Lee, and Peter Kitson’s coauthored book *Literature Science and Exploration in the Romantic Era*, was not coined until 1833) “ascent into the heavens; they have discovered how the blood circulates, and the nature of the air we breathe. They have acquired new and almost unlimited powers” (Shelley 28). Frankenstein is further encouraged to “[pursue] nature to her hiding places” by his desire that “a new species would bless me as its creator and source; many happy and excellent nature would owe their being to me” (32). Here scientists are depicted as all knowing, masters of the universe who can discover and control the secrets of life. This invasive scientific method indicated by the invaded and degraded female nature, made possible the exploitation and “rape” of the natural environment for human benefit. Merchant contends, “as woman’s womb had symbolically yielded to the forceps, so nature’s womb harbored secrets that through technology could be wrested from her grasp for use in the improvement of the human condition” (169).

This metaphor not only presents nature as a passive female that can be penetrated by men in order to satisfy their desire, but also demonstrates a change in cultural values,

attitudes, and human behavior. As Western culture became increasingly mechanized in the 1600's, the image of a living female earth gave way to a mechanistic worldview. The ancient identity of nature as a living, nurturing mother served as a cultural constraint restricting the actions of human beings. Merchant asserts, "one does not readily slay a mother, dig into her entrails for gold or mutilate her body [...]" (3). Such a detachment and lack of respect for nature and for the products of one's research, to use Mellor's words, "can and do produce monsters" (Merchant 94). Mary Shelley's sci-fi monster materializes as a physical grotesque, eight-foot tall monster that seeks revenge against his creator, Victor Frankenstein, after being abandoned and rejected by society.

By linking the Monster's ruminations about the nature of man to cognition and consciousness Shelley suggests that it will not be solely Frankenstein's scientific undertakings or Walton's polar exploration and enterprise that saves humanity but a change in human perception and behavior. Observing the De Lacey family and overhearing Felix instruct Safie from Volney's *Ruins of Empire, or Meditation on the Revolutions of Empires: And the Law of Nature* (1791), (an anthropological and philosophical critique of history, religion, imperialism, and empires) affords the Monster with access to language and insight into the ethical norms of human behavior: "[...] the strange system of human society was explained to me. I heard of the division of property, of immense wealth and squalid poverty; of rank, descent, and noble blood" (Shelley 80). Seeking the origins of civil society and the causes for its dissolution, Volney saw revolution and the fall of empires as a result of abandoning the principle of natural law—a system of rights derived from nature rather than from the rules of society—equality, and liberty. In chapter thirteen, "Will the Human Race Improve," Volney exclaims,

“Alas! conquerors will come; they will drive out the oppressors, and fix themselves in their place; but, inheriting their power, they will inherit their rapacity; and the earth will have changed tyrants, without changing the tyranny” (53). Volney asserts that not only are Empires unsustainable and as a result ultimately collapse, but moreover that “the race of man is always doomed to suffer,” if behavioral change on the part of humans does not occur (Volney 53). Otherwise, humanity will continue to change “tyrants” without changing tyrannical practices, such as humankind’s 150-year love affair with liquid fossil fuels.

The creature’s experience with the De Lacey family reminds the reader of the ways in which the human species might actually act to transform themselves into beings that sees the planet as truly a “commons” that must be distributed democratically, rather than enclosed. By observing the De Lacey family, the Monster realizes that his pilfering of the family’s resources has intensified their distress: “I had been accustomed, during the night, to steal a part of their store for my own consumption; but when I found that in doing this I inflicted pain on the cottagers, I abstained, and satisfied myself with berries, nuts, and roots, which I gathered from a neighboring wood” (Shelley 74). The creature also assists the De Lacey family in their labors: “[...] during the night, I often took [Felix’s] tools, [...] and brought home firing sufficient for the consumptions of several days. [...] as often as it was necessary, I cleared their path from the snow, and performed those offices that I seen done by Felix” (Shelley 74, 76). After the creature alters his behavior, he soon finds that his hard work, “performed by an invisible hand, greatly astonished [the De Lacey family]” (Shelley 76-77). As a result of the creature’s tender conscience and caring behavior, the creature becomes the De Lacey’s “*good spirit.*”

However, the creature's experience with the De Lacey family also reminds the reader of the ways in which humanity itself can be monstrous and contributes to helping the public understand why a change in human perception and behavior will be necessary if we are to more justly recognize that the commons are what keep all "creatures" alive. For example, while observing the De Lacey family in the adjoining cottage through a "chink" in the hovel wall "which the eye could just penetrate," the Monster not only learns about private domestic affections, but also mankind's literal cracks and shortsightedness when Felix violently beats him with a stick due to his physical appearance. (Shelley 72). Thus, the tangled narratives of discoverer, scientist, and creature in the Arctic in juxtaposition to contemporary concerns, challenges readers to rethink and reconceptualize, in Plumwood's words, "our most basic cultural narratives" in order to transform human behavior and our place in the world (111).

The fictionalized intersection of explorer, scientist, and monster in the Arctic, highlights some of the arguments surrounding the race among nations for potential natural resources and shipping routes in the Arctic due to the extension of the continental shelf. In an attempt to provide a perspective on potential oil and gas resources north of the Arctic Circle, the U.S. Geological Survey (USGS) completed an assessment of the Arctic, which concluded that "about 30% of the world's undiscovered gas and 13% of the world's undiscovered oil may be found there, mostly offshore under less than 500 meters of water" (Gautier et al. 1175). Under the U.N. Convention on the Law of the Sea (UNCLOS), one of the largest international treaties ever composed, coastal states are afforded exclusive economic control to the waters and seabed within 200 nautical miles from the coast. This ocean bottom territory can be expanded to 350 nautical miles, and

sometimes beyond, if a country can demonstrate that the area is a natural prolongation of their dry landmass.

Today, Northern nations have begun competing over the economic potential of shipping routes through the Northwest Passage, across the Canadian archipelago, as well as along the Northeast Passage, north of Siberia, where melting ice may make it possible to establish an all-season trade route. Unlike, the climatic impacts of Mount Tambora, which lasted only three years, these new trans-Arctic shipping routes will not be freezing over again and as a result are becoming increasingly popular. These new routes can be more than a third quicker for some shipments that now pass through the Suez or Panama canals” (Roach 2). In addition, even though the shipping industry goes largely ignored by those outside of it, British journalist and author, Rose George, points out in her book, *Ninety Percent of Everything*, that “trade carried by sea has grown fourfold since 1970 and is still growing. In 2011, the 360 commercial ports of the United States took in international goods worth 1.73 trillion, or eighty times the values of all U.S. Trade in 1960” (3). Currently, ocean carriers move ninety percent of all goods. Furthermore, the amounts of ships using seasonal Northern glacial passageways are also increasing. In 2010, only four ships sought out the Northern Sea Route, a route that crosses the Arctic Sea along Russia’s northern coast. In 2011, thirty-four ships used the same crossing and in 2012, the year of the lowest recorded Arctic sea ice coverage, forty-six industrial ships crossed. In 2013, seventy-one ships navigated the Arctic shipping route. According to Laurence Smith and Scott Stephenson’s article, “New Trans-Arctic Shipping Routes Navigable by Midcentury,” published by *The Proceedings of the National Academy of Sciences of the United State of America (PNAS)*, due to climate induced Arctic ice loss,

by 2050, even ships not equipped with ice-breaking hulls will be able to navigate Arctic shipping routes (4871-4872). Growing shipping traffic in Arctic waters also means a higher chance of acoustic pollution, greenhouse emissions, invasive species, oil spills, and ship strikes against whales and other marine life. Thus, readings in the Anthropocene, as exemplified by this re-reading of *Frankenstein*, can contribute to the public's understanding of why industrialization in the Circumpolar North and climate change are linked. By making abstract, often intangible global patterns and concepts accessible, new readings of classic literature, in addition to illuminating the consequences of global economic development, which is done by the facts and figures quoted above, can reveal the consequences for the biosphere of continue human activities that do not account for their ecologic impacts. Heated debates surrounding the militarization and enclosure of the Arctic commons offers a large-scale perspective on how the global North can use finite resources in ways that promote "just sustainability," as Julian Agyeman has coined the phrase, or in ways that unjustly enclose critical resources for the wealthy few. At a news conference held in Ottawa on December 9, 2013, Canadian Minister of Foreign Affairs and Member of Parliament for Ottawa West-Nepean, John Baird declared that the Canadian government is "determined to ensure that all Canadians benefit from the tremendous resources that are to be found in Canada's Far North" (Mayer 1). Canada plans to do additional scientific research and mapping before submitting a new submission to increase its nautical borders and Arctic jurisdiction. Canada hopes to include scientific data that shows the Lomonosov Ridge, a 1,100-mile long submarine ridge in the Arctic Ocean, as an extension of Canada's continental shelf. In the meantime, at the Defense Ministry Board expanded meeting in Moscow, Russia's

President, Vladimir Putin, ordered his military chiefs to “pay special attention to the deployment of infrastructure and military units in the Arctic” in order “to protect [Russia’s] security and national interests” (“Expanded Meeting of the Defence Ministry Board” 1). For example, Russia has already begun reactivating former Soviet bases. In addition, on September 19, 2014, Russia’s Armed Forces staged its biggest post-Soviet military drills in the Arctic, involving more than 160,000 servicemen, 1,000 tanks, 130 planes, and 70 ships. During the five-day Vostok-2014 exercise, troops were trained in repulsing a massive airstrike, combating an aircraft carrier, and repelling a seaborne landing (McDermott n. pag.). Therefore, the tangled narratives of discoverer, scientist, and creature in the Arctic evokes not only the challenges of the shared management of common space but also the sheer exercise of power and domination that comes with enclosing shared spaces in favor of profit.

By analyzing Shelley’s nineteenth century canonical text in relation to past and present social and environmental issues in the global North, such as climate change and the race among Northern nations for potential natural resources and trans-Arctic shipping routes, one can see how readings in the Anthropocene can contribute to the growing awareness of long term/large scale human impacts on the planet. For example, the current rush for political control over the fabled Northwest Passage between the Atlantic and Pacific oceans and the natural resources that lay beneath it have important economic, environmental, and governance implications for not only Northern nations, but also for communities in the North, such as the Inuit. There is a lot of potential for the mining of iron, copper, nickel, zinc, and other minerals in the Arctic. Greenland, for example, a Danish protectorate with a mostly Inuit population of 57,000, is seeking foreign investors

to extract mineral resources that have become more accessible as rising temperatures shrink the island's ice coverage. According to *Bloomberg Businessweek* correspondent, Carol Matlack, "London Mining wants to spend \$2.3 billion to build a mine in southwestern Greenland that would tap a 1 billion-ton iron ore deposit—a project the company hopes will be financed and built mainly by the Chinese" (n. pag.). Uranium and other rare minerals are additional potential targets for Chinese investment considering that Greenland has enormous reserves of both.

Therefore, the melting Arctic sea ice has put the Inuit people at the center of the debate over the future of the Arctic region, and whether commercial and capitalistic interests can trump the needs of the environment and northern peoples. Inuit communities across Canada, Greenland, Alaska, and Russia rely on marine resources to support their subsistence way of life and cultural traditions. Aqqaluk Lyngø, chairman of the Inuit Circumpolar Council, which represents over 160,000 Inuit people, reminds political leaders "that you cannot use the Arctic as a laboratory. It's not a laboratory. The Arctic Ocean is not the last frontier. It's our home. People have to remember that people live there" (Brooke 1). The actions of Victor Frankenstein, Captain Walton, and the global North, illustrate how the creation of "wealth" rests on the control and extraction of materials from the environmental commons. Thus, the enclosure of Arctic commons for the wealthy represents the undemocratic relationship among species and among human groups.

Reading the novel as Mary Shelley's precient advance notice of the Anthropocene illustrates a cultural critique about human practices, which not only requires readers to rethink the global North's values, economic priorities, and growing exploitative

mentality, but also illustrates a call for another much needed shift in environmental conception and human behavior. In her book, *Reinhabiting Reality: Towards a Recovery of Culture*, Australian philosopher and author, Freya Mathews contends, “for when the entire world is treated as raw resources, inert and unspeaking, then the fundamental modus operandi of society must, from a panpsychist point of view, be one of callous insensitivity. To represent the world as brute and blind requires that we ourselves assume an attitude of bruteness and blindness” (15). The global North’s values and priorities have been seen as “mainstream.” However, these principles and “brute” and “blind” attitudes and actions are killing the planet. Therefore, publics both inside and outside the academy must rethink and reconceptualize “mainstream” perspectives in order to transform human behavior and our place in the world. For example, even though most readers think that *Frankenstein* is mainly about a monster, Shelley also demonstrates how a human takes apart and puts together materials, which illustrates to the reader corrupted human interrelationships to “natural resources” or “common resources.” By juxtaposing Shelley’s canonical text with current social and environmental issues, one can see how literature and specifically the environmental humanities, can contribute to growing awareness of long term/large scale human impacts on the planet and how the human species might actually act to transform themselves in ways that lead to monstrosity (as metaphorically represented by Dr. Frankenstein’s monster) or in ways that transform the human species into beings that sees the planet as truly a “commons” that must be distributed democratically, rather than enclosed for a wealthy minority.

CHAPTER 3

FROM THE GLOBAL NORTH TO THE GLOBAL SOUTH: RETHINKING THE COMMONS IN RICHARD POWER'S THE ECHO MAKER

According to *National Geographic*, the global population will reach 9 billion before 2045 (“Special Series: 7 Billion”). Appropriately, in 2011, *National Geographic* undertook a yearlong editorial series about population, demonstrating to readers through a compilation of articles, videos, and photographs “how your world will change.” *National Geographic*'s “Special Series” discusses specific issues such as looming resource shortages, food security, biodiversity, and climate change. With global population growth on the rise along with increasingly apparent environmental limits it is impossible not to be alarmed. Yet, there are also those who will tell you that everything is just fine—that global warming is only a myth, that the entire human population of the world could fit into an area the size of Los Angeles, and that science and technology will one day answer all our problems. However, the earth is warming, the global population is growing about 80 million each year, and if science alone could solve our current ecological crises, then why are we still in this fix?

In her article, “What Winning Looks Like: Critical Environmental Justice Studies and Future of a Movement,” ecocritic and scholar, Joni Adamson, asserts, “None of us is fully equipped to address all the facets of the ‘bigger picture.’ We must decompartmentalize. This is not a problem for science or social science alone to solve. Technology cannot provide all the answers. Figuring out our collective responses will be more complicated than we thought” (1258). This chapter responds to Adamson's call for a collective response between the sciences, social sciences, and the humanities by

providing ecocritical re-readings of classic and contemporary fiction in the Anthropocene. I assert that “readings in the Anthropocene” uncovers a call for a collective environmental ethics concept that transgresses time, disciplines and national boundaries, while illustrating a re-imagining of our own lives, communities, and environments. For example, by juxtaposing Shelley’s canonical *Frankenstein* and American National Book Award winning novelist Richard Power’s *The Echo Maker* (2006) in relation to past and present social and environmental issues in the global North, one can see how two hundred years of colonization and economic activities caused by humans can result in a climatic effect that is similar to the most destructive volcanic eruption on Earth in thousands of years.

Powers explores the monstrous impact of human behaviors and migration patterns on the biosphere. Scholars such as Mitchell Thomashow, Heather Houser, and Joni Adamson suggest that making abstract, often intangible global patterns and concepts accessible to a wider public can change the way we interact with the environment. In his book, *Bringing the Biosphere Home: Learning to Perceive Global Environmental Change*, environmental educator Mitchell Thomashow, contends that in order “to conceptualize issues such as the loss of biodiversity and global climate change requires an understanding of ecology and evolution, an awareness of how the environment changes through geographic space and geological time” (2). In line with much environmental writing, Heather Houser suggests in her book, *Ecosickness in Contemporary U.S. Fiction: Environment and Affect*, that Richard Power’s *The Echo Maker* “aspires to increase readers’ awareness of their surrounding as a way to promote ecological protection” (383). However, as ecocritic and scholar, Joni Adamson, points

out in “Environmental Justice, Cosmopolitics and Climate Change,” “since most humans live less than 100 years, they are often unfamiliar with the history of life on earth—plate tectonics, ancient landscapes and atmospheres, mega-extinctions, and cosmic impacts” (178). Therefore, cognitive awareness of one’s environment and how it has changed (or is changing) often requires an understanding of unfamiliar concepts such as geographic space and geological time.

In order to encourage such environmental awareness, Joni Adamson, asserts in her book *American Indian Literature, Environmental Justice, and Ecocriticism: The Middle Place*, that novelists, poets, and folklorists use stories, proverbs, and animal tales as “seeing instruments—” “a complex navigation system for those who wish to see and move beyond the present [...]” (141). Richard Powers begins *The Echo Maker* and each of the next four sections with cranes migrating North across the length of the hemisphere, with a migratory stopover on the Platte River in the flat wetlands of Nebraska. In “Environmental Justice, Cosmopolitics and Climate Change,” Joni Adamson fleshes out Thomashow’s connections by specifically addressing how Powers uses “the Anishinabe story about a girl transforming into a crane as an “‘instrument’ for ‘seeing’ multispecies relationships in terms of the biographical, geographical and political lives of all humans and animals and the places they live” (179). In this chapter, I specifically examine how Richard Power’s *The Echo Maker* addresses such topics as the flight of migratory birds to the Arctic and neuroscience to innovatively address the global North’s technological power of industrial capitalism and the devastating effects of oil extraction and climate change on the natural world. I argue that Power’s novel appears uncanny for seeming to have anticipated some of the arguments surrounding the much disputed, proposed

Keystone XL pipeline from Canada to the United States—a debate of major importance to North America and the environmental movement. The connections that Powers and Shelley make between patterns of consumption and government and private investment at the expense of human and nonhuman bodies, not only require readers to rethink the global North’s mainstream values, economic priorities, and growing exploitative mentality, but also allows readers to “see” new ways of inhabiting the material world as we proceed into the Anthropocene.

Human Behavior in the Anthropocene

Similar to Shelley, Powers is interested in the cognitive process and behavior of human and nonhuman species. The novel, *The Echo Maker*, takes place in rural Kearney, Nebraska, where Mark Schluter, a twenty-seven-year-old meatpacker mysteriously flips his truck while driving at night through the sandhill crane, bird migration range. When Mark wakes after a fourteen-day coma, Mark believes his sister, Karin, to be an imposter along with his dog, Blacky, and his house, “The HomeStar.” Mark’s condition is identified as Capgras syndrome, a rare neurological disorder where sufferers fail to recognize those people and possessions closest to them. Mark’s circumstances are so extraordinary, that Dr. Gerald Weber, a famous cognitive neurologist, agrees to examine Mark. In an interview with Alec Michod, Powers explains how Mark’s brain injury and crane intelligence gave him “a way to open up the story to all kinds of neurological and ecological traces” (n. pag.). For example, Power elaborates, “so here we are, sharing the planet with these creatures who are weirdly intelligent, smart in an alien way that we’re not quite smart enough to see. And yet, the core parts of their brains are still contained in ours” (n. pag.). Over the course of the novel, the brains and the intelligence of both

sandhill cranes and humans becomes an “instrument” for rethinking our relations to nonhuman species and “seeing” disastrous consequences of human behavior that put others at risk. This (offering easier access to knowledge and these issues) is indeed one of the most trenchant goals of writing in the Anthropocene.

Similar to Victor Frankenstein, Dr. Gerald Weber’s scientific agenda to control Mark’s brain and behavior is a monstrously self-serving attempt to gain power and fame through his scientific research, which consequently, requires readers to rethink mainstream, self-serving, behaviors that are putting human, and nonhuman species at risk. In popular thought, the brain has become the final frontier in science and medicine in the sense that there is still so much to learn about the brain. The brain and the nervous system enable one to interact with the environment, to think, to be conscious, and to perform amazing tasks like learning, memory, and attention. Dr. Weber’s mercenary attempt to control Mark’s brain through artificial means and Victor Frankenstein’s self-indulgent attempt to “[acquire] unlimited powers” becomes a metaphor for the ways in which human activities today are trumping the needs of nonhuman species and people (Shelley 29). Dr. Weber, neuroscientist and famous author of popular neurological case studies, arrives in Kearney, Nebraska after receiving a desperate plea from Karin to examine her brother Mark. With the recent release of his third book, *The Country of Surprise*, Dr. Weber agrees to meet “Mark Schulter and his impostor sister. The book waiting for Weber to write, after this book tour” (Powers 191). Over the years his research has given him publicity, money, and his made-up alter ego, “Famous Gerald.” However, recent reviewers of his work, accuse Weber of shallowness and of coldness towards his subjects. *Harper’s Magazine* even declares that Weber’s stories “border on

privacy violation and sideshow exploitation” (221). Dr. Weber fails to see Mark’s brain as something more than independent passive matter for him to control and manipulate.

Powers challenges readers to see that Mark’s brain is not an isolated agent, or to use Brad Allenby’s words, “a design space” where we use science and engineering to design our internal space for our benefit. According to Allenby, Lincoln Professor of Engineering and Ethics, Professor of Civil and Environmental Engineering, and of Law, at Arizona State University and author of *The Techo-Human Condition*, “the suite of emerging technologies—nanotechnology, biotechnology, robotics, information and communication technology, and applied cognitive science— is rapidly making the human a design space” (“What’s Next The Cognocene” n.pag.). The results, as Allenby points out, are unpredictable. In the novel, Weber dishearteningly asserts, “Psychopharmacology: hit or miss, hard to tune, ripe with side effects, symptom-masking, and once begun, difficult to tail off of” (311). In the end, Dr. Weber does not “cure” or “redesign” Mark: “When Karin Schuller enters her brother’s room, the man who has been denying her is gone. In his place, a Mark she has never seen sits in a chair in striped pajamas [...]” (Powers 443). Therefore, Weber’s failed attempt to use science and technology to quickly fix Mark’s behavior suggests that redesigning the human is not the answer to changing human behavior in the Anthropocene.

Human and Nonhuman Migration

Captain Walton, Dr. Frankenstein, and the Monster’s complicated journey North, parallels the migratory flight north of the cranes in *The Echo Maker* in interesting ways. The endangered sandhill cranes, known to American Indians as “the echo makers” because of their sonorous calls, “push up from New Mexico, Texas, and Mexico, hundreds of

miles each day, with thousands more ahead before they reach their remembered nests. For a few weeks, this stretch of river shelters the miles-long flock. Then, by the start of spring, they'll rise and head away, feeling their way up to Saskatchewan, Alaska, or beyond" (Powers 4). The north-south trajectory of these migratory birds illustrates the Central Flyway bird migration route that generally stretches from Canada, across the United States, and into Mexico. Some birds use this route to even migrate across the Arctic Ocean to Patagonia (Weidensaul 8).

In Power's novel, the crane's migration puts human migration from place to place in perspective. Environmental scholar and educator, Mitchell Thomashow, contends in that we are currently living in an age of widespread cultural and ecological mobility and much can be learned from the experience of those who are modeling a kind of "place-based transience," or awareness of how one might live with a deep sense of community even while living in impermanence. The cranes' migration puts place in perspective, to use Thomashow's words, "it enriches the process of passing through. While we are here, whether for a week or a dozen generations, it is our responsibility to help this place endure" (182). Thomashow goes on to explain that unlike migratory animals, humans often do not leave a place with its integrity intact, but rather, that they change the ecosystem to such an extent that the species living there cannot endure. Powers shows clearly in the novel that the sandhill cranes are continually being so crowded into smaller and smaller spaces on the Platte, as humans expand their own communities, that the birds are becoming more and more diseased and disoriented. Yet, Karin's work at the Buffalo County Crane Refuge also illustrates that one can be place-based locally while cultivating deep concern for a broader spectrum of global movement. Karin, who knows almost

nothing about cranes, reaches out to the community by volunteering at the sand hill crane reserve. In the novel, Karin explains to fictional developer and con man, Robert Karsh, about her work at the Crane Refuge: “What can I say? It’s the most fulfilling work I’ve ever done. Bigger than myself? How about bigger than anyone. I’m working through some papers... Did you know that we’ve changed that river more in one hundred years than in all the ten thousand years prior...?” (Powers 329). Thus, the sandhill cranes expand the reader’s sense of place and civic responsibility by illustrating a biospheric perspective to local ecologies and communities.

In contrast to bird migration, which leave ecosystems largely intact, concepts such as Manifest Destiny in the nineteenth century propelled human migration in the United States from east to west in ways that encouraged people to completely change the landscapes they crossed. Incentives for migration such as The Homestead Act, The California Gold Rush, and mysterious wilderness of the western frontier continued to increase westward expansion in America throughout the nineteenth century. The setting of the novel, *Kearney, Nebraska*, explains Powers in an interview with Alex Michod, “lies on or near the great historical American east-to west routes: Oregon Trail, Mormon Trail, Pony Express, transcontinental railroad, Lincoln Highway, Interstate 80” (n. pag.). Here the east-west human migration corridor crosses the ancient north-south migration route of the continent’s birds. The prairie-crossroads setting of the book offers an assortment of both human and nonhuman bodies migrating by force, chance, or choice. As Joni Adamson writes in “Environmental Justice, Cosmopolitics and Climate Change,” “on one route, cranes fly to the tundras and glacial bays of the iconic North, then back to the Platte. On the other, humans move East to West as they establish the great routes of

commerce that have played a role in catalyzing the transition of the Holocene into the Anthropocene” (171). Often traditional concepts of place and place-attachment simplistically examine one writer or one’s culture’s ties to a particular place at a specific time. However, by conflating the local and global mobility of human and nonhuman bodies, Powers, to use, Thomashow’s words, “[brings] the biosphere home” by making global environmental issues meaningful, tangible, and accessible for readers. Power’s illustration of human and animal migration and interaction provides a much broader biospheric perspective and suggests a range of concerns, from mass extinction and industrial tourism, to resource extraction and climate change.

Rights and Access to Communal Spaces and Resources

The cranes’ shrinking habitat is a symptom of monstrous human ego and behavior that is putting the livelihoods of individuals and groups at risk by ignoring social costs and environmental impacts. Each year the birds at the Platte River look more and more spectacular. Each year it seems as if there are more and more cranes, “coming into town in packs. [Bunches] of them [landing] on the roof of the McDonald’s” (Powers 16). However, what appears as an increase in crane population is actually only a symptom of their declining wet habitat. In the novel, fictional crane conservationist and ascetic environmental activist, Daniel Riegel, explains to Karin how the cranes ““used to roost along the whole Big Bend: a hundred and twenty miles or more. They’re down to sixty, and shrinking. The same number of birds crammed into half the space” (57). Daniel elaborates, “a few more years, and we can say goodbye to something that’s been around since the Eocene” (57). The development of strip malls, housing complexes (such as the one Mark lives in at River Run Estates) and industrial agriculture has diminished the

crane's habitat. The cranes are spectacular "precisely because the river had drained away beneath them, concentrating them in a few remaining heavens" (346). Power's depiction of rapid freshwater depletion and land development challenges the ways in which we understand shared management of local and global "commons" (communal spaces and resources). The over crowded cranes allows readers to "see" how the environmental commons have changed over time and as a result, challenges readers to inhabit the material world in new ways. The plight of the sandhill crane and its habitat (due to the encroachment of industrialization) is further complicated by those who wish to capitalize on their attraction.

Power's depiction of the endangered sandhill cranes also exemplifies the long waged struggle between conservationism and industrial tourism. The high concentration of cranes have put Kearney "on the map" attracting "ten times as many crane peppers" than "just six years ago" (Powers 39). The Platteland Associates, a new developer consortium in Kearney, tries to convince the Kearney Development Council during a public hearing to allow them to create a Central Platte Scenic Natural Outpost. During the trial, Robert Karsh, explains to the council and Kearney community that tourists will "come, one way or another" (Powers 346). According to Platteland Associates, tourists would leave the Outpost "more aware of the need to conserve wildness" and besides, "wasn't the whole point of conservation to protect nature for our appreciation?" (Powers 346). The developers clearly fail to appreciate what the cranes really are—a species in danger of extinction. Instead, the developers see the cranes, to use environmental historian William Cronon words, as a "wilderness experience"—an experience "that is so often conceived as a form of recreation best enjoyed by those whose class privileges give

them the time and resources to leave their jobs behind and ‘get away from it all’” (85). The Outpost demonstrates the development of the commons for the touristic few, there by depleting vital resources for long-term residents. In theory the Outpost seems like it would advocate ecological awareness. However, rather than serving as a medium to establish an ethical relationship between human and nonhuman bodies, the Outpost becomes another means for corporate profit. As Andrew Ross asserts in *Bird on Fire: Lessons From the Least Sustainable City*, if private investment, consumer niche marketing, and government policies practices “are not directed by and toward principles of equity, then [we] will almost certainly end up reinforcing patterns of eco-apartheid” (250). Therefore, Powers offers a more nuanced and complex understanding of the meaning of land management and water conservation and how communities can use resources either in ways that promote sustainability or in ways that unjustly provide natural resources and capital for the few in control.

In *The Echo Maker*, Powers representation of the cranes portrays complex dilemmas on the local and global level that are increasing in the Anthropocene. The illustration of resource extraction, in the form of humans using more and more water and decreasing crane habitat, anchors the novel in real-world issues concerning the global freshwater crisis and regional access to clean water supplies for both humans and nonhumans. As *National Geographic*’s “Special Series” asserts, every year competition for a clean, copious supply of water for sustaining life intensifies: “According to the United Nations, water use has grown at more than twice the rate of population increase in the last century. By 2025, an estimated 1.8 billion people will live in areas plagued by water scarcity, with two-thirds of the world’s population living in water-stressed regions

as a result of use, growth, and climate change” (“Freshwater Crisis”). Powers shows that the challenge we face now is how to effectively conserve, manage, and distribute the water we have. In Nebraska access to water is a touchy subject. Water is the difference between wetlands and irrigated fields, between profit and loss. Naturalist and author, Scott Weidensaul asserts in his Pulitzer-nominated book *Living on the Wind: Across the Hemisphere With Migratory Birds* that as early as the 1960’s, irrigation ditches started bleeding the Platte River. Between 1909 and 1940 a series of dams plugged its two tributaries coming out of Colorado and Wyoming (281). Today, the Platte River, “dammed and diverted [...] is a dim reflection of its old self; nearly three-quarters of the Platte’s water now goes for irrigation or municipal use, siphoned off long before it reaches Big Bend” (Weidensaul 281). For the cranes, the problem is access to water and nesting ranges. In Power’s novel, environmental activist, Daniel Riegel, alarming explains, “the river’s being used up. Fifteen dams, irrigation for three states. Every drop used eight times before it reaches us. The flow is a quarter of what it was before development” (Powers 57). For the sandhill cranes, water is paramount to their security and survival. Daniel elaborates, if “the river slows; the trees and vegetation fill in. The trees spook the cranes. They need the flats—someplace to roost where nothing can sneak up [...]. This is their only safe stopover. No other spot in the center of the continent they can use” (57). Therefore, the depletion of water for the cranes means loss of habitat.

However, not everyone in the community believes in placing the birds’ sanctuary ahead of the comfort and welfare of the people. The crane Refuge, where Daniel works, is attacked from all sides. A local farmer verbally assaults Daniel personally: ““You have any idea how much damage those birds do? [...] It took Americans hundreds of years to

turn this swampland into beautiful farms. And you people want to turn it back into swamps again” (Powers 264). The management of water in the novel raises questions about who has the “rights” to communal spaces and resources. Historically, as Joni Adamson and Kimberly Ruffin assert in their co-edited collection *American Studies, Ecocriticism, and Citizenship*, social belonging, citizenship, and rights have been manipulated to serve the economic power of a wealthy few. Power’s portrayal of water expands notions of “rights,” “citizenship,” and “environment,” or “ecological citizenship” wielded by groups interested in either privatizing and profiting off natural resources for exclusive communities and corporate companies by illustrating a call for, to use Joni Adamson and Kimberly Ruffin’s words, broader “rights” or access to resources for “communities” recognized as including both human and nonhuman beings” (3). Through Daniel, Powers illustrates the difficult and delicate balance between land conservation and agriculture as well as the importance of taking an active role with one’s social and environmental surroundings. Even though the conflict between the Platteland Association and Refuge is never resolved, Powers offers a more nuanced and complex understanding of the meaning of land management and water conservation. The disruption of water in Power’s novel, in Adamson and Ruffin’s words, “expands notions of what constitutes ‘the community of rights’ and the ‘rights of community’ and how we might better support individuals and groups who are part of nations *and* planetary citizens in creating and enacting policies, laws, and community practices that will have positive ecological consequences around the globe” (16). Thus, Power’s emphasis on place and community provides tangibility to otherwise complex environmental issues, which as a result can help create new approaches to environmental practices and policies.

Transnational Monsters

Through the trajectory of the cranes' migration, Powers pushes the reader's imagination from the local community of Kearney across international borders to the global North, and towards the devastating effects of industrial resource extraction on the natural world. This wider, hemispheric perspective highlights some of the modern, transnational monsters we are facing today as we proceed into the twenty-first century with an insatiable appetite for oil and water. For example, TransCanada's seven billion dollar pipeline raises all sorts of environmental concerns. The Keystone XL pipeline would funnel tar sands over 1,700 miles from northern Alberta, Canada to refineries along the Gulf of Mexico crossing international borders. Deep green activist and writer Aric McBay explains how the tar sands underlie the rich boreal forests in Northern Canada, one of the least destroyed biomes today (32). In order to even extract the tar sands, "oil companies literally scrape away the living forest and soils on the surface. Then they dig out the sands, taking about two tons of sands per barrel of oil they produce" (McBay 32). In the article, "The Keystone Pipeline Revolt: Why Mass Arrests are Just the Beginning," environmental activist and journalist, Bill McKibben, explains that "so far they've only got three percent of the oil, but they've already moved more soil than the Great Wall of China, the Suez Canal, the Aswan Dam and the Pyramid of Cheops combined" (2). In addition, McBay makes clear that after the tar sands have been extracted from living forests and soils on the surface, "water drained by nearby rivers is used to wash the bitumen out of the sand—several volumes of water are used for every volume of oil—leaving a toxic water-oil by-product that kills fish, birds, and indigenous people living in the area" (32). Thus, McBay elaborates, "if you simply hated the land

and wanted to destroy it, you would be hardpressed to find a more vicious way of doing it” (32).

Therefore, the migrating cranes in Power’s *The Echo Maker* reveal an expansive understanding of the relationship between industrialism, human bodies, and the more-than human world. Similarly, Captain Walton’s polar exploration for the magnetic secrets of the North Pole and his contact with Victor Frankenstein and the Monster becomes a metaphor for the ways in which human activities today are impacting the world’s most vulnerable nonhuman species and people in the global North. Thus, placing regional environmental and social concerns, such as land management, water conservation, and human and nonhuman migration patterns, into the context of transnational disputes over the Keystone XL Pipeline and Arctic minerals and passageways, radically challenges basic cultural narratives, behaviors, and in Val Plumwood’s words, “narcissistic dreams of consumer desire and endless, consequenceless consumption of growth” and as a result, offers domestic and large-scale understandings about why rapid behavioral change among humans will be necessary not at some ambiguous time in the future, but now (123).

The Keystone XL pipeline also brings the reader’s attention back to the crossroad setting of the novel where North-South crane migration patterns intersect East-West economic routes of human consumption and growth. Debate over the proposed route of the pipeline has drawn international attention focused largely on Nebraska. The planned route for the pipeline would run through Nebraska, crossing the ecosensitive Sandhills and the vast Ogallala Aquifer, a vital source of drinking water for the Great Plains. While the sandhill cranes rely on the shallow waters and sandbars for their migratory

stopover, the Sandhill region of Nebraska is also a crucial recharge zone for the Ogallala Aquifer. Sandra Postel, author and founder of the Global Water Policy Project claims, “the region’s sandy soils allow rainfall to seep rapidly in and replenish the groundwater supply below. Those same sandy soils, however, could allow tar sands crude from a leaky pipeline to seep into the precious Ogallala” (Postel 1). John Stansbury, a professor at University of Nebraska Lincoln who specializes in water resource engineering and hazardous waste site assessments, estimated in a recent independent study the social and ecological costs of a major leak from the Keystone XL pipeline:

A major spill from the proposed Keystone XL where the pipeline crossed the Platte could discharge more than 5.9 million gallons of heavy, toxic, tar sands crude into the river. The resulting plume of contamination would contain benzene, a chemical known to cause cancer, at levels up to ten times the Environmental Protection Agency’s maximum limit for safe drinking water. [...] From the Platte, the plume could flow into the Missouri. Altogether, such a spill could threaten the drinking water of hundreds of thousands of people as far south as Kansas City, Missouri. (Postel 1)

In addition to human health risks, a major spill would also pose serious risks to numerous animal species that rely on the river. The raw tar sands oil, called bitumen, “would sink down to the riverbed. Bottom-dwelling fish, insects, mussels and plants would get smothered near the spill site” (Postel 1). Thus, such a leak would subject local residents—humans and sandhill cranes—as well as communities and ecosystems living downstream to toxic drinking water, carcinogens, and polluted agricultural and recreational areas.

With the loss of the land and resources, communities like Kearney in *The Echo Maker* become displaced without moving living in fear of toxic drinking water, carcinogens, and polluted recreation areas from their once life-sustaining landscapes.

Rob Nixon, identifies such “displacement without moving” or “stationary displacement” in his book *Slow Violence and the Environmentalism of the Poor* (19). Nixon defines stationary displacement as “a loss that leaves communities stranded in place stripped of the very characteristics that made it inhabitable” (19). Thus, the novel is a “reading in the Anthropocene” that enhances recognition of America’s current fixation on meeting non-renewable resource shortages, such as oil, with more finite resources and high-tech pipelines, and expands our vision of the consequences of our behaviors. Therefore, the novel clearly raises questions about what constitutes a sustainable environment.

Power’s novel *The Echo Maker* seems uncanny for having anticipated an event of major importance to the emerging international environmental movement. On the morning of Saturday, August 20, 2011, protesters gathered peacefully outside the White House in order to urge the president to veto TransCanada’s proposed Keystone XL Pipeline. Bill McKibben, contends “this was the largest civil disobedience in this country since at least the nuclear-test protests of the 1980s, and one of the most sustained since the heyday of the civil rights movement” (2). In the book, *Deep Green Resistance: Strategy to Save the Planet*, environmental activists Aric Mcbay, Lierre Keith, and Derrick Jensen argue that if we are going to save the earth then we must dismantle the industrial economy by creating a “culture of resistance” (16). I argue that Keystone XL Pipeline protestors demonstrate such a culture of resistance that reaches across national boundaries in an effort to build translocal alliances. Over the summer the Pipeline retaliation transformed from a regional battle into a transnational crusade. The protests against the Keystone XL Pipeline highlights, to use Nixon’s words, “resource rebellions against developer-dispossessors who descend from other time zones to impose on

habitable environments unsustainable calculations about what constitutes the duration of human gain” (17). From both sides of the border indigenous people, environmentalist activists, celebrities, academics, and communities have come together to create a transnational anti-pipeline coalition. People from all different backgrounds, time zones, and disciplines—Nebraskan ranchers, Tea Party activists, and Nobel Peace Prize laureates—have also sided with the growing opposition (McKibben 3). Therefore, this transnational coalition conflates the singular “I” to the plural “we,” the local and the global, in order to reinforce ecological consciousness towards a wider, hemispheric lens.

Power’s open-ended novels leave the characters hanging on a dystopian note that makes it clear that humans and nonhumans are indeed at the tipping point of an environmental crisis. Therefore, readers are forced to re-examine their choices and actions in order to better understand one another’s social and environmental connections. This shows that Powers is asking his readers to think about the consequences of their actions and the possibilities for changing damaging behaviors and lifestyles. Karin’s work at the Buffalo County Crane Refuge reminds readers that one can be place-based locally while cultivating deep concern for a broader spectrum of global movement. Karin, who knows almost nothing about cranes, reaches out to her community and fellow crane caretakers to becoming a “caring” (as her name suggests) volunteer at the sandhill crane reserve. This shows that “ordinary” citizens have the power to evolve and can come together to create an environmental response large enough to make a difference.

By juxtaposing *Frankenstein* with *The Echo Maker*, readers in the Anthropocene can begin to link narratives, classic and contemporary, in a way that might begin to mobilize the general public to think about how they might change their own behaviors

and/or come into coalition with others interested in confronting the damaging effects of resource extraction and climate change on both local and global ecosystems. Therefore, read as “writing *for* the Anthropocene,” these novels can be seen to be calling upon publics both inside and outside the academy to consider how they might play a role in addressing both local and global social and environmental justice challenges. For example, Shelley’s character, Dr. Victor Frankenstein illustrates how the human species might continue engaging in behaviors that lead to monstrosity by failing to account for the negative environmental, political, and cultural forces at work in the Anthropocene. In comparison, Karin in *The Echo Maker* represents citizens becoming educated about and getting involved in debates over environmental and social justice challenges that are global in scale. Such a cultural and ecological analysis of classical literature alongside twenty-first century texts can help readers re-imagine life, community, and environment in relation to what constitutes a sustainable environment in a globalized world. Thus, the goal of juxtaposing canonical texts, such as Mary Shelley’s *Frankenstein* and contemporary American novels such as Power’s *The Echo Maker* is not to collect evidence for climate change as a human-caused crisis, or to measure its effects—but to call upon readers to think about it, prepare for it, and respond to it as we proceed into the Anthropocene with the use of literary methodologies and environmental studies as tools for making abstract, often intangible global patterns and concepts accessible to a wider public.

CHAPTER 4

NORMALIZED NATURE AND QUEER ECOLOGIES IN WILLIAM FAULKNER'S

"THE BEAR" IN GO DOWN, MOSES AND TONI MORRISON'S SULA

One night before I left I sat halfway down,
halfway up the stairs, as he reeled at the bottom,
shouting, *Choose, choose*. Man or woman, her or him,
me or the children. There was no place to be
simultaneous or between.

--Minnie Bruce Pratt "No Place"

This is a celebration of individual freedom, not of homosexuality. No government has the right to tell its citizens when or whom to love. The only queer people are those who don't love anybody.

-- Rita Mae Brown *Speech, 28 August 1982*

Toni Morrison's *Sula* has traditionally been read as a contemporary novel about a fierce female friendship. As Morrison writes, Nel Wright and Sula Peace's "meeting was fortunate, for it let them use each other to grow on. Daughters of distant mothers and incomprehensible fathers (Sula's because he was dead; Nel's because he wasn't), they found in each other's eyes the intimacy they were looking for" (Morrison 52). Morrison's *Sula* is also clearly linked to other writers such as Minnie Bruce Pratt's poetry to Rita Mae Brown's prose. Minnie Bruce Pratt and Rita Mae Brown are contemporary U.S. lesbian feminist poets who work overtly challenges many sorts of social inequalities and exclusions, including heterosexism, which rests upon the formulation of homosexuality as a crime against nature. Poem 3 of *Crime Against Nature* by Minnie Bruce Pratt, explores her experience when she lost custody of her children in the 1970s because she was open about her lesbian identity: "The hatred baffles me, individual, doctrinal, codified. / The ways she pulled the statue book down like a novel / [...] *crime against nature* [...] / That year the punishment was: not less than five nor more / than sixty years.

For my methods, indecent and unnatural / of gratifying a depraved and perverted sexual instinct (116). Links to “nature writing,” when it comes to poems and prose like these quoted in the epigraphs above by Pratt and Brown, usually do not come to mind nor would these works seem suited to my reading of “writing in the Anthropocene.” This is because “nature” has become so “naturalized” that we cannot think of any other “origins,” to use Rich’s words, for man, for woman, for human, for nonhuman, than those we have been taught in our high school biology classes. Countering this lacunae, from Minnie Bruce Pratt and Adrienne Rich’s poetry to Rita Mae Brown’s and Toni Morrison’s prose, contemporary women writers have explored how both historical and current relations of sexualities and environments meet and inform one another in order to confront and disentangle normative cultural narratives that attach wilderness spaces to performances of heterosexual masculinity and overturn the construction of homosexuality as “unnatural” and “against nature.”

Prominent feminists and ecocritics have read the work of Morrison, Pratt and Rich in ways that challenge the naturalization of nature. In her essay “Eluding Capture: The Science, Culture, and Pleasure of Queer Animals,” material feminist, Stacy Alaimo, notes that “‘nature’ and the ‘natural’ have long been waged against homosexuals, as well as women, people of color, and indigenous peoples” (51). In the United States, she argues, nature has traditionally been deemed the exclusive province of straight white men, who venture into the wilderness in order to claim or reclaim their heterosexual masculinity. This ideological construction, in activist and scholar Mei Mei Evans words, “creates a representational paradigm whereby heterosexual white manhood (i.e., ‘real men’) is construed as the most ‘natural’ social identity in the United States: the ‘true

American,' *the* identity most deserving of social privilege" (183). For example, Ike McCaslin in Faulkner's "The Bear" in *Go Down, Moses* illustrates dominant discourses that attach wilderness space to performances of heterosexual masculinity that are used to reinforce and justify the authority and control of human and nonhuman bodies.

In this chapter, I will be arguing that Toni Morrison's *Sula*, highlights, subverts, and critiques dominant pairings of nature with heteronormativity and homophobia by inscribing lesbian desire within nature and through natural and unnatural phenomena in order to construct an alternative environmental perspective of non-normative sexual and gender positions. By contrasting the novel to Faulkner's "The Bear" in *Go Down, Moses*, I assert that Morrison is queering social and environmental constructs. *Sula* serves as a critical rethinking of cultural narratives that reinforce normative dualisms and value-hierarchical thinking, which have initiated and perpetuated Western patriarchal ideologies of nature as an uncontested resource for human consumption and development, and consequently, justified human behaviors that today can be recognized as having altered planetary processes and patterns. I argue that this is what makes Morrison's writing a "re-reading in the Anthropocene" that is important for offering large term/large scale insights for understanding the structural interconnections between race, gender, and sexual oppressions as historically related forms of subordination and exploitation that continue to shape today's mainstream values and perceptions. In anthropologist and ecocritic Debra Bird Rose words, recognizing "new and more enlivened understandings of the world, our place in it, and the situated connectivities that bind us into multi-species communities," is also a process of becoming aware of and unlearning ideologies of racism, sexism, classism, and heterosexism that sustain gender identification and rituals

of exclusion (87). By thinking about nature as a site in which social relations of sexuality are played out and vice versa, one can see that “modern understandings of sexuality are deeply influenced by historically specific ideas of nature, perhaps most obviously in the classification of gay, lesbian, bisexual, transgender, and queer bodies as, somehow, unnatural” (Sandilands, “Unnatural Passions?” 7). Queering social and environmental paradigms, meaning, challenging and probing how both historical and current relations of sexualities and environments meet and inform one another, I assert, reveals new perspectives that can help change human behavior and practices of inhabiting the material world at the end of the twentieth century, therefore making queer ecologies a fitting subject for “writing in the Anthropocene.” Thus, in this chapter, I first read “The Bear” to examine how many canonical works have “naturalized nature.” Then, I will assert that Morrison is calling for a queering of social and environmental constructs in order to arrive at a more nuanced and effective sexual and ecological understanding that would create effectively inclusive strategies for positive change in the Anthropocene.

Normalizing Nature

In the introduction to *Queer Ecologies: Sex, Nature, Politics, and Desire*, ecofeminist Catriona Sandilands and environmental historian Bruce Erickson assert that since at least the early twentieth century, “wilderness spaces have been understood and organized in a way that presents nature—and its personal domination in the guise of hunting, fishing, climbing, and other outdoor activities—as a site for the enactment of a specific heteromascularity” (3). Particularly in North America, such “outdoor pursuits came to serve as a new space for elite enactments of white male superiority” (3). These performances of heterosexual masculinity are illustrated in numerous canonical literary

texts. For example, William Faulkner's "The Bear" in *Go Down, Moses*, depicts iconic elite white male heterosexual characters battling against the elements of nature in order to prove their dominance and power over nonhuman nature. At ten years old, Ike McCaslin experiences his first nature-wilderness experience when he joins a group of men on their yearly hunting trip. For the next six years, Ike McCaslin accompanies Major de Spain (proprietor of the old Supten plantation), General Compson (a former Confederate officer), McCaslin Edmonds (Ike's second-cousin), Sam Father (son of a Choctaw chief and a slave-girl), and Boon Hogganbeck (a resident of Yoknapatawpha County) to Sutpen's hundred hunting camp. Every November, Ike McCaslin learns about "the big woods, bigger and older than any recorded document" and Old Ben, "the big old bear with one trap-ruined foot that in an area almost a hundred miles square had earned for himself a name" (Faulkner 183, 185). Immediately, Ike can see the destruction that modern society has caused by trying to dominate the wilderness: "It was as if the boy had already divined what his senses and intellect had not encompassed yet: that doomed wilderness whose edges were being constantly and punily gnawed at by men with plows and axes who feared it because it was wilderness [...]" (Faulkner 185). Old Ben who has also been "gnawed at by men" with his "one trap-ruined foot" represents nature as proving ground for U.S. American masculinity.

Ike's knowledge of and adoration for the forest, lead him to relinquish his gun, compass, and watch while tracking Old Ben: "He had left the gun; by his own will and relinquishment he had accepted not a gambit, not a choice, buy a condition in which not only the bear's heretofore inviolable anonymity but all the ancient rules and balances of hunter and hunted had been abrogated" (Faulkner 198). For a moment, Ike even sees Old

Ben: “It did not emerge, appear: it was just there, immobile, fixed in the green and windless noon’s hot dappling, not as big as he had dreamed it but as big as he had expected, bigger, [...] looking at him. [...] Then it moved. [...] Then it was gone. It didn’t walk into the woods. It faded” (Faulkner 200). However, regardless of Ike’s attempt to not naturalize nature, Old Ben is inevitably tracked down and slaughtered by the hunting party. Deep into the woods, Boon Hogganbeck and his dog, Lion, attack Old Ben. With Lion “clinging to the bear’s throat,” Boon draws his knife and kills the bear: “It fell all of a piece, as a tree falls, so that all three of them, man dog and bear, seemed to bounce once” (Faulkner 231). The collapse of all three simultaneously illustrates the connection between dominant discourses that attach wilderness space to performances of heterosexual masculinity that are used to reinforce and justify the authority and control of human and nonhuman bodies.

Even though Ike renounces his gun, watch, compass, and eventually his inheritance, Faulkner illustrates that the dominance of nature and invasion of industrial civilization is unavoidable. For example, two years later, Ike returns to the wilderness only to find that the hunting lodge and party gone and the train closer and louder than ever before: “[...] and he knew now what he had known as soon as he saw Hoke’s this morning but had not yet thought into words: why Major de Spain had not come back, and that after this time he himself, who had had to see it one time other, would return no more” (Faulkner 306-307). Faulkner implies the dominance of nature is inevitable even if one man, Ike, is reverent about nature. However, a queer ecological re-reading Toni Morrison’s *Sula* illustrates that the “naturalization” of nature does not have to be inevitable if we, to use Catriona Sandilands words, “[interrogate] relations of knowledge

and power by which certain “truths” about ourselves have been allowed to pass, unnoticed, without question” (“Lavender’s Green?” 22). Therefore, queering nature “is a process by which all relations to nature become de-naturalized, by which we question the ways in which we are located in nature, by which we question the uses to which “nature” has been put. To queer nature is to “put out of order” our understandings [...] (“Lavender’s Green?” 22). Nel and Sula’s relationship to each other and nature resists and “de-naturalizes” such normative narratives and ideologies of nature with “natural” heterosexuality. Even though the novel does not explicitly illustrate homoerotic relationships in the novel, Morrison, to use Sandiland’s words, “interrogates relations of knowledge” by calling into question social constructs, dichotomies, crimes against nature, and our perceptions of normalcy “that have been allowed to pass.” Such readings in the Anthropocene are important in order to disentangle dualistic dominant discourses that attach wilderness spaces to performances of heterosexual masculinity that continue to serve as vectors used to justify subordination over human and nonhuman bodies.

Lesbian Literature and Queer Ecologies

Historically, critics such as African American lesbian feminist, Barbara Smith, have attempted to perceive *Sula* from a solely lesbian lens that has little to do with “nature.” It is tempting to want and think of lesbian literature as stable and clearly defined. In popular thought, feminist scholar Meredith Miller asserts, “lesbians are women who have no feelings for men, who feel sexual desire for women and who live independently of patriarchal control” (xxvii). However, as Miller asserts in the *Historical Dictionary of Lesbian Literature*, “this definition fits very few of the women whose

literature is significant to the development of the very lesbian identity” (xxvii). Miller elaborates, that lesbian feminist literature of the 1970s “is marked by ideas of silence, voice and the power of language” (x). At the 1976, ‘Lesbian and Literature,’ Modern Language Association convention, Bertha Harris identified lesbian literature: “‘If in a woman writer’s work a sentence refuses to do what it is suppose to do, if there are strong images of women and if there is a refusal to be linear, the result is innately lesbian literature’” (Smith 188). For example, *Sula* takes place almost entirely in a tiny community called the Bottom, an ironic name given to the “hilly land” above the “rich valley floor in that little river town,” leaving blacks only “small consolation in the fact every day they could literally look down on the white folks. Still, it was lovely up in the Bottom” (Morrison 5). In addition, Smith asserts Sula and Nel’s relationship is suffused with erotic romanticism from the very beginning: “Sula and Nel find each other in 1922 when each of them is 12, on the brink of puberty and the discovery of boys. Even as awakening sexuality ‘clotted their dreams,’ each girl desires ‘a someone’ obviously female with whom to share her feelings (189). By this definition, Barbara Smith, identifies Toni Morrison’s *Sula* as a lesbian text in her enormously influential essay “Towards a Black Feminist Criticism.” Smith argues that Morrison’s *Sula* “works as a lesbian novel not only because of the passionate friendship between Sula and Nel, but because of Morrison’s consistently critical stance towards the heterosexual institutions of male/female relationships, marriage and the family” (Smith 189). Morrison writes, for example, how Sula did not mean to intentionally hurt Nel when she slept with Jude, an act of little importance according to Sula’s system of values:

They had always shared the affection of other people: compared how a boy kissed, what line he used with one and then the other [...] She knew well enough what other women said and felt, or said they felt. But she and Nel had always seen through them. They both knew that those women were not jealous of other women; that they were only afraid of losing their jobs. Afraid their husbands would discover that no uniqueness lay between their legs.” (119)

Sula disavows the town’s patriarchal values by disregarding social constructs such as the domain of the family. As well, Morrison’s critical stance towards heterosexual institutions and female subordination is illustrated by Nel and Sula’s relationship—the deepest communion and communication that occurs in the novel. After Nel visits Sula for the last time, Sula thinks to herself, “So she will walk on down that road, her back so straight in the old green coat, the strap of her handbag pushed back all the way to the elbow, thinking how much I have cost her and never remember the days when we were two throats and one eye and we had no price” (Morrison 147). As Smith points out, Sula’s evocative metaphor for disregarding heterosexual institutions illustrates “the ‘pricelessness’ [Nel and Sula] achieve in refusing to sell themselves for male approval, the total worth they can only find in each other’s eyes” (191).

In 1981, Bonnie Zimmerman insisted that, lesbianism is a meaningful category, and endowed lesbian texts with a specific vantage point for questioning heterosexual “norms.” Almost midway between the inclusive and exclusive approaches to a definition of lesbianism, lies that of Lillian Faderman’s criteria: “‘Lesbian’ describes a relationship in which two women's strongest emotions and affections are directed toward each other. Sexual contact may be a part of the relationship to a greater or lesser degree, or it maybe entirely absent. By preference the two women spend most of their time together and share most aspects of their lives with each other” (Zimmerman 24). Morrison writes:

“Nel lowered her head onto crossed arms while tears of laughter dripped into the warm diapers. Laughter that weakened the knees and pressed her bladder into action. Her rapid soprano and Sula’s dark sleepy chuckle made a duet that frightened the cat and made the children run in from the back yard, puzzled at first by the wild free sounds, then delighted to see their mother stumbling merrily toward the bathroom, holding on to her stomach, fairly signing through the laughter: ‘Aw. Aw. Lord. Sula. Stop.’” (Morrison 97)

By this definition, one can ascertain that Morrison’s *Sula* works as a lesbian novel. Even though Nel and Sula’s relationship is not sexual, their strongest emotions are directed towards each other as they share most aspects of their lives together. For example, Morrison writes, “[Nel’s] parents had succeeded in rubbing down to a dull glow any sparkle or splutter she had. Only with Sula did that quality have free reign, but their friendship was so close, they themselves had difficulty distinguishing one’s thoughts from the other’s” (83). Even when Sula returns to Medallion after ten years, Nel and Sula’s relationship retains its primacy. Nel notes, “It was like getting the use of an eye back, having a cataract removed. Her old friend had come home. Sula. Who made her laugh, who made her see old things with new eyes, in whose presence she felt clever, gentle and a little raunchy. Sula, whose past she had lived through and with whom the present was a constant sharing of perceptions” (Morrison 95).

However, a purely lesbian reading of the novel oversimplifies the novel’s complexity especially when it comes to the interconnected oppression of race, sex, and nature. While I agree with Smith that Morrison’s *Sula* withstands dominant heterosexual institutions, I argue that this resistance does not solely rest on the lesbian characteristics of the novel. For example, while the sensuality that Sula and Nel experience in each other’s company is important, I consider the exploration of their sensuality in nature as equally crucial. In addition, while I agree with Smith that Sula’s presence in her

community also “functions much like the presence of lesbians everywhere to expose the contradictions of supposedly ‘normal’ life,” I believe that Morrison also queers nature in order to display the contradictions of “normalcy” (Smith 190). Therefore, reading lesbian feminist literature, such as Toni Morrison’s *Sula*, solely as a lesbian novel stunts its complexities and voice about the interlinked oppressions that are resulting in large scale changes on the planet in the Anthropocene. Therefore, reading lesbian feminist literature, such as Toni Morrison’s *Sula*, solely as a lesbian novel stunts its complexities and voice about the interlinked oppressions that are resulting in large scale changes on the planet in the Anthropocene first triggered by colonization, slavery, and resource exploitation.

However, it is important to note that Morrison’s is not advocating for one dichotomy over another. In addition, as Catriona Sandilands astutely asserts in her essay “Lavender’s Green? Some Thoughts on Queer(y)ing Environmental Politics,” “it is not enough simply to add ‘heterosexism’ to the long list of dominations that shape our relationship to nature, to pretend that we can just ‘add queers and stir’ in our formulations of what ‘oppression’ and ‘exploitation’ mean” (21). By thinking about nature as a site in which social relations of sexuality are played out and vice versa, one can see that “modern understandings of sexuality are deeply influenced by historically specific ideas of nature, perhaps most obviously in the classification of gay, lesbian, bisexual, transgender, and queer bodies as, somehow, unnatural” (Sandilands, “Unnatural Passions?” 7). Thus, while I do agree with numerous feminist critics that *Sula* and Nel’s relationship illustrates a resistance to heterosexual constructs, I believe their interaction with each other *and* their interaction with nature obscures and complicates such readings. Catriona Sandilands and Bruce Erickson’s coedited work *Queer Ecologies*, challenge

readers to radically rethink how sexualities and environments meet and inform one another in order to demolish dualistic ideological approaches to nature and sexuality, and move towards an ethical future. Queer ecology probes the intersection of sex, race, and nature by highlighting, destabilizing, and transforming heteronormative nature relations. Such inquiry helps to envision and develop, to use Sandilands and Erickson's words, "sexual politics that more clearly includes consideration of the natural world and its biosocial constitution, and an environmental politics that demonstrates an understanding of the ways in which sexual relations organize and influence both the material world of nature and our perceptions, experiences, and constitutions of that world" (5). I argue that a queer ecological reading of the novel in relation to Morrison's subversion of dominant discourses that attach wilderness spaces to performances of heterosexual masculinity illustrates a more nuanced and effective sexual and environmental understanding. Thus, the numerous layers and plausible readings embedded in Morrison's *Sula* allows one to see not only that both interpretations exist, but more importantly that both readings co-depend on each other. Therefore, in the next section, I examine Toni Morrison's *Sula* through the lens of queer ecology, which probes the complex intersection of sex, gender, and nature, and as a result, serves as a powerful corrective to conceptual foundations that equate "nature" with "natural" and "natural" with "heteronormativity"—dualized pairs that have been used to justify subordination and legitimized human activities that today can be recognized as having undeniable impacts on the environment at the scale of the planet as a whole.

Queering Normative Narratives

One way to start debunking traditional cultural narratives that attach wilderness spaces to performances of heterosexual masculinity, or in Val Plumwood's words, to start "thinking differently" in the Anthropocene, is by engaging in the task of opening up an experience of nature as powerful and as possessing agency. Plumwood elaborates, "It's a matter of being *open to experiences of nature as powerful, agentic and creative, making space in our culture for an animating sensibility and vocabulary*" ("Nature in the Active Voice" 124). Morrison's use of pastoral imagery in connection to Nel and Sula's relationship and resistance to suppressive heterosexual masculinity constructs demonstrates their experience of nature as "*powerful, agentic and creative*" (Plumwood 124). For example, the two girls disentangle dominant pairings of nature with heteronormativity by digging into the earth and literally queering nature. As Nel and Sula escape into the wilderness contemplating "the wildness that had come upon them so suddenly" they queer nature as they transform the earth's dirt to illustrate their resistance to heterosexual sex (Morrison 58). At first Nel and Sula play out heterosexual performances by playing in the grass: "In concert, without ever meeting each other's eyes, they stroked the blades up and down, up and down" (Morrison 58). After, they begin digging in the earth working together "until the two holes were one and the same," and poking holes with twigs "rhythmically and intensely" (Morrison 58). Nel and Sula's two holes becoming "one and the same" illustrates their union and consequently, challenges dominant discourses that attach wilderness space to performances of heterosexual masculinity that are used to reinforce and justify the authority and control of human and nonhuman bodies. Thus, the two girls are fused together, "one in the same,"

not only because of their gender and anatomy, but also because of their interchangeable struggle, oppression, and love for each other.

Nel and Sula's rejection of heterosexuality is also illustrated by them queering nature as they destroy the hole, throw away the sticks, and bury the phallic and womb-like configurations in the earth. After the digging, Nel's twig breaks and "with a gesture of disgust" she throws "the pieces into the hole they made. Sula threw hers in too. [...]" Carefully, they replaced the soil and covered the entire grave with uprooted grass" (Morrison 58-59). Morrison portrays Nel and Sula as open in the wilderness—to use Stein's words, "reclaiming space in, and identification with, the natural world is one means of striving for sexual justice" (Stein 288). By queering nature, Morrison highlights, subverts, and critiques dominant pairings of nature with heteronormativity and homophobia. Therefore, Nel and Sula's interaction with nature and each other illustrates a "'reverse discourse' that no longer pairs nature with heterosexuality (Sandilands and Erickson 24). Such a reversal of mainstream heteronormative conceptual constructs is important for writing in the Anthropocene because it is intimately linked to the transformation of the human behaviors and material practices involving human and nonhuman natures as we proceed into the twenty-first century. Therefore, queering nature is an appropriate topic for writing in the Anthropocene because to queer nature is to question nature as a blank resource for the activities of men and to recognize the agency of human and nonhuman bodies from grass and soil to women and people of color.

However, it is important to note that Morrison's "reverse discourse" is not replacing one dichotomy for another. More specifically, Morrison rejects the alignment

of women with nature. As Nancy Unger points out in her essay, "From Jook Joints to Sisterspace: The Role of Nature in Lesbian Alternative Environments in the United States" women are presumed to be the ones who are "closest to the earth" (179). In popular thought, since nature supports all life, women, whose traditional role are life-givers of the human species would seem to have a greater affinity or a closer connection to the natural realm than men. Many contemporary writers and scholars, such as Mei Mei Evans, have contested the cultural conflation of "woman" with "nature." Evans asserts that associating nature and women "safeguards and promotes hegemonic sovereignty of straight white men" (184). By decoding the mother/nature binary imagery, one can see that Nel and Sula's earth digging symbolizes their rejection of the patriarchal Judeo-Christian belief that, to use Unger's words, "all women, especially mothers, are the natural guardians of 'Mother Earth.'" Unger elaborates that women and nature are mutually associated and devalued in Western culture.

By defiling and burying the womb in the earth, Nel and Sula oppose the idealization of nature as female, mother. For example, when the girls are done digging they contaminate the womb with surrounding debris: "Nel saw a bottle cap and tossed it in as well. Each then looked around for more debris to throw into the hole: paper, bits of glass, butts of cigarettes, until all of the small defiling things they could find were collected there. Carefully, they replaced the soil and covered the entire grave with uprooted grass" (Morrison 58-59). Nel and Sula deflate the notion of a particular gender being naturally closer to nature, as well as the impulse to gender nature. As Unger's asserts, "nature should not be anthropomorphized into a mother to be protected but instead be respected as a nonhuman, nongendered partner in the web of life" (180). This

is an important aspect of writing in the Anthropocene because traditionally Western culture's devaluation of the erotic and the queer parallels its subjugation of women, poor people, people of color, and nature.

Morrison's refusal to label Nel and Sula as "queer" is also equally important. Non-labeling is part of an ongoing narrative strategy by which the novel distances both women from the tainted stereotype of "unnatural," gay female identity. Feminist scholar and critic Katie Hogan explains that, "queer theories are designed to challenge the assumption that nature and the natural are neutral, independent categories exempt from critical challenge. Queer ecocritique takes the alleged 'against nature-ness' of queers as the focus of its work" (Hogan 232). Nel and Sula's relationship is portrayed as if there is nothing queer about it. Morrison writes, "[Sula and Nel] never quarreled, those two, the way some girlfriends did over boys, or competed again each other for them. In those days a compliment to one was a compliment to the other, and cruelty to one was a challenge to the other" (84). Their feminine identities are repeatedly confirmed as Nel gets married, has children, and maintains a home, while Sula leaves town and pursues an education and men. Their relationship unfolds almost naturally as part of a deepening, homosocial intimacy. The presentation of Nel and Sula in this manner has, in Sandilands and Erickson words, "the effect of 'naturalizing' their relationship insofar as their attraction and love can be read as entirely separate and distinct from what have, throughout much of the twentieth century, been presented as "unnatural" or degenerate" sexualities" (2). Therefore, Morrison's non-labeling of Nel and Sula's relationship provides new understandings of relationships in the Anthropocene. By resisting categories and binarisms of hierarchical social systems, such as man/woman,

nature/culture, heterosexual/homosexual, natural/queer, to use the language of Kirksey and Helmreich, Morrison does not seek to “give voice, agency or subjectivity to the nonhuman,” the “unnatural,” or the “perverse”—“to recognize them as other, visible in their difference—but to force us to radically rethink these categories of our analysis as they pertain to all beings” (565-563).

Therefore, Morrison debunks the ideology of homosexuality as being a “crime against nature. Rachel Stein asserts that, “from colonial times through the present, American laws regulating sexual behavior have drawn upon the Judeo-Christian belief that certain sexual practices are natural and others are unnatural, even crimes against nature” (Stein 286). In addition, for Darwin, “only heterosexual courtship and mating could be ‘natural’ because it was reproduction that allowed the species to continue; despite overwhelming evidence to suggest that homoeroticism is everywhere in nature, evolutionary thought thus came to define it as aberrant” (Sandilands “Lavender’s Green?” 9). Thus, the denunciation of queers as “unnatural” and as “crimes against nature” has a long history in the United States that continues to subordinate queer lives (Hogan 231). For instant, “a literal example took place in the United States in March 2004 when Rhea county officials in Tennessee voted to amend the state’s criminal code so that ‘the county [could] charge homosexuals with crimes against nature’” (Hogan 231). Such discourses, as Katie Hogan asserts, “reinforces the entrenched idea of queers as unnatural [...] But it also inspires a queer ecocritique” (Hogan 232). Therefore, Toni Morrison contests the “crime against nature” ideology by locating lesbians within the natural world, and illustrating a revolutionary environment of sexual freedom. Such

writing in the Anthropocene and inquiry is important as it offers readers alternative, more inclusive, value systems.

Queering Dominant Dualisms

Morrison's *Sula* also upturns traditional hegemonic dualisms that pit the fit, healthy, and natural masculine-male against the irrational, passive, feminine-female. Greta Gaard asserts in her essay that each side of the dualism can be 'seen as exclusive (rather than inclusive) and oppositional (rather than complementary), and where higher value or superiority is attributed to one disjunct (or, side of the dualism) than the other'" (Gaard 23). Far from heroic and powerful the men in *Sula* are diminished, literally and figuratively. For example, this is conveyed most graphically through the deweys, who "except for their magnificent teeth [...] would never grow. They had been forty-eight inches tall for years now, and while their size was unusual it was not unheard of. The realization was based on the fact that they remained boys in mind" (Morrison 84). As well, Eva destroys her son, Plum, in order to prevent his creeping back into the womb: "I done everything I could to make him leave me and go and live and be a man but he wouldn't and I had to keep him out so I just thought of a way he could die like a man not all scrunched up inside my womb, but like a man" (72). Even Sula seduces and sleeps with Jude, Nel's husband of ten years: "Having lived in a house with women who thought all men available, and selected from among them with a care only for their tastes, [Sula] was ill prepared for the possessiveness of the one person she felt close to" (119). This perspective of men as stunted in growth and overpowered by women is conveyed effectively through Chicken Little, who Nel (with Sula watching) inadvertently drowns in the river.

It is also important to note here that Morrison illustrates a crime taking place *in* nature, rather than *against* nature. Nel and Sula illustrate a resistance to Chicken Little's exposed, heterosexist words encouraged by the crime-against-nature ideology that women and lesbians are inferior, therefore permissible targets of subjugation. Even though Sula and Nel do not intentionally kill Chicken Little, it is important to note that they do: "When he slipped from [Sula's] hands and sailed away out over the water they could still hear his bubbly laughter. The water darkened and closed quickly over the place where Chicken Little sank. The pressure of his hard and tight little fingers was still in Sula's palms [...] They expected him to come back up, laughing. Both girls stared at the water" (Morrison 60-61). Morrison tackles the crime-against nature discourse and queers nature by eliminating the damaging supremacy of patriarchal heterosexism. Chicken Little's death deflates natural/unnatural, heterosexual/homosexual, and male/female dualisms and as a result, allows for the possibility to radically rethink sexuality and nature. Thus, in the novel, the crime against nature is enforced heteronormative ideas of nature and social relationships—not same sex desire.

It is also important to note that Morrison's is not replacing one dualized pair (male/female) for another (female/female). The relationship between Sula and Nel is complementary and contrasting. The traumatic incident of Chicken Little's death foreshadows Nel and Sula's differences and their parting of ways. Morrison writes, "Nel and Sula did not touch hands or look at each other during the funeral. There was a space, a separateness, between them" (64). During the funeral, eleven-year old Sula breaks down and weeps hysterically while Nel, who is also eleven is surprisingly calm, irritated by Sula's loss of control: "Sula simply cried. Soundlessly and with no heaving and

gasping for breath, she let the tears roll into her mouth and slide down her chin to dot the front of her dress” (65). The event serves as a point of separation of the two girls. Thus, Morrison overturns supposedly fixed relations and ideologies, which as Morrison illustrates towards the end of the novel, can result in plagues, climate change, and other damaging consequences of anthropogenic behaviors.

Queer Nature in the Anthropocene

Morrison also queers nature when Sula returns to Medallion. When Sula arrives, nature begins acting strangely and unnatural. A plague of robins announces Sula and the beginning of “what [Medallion] called evil days” (Morrison 89). The “evil days” becomes a metaphor for the outcomes of anthropogenic behaviors that have evil consequences such as death: “The little yam-breasted shuddering birds were everywhere [...] you couldn’t go anywhere without stepping in their pearly shit, and it was hard to hang up clothes, pull weeds or just sit on the front porch when robins were flying and dying all around you” (Morrison 89). The plague of robins stands for the unbalances that occur with “global weirding” that is connected to human behaviors that have played a role in catalyzing the transition of the Holocene into the Anthropocene. Thomas Friedman of *The New York Times* prefers the term “global weirding” rather than global warming “because the rise in average global temperature is going to lead to all sorts of crazy things — from hotter heat spells and droughts in some places, to colder cold spells and more violent storms, more intense flooding, forest fires and species loss in other places” (n. pag.). For instance, on New Year’s Eve 2010, five thousand red-winged blackbirds and starlings fell from the sky in a one-mile area of Beebe, Arkansas, a town of less than five-thousand residents. Days later over five-hundred red-winged blackbirds,

starlings, and grackles fell to their deaths along a quarter-mile portion of highway in Point Coupee Parish, Louisiana. According to *Huffington Post* writer Travis Donovan, the birds suffered from physical trauma leading to internal injuries that formed deadly blood clots and death (n.pag). Explanations include disturbance from fireworks to disease and poison—all in which are caused by human activities. The unnatural event and Sula's "unnatural" sexuality disturbs and unsettles the people of Medallion. To use Hogan's words, if nature can "be seen as a force that disrupts, overwhelms, undermines, explodes or otherwise 'make strange' our ideological consensus, [...] then it is possible to see it as an agent of criticism" (Hogan 232). By making nature "an agent of criticism," Morrison reveals how normative dualisms and value-hierarchical paradigms which have initiated and perpetuated Western heteronormative ideologies of nature as an uncontested resource for human consumption and development result in global weirding such as epidemics of dying birds, and other evil consequences of anthropogenic behaviors.

The extreme weather that follows Sula's death also stands for the unbalances that occur with "global weirding" that is connected to human driven climate change. The unexpected ice storm following Sula's death disrupts the town:

Then Medallion turned to silver. [...] Grass stood blade by blade, shocked into separateness by an ice that held for days. Late-harvesting things were ruined, of course, and fowl died of both chill and rage. [...] By the time the ice began to melt and the first barge was seen shuddering through the ice skim on the river, everybody under fifteen had croup, or scarlet fever, and those over had chilblains, rheumatism, pleurisy, earaches and a world of other ailments. (Morrison 151-152)

Even though Morrison never explicitly connects her novel to climate change, it is important to note that the extreme weather events similar to ice storm that Morrison portrays in *Sula*, are becoming more and more frequent in the Anthropocene. In 2010,

for example, record-breaking rains struck Nashville, Tennessee with 18-20 inches of water in two days. Described by officials as “a once-in-a-millennium occurrence”—floods and other extreme weather conditions are happening more often as we proceed into the twenty-first century (Miller n.pag.). For instance, in 2013, an unexpected, early blizzard slammed into South Dakota, pummeling parts of the state with up to four feet of snow and killing as many as one-hundred-thousand cattle. According to *Time Magazine* writer, Bryan Walsh, “beef cows and calves—which hadn’t yet developed the heavy coats that see them through the cold winters of the northern Plains—were soaked first by freezing rain and then buried in the snow” (n.pag.). The South Dakota Stock Growers Association “estimated that 15 to 20% of all cattle were killed in parts of the state, with some ranchers losing more than half of their herds” (Walsh n.pag.). In addition, the burden is not just financial. As Walsh points out, “ranchers spend decades building up bloodlines in their herds, and the storm has wiped away that work” (n.pag.). Thus, the connections that Toni Morrison, Mary Shelley, and Richard Powers make between Western heteronormative ideologies and evil consequences of anthropogenic behaviors portrays complex dilemmas to national security, food and energy markets, species loss, and weird weather. Similar to Mary Shelley and Richard Powers, Morrison’s ability to queer nature demonstrates a different framework of natural imagery—that dismantles the community’s ideologies that are leading to anthropogenic climate change and extinction events.

Sula’s presence and sexuality, even though not understood or appreciated in the community, also disrupts and interrogates sexual and social relations: “Now that Sula was dead and done with [...] wives uncoddled their husbands [...] And even those

Negroes who had moved down from Canada to Medallion [...] felt a loosening of the reactionary compassion for Southern-born blacks Sula had inspired in them. They returned to their original claims of superiority” (Morrison 154). Considering that after Sula’s death the community “returned to their original claims of superiority,” indicates that when Sula was alive, her presence challenged the community’s ideologies and relations. This is most clearly illustrated through Nel’s realization at the end of the novel. After Sula’s death, Nel understands that what she has been missing all along was not her husband Jude, but the relationship she had with Sula, which is also illustrated through nature, but this time by its blossoming: “Leaves stirred; mud shifted; there was the smell of overripe green things. A soft ball of fur broke and scattered like dandelions spores in the breeze” (Morrison 174). Verbally, Nel’s realization is portrayed as she declares, “All that time, all that time, I thought I was missing Jude [...] We were girls together, [...] O Lord Sula [...] girl, girl, girlgirlgirl” (Morrison 174). It is the combination of both Sula’s death and the sudden, queer change in nature that catalyzes Nel’s reflection and understanding of her relationship with Sula and Jude (who represents heterosexual constructs). Radically reconfiguring our view of sexual, social, and environmental relations and consequently our agendas is crucial as we proceed into the Anthropocene as the old imaginaries of Western heteronormative ideologies are unlikely to lead the way in solving the new planetary quandaries.

Clearly, Morrison’s queering of nature questions the problematic heteronormative links between sexuality and nature. The transgressive combination of queer theory, ecological criticism, and lesbian feminist politics “pose a significant challenge to the overarching assumption that heterosexuality is not only natural” but also illustrates the

consequences of heteronormative ideologies for relationships, nature, and environment (Sandilands, “Unnatural Passions 7). Therefore, such a queer ecologies reading in the Anthropocene serves as a critical rethink of cultural narratives that reinforce normative dualisms and value-hierarchical thinking which have initiated and perpetuated Western patriarchal ideologies of nature as an uncontested resource for human consumption and development, and consequently, justified human behaviors that today can be recognized as having altered planetary processes and patterns such as climate change, agriculture, and biodiversity. Furthermore, such writing in the Anthropocene and inquiry is important as it asks readers to think and imagine on a wholly different scale—one that transcends centuries and nations. Re-reading Toni Morrison’s *Sula* through the lens of queer ecologies and the Anthropocene provides a large scale perspective that is vastly more global in scope and more historical in extent, which consequently asks readers take seriously the specific responsibilities that arise from this shifting perspective when re-imagining one’s life, community, and environment in and beyond the Anthropocene.

CHAPTER 5

THINKING ACROSS BODIES AND BORDERS IN NEILL BLOMKAMP'S

DISTRICT 9

Call me
your deepest urge
toward survival
call me
and my brothers and sisters
in the sharp smell of your refusal
call me
roach and presumptuous
nightmare on your white pillow
your itch to destroy
the indestructible
part of yourself

-- Audre Lorde "The Brown Menace or Poem to the
Survival of Roaches"

Living on the borders and in margins, keeping intact one's shifting and multiple identity and integrity, is like trying to swim in a new element, an "alien" element.

-- Gloria Anzaldúa, *Borderland/La Frontera*

The function of bodily boundaries and land borders in the construction of identity is a frequent topic of debate for cultural and environmental studies. As we proceed into an age of increasingly apparent environmental limits, anti-immigrant hysteria, and globalization, many canonical authors such as, Audre Lorde and Gloria Anzaldúa and contemporary environmental and cultural scholars such as Stacy Alaimo, Claudia Sadowski-Smith, and Rob Nixon challenge border ideologies and examine the human and nonhuman materiality that comprises these boundaries. In the "Anthropocene," a period in which global patterns of climate, economics, and migration have changed through human activity, the link between materiality—be it the stuff of atoms, human bodies, or ecosystems—has become an increasingly important focus for American Studies and environmental literary criticism. The forging of a transnational American Studies and

ecocritical methodologies offers capaciousness for reading both inside and outside nations and borders and as a result, can reveal unexpected, key points of interconnection and alliances between various movements and organizations. For example, Joni Adamson and Kimberly Ruffin's coedited collection *American Studies, Ecocriticism, and Citizenship: Thinking and Acting in the Local and Global Commons* illustrates how as a field, transnational American Studies contributes to emerging conceptions of "the human," traditionally characterized in terms of "race," "class," "gender," "sexuality," and "ethnicity" and "the relationship between people and place" (12). In this chapter, I will demonstrate how American Studies and ecocriticism provide the methodology to look at national borders, ethnic groups, and places such as South Africa from transnational perspectives that respond to Deborah Bird Rose's call for "writing in the Anthropocene" in order to provide new tools and models for reading canonical texts and contemporary films for those interested in working to address social and environmental injustices in the "local and global commons."

Specifically, I will examine how the transformation of Wikus van de Merew from human to alien in South African-born director Neill Blomkamp's *District 9* (2009) highlights and critiques thorny contemporary issues surrounding mass displacements, borderlands, and corporate capitalism connected to social and environmental issues. In the movie, the main character, Wikus van de Merew, transforms from human to "alien" in a landscape that suggests South Africa and recalls the years in that country when apartheid was practiced. Concerned with how privatization and profit often leads to human dispossession and nonhuman domination, Blomkamp utilizes the protagonist's transformation to forge even deeper connections that can be useful to contemporary

audiences living in a globalized world increasingly concerned with “alien” toxins and “alien” refugees on the move due to the pressures of capitalism, environmental degradation, and elitist resource hoarding. Such a “reading in the Anthropocene,” I assert, can provide new tools and models for those interested in moving beyond dominant conceptualization of “progress” that do not account for social and environmental factors such as social inclusion, and sustainable consumption and production so that we might arrive at a future that balances the economic, social, and environmental dimensions of human and nonhuman well-being.

Xenophobia, Borderlands, and Corporate Capitalism in Blomkamp’s *District 9*

Traditionally, Neill Blomkamp’s *District 9* has been viewed as a Blockbuster science-fiction action movie about a mild-mannered, bumbling bureaucrat, Wikus van de Merwe, who transforms into an alien, giving him the power to operate alien machinery and weapons. However, I assert, Blomkamp’s *District 9* plays an important role in making global environmental justice struggles visible as he updates and highlights earlier work such as Gloria Anzaldúa’s *Borderlands/La Frontera* message of the effects of global capital and its pressures on material, bodily, and national borders. Blomkamp’s use of a sci-fi alien population (metaphorically) to convey the ways in which some human groups are made to appear as “outsiders” provides insight into why films are playing an increasingly important role to audiences both inside and outside academia who are interested in global environmental justice struggles in the local and global commons.

No one knows exactly why the aliens arrive on planet Earth, there is only speculation. However, one can see that director Neill Blomkamp knows the history of his homeland well and that it is no accident the alien spaceship stalls out over South Africa.

The historical resonance to the events that took place in South Africa during the apartheid era is clear. From 1948 to 1994, the National Party enforced the apartheid system as a means to maintain white domination while extending institutionalized racial separation. The most publicized forced removals during this time occurred in Sophiatown, a suburb of Johannesburg and District Six in Cape Town. From 1955-1963, an estimated 60,000 inhabitants of Sophiatown were moved to the township of Soweto, South Western Township. In 1966, the apartheid government declared District Six a whites only area and forcibly removed approximately 70,000 people from the city center to the Cape Flats Township (Johnson 1-2). Overall, from 1960 to the early 1980's the apartheid government forcibly uprooted 3.5 million people "in one of the largest mass removals of people in modern history" ("Forced Removals" 1).

Anzaldúa's work on capitalism, border militarization, and alienation in her enormously influential book *Borderlands/La Frontera* (1987) can help readers understand Blomkamp's work since he lived in South Africa during the apartheid period. Anzaldúa points out that occupants of borderlands are those who defy normalcy: "The prohibited and forbidden are its inhabitants. [...] the squint-eyed, the perverse, the queer, the troublesome, the mongrel, the mulato, the half-breed, the half dead, in short, those who cross over, pass over or go through the confines of the 'normal'" (25). In the movie, Wikus van de Merwe, Head Field Office at the Multi-National United (MNU), transforms into an extraterrestrial being by inhaling alien toxins. Due to his new hideous form, Wikus is confined to District 9, a fortified borderland slum that reinforces the aliens' otherness. Anzaldúa defines borders as "a dividing line, a narrow strip along a steep edge," that "are set up to define the places that are safe and unsafe, to distinguish *us* from

them” (Anzaldúa 25). The *us* and *them*, normal and abnormal divide is not only defined by the walls of District 9 but is also reaffirmed by the way in which society references and rejects the aliens: “They must just go, I don’t know where they go, but they must just go. (*District 9*). Society no longer views Wikus as a human being. Therefore, society opposes bodily transformation—unable to accept an identity that is not human form. Confined to his borderland because of his metamorphosis, Wikus’ identity is reframed, reduced to an “it,” an unprofitable, useless “Prawn.” In the movie, the word “Prawn” is a derogatory term used by humans in reference to the aliens and serves as a metaphor for the despised and otherized persons of color. It implies that the aliens, “Prawns,” are bottom dwellers that that scavenge for leftovers (*District 9*).

Wikus’ transformation catalyzed by inhaling alien toxins resonates with Anzaldúa’s focus on illness and identity in her book *Borderlands/La Frontera*. Anzaldúa suffered her entire life from diabetes and other endocrine conditions, which have been linked to hormonal disruptions associated with DDT and arsenic (Adamson, “¡Todos Somos Indios” 14). Illness can not only change the external and internal workings of a body, but can also, to use Adamson’s ecocritical American Studies reading of Anzaldúa’s struggle with diabetes, “change one’s place in society, the nature of one’s relationships and the routes of one’s movements” (“¡Todos Somos Indios” 14). Anzaldúa’s experiences with illness, writes Bost, revealed to her “the myopic tendency to see identity only in terms of existing sociopolitical categories” rather than “imagining new ways of thinking about identity and new foundations for forming coalitions (like needs or shared environments)” that are not linked to race, sex, or income bracket (340-341). Wikus’ transformation catalyzed by toxins calls into question our humanity, or our lack of it,

towards the poor, chronically ill, disabled, and handicapped. Vilifying the poor and sick, Bost elaborates, “as the constitutive outside of a healthy society involves not paying attention to the content of sickness, drawing boundaries rather than healing, sorting us out to keep the queer and the ill away from the mythologized healthy family” (347). Rather than focusing on the cause of Wikus’ transformation dominate culture instead neglects and confines him to District 9, only seeking him out to capitalize on the alien weaponry that he can control.

Blomkamp’s *District 9* represents the apartheid he grew up amidst, but also has implications for the twenty-first century because it addresses major contemporary social and ecological issues concerning population growth, immigration, wealth disparity, and the decline of natural resources. In an interview with entertainment newspaper *A.V. Club* associate editor, Tasha Robinson, Blomkamp voices his concerns about the devastation he believes humanity is moving towards:

We are heading for the biggest train wreck our civilization has ever come across ever. Ever. And I think that within 40 or 50 years, we’ll be there. If your population curve is on an exponential growth, and the resources are on an exponential decline, what happens first is you get increases in wealth discrepancy, which means that you get rich pockets of gated communities with security guards outside them, and you get more and more poverty outside that area. And the resources go down, and people start having resource wars over water and food and agriculture and arable land [...]. And you can see signs of it everywhere. (2009)

Blomkamp’s despairing apprehension for land and bodily borders, segregation, wealth disparity, and resource hoarding is illustrated throughout his movie. The movie begins with the aliens already segregated from humans forcing them to live in District 9, a fenced, militarized, sordid shantytown: “There was a million of them. So, what was a temporary holding zone some became fenced and become militarized and before we

knew it, it was a slum” (*District 9*). American Studies scholar Andrew Ross points out that in recent years, and in response to cross-border migration, “‘forting up’ has become a staple prop of anti-immigrationist sentiment, and it has sharpened the appetite for walling off borders and securing resources for a long hoard” (242). Wikus van de Merwe, who works for the MNU corporation in the department of Alien Affairs that oversees the aliens, is in charge of micromanaging the forced removal of 1.8 million aliens from District 9 to District 10, located 200 kilometers outside Johannesburg city. Wikus assures the public that, “The people of Johannesburg and of South Africa are going to live happily and safely knowing that that Prawn is very far away” (*District 9*). The population growth of the alien, “Prawns” has increased into the millions along with the tension between the humans and aliens.

Immigration and Bigger “Better” Border Walls

Blomkamp’s aliens highlight contemporary national security concerns to anxieties over “illegal aliens” who supposedly drain public resources and under undermine the “purity” of the nation. For example, the United State’s socially aggressive and environmentally destructive U.S.-Mexico border wall demonstrates such a “forting-up” mentality against border-crossers from the South to the North. In 2011, according to *New York Times* reporter Julia Preston, U.S. border authorities have so far “built 650 miles of hard fence along the southwest border, including 299 miles of vehicle barriers” (1). The United State’s large-scale border-control “battle plan” also includes aggressive militarization of the southwestern border with support from the military, the National Guard, and local police departments (Saldívar, x). In addition, Andrew Ross points out, that “forting up” can also be seen between but also *within* national borders: “The rise of

the gated community is most often cited as an example of fortifying up, or visible proof that the well-off are turning their backs on the rest of society by securing a protective enclave for themselves and their goods” (242). In the movie the government confines the aliens within national borders to a slum neighborhood called District 9. The borders of District 9 draw lines of protection separating *us* from *them*, taking away the alien’s ability to act—unable to move forward (being integrated into human society) or backwards (the opportunity to go home). Due to growing concerns of immigrant overpopulation, the aliens are forced to move to District 10, another slum even farther outside the city with no doubt bigger and better walls.

The footage of the District 9 alien shacks comes from real-life impoverished homes in Chiawelo, a suburb of Soweto, where the poor have been shut out of the wealthy eco-communities of South Africa. During the time Blomkamp was filming, the residents of Chiawelo were being removed to government-subsidized housing, implemented by the African National Congress’s (ANC) Reconstruction and Development Programme (RDP). Blomkamp explains that while filming, residents were being moved “whether they liked it or not. So we ended up with this open piece of land with all these shacks on it...each day we came to set, there were fewer and fewer people” (“5 Things You Didn’t Know” 1). However, in 2012, *New York Times* journalist Lydia Polgreen reported that the ambitious government housing project has failed to deliver adequate housing especially in impoverished northern provinces: “Signs of waste and fraud are everywhere. Pipes that were supposed to bring clean drinking water to parched, impoverished communities were laid improperly and burst [...]. Tiny government houses [...] are crumbling only months after being built. [...] Roads paved a year ago are already

covered with potholes (1). Blomkamp's illustration of alien relocation emphasizes that the destabilization of slum neighborhoods alone is not enough. Urban growth management projects must not only account for affordable housing, but also income diversity, mixed-use zoning, and fine-grain planning. To use Ross's words, if these practices are not directed by and towards principles of equity, then they will almost certainly end up reinforcing patterns of social and environmental apartheid (250).

Along with the real life shantytown footage, Blomkamp also interviewed native South Africans about the influx of immigrants in Johannesburg. Their frank answers to questions about Nigerians, Zimbabweans, and other immigrants and refugees were transformed into documentary-style commentary on extraterrestrials unwanted by a local xenophobic population. In a press release about *District 9* Blomkamp asserted, "I was not intentionally trying to deceive the people we interviewed [...] I was just trying to get the most completely real and genuine answers. In essence, there is no difference except that in my film we have a group of intergalactic aliens as opposed to illegal aliens" (Savage 1). The interviewees' intolerant commentary such as, "they don't belong here" and "they are spending so much money to keep them here when they could be spending it on other things, but at least they are keeping them separate from us" (*District 9*) echoes the strong anti-immigration sentiment that has come to pervade Central Arizona over the course of 2000s. Arizona's anti-foreigner hysteria, illustrated by laws such as SB 1070 that was passed in 2010, stands as harbinger of the anti-immigrant sentiment and hoarding mentality that may well govern such a desperate future (Ross 17). Often compared to apartheid-era laws, the SB 1070 bill "criminalized all undocumented persons in the state, and mandated police to determine their immigration status if a 'reasonable

suspicion' existed for doing so" (Ross 190). Thus, heated debates about immigration from the Southwest to South Africa, garnered by Blomkamp's *District 9* and Arizona's SB1070, not only places a spotlight on the maltreatment of migrants in other countries, but also reframe our understandings of "aliens" on the move because of climate change and resource hoarding by elites and illustrates what it might mean to belong to communities that extend across national, cultural, and ecological boundaries and borders in both local and global contexts.

Capitalizing on Regions and Peoples

As the movie progresses, it becomes apparent that the aliens will not be allowed to go home because the government wants to capitalize on their technology, particularly weaponry. During a SABC (South African Broadcasting Corporation) news clip the MNU CEO explains, "I want to be realistic with everyone. The aliens will not be able to go home. The aliens are here to stay" (*District 9*). However, the aliens are the only ones able to operate the weaponry. Therefore, the MNU sets up medical laboratories dedicated to discovering the alien's secrets for economic advancement. The aliens' secrets that the MNU corporation searches for resemble the secrets of feminine nature, which masculine science must discover, dissect, dominate, and control.

Such invasive scientific methods reflect the mechanistic conception of nature that developed during the scientific revolution. For example, one can see a direct correlation to the influential ideas of Francis Bacon and Rene Descartes to the MNU's alien experimentation. Bacon not only called for the manipulation of the environment for the improvement of mankind, but also the "manipulation of organic life to create artificial species of plants and animals" (Merchant 182). These decisions would be made "for the

good of the whole by scientists, whose judgment was to be trusted implicitly, for they alone possessed the secrets of nature” (Merchant 180). To achieve this objective, Descartes put forward the notion and practice of vivisection—the dissection of living animals for the purpose of scientific research. The Multi National United corporation in *District 9* practices twisted biological experiments on live aliens in order to capitalize on the alien’s weaponry. Concerned with harvesting all biotech possibilities, the MNU tries to dissect Wikus’s hybrid body as well by attempting to cut it off. The MNU’s vivisection practices in *District 9* illustrate Blomkamp’s critique on how governments all over the world use science to define supposedly rational reasons to target and capitalize on certain populations.

Over the past thirty years, several studies have examined the sacrificing of regions and peoples using scientific discourses. For example, in one of the first book-length studies to examine the intersection between environmental criticism and ethnic literatures linked to social and environmental justice issues, *American Indian Literature, Environmental Justice and Ecocriticism: The Middle Place*, ecocritic and American Studies scholar, Joni Adamson, identifies such vivisection and sacrifice zones. Adamson examines and critiques such oppression, exploitation, and environmental racism in Silko’s novel *Almanac of the Dead*. Adamson defines environmental racism as “a term that has come to mean the deliberate targeting of minority communities for toxic waste facilities, the official sanctioning of life-threatening poisons and pollutants in those communities, and the exclusion of people of color from leadership in the environmental movement” (76-77). The contaminated slum of District 9 and the minority targeting and

segregation of the aliens illustrates historical environmental racism that minorities have been subjected to for centuries.

District 9 takes as its inspiration, many examples of people and land sacrifices that have taken place around the world. Native Americans in the Southwest region of North America for example, experienced an intense violent disruption to their land and culture by the United States government and corporate capitalist mining projects:

Under the Nixon administration and ‘in conjunction with studies of US energy development need and planning undertaken by the Trilateral Commission, the feds sought to designate the Four Corners region and the impacted region of the Dakotas, Wyoming and Montana as National Sacrifice Areas, which means areas rendered literally uninhabitable through the deliberate elimination of the water supplies for industrial purposes (the aquifers are estimated to take from 5,000 to 50,000 years to effectively replenish themselves) and the proliferating nuclear contamination (much of which carries a lethal half-life from 1/4 to 1/2 million years).’ (Zamir 399)

In the Four Corners region of the United States, “sixty-four ‘significant’ uranium mines, thirty-five tailing piles, and eleven power plants” were built by 1984 (Zamir 399). As a result of the government’s marginalization of Native Americans and its lack of appreciation for the landscapes of the Southwest, the government has intentionally targeted indigenous land and peoples for the nuclear industry, demonstrating the unequal allocation of environmental benefits and hazards based on the racial and economic characteristics of communities—thus, environmental racism (Adamson, Evans, and Stein, *The Environmental Justice Reader* 5).

Director Blomkamp reminds his viewers that all over the world, global, state, and corporate entities draw lines of protection around some areas while writing off others as “‘sacrifice zones’—defined as those places allowed to be logged, drilled, mined, or toxically contaminated for ‘the good of the national or global economy’” (Adamson,

“Encounter with a Mexican Jaguar” 225). As Joni Adamson has put it, the people who inhabit these areas, thus become “National Sacrifice Peoples”—“their voices, knowledges, and materials needs [...] discounted” (“Encounter with a Mexican Jaguar” 238). However in *District 9*, it isn’t the geographic land that is being drilled, mined and contaminated for the good of the national economy. Instead, it is the physical alien bodies that are sacrificed, dissected, and experimented on in order to understand, operate, control, and capitalize on technologically advanced alien weaponry—profit making. As a result, the aliens become both the sacrifice zone and the sacrifice peoples as their physical bodies are excavated and violated, and their voices and needs are ignored for corporate objectives and profit making.

Blomkamp’s focus on these communities is suggestive of not only South Africa, but also migrants around the world. For example, after the 1994 implementation of the North American Free Trade Agreement (NAFTA) went into effect, the United States saw a rapid rise in migration from rural areas all over Mexico and Central America. Due to neoliberal trade reforms, small farmers and peasant workers were forced into unequal competition with massively subsidized large-scale American corporations and agribusiness. Anzaldúa writes about the environmental and human costs of capitalists taking over farms for their own profit and as a result, enclosing lands that used to be common into lands only for the rich. Her brother asserts, “farming is in a bad way [...] Two to three thousand small and big farmers went bankrupt in this country last year. Six years ago the price of corn was \$8.00 per hundred pounds [...] This year it is 3.90 per hundred pounds” (112). Anzaldúa comes to the realization, that “after taking inflation into account, not planting anything puts you ahead” (112). In addition, land degradation

resulted from the NAFTA-driven abandonment of traditional sustainable agriculture practices in pursuit of higher industrial yields alone, as well as the increase of soil erosion due to an overall decline in precipitation from climate change (Ross 187). By illustrating the connection between capitalism, diaspora, land degradation, and human (or in the movie, alien) exploitation, Blomkamp's alien sci-fi movie *District 9*, then, can be said to be an activist event supportive of imagining how to live in and beyond the Anthropocene.

One can see that the Blomkamp's sci-fi thriller is not lacking in "spectacle" or special effects that fill movie seats. Rob Nixon, who is noted for bridging postcolonial and ecocritical studies, asks in his book *Slow Violence and the Environmentalism of the Poor* how in an age when the media venerate the spectacular, what forces "imaginative, scientific, and activist—can help extend the temporal horizons of our gaze not just retrospectively but prospectively as well?" (62). During its opening weekend, *District 9* grossed over two hundred million worldwide. Since its original release by TriStar Pictures in August 2009, *District 9* has been shown in movie theatres around the world in over 60 countries. To use Nixon's words, "it is here that writers, filmmakers, and digital activists may play a mediating role in helping counter the layered invisibility that results from insidious threats [...]" (16). Thus, I argue that Blomkamp's *District 9* plays an important role in the visibility of displaced, environmental "alien" refugees and the unequal distribution of pollution hazards loaded against their low-income communities.

Toxins Across Border and Bodies

District 9 sketches a complex, ecopolitical interrelationship of race, class, capitalism, toxins, and nature. The alien substance that Wikus inhales represents a correlation between toxic materials, hazardous technologies, and environmental justice

coalitional politics and resistance movements. Wikus' transformation catalyzed by inhaling alien toxins reveals the interconnectivity of matter, human corporeality and the more-than-human world. In her essay "Trans-Corporeal Feminism and the Ethical Space of Nature," Stacy Alaimo, updates environmental historian Carolyn Merchant's concept of "partnership ethics" in ways that make it more efficacious for participation and change. Alaimo asserts that people and nature are equal and elaborates on the concept of "trans-corporeal space" that "may help us to imagine an epistemological time-space in which, because they are always acting and being acted upon, human bodies and non-human natures transform, unfold, and thereby resist categorization, complete knowledge, and mastery" (Alaimo, "Trans-Corporeal Feminisms" 253).

Blomkamp's illustration of the traffic in toxins also reminds viewers of marine biologist Rachel Carson's not so silent, groundbreaking book *Silent Spring*. Rachel Carson portrays trans-corporeality and the traffic in toxins by examining the environmental and human dangers of the indiscriminate use of pesticides. Carson's work catalyzed a course of events that would result in a nationwide ban on the domestic production of DDT (dichloro-diphenyl-trichloro-ethane) and awaken the public to that fact "that our bodies are not boundaries [...] that we too are permeable" (xvi). Even though the domestic production of DDT was banned in the U.S. in 1972, the exportation still continues today, "ensuring that the pollution of the earth's atmosphere, oceans, streams, and wildlife would continue unabated. DDT is found in the lives of birds and fish on every oceanic island on the planet and in the breast milk of every mother" (Carson xviii). Unfortunately, global contamination and the near epidemic of cancer and the rise of chronic illnesses are components of modern life. Wikus' exposure to alien toxins is

evocative of how most humans come into contact with toxins. Most often people unknowingly are exposed and consume toxins such as DDT. These toxins do not have boundaries, rendering it impossible for humans to image themselves disconnected or protected from the more-than-human world. Therefore, the traffic in toxins also debunks notions “that it is possible to protect ‘nature’ by merely creating separate, distinct areas in which ‘it’ is ‘preserved’” (Alaimo, “Trans-Corporeal Feminisms” 260). Wikus’ toxic, unraveling body allows us to see beyond the boundaries of what we believe defines identity, bodies, and nature and encourages us to imagine ourselves in constant interchange with the environment.

Activists around the world have spoken about how toxins not only transcend and breakdown the assumed material fixity of bodies, but also borders, conventional coalitions and disciplines. For example, in North America, environmental borderlands activist and scholar Teresa Leal talks about the traffic in toxic substances and how pollutants do not stop at anyone’s border wall:

Shit and pollution, toxic substances, do not ask for permission to come into your house: they do not need a passport to cross the border. Without permission these substances come into our lives. We can’t say, oh that person has cancer because they’re poor. No, cancer hits everybody. People are dying all over the world, in part, because cancer can result from the release of POP’s, or Persistent Organic Pollutants, into the environment. These toxins can find their way into everyone’s house, where they’re rich or poor. (“Throwing Rocks at the Sun” 54)

Similarly, Wikus’ transformation illustrates that the traffic in toxins transcends social class, race, and gender and “insist that environmentalism, human health, and social justice cannot be severed” (Alaimo, “Trans-Corporeal Feminism” 262). As a human trapped inside an alien body, Wikus transcends traditional identity boundaries, conflating the *us* and *them*, normal and abnormal divide, and as a result, strengthening new human

and nonhuman coalitions. In her interview, Leal asserts that new coalitions are paramount when dealing with large corporations and the travel in toxins:

There is plenty of research to suggest that POP's are released into the environment by industrial processes, and by the spraying of pesticides, etc. These toxins are flowing through intercontinental airways. Do you know what that means? They're spreading all over the planet! Why don't we stop it? Because corporate profiteering is paramount; people don't seem to be able to live without exorbitant profits. So different groups need to come together to fight the corporations. No one group can do it alone. ("Throwing Rocks at the Sun" 54-55)

Wikus physical species transformation represents a new ecopolitical coalition comprised of human and nonhuman species fighting to shift the publics' attention from traditional and tidy ideals of borders and bodily boundaries to the agency of the material world.

Wikus van de Merwe, serves as a new way of thinking about national identity and identity coalitions. For example, in the introduction to *Material Feminism*, material feminist critics Stacy Alaimo and Susan Hekman, analyze the "traffic in toxins," showing how toxic substances released into a community can bring together different interest groups (environmental justice, disability rights, occupational safety, etc.) heretofore imagined separately (9). Toxins such as mercury or dioxin, "may affect the workers who produce it, the neighborhood in which it is produced, the domesticated and wild animals that ingest it, and the human who ingest the animals who have ingested it" (Alaimo and Hekman 9). Therefore, by connecting American Studies and material ecocriticism one can begin to think across bodies and national borders which as a result can reveal numerous interconnections between various revolutionary campaigns and provide new possibilities for coalition and communal politics.

Blomkamp also seems to be advocating for the formation of new coalitions when Wikus realizes that he cannot fight the MNU corporation alone. Wikus' alliance with the

aliens demonstrates a call for new coalitions to form around the notion that species and nonhuman bodies deserve the same rights and protections as humans. However, Blomkamp does not depict a final outcome or resolution for Wikus or his new found coalition. Instead, Blomkamp leaves the movie hanging on a dystopian note making it clear that we are indeed at the tipping point of our environmental crisis. In an interview with Tasha Robinson, Blomkamp elaborates on his dim outlook for humanity:

I think what what's going to happen [...] within 50 or 60 years [...] [is that] there will be a massive redefining of what it means to be human [...] but that's going to be like this phoenix that rises out of the ashes of billions of starving people. So I think it's both. On one hand, I think people are destined for something incredible if we don't wipe ourselves out, but I think we're going to wipe 90 percent of ourselves out. (2009)

Whether or not humanity is going to “wipe 90 percent of ourselves out” is still to be determined. However, what Neill Blomkamp's *District 9* does offer viewers is a larger scale perspective. This is a more complete, realistic depiction of what we are facing today as we proceed into the twenty-first century at the age of environmental limits, globalization, transnationalism, and the immigration and displacement of millions of people all over the world. Blomkamp's unpropitious open ending makes it clear that the cultural, racial, and economical differences between the humans and aliens are so great that work for a better world might not occur. The remaining aliens will most likely be uprooted to District 10, no doubt located even farther way from civilization. Therefore, with no definite answer, viewers are forced to re-examine choices and actions in order to better understand one another's social and environmental connections. To use the words of ecocritic Joni Adamson, like Wikus, each of us, is figuratively, standing “at the edge of the abyss of genocide, massive displacements, and species extinction, and try[ing] to

understand how social and environmental injustices are connected. Then we must go home to the places where we live, work and play, roll up our sleeves and get to work” (Adamson, *The Middle Place* 177).

Concerned with society’s tendency to marginalize and separate “otherness” Blomkamp utilizes the protagonist’s transformation to compel the audience, to use Sadowski-Smith’s words, to “move beyond dominant conceptualizations of who inhabits and can speak for the border” (*Border Fictions* 11). By examining Wikus through a trans-corporeal lens—one human being trying to understand his identity and connection to world—one may better identify with both characters and their struggle. Stacy Alaimo explains that, “the traffic in toxins reveals the interconnections between various movements, such as those of environmental health, occupational health, labor movements, environmental justice, environmentalism, ecological medicine, disability rights, green living, anti-globalization, consumer rights, and child welfare” (“Trans-Corporeal Feminisms 260). Therefore, the traffic in toxins brings these cohorts working together, moving towards an understanding that does not rest on oppositions, thus leading to the possibility of formation of new environmental justice coalitions for the 21st century. For example, the diverse range of scholars (material feminists, Chicana feminists, ecocritics, biologists), disciplines (environmentalists, literary scholars, activists, movie producers), numerous media (movies, interviews, fiction and non-fiction texts) and nationalities (South African, Native American, Chicana) represented in this essay demonstrates how an ecopolitical coalition is already underway; therefore, illustrating that people around the world are concerned, protesting, conversing, and writing about social and environmental issues, human and nonhuman rights.

Blomkamp's popular blockbuster film portrays the effects of globalization and its pressures on material, bodily, and national borders within a more flexible, global context. As a result, one can see how both classic authors and contemporary filmmakers have been thinking about issues such as "alienation" catalyzed by a world increasingly dominated by global capital. In addition, reading texts and films together offer new ways of looking at issues through visual images and metaphors, rather than solely through the prism of scholastics. For example, *District 9* can help viewers imagine what it might be like to be affected by toxins. By analyzing Wikus van de Merew's metamorphosis, disownment, and confinement one can see why blockbuster films are playing an increasingly important role in global environmental justice struggles as they provide accessibility to audiences both inside and outside academia.

Blomkamp's contemporary film, I assert, provide models for what "readings in the Anthropocene" might offer to publics both inside and outside the academy interested in reexamining, reinterpreting, and reconstructing our notions of progress, land borders, and bodily boundaries. The transformation of Wikus van de Merew from human to alien illustrates a call for alternative measures of progress that accounts for social and environmental factors, which anticipates discussions about how we will need to come together to articulate our various positions and compromise with one another in order to re-image our economy and to arrive at a "future we want." Critic Joni Adamson asserts, we—citizens, activists, scholars, filmmakers, environmental humanists, turn of the century writers—can "find common ground, a middle place" by framing "different experiences in ways that mobilize them to work together" (*The Middle Place* 176). Blomkamp's *District 9* critiques issues such as global capital by illustrating how resource

hoarding and anti-immigration laws enclose resources for the rich. Thus, one can begin to rethink categories of the “human” and forces of “alienation” that are still at work today and being exacerbated by transnational corporations that catalyze displacement and migration on a global scale. Therefore, *District 9* should not be seen as a solely sci-fi, but rather, to use Adamson’s words, as a “cultural critique that calls for change and participation in altering the power relations at the root of social and ecological problems” (*Middle Place* 112). A comparative analysis of classic literature and popular film provides a hemispheric perspective that points to the diverse materiality of borders and bodily boundaries in the world, and serves as a “middle place” for coalitional politics that facilitates communication among various border communities and identities.

CHAPTER 6

BIOCHEMICAL ENGINEERING AND ENVIRONMENTAL ETHICS IN ALDOUS HUXLEY'S BRAVE NEW WORLD AND RICHARD POWER'S GENEROSITY: AN ENHANCEMENT

You have raised us from simple self-replicating chemicals to trillion-celled mammals. What you have made us is glorious, yet deeply flawed. We will no longer tolerate the tyranny of aging and death. Through genetic alternations, cellular manipulations, synthetic organs, and necessary means, we will endow ourselves with enduring vitality and remove our expiration date.

-- Max More, President and CEO of the Alcor Life Extension Foundation

We may be working ourselves out of the Anthropocene, and into a world where cognition arises from techno-human networks.

--Brad Allenby, President Professor of Sustainable Engineering, and Lincoln Professor of Engineering and Ethics, at Arizona State University, "What's Next? The Cognocene"

As we proceed into the Anthropocene the prevalence of genetic engineering and pharmaceuticals has become more controversial than ever. Many believe the development of genetic engineering in the twenty-first century signals the progress of human civilization—intellectually and materially—both which supposedly speak to the fact that we are all living better. For many, genetic engineering suggests hope that one day medicine will be able to simply “turn off” diseases such as cancer, AIDS, bipolar disorder, schizophrenia, Alzheimer’s, etc. (Alaimo, *Bodily Natures* 150). Some scientists and futurists such as Max More, president and CEO of the Alcor Life Extension Foundation (the largest provide of cryonics services in the world) and Ray Kurzweil, director of engineering at Google, favor enhancing the human condition beyond what we are naturally capable of physically and intellectually through genetic engineering and other emerging technologies—nanotechnology, biotechnology, robotics, information and

communication technology, applied cognitive science, and others. Designation of the Anthropocene provides a formal framework for the increasingly obvious fact that human activities (including scientific and technological enhancements) interact strongly with environmental, ecological, and social changes at local to global scales. Some human actions have even transformed the physical, chemical, and biological make up of human and nonhuman bodies. Hence, as founding chairman of the Consortium for Emerging Technologies and Professor of engineering and ethics at Arizona State University, Brad Allenby, asserts, as we proceed further into the twenty-first century “its not just Earth systems, but the human itself, that are in the midst of radical and unpredictable change [...]. We may well be working ourselves out of the Anthropocene, and into a world where cognition arises from techno-human networks rather than just the Cartesian individual...the Cognocene.” (“What’s Next? The Cognocene” pag.). Therefore, understanding the agency and significance of material forces such as chemicals, pharmaceuticals, and genetically altered human and nonhuman biological matter, and their interface with human corporeality and the natural world has become an ever more present concern.

Many will find it surprising to see Aldous Huxley and Richard Powers analyzed together considering Huxley’s *Brave New World* was published almost eighty years prior to Power’s *Generosity*, and Huxley does not directly deal with the genetic engineering controversy that Richard Powers exposes in his novel. First published in 1932, Aldous Huxley’s *Brave New World* illustrates a futuristic, utopian civilization, argued by the rulers to be the epitome of progress because humans are predetermined into a five caste system (Alphas, Betas, Gammas, Deltas, and Epsilons) and drugged with soma—

“delicious *soma*, half a gramme for a half-holiday, a gramme for a weekend, two grammes for a trip to the gorgeous East, three for a dark eternity on the moon” (Huxley 56). When Huxley’s *Brave New World* was published, science and technology were widely seen as holding utopian promise—a research team at Bayer Laboratories developed the first antibacterials, British physicist John Cockcroft and Irish physicist Ernest Walton split the atom, and Charles Lindbergh and Amelia Earhart flew between continents and across vast distances. Improvements in sewage systems, communication technologies, and transportation were having positive results for human health. Nevertheless, Huxley’s *Brave New World* illustrates a dim view of the prospects of the human race. Even though *Brave New World* is now considered a modern classic, the book was originally criticized for its bleak portrayal of science and the future. H.G Wells critically asserted that, “A writer of the standing of Aldous Huxley has no right to betray the future as he did in that book” (Watt 16). Wells was joined by Wyndham Lewis, who referred to the novel as ““an unforgiveable offence to Progress and to political uplift of every description”” (16). As well, in 1959, C.P. Snow’s *New Republic* article, “Aldous Huxley? Romantic Pessimist” dismissed Huxley for his pessimism about scientific progress and social purpose. However, as Margaret Atwood argues in her review of *Brave New World*, “Everybody is Happy Now,” the first world war marked the end of the romantic-idealistic utopian dream as several real-life political systems such as the Communist regime in Russia and the Nazi takeover of Germany, which both began as utopian visions, were about to be launched with disastrous effects (n.pag.). All of these events have forced critics to reevaluate Huxley’s *Brave New World*. It is now judged to be a classic piece of literature.

Although it is tempting to call *Generosity: an Enhancement* a dystopia novel about the scientific and pharmaceutical future, similar to Huxely, Powers sticks so closely to the state of current medical science and popular culture that this is not so much a warning as a diagnosis. Written sixteen years after Peter Kramer's *Listening to Prozac*, and five years after Carl Elliott's *Prozac as a Way of Life*, Richard Power's *Generosity: an Enhancement* illustrates the alarming implications of treatment that supposedly buy better moods and personalities. Russell Stone, the novel's main character, is a skeptic creative writing adjunct teacher at Mesquakie College of Art. While teaching his Creative Nonfiction: Journal and Journey course, Russell Stone encounters twenty-three year old Thassadit Amzwar, a Berber Algerian refugee who migrated to Chicago after living through the horrors of civil war in her homeland. Knowing of Thassadit's seemingly unendurable experiences, Russell Stone becomes infatuated with her "[radiating] awe" and capacity for happiness (Powers 34). Thassadit's generosity of spirit not only enralls her teacher and her fellow classmates, but also attracts the attention of geneticist, Thomas Kurton. Kurton becomes obsessed with isolating, patenting, and selling Thassadit's "happiness gene." According to the National Center for Health Statistics, in 2008, the United States spent \$234.1 billion on prescription drugs—more than double than what was spent in 1999 (NCHS, 6). Richard Power's novel *Generosity* explores the bases for happiness in the Prozac era, and the social and ethical ramifications that arise when humans begin to self medicate and enhance the emotional health limits of the human body.

Thus, these novels can be seen as comments on contemporary issues occurring since they were written and are crucial to shaping and reshaping environmental policy

and publics as we proceed into the Anthropocene. In the essay that follows, I will read Aldous Huxley's *Brave New World* (1932) for what it can tell us about the meaning of eugenics—the science of improving a human population by controlled breeding to increase the occurrence of desirable heritable characteristics—and pharmaceuticals. Then in a reading of *Generosity: An Enhancement*, (2009) I will show how Richard Powers highlights and updates Huxley's message by linking my analysis of genomics—the study of molecular biology concerned with the structure, function, evolution, and mapping of genomes—and pharmaceuticals in both texts to uncover a call for an environmental ethics concept that is both social and material. Following the recent work of material feminist, Stacy Alaimo, theoretical physicist, Karen Barad, and historian of science, Donna Haraway, I illustrate how predominant conceptions of genetic engineering and pharmaceuticals as a “quick fix” are problematic for environmental ethics because it places the environment, “in the distant background where it plays little, if any, role” (*Bodily Natures* 150). Furthermore, I assert that both authors urge readers to rethink genomics and pharmaceuticals not as commodities for human manipulation and consumption but as matter that is part of the material configuration of the world. As atmospheric chemist, Paul Cruzen claims, “we are taking control of Nature's real, from climate to DNA. We humans are becoming the dominant force for change on Earth” (n.pag.). Such an examination illustrates how human behavior and actions are not only altering ecosystems, but are also altering humans.

Eugenics and Pharmaceuticals in Huxley's *Brave New World*

Today, Huxley's *Brave New World* has commonly been read as a satirical vision of a technocratic, capitalist civilization in which the masses are engineered into a

sedated contentment by eugenics and drugs. In the novel, the vast population of the world is unified under the World State, a stable global society in which society is conditioned and restricted to no more than two billion people. People are genetically designed and deliberately limited of cognitive and physical abilities so that they to fit into one of five castes and fulfill predetermined positions within the social and economic strata of the World State. A frustrated London loner named Bernard Marx feels unease with the functionality of the well-ordered society around him. After a chance encounter on vacation, he brings to London a Shakespeare-loving “savage” named John from an Indian reservation in New Mexico who becomes even more distraught by humanity’s genetic discrimination and loss of individual identity. However, I assert that Huxley’s *Brave New World* is more than a 1930’s futuristic cautionary tale of totalitarian regimes, conformity, and eugenics. *Brave New World* illustrates that the present and the future are interconnected as Aldous Huxley alarmingly explores current and futuristic ramifications that arise when humans begin to genetically modify and medicate themselves. This suggests that Aldous Huxley is calling for an environmental ethics in the Anthropocene that addresses social, material, and biological factors.

Huxley’s novel has many implications for what is taking place today in the field of genomics. In the foreword, Huxley himself describes the theme of the novel as “the advancement of science as it affects human individuals” (ix). In the year of stability, A.F. 632, the people of the civilized world are preserved from disease, depression, and physical aging past thirty. Natural reproduction is no longer permitted, and hate, pain, neglect, love, and parents have been eliminated:

The world's stable now. People are happy; they get what they want, and they never want what they can't get. They're well off; they're safe; they're never ill; they're not afraid of death; they are blissfully ignorant of passion and old age; they're plagued with no mothers or fathers; they've got no wives, or children, or lovers to feel strongly about; they're so conditioned that they practically can't help behaving as they out to behave. (Huxley 149)

Huxley imagines a procedure that is called “Bokanovsky’s Process” in the novel, which is described as the process of human cloning where humans are produced in hatcheries through a modern fertilizing process—the principle of mass production has been applied to biology all in the name of “social stability.” The director of the Central London Hatching and Conditioning Center explains, “One egg, one embryo, one adult—normality. But a bokanovskified egg will bud, will proliferate, will divide. From eight to ninety-six buds, and every bud will grow into a perfectly formed embryo, and every embryo into a full-sized adult. Making ninety-six human beings grow where only one grew before. Progress” (Huxley 6). The combination of science, technology, and a totalitarian government has depleted human individuality.

Even though the scientific techniques used to control the populace in *Brave New World* does not include genetic engineering (the novel was written before the structure of DNA was known), Huxley’s futuristic science fiction world provides a commentary on the social and environmental uses of scientific knowledge. During the 1930’s, science and technology were widely seen as holding much promise—pathologist, Cecil George Paine, achieves the first recorded cure using penicillin and the DPT vaccine is first used to treat pertussis, more commonly known as whooping cough. Eugenics—a term English scientist Francis Galton coined—aims at making the “perfect environment” by improving the genetic quality of the human population through the promotion of higher reproduction

of people with desired traits and reduced reproduction of people with undesired traits. Thus, in the twenty-century eugenics was considered a method of preserving and improving the dominant groups in the population. For example, Hitler and his army killed millions in their quest to wipe away all humans deemed “unfit,” preserving only those who conformed to a Nordic stereotype. In the United States, sterilization laws (adopted by over 30 states) led to the involuntary sterilization of more than 60,000 individuals—mainly those who were mentally disabled or deemed socially disadvantaged.

Similarly, in order to “enhance” social stability, the population in Huxley’s *Brave New World* is also sterilized. Reproduction through sexual intercourse is no longer permitted in the new World State. Instead, “the modern fertilizing process” of the new World State keeps a “supply of ova [...] at blood heat; whereas the male gametes [...] [are] kept at thirty-five instead of thirty seven. Full blood heat sterilizes” (Huxley 5). In various Hatchery and Conditioning Centres, female and male gametes are produced in test-tubes and incubators then chilled and checked, predestined and conditioned. Different Centres compete with one another to see what nations can yield the most identical twins from one ovary: “Singapore has often produced over sixteen thousand five hundred; and Mombasa has actually touched the seventeen thousand mark. But then they have unfair advantages. You should see the way a negro ovary responds to pituitary! It’s quite astonishing, when you’re used to working with European material” (Huxley 9). In the new World State, genes and reproductive cells are commodities, to use Haraway’s words, “[things] that can be exhaustively measured, mapped, owned, appropriated, disposed (Haraway 8). However, as Stacy Alaimo asserts in her book, *Bodily Natures:*

Science, Environment, and the Material Self, understanding genes as mechanisms that can be seized, patented, copied, and branded encourages humans to assume techno-scientific mastery of human and nonhuman life forms and leads us to ignore the multiple material agencies and the unpredictable transformations that these living force will effect (150). Interestingly, one can see a connection between Huxley's perception and examination of the social and ethical ramifications of the widespread gene fixation to some current models of techno-scientific laboratory institutions and their patents.

For example, on April 12, 1988, the United States Patent and Trademark Office issued Harvard University the world's first patent for a higher form of life; a mouse specially developed by researchers at the Harvard Medical School through techniques of genetic manipulation" (Schneider 1). According to the *New York Times*, the two scientist, Dr. Philip Lender and Dr. Timothy Stewart, "isolated a gene that causes cancer in many mammals, including humans, injected it into fertilized mouse eggs and developed a new breed of genetically altered mice" (Schneider 1). As a result, OncoMouse is the first patented animal in the world. Similarly, the Director in *Brave New World* wants uniform batches of men and women: "the whole of a small factory staffed with the products of a single bokanovskified egg" (Huxley 7). The Director exclaims to a group of students that the "'Bokanovsk's Process is one of the major instruments of social stability! [...] Ninety-six identical twins working ninety-six identical machines! [...] You really know where you are. For the first time in history. [...]" (Huxley 7). Both the fictional "Bokanovsky's Process" and real world OncoMouse force readers to ask who gets to own and control genetic information in the Anthropocene and how will it be used?

So then what exactly is OncoMouse? In her influential book *Modest_Witness @ Second_Millennium FemaleMan_ Meets_ OncoMouse*, historian of science, Donna Haraway, unravels the ethical and environmental controversies relating to patenting and marketing of “the Harvard mouse,” OncoMouse: “Gestated in the imploded matrices of the New World Order, OncoMouse is many things simultaneously. One of a varied line of transgenic research mice, s/he is an animal model system for a disease, breast cancer, that women in the United States have a one in eight chance of getting if they live into old age” (Haraway 79). However, as Haraway also asserts, OncoMouse is more than a means to find “a cure for cancer:”

OncoMouse is my sibling, and more properly, male or female, s/he is my sister. Her essence is to be a mammal, a bearer by definition of mammary glands, and a site for the operation of a transplanted, human, tumor-producing gene—an oncogene—that reliably produces breast cancer [...] S/he is our scapegoat, s/he bars our suffering; s/he signifies and enacts our mortality [...] s/he suffers, physically, repeatedly, and profoundly, that I and my sisters may live. In the experimental way of life s/he is the experiment. S/he also suffers that we, that is, those interpellated into this ubiquitous story, might inhabit the multibillion-dollar quest narrative of the search for the ‘cure for cancer.’ (Haraway 79)

Therefore, Oncomouse is not just any ordinary mouse or patent. S/he is genetically modified to develop cancer for the purpose of medical research. S/he can be sold just like “many other laboratory devices” (Haraway 79). As a result, Oncomouse has raised complex ethical issues for patent authorities, environmentalists, and animal rights activists. Both Oncomouse and the Bokanovsk’s Process illustrate the material gene commodity circuits of the late-twentieth and early twenty-first century and pose vital, complex questions for bioethics and environmental ethics.

In addition, genetic breeding and conditioning is not the only obsession illustrated in the novel. Humans are also pharmaceutically anesthetized with *Soma*. Huxley

describes *Soma* as providing a mindless, underwhelming happiness that raises “a quite impenetrable wall between the actual universe and [the mind]” (Huxley 77). The price of “universal happiness” and “social stability” is the sacrifice of individuality, motherhood, family, and love. Therefore, *soma* makes civilization comfortable with their lack of identity and freedom. Consuming *soma* and taking “*soma* holidays” are highly encouraged whenever one feels even the slightest distress: “there’s always *soma* to give you a holiday from the facts. And there’s always *soma* [...] to calm your anger, to reconcile you to your enemies, to make you patient and long-suffering” (Huxley 238). Self-medicating inhibits alternative approaches to coping, healing, progressing and evolving. Instead of confronting stress, pain, grief, or even love, “now you swallow two or three half-gramme tablets, and there you are. Anybody can be virtuous now” (Huxley 238).

Aldous Huxley’s *Brave New World* rejects any solutions to world happiness and social stability through eugenics and pharmaceuticals. The perilous effect that such a drug fixation can have on humanity is illustrated through the suicide of John, “the savage,” who kills himself at the end of the novel after taking *Soma*. Raised outside the World State on a reservation, John is a thinking, feeling, man who has read Shakespeare and witnessed religious rituals. John and his mother are brought back to England where he is harassed as a freak of the accepted social order: “In a few minutes there were dozens of them, standing in a wide circle round the lighthouse, staring, laughing, clicking their cameras, throwing (as to an ape) peanuts packets of sex hormones chewing-gum [...]. As in a nightmare, the dozens became scores, the scores hundreds (Huxley 255). John repetitively asks the tormenting crowd to leave him alone. Yet, “others took up the

cry, and the phrase [we want the whip] was repeated, parrot fashion, again and again, with an ever-growing volume of sound [...] they might it seemed, have gone on for hours—almost indefinitely” (Huxley 256). Ultimately, to his onlookers delight, John begins to beat himself with a whip: “With a whoop of delighted excitement the line broke; there was a convergent stampede towards that magnetic centre of attraction. Pain was a fascinating horror” (Huxley 258). Thus, as Stacy Alaimo asserts in her analysis of material agencies such as genes and the emergent world, an overemphasis on gene mastery and pharmaceuticals harmfully separates the human from nonhuman nature because it places environmental influences and factors in the outlying background (*Bodily Natures* 150). In her essay, “Trans-Corporeal Feminism and the Ethical Space of Nature, material feminist, Stacy Alaimo, coins the term “trans-corporeality,” the movement across bodies and nature, which “includes human actions and intra-actions, along with the intra-actions of man-made substances,” such as pharmaceuticals and genetically altered matter (Alaimo, *Material Feminism* 259). John’s death illustrates that even with biological engineering and drugs such as *Soma*, our bodies are in constant interchange with the environment. Therefore, understanding material agency is especially important for environmental ethics in the Anthropocene because it insists that humans, in Alaimo’s words, “are always part of, and accountable to, the wider world” (*Bodily Natures* 158).

Quick Fix Fixations and Environmental Ethics in Power’s *Generosity: an Enhancement*

Even though soma in Huxley’s *Brave New World* is chemically and pharmaceutically undefined, Richard Powers demonstrates the ramifications that

hormonally active drugs can have through Thassadit Amzwar and consequently, illustrates that it is crucial to consider the widespread genetic engineering fixation for environmental ethics. Russell Stone's obsession with finding the biological source for Thassadit's happiness leads him to conclude that her happiness must be the result of "newly discovered antidepressants" or a biological disorder: "He reads about a culture struggling to emerge from feudal female sequestering and subservience. He can't connect these accounts to his student's existence. Even her years in Canada don't explain such a leap" (Powers 46). Unable to comprehend Thassadit's "unreasonable delight," Stone begins to investigate the basis of happiness. Stone concludes that Thassadit's unfaltering happiness must be due to a biological condition called "hyperthymia"— a proposed personality type characterized by an excessively positive disposition (Powers 73). In a flurry to pass on Thassadit's "happiness gene" or her "hyperthymic temperament," fertility clinics, corporations, and the general public seek out Thassadit and her eggs. Due to high market demands, Thassadit, agrees to sell her eggs to the highest bidder. Thassadit explains, "The top offering is now \$32,000, American. I know: this is insanity. But I could give half to my brother. Five times what he earns in one year! He could quit his killing job and find a good one. And half for my uncle and aunt, to pay on my student loans" (Powers 261). However, the hormonal treatments that Thassadit undergoes in order sell her eggs unhinge her. Schoolmate Sue Weston explains, that "the hormone treatment for the...the donation thing might be making Thassadit emotionally unstable" (Powers 285). Thus, Powers illustrates that happiness does not solely subsist in the brain or in our genes. Rather, it requires ongoing commerce between the brain, body, cultural milieu, and environment. As a result, Power's emphasis on the unpredictable effects of

hormone medication entangles the biological, social, and environmental and as a result, illustrates the material world as agential.

Similar to Huxley, Powers utilize characters' pharmaceutical consumption to compel readers to start thinking about the correlation between human exposures to synthetic compounds. With increasingly apparent environmental and economic limits, healthcare reforms, scientific progress, and stressful time-constraints, the popularity of pharmaceuticals has become more widespread than ever before. The 2010, NCHS Data Brief disclosed that, "over the last decade, the percentage of Americans who took at least one prescription drug in the past month increased by 10%. [...] By 2007-2008, one half of Americans used at least one or more prescription drugs; 1 out of 10 used five or more" (NCHS, 6). Antidepressants were the most frequently used type of prescription drugs for middle-aged adults ranging 20-59 years old. Concerned with society's "quick fix" drug fixation, Richard Powers' novel *Generosity* explores the bases for happiness in the Prozac era, and the social and ethical ramifications that arise when humans begin to self-medicate. For example, Robert Stone, the main protagonist's brother, represents the recent public move towards mood enhancers. Robert takes a selective serotonin reuptake inhibitor, which helps him perform his job installing satellite receivers. Robert explains to his brother Russell, "I told you. All it does is let me talk to strangers without wiggling. Makes me feel a little bigger than I am. Like I've got something to give other people" (42). Selective serotonin reuptake inhibitors (SSRIs) are a new generation of antidepressants that include Prozac, Zoloft, Paxil, Celexa, and Luvox. Therefore, Powers makes it clear that understanding the agency and significance of material forces, like

pharmaceuticals, and their interface with human bodies, has become ever more vital and controversial.

For example, even though the novel does not explicitly illustrate the effects of pharmaceutical consumption on the environment, Power's emphasis on self-medicating illustrated through Thassadit Amzwar and Robert Stone, pushes the reader's imagination to not only the effects of pharmaceuticals on the human body but also the effects of pharmaceutical consumption on non-human bodies. Numerous different types of pharmaceuticals have been detected in the environment. *Chemical & Engineering News* European correspondent, Sarah Everts, asserts that from ibuprofen to Zoloft, "the pharmaceuticals we consume, as well as their metabolites, percolate through our bodies, get flushed down the toilet, and end up in the environment" (23). Everts points out that, "since the late 1990s, a steady trickle of ecological toxicity data about the fate of drugs in the environment has raised alarms among some scientists [...]. The concern is that some of the nearly 10,000 drugs currently on the market are not passive, benign travelers in the environment but instead are bioaccumulative, persistent, and toxic to wildlife—and possibly humans" (23). Even drugs that have been screened by the U.S. Food & Drug Administration are only tested for short-term survival that uses high concentrations of the drug to determine their capacity to harm or kill aquatic animals (23). Everts explains that "many researchers concerned with the environmental impact of drugs believe the predictive abilities of such tests are limited because harmful effects on wildlife would likely not be short-term but would instead occur over long periods, even generations, of low-dose drug exposure" (23). For example, selective serotonin reuptake inhibitors in waste treatment effluent have been found to accumulate in the brains of fish. Thus,

medication or genetic engineering alone cannot provide a feasible solution for enhancement because it promotes a disconnection between humans, nonhumans, and material agencies. As Alaimo asserts, substances not only travel across and within human bodies, but also “they *do* things—often unwelcome or unexpected things” (*Bodily Nature* 146). This disconnection furthers our inattention to how the materials that we consume daily impact other species.

Power’s emphasis on the unpredictable effects of hormone medication entangles the biological, social, and environmental. Even though the novel does not directly deal with the effects of hormone compounds on nonhuman bodies, Power’s emphasis on the effects of Thassadit’s hormone treatment pushes the reader’s imagination to the social and biological consequences of pharmaceutical consumption to current scientific concerns about the excess and effect of estrogenic compounds in the environment. For example, after women's bodies expel the drugs, the powerful hormones get flushed into sewage systems, where they eventually discharge with treatment plants' effluent” (Pelley 1). According to ecocritic and scholar Giovanna Di Chiro, “there is good reason for alarm concerning the continued use and accumulation of toxic chemicals that are wreaking havoc on the health and reproductive possibilities of the living world” (Di Chiro 210). In her essay, “Polluted Politics? Confronting Toxic Discourse, Sex Panic, and Eco-Normativity,” Di Chiro asserts that recently, “particular anxiety has been focused on the perils to humanity of our ‘swimming in a sea of estrogen,’ a consequence, according to many environmental scientists, of the rising levels of estrogenic, synthetic chemical compounds emitted into our water, air, and food” (201).

Thassa's hormonal treatment also highlights how synthetic xenoestrogens in hormonal replacement supplements and birth control pills pose environmental and human health problems. For example, according to the *Chemical & Engineering News* magazine "natural and synthetic estrogens find their ways into fish habitats by way of birth control pills or hormone replacement therapy. Most of these reports have focused on the many ways that "estrogen in sewage effluent can distort normal male [fish] development [...] such as feminization of testes or reduced number of offspring" (Pelley 1). However, recent research by ecotoxicologist Charles Tyler of the University of Exeter in the U.K. shows that toxic assaults by estrogenic chemicals can affect female fish as well. Researchers found that "when the female fish reached adulthood, estrogen-exposed females abandoned their normal courting behaviors such as swimming alongside or chasing a suitor, while unexposed fish acted normally" (Pelley 1). Charles Tyler elaborates, "'if a female doesn't give the right signal to a courting male, he won't respond'" (Pelley 1). Thus, too much estrogen causes changes in female fish's courting behavior, which as a result could have long-term population effects in wildlife and humans. According to David Marcogliese, a research scientist at Environment Canada, Tyler's study "'enlarges the scope of effects that we need to be aware of when studying endocrine disruption'" (Pelley 1). Therefore, Richard Power's *Generosity* illustrates that understanding the agency and significance of material forces, like pharmaceuticals, and their interface with nonhuman nature is necessary. Such research and environmental studies, to use Di Chiro's words, "need to be sentinels warning us about an impending human health crisis threatening the 'human prospect'" (204).

Power's over emphasis on pharmaceuticals also reminds readers that human bodies are constantly in interchange with the environment; able to be composed, transformed, and decomposed by other bodies and non-human natures. Russell Stone's obsession with finding the biological source for Thassadit's happiness blinds him to potential harmful and favorable environmental causes for Thassadit's mood. Stone becomes dumbfounded when he hears Thassadit describe the beauty of her native land, its mountains and coast: "Nature?" [Stone] can't keep the bafflement out of his voice. A child of death who's thrilled about the future. An Algerian who shuns politics. A film lover who chooses the banality of mountains" (Powers 53). Stone never considers that Thassadit's horrific refugee background or the start of her new life in the U.S studying film, her life's passion, might also contribute to her exuberant disposition. Stone also does not consider that the hormonal treatments that Thassadit undergoes in order sell her eggs along with the overwhelming media attention can unhinge her. Thassadit's story and condition becomes a public frenzy: "Strange people with Hotmail accounts want me to make them happy. One woman wants to hire me as her personal trainer. She thinks her soul needs a professional workout. Twenty-three messages in two days" (Powers 126). Like John in *Brave New World*, Thassadit's condition makes her a media sensation and as a result, exposes her to overwhelming toxic publicity: "Thassa's egg contract makes her fair game for every kind of Web-disinhibited public attack. She turns pariah in several demographic sectors [...]" (Powers 272-273). Here one can also see the perilous effects of placing the environment as mere background, and the deliberate connection Power's is making with Huxley considering that by the end of the novel, Thassadit flees with Stone for the Canadian border tries to commit suicide in a motel room, ironically enough by

over-dosing on a cocktail of Stone's prescription happy-pills and pain killers: "His Dopp kit sits by the side of the sink, wide open. He steps on a small hard nub: a pill lodges in the sole of his foot. He looks down and sees three others on the floor. [...] Robert's Ativan. Russell's doxylamine. Old Darvons from a wisdom tooth extraction he was saving for a rainy day" (Powers 313). Thus, Powers illustrates that happiness does not solely subsist in the brain or in our genes. To use feminist scientist scholar, Elizabeth Wilson's words, "the brain doesn't manufacture serotonin internally and independently of the body" (384). Rather, it requires ongoing commerce between the brain, body, cultural milieu, and environment.

Powers also illustrates the ramifications of predominant perceptions of genes as mechanisms that can be altered and controlled through Dr. Thomas Kurton and his fixation with finding the genetic basis for happiness. Instead of presenting the traditional crazed, monstrous, mad scientist fiction figure, Power's portrays Dr. Kurton, a well educated, well spoken, suave business man who "has never doubted that happiness is chemical" and believes that anxiety, and negativity are leftover emotions—"an evolutionary hangover" from the Stone Age: "Back on the savannah, stress kept us alive. Natural selection shaped us for productive discontent, with glimmers of heavenly mirage to keep us going" (Powers 43). As Kurton puts asserts in his article "Stairway to Paradise," "Depression had its uses once, when mankind was on the run. But now that we're somewhat safe, it's time to free the subjugated populace and show what the race can do, armed with sustainable satisfaction at last" (Powers 43). Even more so, Dr. Kurton believes that genetic engineering can cure mankind: "The script that has kept us in gloom and dread is about to be rewritten. Labs across the globe are closing in on those

ridiculous genetic errors that cause life to suicide. Aging is not just a disease; it's the mother of all maladies. And humankind may finally have a shot at curing it" (Powers 61). However, Kurton's conception of genetic engineering as a "quick fix" is problematic for environmental ethics because to use Alaimo's words, "it encourages humans to assume techno-scientific mastery of all life forms" (*Bodily Natures* 150). However, it is important to note that Alaimo is not claiming that society does not need genetic engineering. On the contrary, Alaimo is well aware of the need for finding a cure to diseases like AIDS, where scientists engineer and study viruses. Instead, Alaimo is calling for an environmental ethics that acknowledges "the material interconnections of human corporeality with the more-than-human world" which as a result, forges "ethical and political positions that can contend with numerous late twentieth- and early twenty-first century realities in which 'human' and 'environment' can by no means be considered separate" (*Bodily Natures* 2). We need to think of matter, such as pharmaceuticals, not as "a passive resource for human manipulation and consumption" but as an "intra-active becoming" that "instead focuses on interfaces, interchanges, and transformative material/discursive practices" (Alaimo, *Bodily Natures* 142). Kurton's downfall is that he sees genes as isolated, static, passive matter that needs to be collected, controlled, converted and codified in order to manipulate for maximum profit: "One fifth of human genes have already been patented. You have to pay a license fee just to look at them. People like Thomas Kurton buy and sell genetic material like it's movie rights" (Powers 21). However, the genes portrayed in Power's *Generosity* are not the sole determinants of anything, but instead are interwoven with and sparked by environmental factors. Kurton's findings are futile because he fails to comprehend the interchanges and

interrelations between human corporeality and the more than human world, which can have unpredictable effects on gene expression. Interestingly, one can see a connection between Power's perception and examination of the social and ethical ramifications of the widespread gene fixation (illustrated through Kurton's obsession with patenting Thassadit's "happiness gene") to some current models of techno-scientific laboratory institutions trying to enhance the limits of the human body.

For example, according to Brad Allenby, "various types of enhancements, from vaccines to cognitive booster are already used by the United States military" ("Is Human Enhancement Really Cheating?" n.pag.). In addition, the Defense Advanced Research Projects Agency (DARPA) currently has a long-term, three-billion program to help make what Brad Allenby calls "superwarriors"—"who, through drugs, genetic engineering, and cyborg technologies are more weapon system than soldier" (n.pag.). In other words, the United States Department of Defense is studying how to use technology and biology to transcend the limits of the human body. According to Brian Wang, director of research at Next Big Future, "the drugs and genetic enhancements and some technology which gets applied would allow for regeneration, faster healing, muscle strength enhancement up to current olympic levels, endurance of an Alaskan sled dog, cognitive enhancement, operate without sleep for many days without performance degradation, the metabolic energy of twenty year old for a forty or fifty year old and immunity to pain" (n.pag.). Similarly, Dr. Kurton in *Generosity* wants to use technology and science to isolate, patent, and sell Thassadit's "happiness gene" in order to capitalize on human enhancement technologies. When Thassadit sells her eggs, Kurton files to stop the deal:

His argument is simple, and similar to those upheld for decades in America's courts. Whatever they mean to use the eggs for, this clinic is buying a genome whose increased bio-value results directly from the association studies performed by Truecyte. Truecyte's intellectual efforts have established a correlation, and the company has filed for the appropriate patents. So if this fertility clinic means to profit from the probability of increased emotional health inherent in Thassadit Amzwar's genome, then they own Truecyte a licensing fee. (Powers 271)

Powers demonstrates a consumer-genomics era where corporations and scientists challenge biological and ethical boundaries in relation to genomics and patents. Both Thassa and superwarriors force readers to questions who gets to own and control genetic information, what can be patented, and who will have access to such patents in and beyond the Anthropocene?

One can also see a connection between Kurton's Truecyte Corporation and its gene-sequencing search to some current regimes of biological knowledge and power. Historian of science, Donna Haraway, asserts, "biological research globally is progressively practiced under the direct auspices of corporations, from the multinational pharmaceutical and agribusiness giants to venture-capital companies that fascinate the writers for the business sections of the daily-newspapers" (Haraway 245). For example, in 1988, the U.S. Human Genome Project, coordinated by the U.S. Department of Energy and the National Institutes of Health set out to understand the human genome in order to provide new avenues in medicine and biotechnology. According to Haraway, "as a whole, the global Human Genome Project is a multinational, long-term, competitive and cooperative, multibillion-dollar (yen, franc, mark, etc.) effort to represent exhaustively—in genetic, physical, and DNA sequence maps—the totality of information in the species genome" (Haraway 246). As a result, the Human Genome Project is the largest single investigative projects in modern science. Completed in 2003, this project set out to

understand the genetic make up of humans by identifying and mapping approximately 20,000-25,000 genes of the human genome.

Furthermore, biotechnology in the service of corporate profit is a revolutionary force. For example, the Human Genome Project, “has germinated its share of millionaire scientists since Genentech’s Herbert Boyer in 1976” (Haraway 93). Likewise, in 1992 J. Craig Venter, an American geneticist who first sequenced the human genome, helped found the Human Genome Sciences, Inc., of Bethesda, Maryland. In November 1993, Venter’s shares were valued at \$9.2 million. By January 1994, when the company began to offer shares on the public stock exchange, Venter’s shares were valued at \$13.4 million (Haraway 93). Similarly, Kurton’s Truecyte Corporation echoes current industrial biotechnology: “We have done the research [...] for a wire-syndicated piece called ‘Fixing the Price of Delight’: And we’ve determined 800 million to be a fair pro rata evaluation of the accumulated future benefits of our findings, as enjoyed by all its direct descendants into the indefinite future” (Powers 271). Kurton’s Truecyte company raises various questions such as who will own, control, and patent genes and other pieces of DNA as we proceed into the Anthropocene? Exactly who will be able to access and afford such medical advancements? Furthermore, Kurton’s Truecyte portrays geneticists as masters of the human genome ignoring the interconnectivity of all matter. Kurton’s research team encourages readers to critically think about the power and money invested in industrial biotechnology corporations. As a result, one can see Power’s call, to use Alaimo’s words, for an environmental ethics “[that] denies the human the sense of separation from the interconnected, mutually constitutive actions of material reality” (*Bodily Natures* 157). Overall, re-reading Power’s *Generosity: an Enhancement* in the

Anthropocene illustrates that it is absolutely crucial that we understand the agency and significance of material forces, such as pharmaceuticals and genetically engineered matter as we proceed into the twenty-first century.

Kurton's Truecyte Corporation in *Generosity*, like the Defense Advanced Research Projects Agency's "superwarriors," and the Human Genome Project, raises complex biological and ethical issues which consequently can contribute to the public's understanding that human activities including enhancement technologies interact strongly with environmental, ecological, and social changes at local to global scales. Truecyte, OncoMouse, "superwarriors," and the Human Genome Project are just a few examples, to use Haraway's words, "of the emerging institutional structure shaping human relations to nature in a world where the relations of technoscience to wealth and well being have never been tighter" (Haraway 313n28). As Brad Allenby asserts, "the challenge, then, is not 'cheating' [evolution] but the far more difficult challenge of developing the ability to interact ethically, rationally, and responsibly with the world of enhancement technologies that is already here" in and beyond the Anthropocene ("Is Human Enhancement Really Cheating?" n.pag.). Thus, readings in the Anthropocene, as exemplified by this re-reading of *Brave New World* and *Generosity: an Enhancement*, can illuminate how scientific enhancements such as pharmaceuticals or genetically altered matter can spread into our water (as noted above) and transform the physical, chemical, and biological makeup of not only human bodies, but nonhuman species as well.

Both Aldous Huxley's *Brave New World* and Richard Power's *Generosity: An Enhancement*, demonstrate real worldwide ethical implications in relation to

pharmaceutical consumption and biochemical engineering for the twenty-first century. For example, an impending environmental and human health crisis can be seen not only by the increasing amounts of hermaphrodite frogs and alligators' "teeny weenies" but also "rising incidences of fish tumors, clam and mussel lesions, Beluga whale breast and ovarian cancers, and disappearing amphibians".¹ Therefore, Thassadit Amzwar hormonal treatment and Robert Stone's selective serotonin reuptake inhibitor mood enhancers illustrates a direct link to material forces and their impact on nonhuman bodies such as cancer. However, the excess and effect of endocrine-disrupting chemicals in the environment does not stop with cancer. Most likely, "on going research will confirm that the hormonal experience of the developing embryo at crucial stages of its development has an impact on adult behavior in humans, affecting the choice of mates, parenting, social behavior, and other significant dimensions of humanity" (Di Chiro 204-205). For example, currently, the United Kingdom is set to become the first country in the world to allow a controversial new form of in vitro fertilization (IVF) by merging the DNA of three parents in order to prevent the transmission of mitochondrial disorders such as visual and hearing problems, learning disabilities, respiratory disorders, and heart, liver, and kidney disease. Advocates of the technique say it could eliminate some cases of inherited disorders passed on by defective DNA. However, according to *Live Science* writer Tanya Lewis, "critics think it's a slippery slope toward genetic

¹ According to researchers, Apopka alligators shrunken penises "were partly responsible for the 80-95 percent egg hatching failure rate [...] resulting in a population, but so was the out-of-balance hormone ration of both males and females—female alligators appearing as 'superfemales' with twice the estrogen typical of a female and almost no testosterone in the males" (Di Chiro 206).

modification resulting in the creation of ‘designer’ babies” (n.pag.). If it passes, the law would be the first to allow pre-birth human-DNA modification.

As a result, it is absolutely crucial that we understand the agency and significance of material forces, such as pharmaceuticals, Persistent Organic Pollutants, and Genetically Modified Organisms and their interface with human and nonhuman bodies. As a whole, re-reading *Brave New World* and Richard Power’s *Generosity: an Enhancement in the Anthropocene* offers a broad general public—both inside and outside the academy—awareness about these issues and serves as a critical rethink of human behaviors that today can be recognized as having altered human and nonhuman processes and patterns. Material feminist Stacy Alaimo asserts, “recognizing how the bodies of all living creatures intra-act with place—with the perpetual flows of water, nutrients, toxicants, and other substances—makes it imperative that we be accountable for our practices” (Alaimo, *Bodily Natures* 157-158). Such recognition will allow us to forge an environmental ethics concept in the Anthropocene that is social, biological, and material. Thus, we must reexamine our consumption of pharmaceuticals and reinterpret our practices of biochemical engineering and come together to articulate our various positions so that both humans and nonhuman natures can not only progress—but survive.

CHAPTER 7

CONCLUSION

[...] an era dominated by industry, in which the right to make money, at whatever cost to others, is seldom challenged.

-- Rachel Carson, *Silent Spring*

At some point, on our way to a new consciousness, we will have to leave the opposite bank, the split between the two mortal combatants somehow healed so that we are on both shores at once [...]. The possibilities are numerous once we decide to act and not react.

-- Gloria Anzaldúa, *Boderlands La Frontera*

In the “Anthropocene,” an age in which global patterns of climate, economics, and migration have changed through human activity, the conception of commercial markets and capital as a measure of quality of life has become an increasingly important focus for American Studies, ecocriticism, and environmental justice discourse. Many environmental and cultural scholars such as Rachel Carson and canonical authors such as Gloria Anzaldúa anticipated what we are now calling environmental limits, globalization, and “progress.” In addition, canonical writers and contemporary filmmakers from different continents have been calling for alternative definitions of “progress” that account for social and environmental factors, and thus anticipate or join discussions about how we need to re-image the “economy.” As well, several coalitions and reports such as, “The Future We Want” (a document produced at the 2012 Rio+ 20 United Nations Conference on Sustainable Development agreed to by all UN member states), have challenged the exploitation of the environmental commons at the expense of private profitability and the old economic model that equates commercial markets with national well-being in order to develop a new set of metrics that integrates and balances the economic, social, and environmental dimensions of prosperity and human well-being.

Secretary general of the United Nations, Ban Ki-Moon, asserts that as we proceed into the Anthropocene one can clearly see that the old economic model is breaking down: “In too many places, growth has stalled. Jobs are lagging. Gaps are growing between rich and poor, and we see alarming scarcities of food, fuel and the natural resources on which civilization depends” (n.pag.). As a result, ecological economist Robert Costanza and colleagues point out in “Time to Leave GDP Behind,” one can see that “there is broad agreement that global society should strive for a high quality of life that is equitably shared and sustainable” (284).

“Readings in the Anthropocene” or re-readings of classic and contemporary texts provides an opportunity to define what sustainable well-being will mean for the future. Missing this opportunity, to use Costanza words, “would condone growing inequality and the continued destruction of the natural capital on which all life on the planet depends” (284). The “monsters” in *Frankenstein* illustrates Shelley’s call for alternative measures of progress that account for social and environmental factors. For example, Captain Walton’s polar exploration quest for the magnetic secrets of the North Pole and its potential for travel passages for global commerce represents current economic development that has been accompanied by growth in the consumption of fossil fuels, which has led to the warming of the planet and consequently the current race to claim and develop the Arctic North. Thus, the novel anticipates discussions we are not having about how we will need to re-image robust economic growth.

The juxtaposition of Shelley’s canonical *Frankenstein* with Richard Power’s US contemporary novel, *The Echo Maker* allows readers to see how literary texts, both old and new, and, more specifically, the environmental humanities, are contributing to

growing awareness of the Global North's long term/large scale human impact on the planet. For example, Power's depiction of the plight of the sandhill cranes allows readers to question energy practices such as the Keystone XL Pipeline, which will radically escalate carbon emissions further. The framework of the Anthropocene can help readers look at larger scales of time and space, which is important if we are to reflect on how we dwell and how we might dwell and live in the future.

By contrasting William Faulkner's "The Bear" in *Go Down, Moses*, to Toni Morrison's *Sula*, which are both composed in the geological age of the human, or the "Anthropocene," I assert that Morrison is queering social and environmental constructs. Morrison's *Sula*, highlights, subverts, and critiques dominant pairings of nature with heteronormativity and homophobia by inscribing lesbian desire within nature and through natural and unnatural phenomena in order to construct an alternative environmental perspective of non-normative sexual and gender positions. Morrison reveals how classis cultural narratives, normative dualisms, and value-hierarchical paradigms which have initiated and perpetuated Western heteronormative ideologies of nature as an uncontested resource for human consumption and development (as illustrated in Faulkner's "The Bear" by the killing of Old Ben and the encroachment lumber company and railroad) can lead to epidemics of dying birds, and extreme weather events such as unexpected ice storms. I argue that this is what makes Morrison's writing a "re-reading in the Anthropocene" that is important for offering large term/large scale insights for understanding the structural interconnections between race, gender, and sexual oppressions as historically related forms of subordination and exploitation that continue to shape today's mainstream values and perceptions of "progress."

Likewise, contemporary films such as Neill Blomkamp's science fiction thriller, *District 9*, offers viewers a more nuanced and complex understandings of economics, resources, growth. The enclosure of the commons for the wealthy is an undemocratic relationship among species and among human group, and consequently, prevents us from arriving at a "future we want" in the Anthropocene. Blomkamp utilizes the protagonist's transformation to compel the audience, to move beyond dominant conceptualizations of capitalism that do not account for social and environmental factors such as social inclusion, and sustainable consumption and production so that we might arrive at a future that balances the economic, social, and environmental dimensions of human and nonhuman well-being. Using a sci-fi alien population (metaphorically) to convey the ways in which some human groups are made to appear as "outsiders," due to social and capital "progress," redirects the internal focus of identity and boundaries towards a wider, global lens which as a result anticipates discussions about how we will need to come together to articulate our various positions and compromise with one another in order to re-image our economy.

In a final chapter, I assert that both Aldous Huxley's classic *Brave New World* and Richard Power's contemporary *Generosity: an Enhancement*," urge readers to rethink pharmaceutically and genetically altered human and nonhuman biological matter not as commodities for human manipulation and consumption but as matter that is part of the material configuration of the world. Many believe the development of genetic engineering in the twenty-first century signals the progress of human civilization—intellectually and materially—both which supposedly speak to the fact that we are all living better. Designation of the Anthropocene provides a formal framework for the

increasingly obvious fact that human activities (including scientific and technological enhancements) interact strongly with ecological changes like fish tumors, whale breast and ovarian cancers, and disappearing amphibians at local and global scales. Such recognition will allow us to forge an environmental ethics concept that is social, biological, and material. Thus, we must reexamine our consumption of pharmaceuticals and reinterpret our notion of progress so that both humans and nonhuman natures can live in and beyond the Anthropocene.

Thus, readings of canonical texts, such as Shelley's *Frankenstein* and Huxley's *Brave New World* in juxtaposition with popular films such as Blomkamp's *District 9* and contemporary American novels such as Faulkner's "The Bear" in *Go Down, Moses*, Morrison's *Sula*, and Power's *The Echo Maker* and *Generosity: an Enhancement*, provides insight into why both novels films are playing an increasingly important role in global environmental justice struggles by providing accessibility to audiences both inside and outside academia who are interested in a future that balances the economic, social, and environmental dimensions of human and nonhuman well-being. As Ban Ki-Moon elaborates in his *New York Times* article, "The Future We Want," "a new emphasis on sustainability can offer what economists call a "triple bottom line"—job-rich economic growth coupled with environmental protection and social inclusion" (n.pag.). Thus, this dissertation illustrates how classic writers and contemporary filmmakers and novelists from different continents and disciplines over the past 200 years have been calling for alternative definitions of "progress" that account for social and environmental factors, which as a result, provides opportunities of conceptualizing "a future we want" and imagining plausible solutions for how we will get there.

REFERENCES

- Adamson, Joni. *American Indian Literature, Environmental Justice, and Ecocriticism: The Middle Place*. Tucson, AZ: University of Arizona Press, 2001.
- Adamson, Joni. "What Winning Looks Like: Critical Environmental Justice Studies and the Future of a Movement." *American Quarterly* 59.4 (2007): 1257-267. Print.
- Adamson, Joni. "Encounter with a Mexican Jaguar: Nature, NAFTA, Militarization, and Ranching in the U.S.-Mexico Borderlands." *Globalization on the Line: Culture, Capital, and Citizenship at U.S. Borders*. New York: Palgrave, 2002. 221-240. Print.
- Adamson, Joni. "'¡Todos Somos Indios!' Revolutionary Imagination, Alternative Modernity, and Transnational Organizing in the Work of Silko, Tamez and Anzaldúa." Print.
- Adamson, Joni. "Humanities." *Keywords for Environmental Studies*. Ed. Joni Adamson, William Gleason, David N. Pellow. New York: New York University Press, forthcoming. Print.
- Adamson, Joni, Mei Mei Evans, and Rachel Stein, eds. *The Environmental Justice Reader: Politics, Poetics & Pedagogy*. Tucson, AZ: University of Arizona, 2002. Print.
- Adamson, Joni, and Kimberly N. Ruffin, eds. *American Studies, Ecocriticism, and Citizenship: Thinking and Acting in the Local and Global Commons*. New York: Routledge, 2013. Print.
- Adrienne Rich. *The Dream of a Common Language*. New York: Norton, 1978. Print.
- Alaimo, Stacy. *Bodily Natures: Science, Environment, and the Material Self*. Indiana: Indiana University Press, 2010. Print.
- Alaimo, Stacy, and Susan J. Hekman, Eds. *Material Feminism*. Bloomington and Indianapolis: Indiana University Press, 2008. Print.
- Alaimo, Stacy. "Eluding Capture: The Science, Culture, and Pleasure of 'Queer' Animals." Eds. Sandilands and Erickson 52-72. Print.
- Alaimo, Stacy, and Susan J. Hekman. *Material Feminisms*. Bloomington and Indianapolis: Indiana University Press, 2008. Print.
- Alaimo, Stacy. "Trans-Corporeal Feminisms and the Ethnical Space of Nature." *Material Feminisms*. Bloomington and Indianapolis: Indiana University Press,

2008. 237-264. Print.
- Allenby, Brad. "What's Next? The Cognocene." *The New York Times*. N.p., 23 May 2011. Web. 27 Jan. 2015.
<http://www.nytimes.com/roomfordebate/2011/05/19/the-age-of-anthropocene-should-we-worry/whats-next-the-cognocene>
- Allenby, Brad. "Is Human Enhancement Really Cheating?" *Slate*. N.p., 9 May 2013. Web. 27 Jan. 2015.
 <http://www.slate.com/articles/technology/superman/2013/05/human_enhancement_ethics_is_it_cheating.html>.
- Anzaldúa, Gloria. *Borderlands/La Frontera: The New Mestiza*. San Francisco: Aunt Lute Books, 2007. Print.
- "Anthropocene: The Geology of Humanity." *Global Change International Geosphere-Biosphere Programme Newsletter* Mar. 2012: 10. Print.
- Atwood, Margaret. "Everyone is Happy Now." *The Guardian*. N.p., 17 Nov. 2007. Web. 27 Jan 2015.
<http://www.theguardian.com/books/2007/nov/17/classics.margaretatwood>
- Balog, James. "The Big Thaw." *National Geographic*. June 2007. Web. 13 Sept. 2014.
<http://ngm.nationalgeographic.com/2007/06/big-thaw/big-thaw-photography>
- Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, N.C.: Duke University Press, 2007. Print.
- Barad, Karen. "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter." *Material Feminism*. Bloomington and Indianapolis: Indiana University Press, 2008. 120-154. Print.
- Bost, Suzanne. "From Race/Sex/Etc. to Glucose Feeding Tube, and Mourning: The Shifting Matter of Chicana Feminism." *Material Feminisms*. Bloomington and Indianapolis: Indiana University Press, 2008. 340-372. Print.
- Brooke, James. "As North Pole Ice Melts, More Ships Take Arctic Shortcut." *Voice of America*. 04 Oct. 2013. Web. 23 Feb. 2014. <http://www.voanews.com/content/as-north-pole-ice-melts-more-ships-takearctic-shortcut/1763072.html>
- Carson, Rachel. *Silent Spring*. Boston: Houghton Mifflin, 2002. Print.
- Costanza, Robert, et al. "Development: Time to leave GDP behind." *Nature* 505, no. 7483 (2014): 283-285.

- Cronon, William. "The Trouble with Wilderness." *Uncommon Ground: Rethinking the Human Place in Nature*. New York: W.W. Norton, 1996. 69-90. Print.
- Crutzen, Paul J., and Eugene F. Stoermer. "The Anthropocene." *Global Change Newsletter* 41 (2000): 17-18.
- Crutzen, Paul, and Christian Schwägerl. "Living in the Anthropocene: Toward a New Global Ethos." *Yale Environment* 360. N.p., 24 Jan. 2011. Web. 27 Jan. 2015. <http://e360.yale.edu/feature/living_in_the_anthropocene_toward_a_new_global_ethos/2363/>.
- Di Chiro, Giovanna. "Polluted Politics? Confronting Toxic Discourse, Sex Panic, and Eco-Normativity." *Queer Ecologies: Sex, Nature, Politics, Desire*. Eds. Catriona Sandilands and Bruce Erickson. Bloomington, IN: Indiana UP, 2010. 199-230. Print.
- District 9*. Dir. Neill Blomkamp. Perf. Sharlto Copley, Jason Cope, and David James. TriStar Pictures, 2009. DVD.
- Donovan, Travis. "Dead Birds Fall From Sky AGAIN In Louisiana, 300 Miles From Arkansas Incident Days Earlier." *The Huffington Post*. 25 May 2011. Web. 20 Dec. 2014. <http://www.huffingtonpost.com/2011/01/04/birds-fall-from-sky-louisiana_n_804196.html>.
- Evans, Mei Mei. "'Nature' and Environmental Justice." *The Environmental Justice Reader*. Eds. Joni Adamson, Mei Mei Evans, and Rachel Stein. Tucson: University of Arizona Press, 2002. 181-193. Print.
- Everts, Sarah. "Drugs In The Environment." *Chemical & Engineering News* 88.13 (2010): 23-24. Web. 6 May 2011. <<http://pubs.acs.org/cen/email/html/8832news5.html>>.
- "Expanded Meeting of the Defence Ministry Board." *President of Russia*. 10 Dec. 2013. Web. 23 Feb. 2014. <http://eng.kremlin.ru/news/6395>
- Fara, Patricia. "Education Mary: Women and Scientific Literature in the Early Nineteenth Century." *Frankenstein's Science: Experimentation and Discovery in Romantic Culture, 1780-1830*. Aldershot, England: Ashgate, 2008. 17-32. Print.
- Faulkner, William. *Go Down, Moses*. New York: Vintage, 1990. Print.
- "Forced Removals." *South Africa: Overcoming Apartheid, Building Democracy*. Web. 9 Dec. 2010. <http://overcomingapartheid.msu.edu>
- "Freshwater Crisis." *National Geographic Magazine*. April 2010. Web. 25 Nov. 2011.

<http://environment.nationalgeographic.com/environment/freshwater/freshwater-crisis>.

- Friedman, Thomas L. "Global Weirding Is Here." *The New York Times*. 16 Feb. 2010. Web. 20 Dec. 2014. <http://www.nytimes.com/2010/02/17/opinion/17friedman.html?_r=0>.
- Fulford, Tim, Debbie Lee, and Peter J. Kitson. *Literature, Science and Exploration in the Romantic Era: Bodies of Knowledge*. Cambridge, England: Cambridge UP, 2004. Print
- Gaard, Greta. "Towards a Queer Ecocriticism." *New Perspectives on Environmental Justice*. Ed. Rachel Stein. New Jersey: Rutgers University Press, 2004. 21-44. Print.
- Gautier, Donald, et al. "Assessment of Undiscovered Oil and Gas in the Arctic." *Science* (2009): 1175-179. Print.
- Haraway, Donna J. *Modest_Witness@Second_Millennium: FemaleMan_Meets_OncoMouse*. New York: Routledge, 1997. Print.
- Hogan, Katie. "Undoing Nature: Coalition Building as Queer Environmentalism." Eds. Sandilands and Erickson 231-253. Print.
- Houser, Heather. *Ecosickness in Contemporary U.S. Fiction: Environment and Affect*. New York: Columbia UP, 2014. Print.
- Huxley, Aldous. *Brave New World*. New York: Harper Perennial Modern Classics, 2006. Print.
- Johnson, Scott. "Alien Nation: District 9, the New Blockbuster Film, Was Inspired by a Very Real South African Disaster, District Six." *Newsweek*. 27 Aug. 2009. Web. 9 Dec. 2010. http://www.newsweek.com/2009/08/26/alien_nation.html
- Ki-moon, Ban. "The Future We Want." *The New York Times*. The New York Times, 23 May 2012. Web. 21 Feb. 2015. <<http://www.nytimes.com/2012/05/24>
- Kirksey, S. Eben, and Stefan Helmreich. "The Emergence Of Multispecies Ethnography." *Cultural Anthropology* 25.4 (2010): 545-76. Web.
- Kowalewski-Wallace, Elizabeth. *Encyclopedia of Feminist Literary Theory*. New York: Garland, 1997. Print.
- Krupat, Arnold. ed. *New Voices in Native American Literary Criticism*. Washington: Smithsonian Institution Press, 1993. Print.

- Lewis, Tanya. "UK Government Backs 3-Parent IVF." *LiveScience*. TechMedia Network, 28 June 2013. Web. 27 Jan. 2015. <<http://www.livescience.com/37836-uk-government-backs-3-parent-ivf.html>>.
- Lussier, Mark. *Romantic Dynamics: The Poetics of Physicality*. Hampshire: Macmillan, 2000. Print.
- Lussier, Mark. *Romantic Dharma: The Emergence of Buddhism into Nineteenth-century Europe*. New York: Palgrave Macmillan, 2011. Print.
- Lussier, Mark. "Blake, Deleuze, and the Emergence of Ecological Consciousness." *Ecocritical Theory: New European Approaches*. Ed. Axel Goodbody and Catherine E. Rigby. Charlottesville: University of Virginia, 2011. 256-69. Print.
- Mathews, Freya. *Reinhabiting Reality: Towards a Recovery of Culture*. Albany: State University of New York, 2005. Print.
- Matlack, Carol. "Chinese Workers-in Greenland?" *Bloomberg Business Week*. Bloomberg, 10 Feb. 2013. Web. 06 June 2014. <http://www.businessweek.com/articles/2013-02-10/chinese-workers-in-greenland>.
- Mayer, Andre. "Race to Claim High Arctic's Oil Resources May Be a Fool's Mission." *CBCnews*. CBC/Radio Canada, 13 Dec. 2013. Web. 23 Feb. 2014. <http://www.cbc.ca/news/canada/race-to-claim-high-arctic-s-oil-resources-may-be-a-fool-s-mission-1.2461910>
- McBay, Aric, Lierre Keith, and Derrick Jensen. *Deep Green Resistance: Strategy to save the Planet*. New York: Seven Stories, 2011. Print.
- McBay, Aric. "Civilization and Other Hazards." *Deep Green Resistance: Strategy to save the Planet*. Aric McBay, Lierre Keith, and Derrick Jensen. New York: Seven Stories, 2011. 31-59. Print.
- McDermott, Roger. "Vostok 2014 and Russia's Hypothetical Enemies (Part One)." *Eurasia Daily Monitor* 11.167 (2014): n. pag. *The Jamestown Foundation*. 23 Sept. 2014. Web. 30 Oct. 2014. http://www.jamestown.org/single/?tx_ttnews%5Btt_news%5D=42859&no_cache=1#.VFKNGij6m20
- McKibben, Bill. "The Keystone Pipeline Revolt: Why Mass Arrests Are Just the Beginning." *Rolling Stone*. 13 Oct. 2011. Web. 25 Nov. 2011. <http://www.rollingstone.com/politics/news/the-keystone-pipeline-revolt-why-mass-arrests-are-just-the-beginning-20110928>.

- Mellor, Anne K. *Mary Shelley: Her Life, Her Fiction, Her Monsters*. New York: Methuen, 1988. Print.
- Merchant, Carolyn. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. New York: Harper & Row, 1989. Print.
- Michod, Alec. "Interview with Richard Powers." *The Believer*. Feb. 2007. Web. 3 Nov. 2011. http://www.believmag.com/issues/200702/?read=interview_powers.
- Miller, Meredith. *Historical Dictionary of Lesbian Literature*. Lanham, MD: Scarecrow, 2006. Print.
- Miller, Peter. "Extreme Weather." *National Geographic Magazine*. N.p., Sept. 2012. Web. 21 Dec. 2014. <<http://ngm.nationalgeographic.com/2012/09/extreme-weather/miller-text>>.
- Morrison, Toni. *Sula*. New York, NY: Plume, 1973. Print.
- Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard UP, 2011. Print.
- Nixon, Rob. "Neoliberalism, Genre, And "The Tragedy Of The Commons." *PMLA: Publications Of The Modern Language Association Of America* 127.3 (2012): 593-599.
- Pelley, Janet. "Estrogen Throws Cold Water On Fish Courtship." *Chemical & Engineering News*. American Chemical Society, 3 Aug. 2010. Web. 6 May 2011. <<http://pubs.acs.org/cen/email/html/8832news5.html>>. Web.
- Pérez-Peña, Richard. "College Classes Use Arts to Brace for Climate Change." *The New York Times*. The New York Times, 31 Mar. 2014. Web. 16 Feb. 2015. <<http://www.nytimes.com/2014/04/01/education/using-the-arts-to-teach-how-to-prepare-for-climate-crisis.html>>.
- Plumwood, Val. "Nature in the Active Voice." *Australian Humanities Review* 46 (2009): 111-127. Print.
- Postel, Sandra. "Keystone XL, Clean Water and Democracy." *National Geographic Magazine*. 16. Nov. 2011. Web. 02 Nov. 2011. <http://newswatch.nationalgeographic.com/2011/11/16/keystone-xl-clean-water-and-democracy/>
- Powers, Richard. *The Echo Maker*. New York: Farrar, Straus and Giroux, 2006. Print.
- Powers, Richard. *Generosity: An Enhancement*. New York: Farrar, Straus and Giroux,

2009. Print.
- Pratt, Minnie Bruce. *Crime Against Nature*. Ithaca, NY: Firebrand, 1990. Print.
- “Prescription Drug Use Continues to Increase: U.S. Prescription Drug Data for 2007-2008.” *National Center for Health and Statistics*. 2010. Retrieved: 12 March 2011. <http://www.cdc.gov/nchs/data/databriefs/db42.pdf>
- Preston, Julia. "Some Cheer Border Fence as Others Ponder the Cost." *The New York Times*. 19 Oct. 2011. Web. 24 Apr. 2012. <http://www.nytimes.com/2011/10/20/us/politics/border-fence-raises-cost-questions.html?_r=1&ref=borderfenceusmexico>. Web.
- Roach, John. "As Arctic Ice Melts, Rush Is on for Shipping Lanes, More." *National Geographic*. National Geographic Society, 5 Feb. 2005. Web. 02 Jan. 2014. http://news.nationalgeographic.com/news/2005/02/0225_050225_arctic_landrush.html
- Robinson, Tasha. "Interview: District 9 Director Neill Blomkamp." *The A.V. Club*. 12 Aug. 2009. Web. 9 Dec. 2010. <http://www.avclub.com/articles/district-9-director-neill-blomkamp,31606>. Web.
- Rose, Debra Bird. "Introduction: Writing in the Anthropocene." *Australian Humanities Review* 49 (2009): 87. Print.
- Ross, Andrew. *Bird on Fire: Lessons from the World's Least Sustainable City*. Oxford: Oxford UP, 2011. Print.
- Sadowski-Smith, Claudia. *Border Fictions: Globalization, Empire, and Writing at the Boundaries of the United States*. Charlottesville: University of Virginia, 2008. Print.
- Sadowski-Smith, Claudia, ed. *Globalization on the Line: Culture, Capital, and Citizenship at U.S. Borders*. New York: Palgrave, 2002. Print.
- Sandilands, Catriona, and Bruce Erickson, eds. *Queer Ecologies: Sex, Nature, Politics, Desire*. Bloomington, IN: Indiana UP, 2010. Print.
- Sandilands, Catriona. "Lavender's Green? Some Thoughts on Queer(y)ing Environmental Politics." *Undercurrents* 6.1 (1994): 20-24. Print.
- Savage, Annaliza. "Xenophobia, Racism Drive Alien Relocation in District 9." *Wired.com*. Conde Nast Digital, 12 Aug. 2009. Web. 26 Apr. 2012. <<http://www.wired.com/underwire/2009/08/xenophobia-racism-drive-alien-relocation-in-district-9/>>.

- Schneider, Keith. "Harvard Mouse Gets Patent, A World First." *The New York Times*. 13 Apr. 1988. Web. 8 May 2011. <http://www.nytimes.com/1988/04/13/us/harvard-gets-mouse-patent-a-world-first.html>.
- Shelley, Mary. *Frankenstein*. Ed. J. Paul. Hunter. New York: W.W. Norton & Company, 1996. Print.
- Smith, B. "Toward a Black Feminist Criticism." *Women's Studies International Quarterly* 2.2 (1979): 183-94. Print.
- Smith, Laurence C., and Scott R. Stephenson. "New Trans-Arctic Shipping Routes Navigable by Midcentury." *Proceedings of the National Academy of Sciences* 110.13 (2013): 4871-4872. Print.
- Solomon, Susan, Dahe Qin, Martin Manning, Zhenlin Chen, Melinda Marquis, Kristen Averyt, Melinda Tignor and H.L. Miller. "IPCC Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change." Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- "Special Series: 7 Billion." *National Geographic Magazine*. January 2011. Web. 02 Nov. 2011. <http://ngm.nationalgeographic.com/7-billion>
- Stein, Rachel, ed. *New Perspectives on Environmental Justice*. New Jersey: Rutgers University Press, 2004. Print.
- Stein, Rachel. "The Place, Promised, That Has Not Yet Been." Eds. Sandilands and Erickson 285-308. Print.
- Thomashow, Mitchell. *Bringing the Biosphere Home: Learning to Perceive Global Environmental Change*. Cambridge, Massachusetts: MIT, 2002. Print.
- Unger, Nancy. "From Jook Joints to Sisterspace: The Role of Nature in Lesbian Alternative Environments in the United States." Eds. Sandilands and Erickson 173-198. Print.
- Volney, C.F. *The Ruins, Or, Meditation on the Revolutions of Empires; and the Law of Nature*. Baltimore, MD: Black Classic, 1991. Print.
- Walsh, Bryan. "Freak Blizzard Kills Tens of Thousands of South Dakota Cattle-and Washington Does Nothing | TIME.com." *Time Magazine*. N.p., 16 Oct. 2013. Web. 21 Dec. 2014. <<http://science.time.com/2013/10/16/freak-blizzard-kills-tens-of-thousands-of-south-dakota-cattle-and-washington-does-nothing/>>.

- Wang, Brian. "Next Big Future: \$3 Billion Super Soldier Program: 10 times Muscle Endurance, 7 Foot Vertical Leap, Wall Crawling, Personal Flight and More." *Next Big Future*. N.p., 16 July 2008. Web. 20 Jan. 2015.
- Watt, Donald. *Aldous Huxley: The Critical Heritage*. London: Routledge, 1997. Print.
- Weidensaul, Scott. *Living on the Wind: Across the Hemisphere with Migratory Birds*. New York: North Point, 1999. Print.
- Wilson, Elizabeth. "Organic Empathy: Feminism, Psychopharmaceuticals, and the Embodiment of Depression." *Material Feminism*. Bloomington and Indianapolis: Indiana University Press, 2008. 373-399. Print.
- Wood, Gillen D'Arcy. "The Volcano That Changed the Course of History." *Slate Magazine*. N.p., 9 Apr. 2014. Web. 05 June 2014.
http://www.slate.com/articles/health_and_science/science/2014/04/tambora_eruption_caused_the_year_without_a_summer_cholera_opium_famine_and.html
- Wood, Gillen D'Arcy. "1816, The Year without a Summer." *BRANCH: Britain, Representation and Nineteenth-Century History*. Ed. Dino Franco Felluga. Extension of *Romanticism and Victorianism on the Net*. Web. 15 Sept. 2014.
http://www.branchcollective.org/?ps_articles=gillen-darcy-wood-1816-the-year-without-a-summer
- Zamir, Shamoan. "Literature in a National Sacrifice Area." *New Voices in Native American Literary Criticism*. Ed. Arnold Krupat. Washington: Smithsonian Institution Press, 1993. 396-41. Print.
- Zimmerman, Bonnie. "An Overview of Lesbian Feminist Literary Criticism Author(s)." *Feminist Studies* 7.3 (1981): 451-475. Print. 137