

Towards a Postnatural Environmental Politics: Distributed Agency and Political Subjectivity in  
U.S. Literature and Culture

Andrew M. Rose

A dissertation submitted

in partial fulfillment of the degree of

Doctor of Philosophy

University of Washington

2013

Reading Committee:

Eva Cherniavsky, Chair

Ronald Thomas Foster

Linda Nash

Program authorized to offer degree:

Department of English

©Copyright 2013

Andrew M. Rose

University of Washington

Abstract

Towards a Postnatural Environmental Politics: Distributed Agency and Political Subjectivity in  
U.S. Literature and Culture

Andrew M. Rose

Chair of Supervisory Committee:

Professor Eva Cherniavsky

Department of English

This dissertation employs theories of literature and environment (ecocriticism) and posthumanism in order to explore the relationship between concepts of agency and political subjectivity. While I will argue that the concept of distributed agency productively unsettles liberal humanist constructions of the relation between self, culture and nature; this project will also investigate the ways in which a distributed, fragmented concept of agency (one that does not allow for the re-inscription of holistic human subject-actor at convenient moments) also raises a

series of problematics for thinking human political subjectivity and best practices for social movement organizing. While the following chapters certainly do attempt to both embrace and promote the transformative potential of posthuman and postnatural theories, I also deem it necessary to explore the flip side of the coin – that is, what we might term the crisis of the decentered human subject in regard to human agency and futurity. To put it as a question: what might an effective environmental politics look like in a posthuman and postnatural moment of increasing climate instability?

## **Introduction: Knowledge and Agency in the Anthropocene**

During a January 2013 episode of the popular Comedy Central show *The Colbert Report*, Stephen Colbert opened with a segment skewering conservative media's reaction to the public's growing awareness of global warming.<sup>i</sup> After the hottest year on record in the U.S., a summer of record-breaking droughts, and October's Hurricane Sandy, some polls showed as many as 70% of Americans now agreed that the planet was warming (representing a significant increase).<sup>ii</sup> Colbert, whose TV character is generally understood as a satirical amalgamation of conservative media personalities such as Rush Limbaugh and Bill O'Reilly, showed a series of clips all displaying various Fox News correspondents riffing on a similar theme. The gist of their argument went something like this; climate change is too big of a problem to solve and, now that it is happening and since there is nothing mere mortals can do, business should and will carry on as usual.

Interestingly, there were two major reasons, all the correspondents argued, that led them to this conclusion. The first was a common geo-political based claim that has made the rounds for a while already. That is, this is a global problem and therefore, even if the U.S. moves toward sustainable energy and reduces CO<sub>2</sub> emissions, there is no way to compel China and India (let alone the rest of the developing world) to do the same. The second reason for inaction is more telling; the developed world has already released enough carbon into the atmosphere since the industrial revolution, that, even if we reduce emissions now, it is already too late to stop the warming. While there is truth to the "built in" effect of past CO<sub>2</sub> emissions, this cynical deployment of that scientific reality raises a more interesting point. If the first reason is a more common complaint regarding the relation between national policy and global challenges, the second is a rather glaring admission of human limitations. The key assumption behind this

second argument is that the agency of human institutions – government for one but also the “market” - is limited and, essentially, not up to the task of responding to or mitigating climate change in any significant way.

Colbert runs a series of clips that end with similar themes: “what can you do about it?” one correspondent asks repeatedly with an increasingly nervous laugh. Of course, Colbert is quick to mock this reasoning for the way in which it shamelessly proffers a defense of the corporate status quo. “Thanks for *literally* nothing, Fox News”, Colbert jokes (with a conspiratorial glint in his eye directed towards his knowing audience). Of course, for years Fox News has been a major disseminator of so-called climate denial arguments. Therefore, Colbert’s joke is to call these conservative pundits out for seamlessly moving from the position that climate change doesn’t exist at all (so no response is necessary), to arguing that climate change is happening and is so far along, and so powerful, that there is no point in any response. The predominantly liberal audience of the show recognizes these conservative rhetorical gymnastics and laughs along, albeit a bit nervously. Admittedly, this is where Colbert is at his most entertaining; pushing these types of talking points that attempt to pass as reasonable argumentation on 24-hour “news” stations into the realm of farce. It does not take much. “There’s nothing you can do about it, so get used to it Nation!” Colbert exclaims happily. And then the punch line, rather obvious yet still quite funny, is finally presented; “I guess now we know the five stages of conservative climate change grief – denial, denial, denial, denial...acceptance!” Colbert exclaims, relishing the moment.

While this project is intensely engaged with the political aspects of environmentalism as a social movement, my interest in Colbert’s segment goes beyond the already well-documented politicization of climate change issues. Rather, I want to suggest that Colbert’s satirical

presentation of this new conservative position on climate change also sheds light on a central problematic of this project. While pointing out that the earlier logic for climate denial assumed that we did not know if global warming was really happening, Colbert suggests, in this newer manifestation, we find conservatives now espouse “knowing and doing nothing.” To refuse to admit the existence of climate change was one thing, but to accept it as fact and do nothing, Colbert intimates, might actually be the truly unforgivable crime. This conclusion raises an intriguing relation between knowledge and agency that I hope to elucidate in the following chapters.

As all good satire should, Colbert’s bit does more than lay bare the illegitimacy of a dominant cultural logic, as it also hints at a layer of uncomfortable truth that lies beneath the corporate ideology passing as news at Rupert Murdoch’s NewsCorp subsidiaries. To hear the conservative pundit laughing nervously, almost incredulously, as he repeats, “what are you going to do about it?” compels us to wonder if this laughter may emanate from a realization that his argument is more than a cynical talking point for the day; but, instead, an all too serious possibility. That is, even if NewsCorp, Wall Street, the fossil fuel industry, etc. suddenly all joined in a unity of political will to address climate change in the U.S. (or even internationally), what exactly is the best response? What do we know? How do we know it? And if we decide to do nothing about it, or even decide to do something but recognize the limits of our options, then how do we conceive of this new uncertain and unimaginable future? These seemingly basic, and certainly foundational, questions, I suggest, are reopened by the crisis of, and between, knowledge-formation and human agency.

To think through this question a bit further I would like to turn to Dipesh Chakrabarty’s 2009 essay “The Climate of History: Four Theses”. Chakrabarty’s line of inquiry in this short

but dense essay is catalyzed by the possibility we have entered a new geologic era termed the Anthropocene; one in which scientists are claiming that humans are now a major agent of geologic change. Yet, this type of agency is significantly different than the liberal humanist conception of a reasoned, intentional human agency. In fact, Chakrabarty brings to our attention the way in which two liberal humanist conceptions as fundamental as human rational agency and linear history are brought into crisis "...under the cloud of the Anthropocene" (212).

Chakrabarty devotes a significant portion of his essay to the way in which humans have unintentionally created a new geologic epoch; and one in which humanist conceptions of agency are then fundamentally challenged. As he explains, "...it is no longer a question simply of man having an interactive relation with nature...Now it is being claimed that humans are a force of nature in the geologic sense. A fundamental assumption of Western (and now universal) political thought has come undone in this crisis" (207). At first glance, thinking human agency as geologic (rather than biological) might seem to be a radical enhancement of our understanding of unfettered human agency. However, Chakrabarty is quick to point out that the geologic agency of humans is not an agency in the traditional (that is to say, rational and intentional) sense. In fact, the "...anthropocene, one might say, has been an unintended consequence of human choices" (210). Here Chakarabarty alludes to, without fully theorizing, a new conception of agency that has become a central issue in my project; that is, an agency that is understood to be distributed across the human and non-human in complex and inter-related ways. This new recognition, what I will term distributed agency, is a central focus of the proceeding chapters in which I will explore the fundamental challenges it raises for dominant conceptions of liberal humanist rationality, political subjectivity and social movement organizing.

Chakrabarty argues that even the contemporary scholarly “historiography of globalization” is not up to the one “demanded by anthropogenic theories of climate change” because of the way in which it puts commonplace conceptions of agency and futurity into question. He goes on to suggest that linear temporality makes sense to individuals through their ability to connect the past to possible futures through the present day production of experience (220). Therefore, Chakrabarty claims that rethinking history in the Anthropocene, with humans as a “natural” geologic force, necessitates combining what he terms “species history” and the history of capital (industrialization, western imperialism, etc.). Ultimately, this challenges contemporary postcolonial historical thinking by asking; “How do we relate to a universal history of life – to universal thought, that is - while retaining what is of obvious value in our postcolonial suspicion of the universal?” (220). It is important to note that this reassessment of historical approach is created via Chakrabarty’s recent attention to the issue of climate change.

He retells his initiation to climate change science, somewhat reluctant continued engagement, and finally, his commitment to think through what this might portend for western conceptions of history.<sup>iii</sup> By highlighting climate change as the unintended consequence of industrialization and globalization, Chakrabarty creates a link between enlightenment freedom/economic globalization and the one-time exploitation of easily accessible and inexpensive fossil fuel energy sources. This move also opens an opportunity for us to further theorize the relationship between climate change and distributed agency that his essay argues has placed human (as species) futurity into question. In fact, he goes on to suggest that even environmental histories that have focused on the interaction of human and natural histories have not quite yet moved from the consideration of humans as biological agents to that of geologic agents.

“I begin with the proposition that anthropogenic explanations of climate change spell the collapse of the age-old humanist distinction between natural history and human history and end by returning to the question I opened with: How does the crisis of climate change appeal to our sense of human universals while challenging at the same time our capacity for historical understanding?” (201).

The disruption of historical understanding opens up new avenues for thinking human agency and knowledge-making processes. On the one hand, arguing that we know what to do (the science is clear) so we should do it (overcome political and social recalcitrance) implies we can conceptualize the future outcomes of our present day action. However, this problematically erases the question of unintended consequences. Therefore, Colbert’s condemnation of the new conservative talking points – which want to suggest that climate change is inevitable – indicates a desire to redeem and maintain certain aspects of liberal humanist assumptions regarding agency and knowledge across the scientific and the political.

The newly formed conservative position is basically asking us to avoid thinking of this (suddenly) unimaginable future while Colbert’s liberal critique of that response remains dependent upon a certain faith in linear progress; in effect, a re-animation of human agency and ingenuity in the present to “save” that promissary future. Therefore, it is imperative to note that while the conservative talking point recognizes this rupture - and cynically plays upon it - Colbert, the liberal satirist, is unwilling to entertain the idea that contemporary society may be unable to conceptualize/confront that future through present day action and commitment. Consequently, the message behind Colbert’s satirical bit still scripts political agency as an intentional act based upon certain (empirical) knowledge and with predictable results. For the

liberal humanist, we know what to do and therefore have a moral obligation to act as a political group (the nation or the global community).

Meanwhile, we are currently living in a geologic age that is the consequence of exactly that which we do not wish to consider – the limits of human knowledge and the unexpected consequences of industrialization. Concepts of human knowledge, agency and historical progress are unsettled to such an extent as to offer a possibly transformative moment. However, this possibility is closely followed by several troubling new challenges. The questions raised in Chakrabarty's scholarly essay and Colbert's comedic sketch each emanate from their respective, and relatively recent, engagement with the immensity of the challenge that climate change presents. Both of these examples raise the potential as well as the quite rightly terrifying problems brought on by the Anthropocene. One way to clarify our task would be to ask; how do we develop a critical position to conservatives' cynical "acceptance" of climate change without relying on a conception of political agency that uncritically extols human society's ability to enact its will upon the non-human environment? In the following chapters, I will turn to environmental literature, ecocriticism and posthumanist theoretical work in the hopes of speaking to this pressing question.

In early investigations into the field of environment and literature I discovered that ecocriticism was in a period of transition. There appeared to be momentum toward more serious engagement with postmodern critical theory and away from the field's initial emphasis on nature writing. That earlier manifestation of the field had been overly preoccupied with elucidating (the ever-difficult to define) "unmediated" relation to the natural world. Yet, as second-wave ecocriticism came into its own, several critics were openly calling for a more theoretical approach to work in environment and literature that would widen the archive of ecocriticism and

rethink the relationship between the human and non-human. For instance, in the field's primary journal, *Interdisciplinary Studies in Literature and the Environment*, Serpil Opperman wrote in 2008 that ecocritics were still, on the whole, overly resistant to contemporary theory because, he argues, many fundamentally misread and over-generalized postmodernist thought as promoting a nihilistic view leaving no room for nature outside of discourse.

Working within this somewhat reactionary relation to contemporary critical theory and social constructivism, so-called first-wave ecocritics were quick to separate themselves from a view that they felt contested the existence of the natural world altogether. Opperman explains that, "These ecocritics tend to perceive environmental literature as a potential resource for examining the importance of environmental values. They formulate their interpretations on a naïve understanding of the relationship between literature and the material reality of nature (111)". In contradiction to this view, Opperman argues for what he terms an "ecocritic postmodern theory" that would,

"critically assess the ways in which nature has been defined, constructed, interpreted, recontextualized, reflected, represented, or misrepresented in narrative fiction and nature writing will be a significant ecocritical concern [and] build a field-defining ecocritical postmodern theory which can explore the problematic relation between culture and the environment in their literary contexts" (117).

Consequently, in terms of building upon second-wave ecocriticism, this project began with the intention to consider how critical work in this field could more productively develop an understanding of the relationship between nature and culture.

In recognizing this engagement with the nature-culture binary, the reification of nature and the question of the usefulness of cultural theory to eco-theory, I began this project with an eye toward investigating how and why ecocritical theorists should move beyond representations of a reified nature. And, further, to examine the ways in which this movement might destabilize the nature-culture binary in productive ways. I hoped to ask what alternatives might be possible ‘beyond nature’ for eco-theory and how these theories might animate a new environmental theory and politics. However, while dualism is persistent in much public environmental discourse (for example, what Giovanna Di Chiro and others have called “nature talk”), ecocriticism was further along in this critical work than I originally posited at the outset.

While I was encouraged to discover the critical energy with which critics were embracing the destabilization of nature-culture dualism, it also became clear that there was a lot of work left to do in regard to theorizing a relationship between the human and non-human beyond the binary. Overly simple deep green theories of integration were rightfully seen as uncritical and romantic by the majority of ecocritics; however, if eco-theory hopes to avoid a holistic and overly simple rendering of this relationship, scholars are left with a question regarding how to understand this newly decentered human subject.

My project emanates, therefore, from this quandary. I will argue that many eco-theorists have been too quick to extol this decentered human subject as a more ecologically aware citizen. After a long history of deep green or ecocentric-based critiques of anthropocentrism, it seems that many eco-theorists are all too ready to celebrate the newly decentered human subject as one who becomes automatically more aware of her “true” or “actual” relation to the non-human. In this way the reification of the natural world is never really unsettled; instead, we’ve simply, and finally, discovered the reality of our human relation to the non-human (as an ethical member of a

system rather than a separate and dominant actor upon it). In this configuration, the human subject is supposedly able to recognize the limitations upon their knowledge and agency while simultaneously retaining a reconfigured yet fully intact, intentional agency. And, consequently, will act in a more responsible and ethical manner from this “correct” relation to the world. Furthermore, when I ventured to turn to posthumanist theory for a better version of this critique, I was surprised to find a similar problem. And it is to this problem that we now turn.

In her article “Desiring Agency”, Katherine N. Hayles examines Richard Dawkins’ *The Selfish Gene* and Deleuze and Guattari’s *A Thousand Plateaus* in order to argue that both, despite their quite different critiques of humanism, in actuality only manage to re-locate, rather than fundamentally disrupt, holistic agency. Hayles argues that in re-locating agency to a more convenient location for their own argument, these theories also allow the human subject to reclaim this unfettered agency when convenient (158).<sup>iv</sup> Hayles writes that, “Both deny that distributed cognition implies distributed agency – Dawkins by giving all the agency to the genes and none to conscious human subjects, Deleuze and Guattari by giving agency to the desire that alone drives the endless mutations and transformations” (158). Accordingly, the following chapters attempt to keep the question of the decentered subject’s new ecological awareness an open one. Interestingly, the quick celebration of the decentered human in ecocriticism is a mirror image, in some ways, of what Cary Wolfe has called “bad posthumanism” – often referred to as transhumanism – in which there is an uncritical faith in the liberatory possibilities of technological innovation. In the case of ecocentric thought, on the other hand, it is the liberatory possibilities of a re-embeddedness in our environment (localism, place-attachment theory, etc). While critiques of liberal humanism are an integral step toward a more ecologically sustainable

society, this project is an attempt to ensure a careful consideration of what comes after the decentering of the human subject.

This dissertation hopes to productively engage with the following question: what does it mean to live with this decentered subject as we reimagine subjectivity and political efficacy? At the outset of the project, I myself was enthusiastic regarding the potential for critiques of anthropocentrism to aid in the construction of a more ecologically aware society. However, as I noticed that these critiques struggled to accept the prospect of a limited human agency that necessarily followed from a newly decentered subject, as outlined above; I came to realize that the impulse to reconstruct the intentional subject remained so prevalent because the alternatives were less than clear.

Distributed agency is the concept that I will use to think about what it means to take seriously this decentering of the human subject as rational actor.<sup>v</sup> While this project will argue that the concept of distributed agency productively unsettles liberal humanist constructions of the relation between self, culture and nature; I will also investigate the ways in which a distributed, fragmented concept of agency (one that does not allow for the convenient re-inscription of holistic human subject-actor at convenient moments) also raises a series of problematics for thinking human political subjectivity and best practices for social movement organizing. While I certainly hope to further the transformative potential of posthuman and postnatural theories, I also deem it necessary to explore the flip side of the coin – that is, what we might term the crisis of the decentered human subject in regard to human agency and futurity. Again, to put it as a question: what might an effective environmental politics look like in a posthuman and postnatural moment of increasing climate instability?

### **Theoretical Approaches – A posthuman ecocriticism:**

In terms of theoretical approaches, my argument is that the relationship between ecocriticism and posthumanist work has the potential to be more than simply a mutually beneficial relationship in which some aspects of one benefit the other in limited ways and vice versa. In actuality, I will argue that the most effective method for analyzing the current relationship between global information-capitalism, issues of social injustice, and the consequences of a warming planet will be through a critical lens that utilizes both second-wave ecocriticism and posthuman studies. I suggest that the emphasis on deconstructing the nature-culture binary at the level of spatiality, the cultural understanding of the material space of the city, the suburbs, and nature, is one way in which ecocriticism usefully informs posthumanist work on subjectivity and human agency. On the other hand, it is clear that posthumanism can help environmentally motivated critiques of anthropocentrism as ecocritics attempt to move beyond regressive and essentialized uses of nature as exemplifying the “real”. Posthumanism also offers ecocritics an abundance of work on empirical science, critiques of anthropocentrism much more trenchant than any eco-critiques to date, and, finally, a sophisticated approach to the contemporary relationship between the economy, culture and technology. The work of Katherine Hayles, Donna Haraway, and Timothy Mitchell, among others, will motivate my posthumanist approach to questions of environmental (and postnatural) theory and literature.

Ecocriticism, meanwhile, offers posthumanists detailed histories (for example William Cronon’s and Mathew Klingle’s histories of Chicago and Seattle, respectively) that illuminate how human systems, technology and the natural world have developed in an intra-related fashion. A posthumanism influenced by ecocriticism will also emphasize the critical importance of materiality in what is often assumed to be an increasingly de-materialized, technology-driven

world. And, finally, ecocriticism's attention to an earlier period of studies, involving humans and technology during industrialization, will help posthuman critics to better understand the roots of a nature/culture binary that continues to exist today in a world of information-technologies and global capital.

### **Chapter Summaries:**

Given that this dissertation developed from an initial interest in the problematics of climate change for environmental theory and activism, I initially assumed the questions raised would be relatively new and distinct. Therefore, I originally planned to work with primary texts published, for the most part, in the last few decades; or, at the very least, those written within and about contemporary environmental politics (usually designated by the post 1960's move from traditional preservationist politics to a broader inclusive agenda marked by Nixon's creation of the EPA). However, I quickly discovered that the questions embedded in the (professional) theoretical and (public) political work of climate change environmentalism, eco-theory and posthumanism also had a longer history (albeit from different motivations and with significantly different theoretical preoccupations) in environmental scholarship and writing. As I will outline in chapter 1, for instance, I was led back to the 19<sup>th</sup> century via the discovery of a wealth of recent scholarship on Henry David Thoreau dealing with questions of human knowledge and agency within his work even during that early industrial period.

The opening chapter of this dissertation attempts to read Thoreau's failures, contradictions and inconsistencies as an opening into the questions surrounding what the nature-culture relation may look like in a postnatural world inhabited by posthuman humans. I will suggest that the fundamental inconsistencies within Thoreau's depictions of the relationship between humans and the non-human are indicative, at least in part, of a broader problem still

operating within environmental thought regarding the questions of human knowledge and agency. The goal of the chapter is not to recover Thoreau for any one particular methodology or approach, but rather to examine the problematics in his work that speak to continuing, unresolved issues in environmental thought. Specifically, his attention to the relation between knowledge formation and border spaces, hybridity, and non-human agency offer insight into the ongoing challenges to effectively confront and critique anthropocentrism in ways that help move beyond the problematic dualism inherent in the nature-culture binary.

The second chapter turns to fictional representations of environmental justice issues in order to more fully explicate the relationship between concepts of agency as distributed across the human and non-human, linear and non-linear conceptions of history and the political efficacy of environmental politics. In this manner, chapter 2 raises the question of whether Karen Tei Yamashita's and Leslie Marmon Silko's related yet unique depictions of distributed agency and radical social movement organizing – contingent, limited, co-produced, and with agency dispersed across the human and non-human – offer a type of evaluative technique for radical socio-political organizing in the face of myriad environmental and socio-economic challenges of the early first 21<sup>st</sup> century.

The third chapter builds upon these questions of distributed agency and political efficacy with a reading of Kim Stanley Robinson's near-future science fictional depiction of climate change in the 'Science in the Capital' trilogy. The trilogy places intriguing emphasis on the relationship between forms of scientific practice and concepts of agency. Here I argue that as socio-political strategy takes non-empirical forms of knowledge formation and distributed agency more fundamentally into account, the political potential and challenges inherent in this recognition of a radical limitation of human knowledge and agency calls for a rethinking of our

very notion of political efficacy (of what radical transformation looks like). This would necessarily entail learning to critically inhabit a present moment that anticipates an uncertain, rather than promisory, future.

The fourth and final chapter takes a selective look at contemporary global climate change activism in the U.S. as I attempt to track the manner in which the dominant and possible emerging alternative paths of the movement are scripting political subjectivity and agency. On one level, of particular interest in this chapter is the emerging tension between global climate change environmentalism and the increasingly globally networked environmental justice movement. On another level, this final chapter examines the relation between environmental scholarship and activism around the question of distributed agency and political efficacy in the age of climate change. I take a particular interest in the organization 350.org's scripting of agency in its recent and ongoing, high publicity struggle to stop the construction of the Keystone XL Pipeline (planned to connect the Tar Sands oil of Alberta, Canada to U.S. Gulf Coast ports).

## **Chapter 1: Relational Knowing, Hybridity and the Postnatural in Henry David Thoreau's "Walking" and *Walden***

### **I - Introduction**

During the early stages of my research into the relationship between environmental literature and theories of the posthuman, my attention was quickly drawn to Kim Stanley Robinson's *Science in the Capital* trilogy. The trilogy's narrative pivots around the manifestation of near-future, abrupt climate change. However, I was surprised to discover that the trilogy incorporates transcendentalist philosophy into its complex representation of the challenges abrupt climate change might pose to contemporary scientific, economic and cultural institutions. Specifically, R. W. Emerson and H. D. Thoreau play a significant role in the philosophical exploration of the character Frank Vanderwal. As I will discuss in chapter 3, Frank, a scientist at the National Science Foundation, undergoes a professional and personal transformation that challenges his empiricist-based worldview. Frank becomes increasingly convinced of the need to blend scientific and cultural approaches to environmental challenges and attempts to relinquish his former purely empiricist approach to knowledge-making and problem-solving. Despite my initial impulse to focus on more contemporary texts when examining the relation between environmental politics, environmental humanities scholarship and theories of posthumanism; I was deeply struck by the relatively prominent role of 19<sup>th</sup> century transcendental thinkers in a science fiction narrative about the crisis of climate change in the early 21<sup>st</sup> century. It brought to my attention, not only the continued influence of Thoreau et al. in contemporary American environmental thought, but also the manner in which the challenges of thinking the human place in nature span across these time periods in interesting

ways. Therefore, it also became clear to me that the preoccupations of the privileged texts in this project are not completely (or only) a function of their historical time period.

Robinson's *Science in the Capital* trilogy, in part, tells a story that insists the crisis of climate change can be addressed by, what Frank comes to term, "passionate science". This is an approach to scientific practice that I argue in chapter 3 is indebted to Harraway's concept of "situated knowledges". In the novels, Frank's personal and professional transformation serves as a symbol of what is depicted as a necessary shift from empirical to embodied, subjective, passionate science. Interestingly, he becomes a habitual reader of a website called [emersonfortheworld.net](http://emersonfortheworld.net) that features a daily quote from Emerson or Thoreau. For the scholar of environment and literature, Robinson's choice of these transcendentalist figures as a motivating force in his character's transformation may at first seem an unlikely one. Several pertinent questions likely come to mind; for instance, why does Robinson turn to Thoreau as the inspiration for a character moving away from the basic tenets of empirical science and toward a type of 'situated knowledge'? What is it about Thoreau's ideas that might catalyze the destabilization of scientific practice that Robinson explores in his trilogy? And, finally, what depictions of nature and the relationship between human and non-human communities exist in Thoreau's work that Robinson might be drawing on? In this opening chapter, therefore, I begin by examining Thoreau with an eye to the role he plays in Robinson's trilogy. That is, as one source of motivation for Robinson's thrilling depiction of the search for a social, scientific and political approach that might outstrip the limitations of purely humanist and empirical approaches to global climate change.

After happening upon the website, Frank finds himself especially compelled by the quotes he finds from Thoreau. In fact, "...the great philosopher of the forest at the edge of the

town” was “extremely useful to Frank – often more so, dare he say it, than the old man himself [Emerson]” (*Sixty Days*, 15). Thoreau’s literal and perceptual inhabitation of the edges and borders, and a philosophy focused upon unsettling simple binaries, ignites Frank’s exploration of alternative ways of knowing the world. In his trilogy, Robinson pulls upon the aspects of Thoreau’s work that examine the borderlines between what is nominally termed science, culture and nature – recent ecocritical and environmental philosophy scholarship on Thoreau has also been intrigued with this aspect of his work (as I will discuss below shortly). The Thoreau that destabilizes these borders – between mind and body, culture and nature, science and art – offers an opportunity for Frank, the scientist, to re-examine the assumptions that motivate his disciplinary expectations (from humanism to empiricism). Frank is searching for what he hopes will be a more flexible way of interacting and interpreting the quickly changing world he daily encounters; a new ‘way of seeing’ that may help society adapt and find new ways of inhabiting a quickly changing and unpredictable climate.

For Frank, the assumption of objectivity and the privileging of an assumed uniquely human rational mind, that underpin empirical scientific method, are fundamental tenets prior to his transformational process. Early in the third and final novel, Robinson depicts a quote from Thoreau’s journal that challenges the fundamental tenet of Cartesian dualism as particularly influential on Frank’s thinking. It reads; “They are fatally mistaken who think, while they strive with their minds, that they may suffer their bodies to stagnate in luxury or sloth. A man thinks as well through his legs and arms as his brain. We exaggerate the importance and exclusiveness of the headquarters.” In contemplating this declaration, Frank realizes that Thoreau had, as he puts it, “lived the day, and paid ferocious attention to it, as a very respectable early scientist” (15). Frank commends Thoreau for the motivation that he now himself finds each day to “slip out the

door in a frame of mind to see the world and act in it.” To see the world and to act within it while privileging an attentiveness to detail, and to the natural world’s independent powers, takes on great importance to Frank. How best to remain open to the world is then the ultimate question; the answer that Frank finds in the above passages resembles the practice, or state of being, that Thoreau terms ‘Useful Ignorance’ in his famous late essay “Walking”.

The connection that I will trace between Robinson’s trilogy and Thoreau’s work is embedded, in significant part, in the difficulty of thinking agency outside of liberal humanist constructs. This connection can most clearly be seen in the contradictions within Thoreau’s work and the difficulties that Robinson’s work predicts contemporary society will have in dealing with climate change (even once the socio-political campaign to discount its existence is overcome). The uncertainty and contradiction that permeates Thoreau’s critique of anthropocentrism displays the difficulty of thinking outside the fundamental constructs and binaries of liberal humanism. His attempts, although not necessarily successful by general standards of consistency and clarity, offer a productive place to begin an investigation of American environmental theory’s varied attempts to mount trenchant critiques of, and alternative models to, anthropocentrism.

This project also begins with a focus upon Thoreau due to his status in an ecocentric imaginary within environmental humanities scholarship. Thoreau is consistently turned to, for vastly different reasons, by scholars from multiple disciplines in order to depict the bard of Concord as a monumental thinker or early example of some later theoretical trend. These theoretical trends include, but are not limited to; the preservation movement, environmental ethics, critiques of capitalism, simplicity movements, ecocentrism and, most recently, fiction and scholarship exploring hybridity, the postnatural and posthuman subject. Of these,

ecocentrism remains a particularly dominant trend within ecocritical work and Thoreau remains a touchstone figure for those looking back to early environmental writing for alternatives to, and critiques of, anthropocentrism. Obviously, critiques of objectivity, rationality and human mastery of nature are long-running themes in environmental writing and philosophy. However, is it correct to assume that a decentered human is automatically a more ecological one? And, is to assume so indicative of a certain form of primitivism? A more sustained look at Thoreau's depictions of human subjectivity and the nature-culture binary opens up an opportunity to begin to unpack this prevalent assumption. My goal here is not to recover Thoreau for any one particular methodology or approach, but rather to examine the problematics in his work that speak to continuing, unresolved issues in environmental thought. Specifically, his attention to borders, hybridity, and non-human agency are related to ongoing challenges to effectively confront and critique anthropocentrism and move beyond the problematic dualism inherent in the nature-culture binary<sup>vi</sup>.

This chapter hopes to engage with Thoreau's sometimes maddeningly contradictory statements and his inability to produce a fully coherent argument as productive failures based in his unrelenting engagement with these difficult issues. In so doing, I attempt to look to parts of Thoreau that generally go under-examined exactly because they are not commensurate with an ecocentric reading of Thoreau. Along these lines, Lawrence Buell writes that, "To understand fully what nature meant to Thoreau, we need to examine each of these projects with the understanding that we shall arrive at an overall picture that is somewhat blurry, shifting, and pluriform, not tidily coherent or reducible to one or two sweeping statements" (126). I want to build on Buell's point here, in which he quite rightly points to the relationship between Thoreau's contradictoriness and the complexity of his ideas, to say that Thoreau's 'failures'

might be instructive regarding the difficulties intrinsic to the critique of anthropocentrism. I hope to investigate what is productive about Thoreau's 'failures' (the inchoate nature of his approach to environmental questions) rather than (re)define him as a monumental thinker. Buell is also correct in pointing out that,

“Respecting Walden particularly, I believe that its very ‘failures’ enhance its representativeness both as a document of the environmental imagination and as a microcosm of Thoreau’s achievement, for he was never able to get beyond an inchoate, fragmentary sketch of his grand effort to comprehend the Concord environment in its multidimensional totality” (126).

While I agree with the importance of noting the productive potential of Thoreau's “failures”, I also want to suggest that certain aspects of these inconsistencies continue to bedevil environmental thought as it has attempted to articulate critiques of anthropocentrism, empiricism and, more generally, redefine the nature-culture binary in ways that more consistently emphasize the interconnectedness of the human and non-human worlds. Further, I can't help but wonder if Buell, who argues consistently for the ecocentric Thoreau, is not attempting to tidy up this contradictory messiness even as he points to its productive potential in the above quote.

Buell references Thoreau's attempts to discover Concord's “multidimensional totality” and I find this particular phrasing somewhat telling. To my mind, this phrasing actually operates as an attempt to repackage Thoreau's contradictions in a more holistic manner.<sup>vii</sup> In other words, in this case the phrasing of the non-human environment and its relationship to the human as a “multi-dimensional totality” seems to me an attempt to make the problem *comfortably complex*. By repackaging the multidimensionality of Thoreau's work, Buell attempts to emphasize a

holistic and ecocentric alternative at work in Thoreau's writing; or, a reassuring commensurability with conventional frameworks for thinking the nature-culture binary. Instead, I hope to read Thoreau's failures, contradictions and inconsistencies in a less comforting fashion and, in so doing, begin an exploration into what the nature-culture relation may look like in a postnatural environment inhabited by posthuman humans. Furthermore, I will suggest that Thoreau's inability to articulate one consistent position is indicative, at least in part, of a broader problem still operating within environmental thought around the question of material agency in particular.

So-called *second wave ecocriticism*, a term also coined by Buell and generally understood to have come to prominence in the past 10-15 years due to its attention to critical theory and cultural studies scholarship, has recently returned to 19<sup>th</sup> century literature, and Thoreau in particular, in an attempt to think about the iconic figure outside, or around/along the borders, of transcendental romanticism. Buell's *The Environmental Imagination* was an early and influential work that argued for an ecocentric approach to Thoreau; and, furthermore, that Thoreau himself is an early example of ecocentric philosophy. More recently, Geoffrey Myers has argued for the potential of what he terms "post-positivist ecocentrism" that he suggests would be more attentive to social construction theory and more clearly articulates a relinquishment of human mastery of non-human nature that refrains from reifying the natural environment in the process. Maintaining the ecocentric critique of anthropocentrism while moving away from a holistic understanding of nature may very well open up new possibilities for ecocentrism in environmental thought. However, in too many instances, there remains a romanticized concept of "balance" or being "in-tune" with nature in ecocentric thinking. Even in projects such as Myers, that ostensibly set out to critique this problematic construction of the

natural world, there is a reluctance to fully move beyond a reified and holistic form of Nature. Consequently, theories of ecocentric critiques of contemporary culture continue to have a difficult time articulating what happens once humans relinquish empirical/imperial missions for supremacy and the illusory empirical/objective position outside or above the non-human environment (that these critiques widely and fervently call for).

Ecocentric approaches to environmental questions in many ways continue to value a particular type of nature and assume a proper relation to it (and experience of it) that is based in euro-american concepts of nature. That is, “Many popular ideas about the environment are premised on the conviction that nature is stable, holistic, homeostatic community capable of preserving its natural balance more or less indefinitely if only humans can avoid ‘disturbing’ it. This is in fact a deeply problematic assumption” (Cronon, 24). As this project outlines and builds upon, there have certainly been strides taken in ecocriticism to destabilize the nature-culture binary that attempt to move beyond “appealing to non-human nature as the objective measure against which human uses of nature should be judged” (Cronon, 25).<sup>viii</sup> However, Myers’ argument for a new type of ecocentric approach in which the relinquishment of human privilege is equally committed to social justice and the eradication of white privilege is an attempt to recover ecocentric thinking from this problematic essentialism – and therefore from the field’s persistent impulse to a regressive antipathy for theory and a reluctance to engage with theories of cultural construction.

Building from Paula Moya’s concept of “postpositivist realism”, Myers argues for a “post-positivist ecocentricity that would acknowledge the social construction of ideas about nature while privileging the reality of the physical world and its constituent members (including human beings)” (18). According to Myers, post-positivist ecocentrism is more attentive to

human-related environmental issues, such as environmental racism, because “such a postpositivist ecocentricity, in positioning the self as equal to and interconnected with other beings in the natural world, necessarily rejects both racial and species superiority as false in theory and unsustainable in practice” (18). Despite the important aims to destabilize anthropocentrism and white privilege that are at the core of this statement, a problem arises due to the retention of the ecocentric approach. That is, in part, that Myers continues to posit a correct, or legitimate, human relationship to nature up against the *false* claims of human privilege. As I will point out even more forcefully below, there is an undercurrent of “false consciousness” critique in Myers work that attempts to hold onto some constitutive elements of traditional ecocentrism. In other words, Myers version of ecocentrism still posits that a *correct relation* to nature will be discovered only after a particular type of nature experience reveals it to us; this, in turn, will lead the human subject to ‘relinquish’ their position of superiority. Allow me to offer a quick but illustrative example.

Myers turns to Thoreau as a ‘starting point’ and argues that Thoreau’s critique of his contemporary culture was committed to both environmental and social justice. Despite his qualifications regarding ecocentrism, Myers does in the end mostly agree with Buell that Thoreau discovers a commitment to environmental and social justice through an “ecocentric relinquishment” of the self (141). The concept of relinquishment here operates to continue a romanticist valuing of nature (based in a particular euro-american subjectivity) that assumes contact, or recognition of, a particular type of nature will automatically trigger this more sustainable relationship between the human and non-human world. In regard to the cultural construction of nature, Myers writes,

“I certainly agree that ideas about the natural world such as ‘wilderness’ or ‘private property’ are products of human culture and history, but I want to stress less the constructedness of nature and more the way that ideas about the superior status of the human self with respect to nature and the superiority of the white self with respect to race are related social constructions that derive from a misunderstanding of the human relationship to the rest of the natural world” (16-17).

At the end of this quote, we can note the reemergence of an essentialized representation of human experience in nature – that is, the idea that there is one correct way of understanding nature and humans’ relation to, and experience of, the non-human. If Myers would have it that contemporary western culture has “misunderstood” its relation to nature then it is inferred that anthropocentrism has veiled another, more *real*, relation to the non-human. This is the essentialized understanding of nature that ecocentrism seems unable to shake; even in Myers’ otherwise thoughtful and well-intentioned work. It is a common theme: there is one correct way to live in relation to the earth, and ecocentrism is the path to it, if only we could pull off the blinders of humanism and see it!

Paul Outka, also returning to Thoreau and the 19<sup>th</sup> century more generally in his recent book *Race and Nature*, takes the “inverse” approach to Myers. Essentially arguing that a post-positivist ecocentrism is impossible, Outka explains that, in contrast to Myers, his “...analysis views moments of merge with the natural world and a strong identification of subject and landscape as also deeply implicated in racist hegemony, from the relatively strong environmental commitments of the Nazis, to the ways whiteness became normative and white supremacy was naturalized...” (Outka, 207). Importantly, Outka shows Myers’ assumption, that there is one type of correct relation to nature, to be problematic in that it does not sufficiently account for

cultural difference and instead universalizes the author's experience in nature in the name of "reality". Further, we can see that this holistic approach assumes an individuated whole subject and a singular, consistent nature. This is an example of the reluctance to take social constructionist theory seriously in much 1<sup>st</sup> wave ecocritical work. As Ursula Heisse has pointed out;

"The critical insights of the last twenty years of cultural theory...[examining] the ways local and national identities depend on excluded others, how they rely on but often deny their own hybrid mixtures with other places and cultures, and in what ways real and imagined travel to other places shapes self-definitions have not left any lasting marks on American environmentalist and ecocritical thought" (42).

This is an overly simple rendering of human subjectivity as well as the complex and dynamic qualities of the non-human environment. In this way, "...ecocriticism...has not connected to the foundational idea in much recent cultural theory that identities are at their core made up of mixtures, fragments, and dispersed allegiances to diverse communities, cultures, and place..." (Heisse, 43). While Myers project effectively draws attention to the ways in which environmentally based critiques of anthropocentrism can also be attentive to issues such as environmental racism, it also shows us that the ecocentric 'relinquishment' of human privilege is fraught with complications.

The decentered human subject and the question of agency in a post-anthropocentric moment remain under-theorized by ecocentric analysis. As mentioned elsewhere, it seems much ecocentric theory assumes as axiomatic that a decentered human will *naturally* be a more ecologically aware citizen. Therefore, even Myers interesting attempt to move ecocentrism past

its reification of nature, his theorizing of a post-positivist ecocentrism maintains an essentialized, and theoretically uncritical, rendering of the natural world and human experience in that non-human world. In the end, essentialized representations of the human and non-human community remain mostly, if not completely, intact. In fact, this essentialism remains central to the argument for a transition from anthropocentrism to an ecocentric perspective.<sup>ix</sup>

I would suggest that several issues are not fully considered regarding the new relationship between the human and non-human after the ‘relinquishment’ of a human-centered approach. First of all, should it be assumed that an ecocentric “leveling” of the relationship between humans and non-human environment, through a proposed “relinquishment” of human superiority (usually brought on by a particular attention and experience in the non-human world), will automatically lead to a more ecologically-friendly society? What assumptions are at work behind this logic? Ecocentrism tends toward this problematic approach because it generally obscures these complications in an effort to offer a readily available alternative to anthropocentrism. For my project, this example is instructive for the continuing challenges within environmental scholarship in regard to its attempts to configure a trenchant critique of anthropocentrism that does not rely upon an essentialist approach to the natural world.

Another significant problem within ecocentric thought to this point is its oversimplified depiction of the human subject’s relationship to place. This is a particularly important aspect of thinking through the relationship between ecocentrism and Thoreau’s work due to the latter’s consistent emphasis on place-based knowledge but also, importantly, his attempts to recognize the hybridity and complexity of place and cultural-ecological relationships. In fact, the more problematic aspects of ecocentrism can just as easily lend themselves to quite regressive cultural and political positions. Buell writes, “Those who speak on behalf of place-attachment need to

face certain intractable ambiguities inherent in the concept of place. One is the fraught relation between environment and emplacement. Devotees of place-attachment can easily fall into a sentimental environmental determinism” (66). Here Buell calls into question an important aspect of much ecocentric thought; that is, the argument that a certain experience in nature leads to an appreciation of nature (often based in aesthetic terms) which, eventually, leads to a conservation ethic on the part of the human to protect said nature. Building upon this idea, Ursula Heise has explained that, “...the temptation on the part of environmental writers...has been to assume that such ties [to place] emerge ‘naturally’ and spontaneously in the process of inhabiting particular places, while allegiances to larger entities – modern society, the nation-state – have to be created by complex and artificial means” (61). It, therefore, is not entirely clear that place-attachment theory can do much to move beyond these issues of sentimentality, primitivism, and the dualist construction of “simple nature” vs. “complex culture”. Ecocentrism and localism seem, in several ways, intricately reliant upon one another and theorists should certainly be careful to avoid assuming that progressive values will necessarily be derived from this relationship to place. And, as Outka points out above, history is full of examples discounting such an assumption.

In the end, it is not the goal of this project to create a type of litmus test for ecocentric thinking, but rather to examine the complexity of the nature-culture relationship that is actually incommensurate with ecocentric approaches. The nature-culture relationship is often posed in oversimplified terms in environmental thought (based as it so often is in the either/or debate of anthropocentrism and ecocentrism). Therefore, following the “relinquishment” of human mastery that is proposed in environmental critiques of anthropocentrism and empiricism, how do environmental thinkers imagine what happens next? Too often, as we’ve seen above, it is argued

that there is a real or actual nature-culture relation that we can find once one casts off the blinders of anthropocentrism. The assumption that there is something real to be unveiled lends itself to under-theorization of the possible challenges, limitations and possibilities commensurate with a post-anthropocentric relation to nature. One issue in particular that goes under-theorized is the question of human and non-human agency. Of course, the recognition of material agency, nature's autonomous ecological systems, plays an important role in ecocentric critiques of anthropocentrism (it is often presented as one realization that "connecting to nature" offers the human a more humble realization of nature's vast and at least partially autonomous processes). However, the questions that a decentered human raises for our understanding of agency and the nature-culture binary remain under-theorized.

Throughout this project, it is my contention that distributed agency is at once a key component of the critique of anthropocentrism *and* a problematic for environmental thought. As early as Thoreau's work, I will argue that we can see the question of distributed agency emerging as a significant problem that confronts environmental thought and its critique of human mastery over nature.<sup>x</sup> This raises several important questions. Such as, in what manner does Thoreau's proposed 'way of seeing' script agency? How does this conception of agency relate to linear history and futurity? How does material agency fit into Thoreau's critique of empiricism and anthropocentrism? And, finally, what exactly becomes of linearity/agency in a world where human agency is relinquished and the "chaotic"- the creativity/complexity – of the non-human is understood as a constitutive element of historical change?

The following chapters will engage with these questions even more fully, looking to several literary genres and variants of contemporary environmental politics. For the purposes of this opening chapter, however, I turn to Thoreau not to necessarily answer these questions

definitively, but instead to explore a certain connection, or continuity, between Thoreau's attention to the nature-culture binary and the continuing problematics that environmental scholars and activists encounter when attempting to think outside the realm of liberal humanism. It is my hunch that the persistence of these problematics in environmental thought is in part a reflection of eco-theory's inability to reconcile the decentered human subject with a loss of human agency.

This chapter asks whether these 'ways of seeing' the relationship between the human and the non-human worlds problematize (or significantly disrupt) the ecocentric call for humans to "let go" of their supposed position of objective mastery over the natural world. Is there a tension between Thoreau's acceptance of what he terms "useful ignorance" – based upon an approach that observes the natural world via a privileging of a type of knowledge that is local, embodied, and flexible rather than objective, universal and fixed - versus, on the other hand, the uncertainty that exists in his depiction of chaotic nature and the limits to human knowledge and agency? The latter seems to highlight the ways in which humans cannot have complete control over nature, as well as the fact that they cannot easily relinquish what partial agency they do have. In other words, this understanding of agency as distributed across the human and non-human makes both notions (empirical anthropocentrism AND ecocentrism), in their most commonly understood manifestations, impossibilities.

## **II Humboldtian science, Situated-Knowledge(s) and the "passionate scientist":**

Laura Dassow Walls' book *Seeing New Worlds: Henry David Thoreau and 19<sup>th</sup> Century Natural Science* serves as an excellent starting place for an investigation of Thoreau's

engagement with knowledge-making processes. *Seeing New Worlds* reveals an alternative understanding of the human/non-human relationship that develops in Thoreau's work in the 1850's until his premature death in 1862<sup>xi</sup>. In fact, Walls argues that Thoreau's goal in turning to natural history and science in the 1850's (as most clearly evidenced in the journals and later essays) is to tell a "history of man and nature together" as an "interconnected act" (*Seeing*, 10). In this manner, Walls highlights the ways in which Thoreau works to combine transcendentalism with empiricism, poetry with science, through attention to the materiality of the natural world. According to Walls, Thoreau does still conceive of Nature as "one great whole" but, in a break from Emerson (and Coleridge and Kant before him), Thoreau becomes intensely interested in an emergent alternative to their 'romantic rational holism' through his study of the natural world's "constituent and individual parts" (94). Walls explains that Thoreau's project in his journal and later essays, during the 1850's, is to see nature as a series of "facts" rather than as a universal myth or a mirror to the soul of humanity. I will argue later that this change of emphasis is one that displays a distinctly different understanding of human and material agency as well. The romanticism of Emerson leads to the "subordination of material nature as no more than a passive vehicle for the currents and energies of a life force that is...only in the human soul" (69). Emerson's division between World and Idea, or Nature and Thought, leads to a paradox inasmuch as the philosopher can only discover true existence through a purposeful extraction of oneself from the world of objects.

Walls points out the ways in which this dualism will aid in the separation of the natural sciences from the humanities. Understood within this binary framework, Thoreau's move to the natural sciences has commonly been explained as a retreat from his poetic aspirations. However, as Walls accurately points out, we'd be better served to recognize Thoreau's final decade of

work as an attempt to occupy the boundary between these two transcendental polarized opposites and, ultimately, to deny the division of poetry and science altogether. In fact, she argues that although the,

“...popular image envisions Thoreau as a premodern isolate who turned his back on society to rhapsodize about a pure, untainted, Edenic American nature. This iconic figure reasserts the tragic and sterile dualisms between subject and object...the human and the natural, which Thoreau himself inherited from Emerson and Coleridge, which he lived and experienced fully, and which he fought to disrupt and disown in the name of creating a future that might succeed the ‘evil days’ ushered in by romantic alienation in a commodified society.” (13-14).

Thoreau’s struggle to disrupt these “sterile dualisms” is the point from which I hope to investigate how his work is already exploring the destabilization of the nature-culture binary in ways that point towards a developing recognition of distributed agency. Does the critique of these dualisms also lead to sustained attention to the broader assumptions of liberal humanism; particularly as it posits the agency of humans as unchallenged by the merely non-human world? I will look at examples from *Walden* and the essay “Walking” below to determine whether Thoreau is engaging with the question of agency on a level that ecocentric environmental theories have yet to do.

Walls points to a connection between Thoreau’s critique of empiricism and what Haraway calls “the redemptive value of ‘sitedness’ – of knowledge that has the enabling properties of being sited, in discipline, place, history, gender, personality” (10). Although certainly incomplete or inchoate, Thoreau’s determination to attend to the subjective experience

of knowledge-making and his critiques of objectivity and empiricism do seem to “anticipate” Haraway’s concept of situated-knowledges. Walls argues,

“Thoreau’s conscious experimentation with intentional and partial vision centered in personal, empirical experience anticipates Donna Haraway’s quest for a ‘feminist objectivity’ which defies the transcendent God-vision of the unmarked gaze by insisting on the ‘embodied nature of all vision’ through eyes which are ‘active perceptual systems’” (10).

The critique of “God-vision”, the myth of disembodied objectivity, which Walls identifies within Thoreau’s turn to particularity and subjective positionality (and away from the rationalist and universalist approach we find in his mentor Emerson), connects in provocative ways to the questions raised in Kim Stanley Robinson’s *Science in the Capital* trilogy. That work, I will argue in chapter 3, suggests that the climate change crisis can only be addressed by a ‘passionate science’ – that I will argue is also modeled upon Haraway’s concept of situated knowledge. Interestingly, in her analysis of Thoreau’s movement away from transcendental romantic holism, Walls argues that Humboldtian science operates as a similar influence on Thoreau’s thought and motivates his process of transformation into a type of passionate scientist in the latter stages of his career. This connection is intriguing in its potential to offer a reading of Thoreau that works to understand his critique of liberal humanism (anthropocentrism, etc.) as not fully, if at all, ecocentric.<sup>xii</sup>

It is intriguing to consider that Thoreau is attempting to destabilize the assumed boundary between science and culture at the very moment that professional and disciplinary specialization is in its earliest stages of development. It is also important that we do not read Thoreau too much

through the lens of modern categories. His frustrations with the limits of western empirical method can be instructive for us now even while we allow for the distinct differences in the professional institutions, cultural systems, and material environment between early industrial New England then and now. Therefore, I simply hope to raise and examine the idea that some of the problems Thoreau grapples with, but does not resolve, regarding objective knowledge-making processes share certain commonalities with our contemporary predicaments.

“In the years after 1850, what Thoreau strove to create was, in a sense, a new form of science...that would be relational rather than objective. This ‘relational knowing’ extended and applied the possibilities opened up by the disintegration of the subject/object dualism, which encouraged the subject to ‘know’ by seeing correspondence in the world’s objects, as if they were the mirror of the self, or by ‘reading’ the book of nature as if it were a text ready-made for decoding. By contrast, knowing as an active process in Thoreau’s sense becomes no less than what H. Daniel Peck calls ‘worlding,’ the making of world ‘by interaction – the dance – of the creative self and the world’” (147).

The emphasis on ‘relational knowing’ is an example of Thoreau’s desire to attend to the complex relationship between human and non-human agency. It also denotes a certain attentiveness to the complexity and scale of the natural world which exists outside human’s ability to classify, catalogue, harness and redeploy it.<sup>xiii</sup> Thoreau, like us, is looking for ‘ways of seeing’ the world, and human’s relation to it, that might allow him to better understand his experiences and act more responsibly and ethically as a result.<sup>xiv</sup>

From his journals it is evident that Thoreau read Humboldt almost directly after his time by Walden Pond and “began to visualize a way to banish the tragic dualisms that set man apart from nature” (Walls, *Seeing* 93). It is in this time that he begins to focus more clearly on the “reciprocity” between humanity and the natural world and hopes to interact with nature without “becoming masterful” (124). This approach leads to an understanding of knowledge (and knowledge-making practices) as both scientific and poetic. “In this way, countering the tyranny of ‘system or arrangement,’ does community become the basis for Thoreau’s theory of knowledge...” (143). Walls draws her readers attention to a series of journal entries in the early 1850’s (such November 25, 1850, August 5 1851 and June 30 1852) in which Thoreau ponders the inter-dependent relationship between humans and non-human nature leading to the decentering of the human subject. She proposes that, for Thoreau, “true knowledge is generated and maintained by the community of knowers, a ‘round robin’ in which the center rotates, which includes all as subjects and all as objects. In this way Thoreau breaks down the dualism embedded in the foundation of ‘rational’ holism, which assumes that knowing can take place within the isolated, rational mind” (143-144). This is a critique of objectivity that continues to run through much environmentally focused critiques of western scientific practice.

In regard to Thoreau’s later work, Walls argues that, influenced by Humboldtian science, it evolves into something she terms “empirical holism” and she argues it is a precursor to an ecological science. In fact, Walls contends that Thoreau makes, “a sustained argument for and demonstration of relational knowing, out of which Thoreau proposed a kind of science that Humboldt would have recognized and honored but which in America was a novelty” (144). She is predominantly interested in displaying this approach as one that debunks the assumed disciplinary differences (science and philosophy, empirical and subjective). Specifically, Walls

has argued that "...Thoreau's participation in science maps a range of conflicts and potentials in environmental thought. In brief, I argue that Thoreau arrived at a radical view of nature as a self-generating, creative agent by incorporating Humboldtian proto-ecological science into traditional and romantic forms of natural theology" ("Believing in Nature", 17). My reading of 'Walking' below draws attention to moments where Thoreau contemplates the autonomous, unexplained and 'chaotic' aspects of nature. Thoreau's attention to particularity, such as the details of the seasons in his Concord woods, brings about his revelation that the immensity of variability within the natural cycles challenges any ready-made system of order.

In "Walking", Thoreau also offers a critique of objectivity and argues for the value of subjective experience in understanding the relationship between subject and object. He argues that, "The highest that we can attain to is not Knowledge, but Sympathy with Intelligence. I do not know that this higher knowledge amounts to anything more definite than a novel and grand surprise on a sudden revelation of the insufficiency of all that we called Knowledge before" (623). The movement is away from Knowledge, represented here as something akin to the search for universal Truth, towards instead "Sympathy with Intelligence". This alludes to the idea of situated knowledges, or a "passionate science", that is founded upon a belief in the a practice (simultaneously personal, relational and experiential) of limited, embedded and experiential knowledge-making. For Thoreau, to catalogue and finalize your impression is forever forestalled by a new revelation, transition, etc. However, according to Walls, this is a problem that Thoreau found exciting rather than entirely frustrating. She contends that, "What energized him was his conviction that nature does not lie passive and ready-made, to be 'read' by his educated eye' rather, it is continually creative, improvising in front of his very eyes everywhere and at every moment..." (*Seeing*, 147-148). For my project, Walls attention to

Thoreau's interest in the complexity and autonomous agency of non-human natural processes is extremely helpful. This chapter builds upon her work, and also takes up a slightly different intellectual focus, in that my attention will center more fully on the question of agency (human, non-human and distributed) and whether or not the more practical and complex approach to non-human agency evident in Thoreau's work offers an opportunity to rethink the relationship between the human and non-human nature.

In rethinking Thoreau's depiction of the nature-culture binary through the lens of distributed agency, I hope to display that the so-called original environmentalist's commitment to the practice of situated knowledge offers a productive opportunity to investigate the complex interaction between human and non-human agency (what I discuss in the following chapters as distributed agency). I will investigate the relationship between Thoreau's critique of liberal humanist conceptions of the human subject and his engagement with the question of distributed agency. In endeavoring to speak to these questions in the following readings of "Walking" and *Walden*, I want to suggest that this acceptance of the changing landscape is more than a simple recognition of a semi-autonomous non-human agency. From here, one question for me going forward is whether or not Thoreau understands human and non-human agency as separate entities (in some type of epic struggle) or whether or not there is attention to the inter-linked nature of these agencies, ie. distributed agency? And how does this attentiveness to distributed agency fit into, if it does at all, theorizations of ecocentrism?

### **III – Sauntering Through a Postnatural Landscape:**

Thoreau begins “Walking” by stating his intention to purposively destabilize the reader’s common assumptions regarding for whom, and to what purpose, an author should hope to speak. He begins by writing, “I wish to speak a word for Nature, for absolute freedom and wildness, as contrasted with a freedom and culture merely civil...” (592). The problems regarding the attempt to ever “speak” for an assumed “silent” non-human world are myriad and quite present throughout the canon of American nature writing. Not least of which is the question of how it is possible, and even more importantly whether it is ethical, for the human author to assume to speak for the othered, non-human world at all. Even more pertinent here, and possibly even more problematic, is the question of whether or not Thoreau’s attempt to speak for nature will only help to construct an idealized and reified Nature that stands aloof and remote from human culture. In other words, does Thoreau’s attempt to challenge society’s construction of the nature/culture binary simply replace an instrumental view of the non-human with a romantic idealization of it?

The essay clearly does have its moments of transcendental universalism in which the romanticizing of nature often occurs right alongside a veiled instrumentalization of it. That is, the reader finds moments in which Nature serves as the awe-inspiring inspiration for the poet’s art as well as symbol of the nation’s strength and bedrock of its economic development.<sup>xv</sup> For instance, this is more than evident in the exultation that, “As a true patriot, I should be ashamed to think that Adam in paradise was more favorable situated on the whole than the back woodsman in this country” (608). However, it is also necessary to note that the essay does, in other moments, point towards a more interesting although certainly incomplete investigation of a very different type of nature.

It is my contention that Thoreau, in this essay and elsewhere in his later work, attends to the interdependency of the human and non-human in a more complicated, vexed, and contradictory manner than it is often warranted. The complications inherent in Thoreau's desire to re-conceptualize the relationship between the human and the non-human become clearer just a few pages further into the essay. While making a distinction between walking simply for exercise, or to arrive at a pre-determined destination, and the particular type of "sauntering" that he is actually extolling; Thoreau explains that, to "saunter" as he would propose, one must have both body and mind embedded in place. "In my afternoon walk I would fain forget all my morning occupations and my obligations to society. But it sometimes happens that I cannot easily shake off the village. The thought of some work will run in my head and I am not where my body is – I am out of my senses. In my walks I would fain return to my senses" (597-598). Leaving aside for the moment the rather obvious reading that might point out the assumed Cartesian dualism in this passage; I would like to focus on the ultimate rejoining of the mind and the body that Thoreau proposes. The art of walking is a "return" to the walker's senses. The mindful walker's attention is drawn to her body and her bodily senses; thus bringing the materiality of the human body and the human as species-animal into her consciousness. Both the materiality and particularity of the human senses that this phrasing accentuates are indicative of an attention to the place of the human in relation to the material, non-human environment. Importantly, we are "part and parcel" of this landscape rather than divorced from or above it. Yet, within the context of the entire essay, this return is not necessarily one that creates holistic unity, but rather the human mind, human body and non-human environment (place) interact with and within each other.

Thoreau suggests that the walker in the woods of Concord, one who returns to her senses, can begin to inhabit a border space between (what is commonly understood to be a definitive divide) between the natural world and the inhabited and cultured landscape. However, Thoreau argues it is not so definite after all and to inhabit this border, to blur the clear distinctions between the human and non-human worlds, allows for a new perspective on the central place of humanity in the universe. For example, Thoreau admits that it takes some purposeful route planning and quite a bit of local knowledge to take a walk that successfully avoids “going by any house” and “crossing any road”. In fact, the walker must move “first along by the river, and then the brook, and then the meadow and the woodside” purposively moving through the less inhabited areas of an increasingly inhabited landscape. In other words, it takes effort and planning to even imagine oneself as outside the human occupied landscape. It takes both the mind and body (both an intellectual and material practice) to cultivate a sense of the blurred boundary between what is normally perceived as two separate worlds; society and wilderness. From this we can assume that Thoreau is actually attempting to construct in his walks a material and intellectual space that will allow him to investigate the landscape as a mixed-community (an interdependent relation between human and non-human elements, as theorized helpfully by Giovanna Di Chiro).

This border (liminal) space is one in which the non-human world, while existing within the framework of cultural construction, also retains a ‘wild’ aspect that resides outside of human perception and social construction. The essay “Walking” and Thoreau’s project in his daily walks, I argue, is an ongoing search for this border space. Environmental historian William Cronon, whose essay “The Trouble with Wilderness” makes one of the more influential arguments for the social construction of nature in environmental scholarship, also discusses this autonomy of non-human nature. Cronon allows that while,

“Any way of looking at nature that encourages us to believe we are separate from nature – as wilderness tends to do – is likely to reinforce environmentally irresponsible behavior. On the other hand, I also think it no less crucial for us to recognize and honor nonhuman nature as a world we did not create, a world with its own independent, nonhuman reasons for being as it is. The autonomy of nature seems to me an indispensable corrective to human arrogance” (87).

Therefore, it is important to remember that recognizing the autonomy of certain aspects of nature (and material agency) and understanding the cultural constructedness of nature are not incommensurate. Recognizing the complexity and independence of certain natural processes is not the same as reifying a particular type of nature, nor is it to accept a simple binary between culture and nature.

Thoreau looks to spaces, such as the swamp, that are not handily compiled into either a romanticist or instrumental view of nature. He declares that, “Yes, though you may think me perverse, if it were proposed to me to dwell in the neighborhood of the most beautiful garden that ever human art contrived, or else of a Dismal Swamp, I should certainly decide for the swamp. How vain, then, have been all your labors, citizens, for me!” (612-13). Though easily read as a simple valuation of nature over modern culture, it is important to think about the choice of the swamp. The swamp is a hybrid, border space. Therefore, other than simply being contrary to societal expectations of aesthetic beauty, Thoreau is also emphasizing the generative aspects of nature (also outside the instrumentalization and romanticization of nature). This is about more than simply valuing all types of nature. In fact, Thoreau goes on to say that the muck is a necessity of both nature and culture.

In his detailed history *The Great Meadow; Farmers and the Land in Colonial Concord*, Brian Donahue sheds light on the importance of the marshy meadowland that spread on either side of the Concord River. Donahue argues that this swampy land was an original catalyst to the successful mixed-husbandry agriculture of the early settlers and, by the late 18<sup>th</sup> century, became a limiting factor as well. As population increased, Donahue argues that the amount of farmable land was sufficient to meet local needs but that the colonialists ran up against an ecological limit in the Meadow itself. “Scarce meadow hay,” Donahue argues, “far more than failing pasture, limited the number of livestock that could be kept in towns like Concord in the eighteenth century. More summer pasture could be cleared, either in Concord or up-country, but without more hay it could not easily have been stocked” (210). Farmers were surely aware of this limitation as their need for hay increased and the Meadow’s production could not grow apace. Most likely, “although they may not have calculated it to the decimal point, Concord farmers understood this formula very well” and, therefore, Donahue concludes that by the late eighteenth century, “Before reaching any other limits, the town had outgrown the Great Meadow” (211). Donahue’s insights into the integral role of the swamp in everyday agriculture in colonial Concord add an intriguing aspect to Thoreau’s own fascination with the muck and marshy soil. At the very least, it is another example of Thoreau’s growing interest into the ways different aspects of the natural world affect each other, as well as their complex relation to the human community. The swamp, as generative and limiting at once, highlights the complexity of interaction and interdependence between the human and non-human.

Thoreau’s discussion of the swamp itself moves fluidly in and out of romantic tropes such as the sacred nature of the sublime and the instrumentalist view of nature as the raw material of Civilization. In another passage, Thoreau actually manages to integrate both the

romantic and instrumentalist almost in one breath; he writes, “When I would recreate myself, I seek the darkest wood, the thickest and most interminable and, to the citizen, most dismal, swamp. I enter a swamp as a sacred place, a sanctum sanctorum. There is the strength, the marrow, of Nature. The wildwood covers the virgin mould, and the same soil is good for men and for trees (613). Here the swamp is the sacred escape from culture and the strengthening “marrow” of the human and non-human alike. And, quickly sliding into a more instrumentalist view of nature he writes “A man’s health requires as many acres of meadow to his prospect as his farm does loads of muck. These are the strong meats on which he feeds” (613). Sustained attention to the “muck” of the earth and the “swamps” of the landscape continues at key moments in the essay. These features of the landscape do seem to exist outside the two common constructions of nature – the ideal (romantic) and the useful (instrumental). The artist and philosopher does not depict a swamp, but instead Niagara Falls and the mountains of the West; and the farmer and developer evaluate the swamp as the least valuable aspect of a property until it can be “improved”.

The art of walking, for Thoreau, is certainly an attempt to better understand the complexity of the non-human world but it is also an investigation into the relationship between it and the human community. Thoreau explains that, “For my part, I feel that with regard to Nature I live a sort of border life, on the confines of a world into which I make occasional and transient forays only...” (625). Categorizing his sustained and persistent daily walks in the woods “occasional and transient” forays into nature is to imply both the vastness and complexity of the natural world and humans limited knowledge of it. When Thoreau, probably one of the most committed observers of natural phenomena to ever go for a walk, laments his ability to spend enough time in nature to even approach an understanding of it, we should pay attention. The

critique of liberal humanist conceptions of human control over nature, the newly professionalizing sciences, and empirical approaches to knowledge-making become increasingly evident. Thoreau expands upon this inability of the human to grasp the complexity of nature just a bit later on the same page. He writes,

“Nature is a personality so vast and universal that we have never seen one of her features. The walker in the familiar field which stretch around my native town sometimes finds himself in another land than is described in their owners’ deeds, as it were in some faraway field on the confines of the actual Concord, where her jurisdiction ceases, and the idea which the word Concord suggests ceases to be suggested” (625).

These complex layers of nature, according to Thoreau, are simply not amenable to human economic structures and political borders. By ruminating on the chaotic and complex non-human world Thoreau finds himself increasingly attentive the impermanent nature of the public and private property lines he himself helped to create as a surveyor. On the other hand, there are layers of the non-human that are not easily recognizable because they are not encompassed by current human frameworks for understanding the natural world; these unknown aspects are not simply ‘out there’ in nature but are also fundamentally a part of the interaction between the human and non-human worlds.

Thoreau sees this possibility for interaction as the attuned human saunterer does “sometimes find himself” in this other-than-human place; this is the possibility for inhabiting and studying the border spaces that motivates Thoreau’s ruminations throughout the essay. He seems to be searching for ‘a way of seeing’ that allows for the de-centered human and this de-natured nature to interact; to learn about each other through close scrutiny of this border space itself

outside subject-object dualism. What new ‘ways of seeing’ might form by pressing further upon this intersection of multiple agencies? As these questions indicate, I want to read this passage and Thoreau’s broader argument for “sauntering” as more than merely a romantic exaltation of nature. Instead, I want to suggest that this passage, along with others, actually offer a more fundamental challenge to the privileged position of the empirical (and disembodied) observer through their detailed mediation upon hybridity and fragmentation.

Laura Walls examines a series of journal entries from the 1850’s and argues that Thoreau’s excursions are also designed to facilitate the merging, and even transposing, of object (nature) and subject (human observer) through the discovery of new natural phenomenon that unsettle the observer’s individuality and wholeness in a fundamental way. A similar type of moment occurs near the end of “Walking” as well. While arguing that while the voice of a human singer can bring us to “tears or to laughter”, Thoreau contends that only the crow of a barnyard rooster can offer us “pure morning joy”. Thoreau writes, “I hear a cockerel crow far or near, I think to myself, ‘There is one of us well, at any rate,’ and with a sudden gush return to my senses” (?). The comparison of this ‘bird’s strain’ with a human voice reminds Thoreau of the human animal’s inter-species connection to non-human animals. The assumed gap between the human and non-human is briefly erased in the moment of recognition; the bird becomes simply “one of us”. The gap between the human and non-human is unsettled in a way that moves beyond a simple pronouncement of compassion for (or enjoyment of) the non-human precisely because Thoreau depicts this moment as a return to his own senses. The rooster’s call and the human ear share a sense for each other that crosses the presumed boundary between species; thus allowing the rooster’s morning exuberance to connect Thoreau with his own “morning joy”.<sup>xvi</sup>

At this point, we can see Thoreau contemplating the various (often unrecognized) ways in which human and non-human communities are linked; links that are often obscured by the nature-culture binary. An important aspect of this complex interaction is revealed via Thoreau's attention, in a few important moments, to the way in which social and economic factors are implicated in his interactions with nature. Early in the essay Thoreau offers a rather direct and fairly radical critique of private property in favor of public access to natural areas and the importance of community-wide engagement with and responsibility to the natural environment. He writes, "At present...the best part of the land is not private property...But possibly the day will come when it will be partitioned off into so-called pleasure-grounds, in which a few will take a narrow and exclusive pleasure only – when fences shall be multiplied, and man-traps and other engines invented to confine men to the public road..." (602). In this instance, we clearly do not find an author lost in transcendental questions only, but instead this reveals Thoreau as willing to critique capitalism at the fundamental level of private property and the over-valuation of privacy or "exclusive pleasure". He continues this idea by asserting that, "To enjoy a thing exclusively is commonly to exclude yourself from the true enjoyment of it. Let us improve our opportunities, then, before the evil days come" (602). The value of the experience in nature is one that cannot be an individual experience only. This sentiment may sound strange to those of us that have been trained to think of Thoreau as the loner misanthrope enthralled by the minutia of natural experience or the romantic transcendentalist searching for Universal Truth through Nature's portal to God.<sup>xvii</sup> What we find here is Thoreau's recognition that the natural world is not a separate realm that exists either below, outside or somehow above the human. In this instance, nature is not outside but deeply intertwined with an economic system that, in many cases, determines the very value of the landscape.

It is also worthwhile to note that Thoreau does not seem to be simply lamenting the loss of an untainted, pristine landscape but instead is thinking through the complex question of what economic and socio-political systems may best manage the inevitable human use of natural resources. He is not railing against human intrusion into the landscape entirely but is actually arguing for shared, communal and democratic access to the natural world. In this way the critique of capitalism is more trenchant and complex than some later environmentalists, such as Edward Abbey, who seem to conflate capitalism and progress to the point that humans become inherently disposed to mismanage, exploit and damage the environment no matter the social, political or economic structures that may be in place. Instead, Thoreau is attentive to the social, political and economic structures that effect how we understand and interact with the environment, and argues that as a culture we still have choices (although we must be aware that any course of action the human community may decide upon is never complete or unchallenged).

The excesses and complexity of nature, that I read as an acknowledgement of the independent qualities of the non-human environment earlier, operate here to de-center the human as well. In this way, Thoreau can, all at once, foresee the evil days of resource exploitation to come, challenge his contemporaries to “improve their opportunities” now, and understand that, in the end, the future composition of the New England landscape will not be exclusively the result of human agency. From this perspective, the human world of private property, culturally inscribed ethics, economic and political institutions seem to Thoreau to lack stability and even meaning. Consequently, while contemplating the property lines he has surveyed around Concord he contemplates how “...these bounds which I have set up” can maintain meaning against the material agency of the natural world. It is the human world that becomes temporary here.

These aspects of Thoreau's thinking should also be considered in relation to the technological (industrial) changes occurring in and around Concord from the mid 40's onward. To begin with, the year before his move to Walden pond, the train tracks first reached Concord from Boston. In his journal he documents the arrival of the telegraph to Concord as well. In the fall of '51 he notes that, "In a day or two the first message will be conveyed or transmitted over the magnetic telegraph through this town, as a thought traverses space, and no citizen of the town shall be aware of it" (Journal, 9/2/51,72). The message will pass over the town via the new telegraph technology "as a thought traverses" space; that is, Thoreau here imagines the message as immaterial as an unvoiced human thought. And, consequently, this lack of materiality, as the technology seems to erase the more material instantiations of the letter, - such as a human author, the paper and ink, the postal office and its employees - will lead to an almost invisible yet highly influential change to communication practices. This change appears, in Thoreau's initial assessment, invisible and the material form of the letter has ostensibly disappeared into thin air. Now the telegraph transforms that material form into nothing more than an invisible, undetectable thought moving through the air.

The following day, however, Thoreau apparently chooses a walk, according to the journal "Hubbard's Swimming-Place and Grove" is the destination on a rainy November day, that will take him past the "new telegraph-wire". And, Thoreau notes that as he walked under it that he "...heard it vibrating like a harp high overhead. It was as the sound of a far-off glorious life, a supernal life, which came down to us, and vibrated the lattice-work of this life of ours" (9/3/51, 73). Thoreau is clearly struggling to find the correct note, or metaphor, to describe this new technology arriving in Concord. In the first quote the telegraph message is immaterial and invisible (unnoticeable by anyone) but the next day, as he walks under a portion of the necessary

physical infrastructure built into the landscape, he instead focuses on the physicality of the structure and the actual, perceptible vibration of the wires. Interestingly, he still remains a bit unsure of how ‘material’ this technology can be as it seems to emanate from a “far-off glorious life” unknown to the New England landscape. However, the first noted vibration suddenly becomes capable, in the final sentence, of disrupting the very “lattice-work of this life of ours”. The telegraph, as a technology, effects changes in both the physical infrastructure of New England and its socio-economic system. The physical changes are now a part of the town and the non-human landscape, to either be encountered on his walks or purposefully avoided, and provide an opportunity for Thoreau to consider the connection between the natural and the social (through the technological innovation) on a more complex level. This passage indicates one manner in which Thoreau’s depictions of the natural world are already de-natured in fundamental ways and a contemplation of a technological-nature begins to percolate in Thoreau’s physical and mental excursions through Concorde’s “wilderness.”<sup>xviii</sup> Thinking through these connections also continues to destabilize the nature/culture binary and allows Thoreau, at times, to succeed in bringing the human individual, society, and technology and into a more inter-dependent relationship with the natural world.

#### **IV – Materiality, Subjectivity and Distributed Agency in *Walden***

If my reading of “Walking” above highlighted the contradictory and inconsistent representations of the relationship between human and non-human communities, it also has hopefully displayed the potential in examining these contradictions in Thoreau’s thinking. These supposed failures, or inconsistencies, offer a window into a persistent and pervasive set of

problematics with which environmental thought must engage as it posits critiques of anthropocentrism. In now turning to *Walden*, I am interested in evaluating the relationship between Thoreau's intentional engagement with border (hybrid) spaces and his commitment to situated (embodied and emplaced) knowledge. And, further, we should next look to what these critical engagements with, and representations of, holism and empiricism can tell us about Thoreau's treatment of agency as spread across the human and non-human worlds. Within this reading of certain key passages from *Walden*, I hope to investigate the relationship, if one exists at all, between a destabilization of the nature-culture binary, examples of situated knowledge and other alternatives to empirical process, and distributed agency in Thoreau's work.

Thoreau's depictions of the relationship between humans and the non-human in *Walden* suggests his recognition that empiricism's assumptions regarding human control of nature, and hence a modicum of influence upon the future, is no longer a valid 'way of seeing' the world; but the challenge then becomes to engage with how a decentered human, and a distributed agency, might amend this assumption in a way no longer based in a liberal humanist understanding of linear history; or of a predictable, and therefore manageable, future. The key realization in Thoreau's attention to the chaotic nature of the non-human world, and the intricacies of human and non-human interaction, is that the future cannot be predicted through empirical knowledge alone. This raises the question: is linearity put into crisis within environmental critiques of liberal humanism as early as Thoreau? What would this do to our understanding of the human place in nature within environmental thought (in a U.S. context)?

In reference to the changes in Thoreau's work from *Walden* to the later essays and journal entries, Walls argues that, "...while in *Walden* he consciously sought to create a cosmos out of the chaotic, both the bulk of the *Journal* and the late essays experiment with disconnection

and patterning, creating minimally ordered forms which remain responsive to chaotic processes. The emphasis is no longer on the individual, or on the ‘whole’ (which in any case is no longer knowable), but on the generative equation – the author, Thoreau, in the act of writing the Journal, on a nodal point of chaos, bringing it into a new state of organization” (245). While I agree with Walls’ assessment regarding the gradual change in Thoreau’s thought process, in which his attention moves from holistic naturalism towards the investigation of chaotic nature through attention to materialism and particularity, I am less comfortable with her re-positioning of the author as the “nodal” point in the above quotation. Here again it seems to stem from an impulse, much like Buell’s “multidimensional totality”, to reorganize Thoreau’s “chaotic” representations of nature. In this construction, Thoreau is presented as fostering “organization” out of the “chaos”, but it is certainly hard to accept this version of Thoreau when we pay attention to the pervasive inconsistency in his thought. In just the short treatment of Thoreau possible in this chapter, I hope to highlight that there is at least as much attention to chaotic border spaces between nature and culture, materiality and the transcendental, etc. as there is to the process of re-organizing a holistic system out of these parts. Furthermore, this desire of scholars to de-emphasize the unresolvable conflicts in Thoreau’s work speaks to a larger question I pose throughout this project; that is, how does environmental thought understand the relationship between its ever-present critique of liberal humanism and the issue of agency?

In many cases it appears that the human agent slips back into a position of centrality once the environmental community feels it has successfully outlined the best practices (or determining philosophy) that *should* govern that human actor. I discuss, in later chapters, this persistent *re-centering of the human subject* in regard to the political efficacy of the environmental movement and the impossibility of narrative closure in environmental fiction that engages seriously with the

posthuman. For our purposes now, I will turn to Thoreau's attentiveness to hybridity and the chaotic elements of the natural world (and the human relation to these non-human worlds) to investigate the ways in which they might shed some light on the relation between knowledge and (distributed) agency. And, if so, is it clear that these preoccupations actually disrupt the uncritical "letting go" of human agency inherent in ecocentrism? Will this attention to hybridity at the same time forestall the desire for the re-installation of the human subject in the privileged position of sole arbiter of knowledge and agency?

The central narrative within "The Pond in Winter" chapter, in which ice-cutters arrive to break up, stack and store the icy covering of Walden for its eventual sale, presents an interesting opportunity to explore Thoreau's depiction of agency. In his telling of this story, Thoreau depicts the natural, economic and philosophical systems that confront each other at the level of the local (the pond) and the global (economic markets). First, we learn that, "...a hundred Irishmen, with Yankee overseers, came from Cambridge every day to get out the ice. They divided it into cakes by methods too well known to require description" and "...for sixteen days I saw from my window a hundred men at work like busy husbandmen, with teams and horses and apparently all the implements of farming" (Walden, 538). Thoreau's description of the event is reliably rife with disdain and even a sense of violation at the removal of what he deems "the only coat, ay, the skin itself, of Walden Pond in the midst of a hard winter". All this, he complains, solely for a "gentleman farmer" to "cover each of his dollars with another" (535). The commodification of the pond does, as one might surmise, elicit what can be deemed a romanticist critique of modernity's valuation of economic success at the cost of the aesthetic appreciation of nature. However, despite the strain of transcendental romanticism motivating his

lament of the commodification of the pond, there are also much more complex and possibly unexpected impulses at work in this story.

Thoreau, as we have noted elsewhere, is interested in examining his liminal position at the intersection of the natural and the cultural; therefore, these passages present a very nuanced representation of the relationship between his supposed pastoral escape to Walden and the ongoing industrialization of New England; including its role within an increasingly global marketplace. Specifically, I will argue below that this passage provides an opportunity to examine the ways in which materiality and situated knowledge, distributed agency, and critiques of linear history each operate in Thoreau's narrative. The ice of Walden itself will play its own role in this tale as well; as it, rather than the author himself, becomes the nodal point for thinking an agency that is distributed across the human and non-human. Importantly, the ice becomes a site for the practice of situated knowledge-making practices and an example of a *hybrid product* that is at once natural and cultural, as I will explain shortly.

And it is here, as pointed out above, that Thoreau's narrative enters into more complex terrain than a mundane romantic critique of the spoiling of a picturesque natural scene. I will suggest that the ice-cutters scene opens up a series of interesting problems involving (1) the importance of materiality, particularity and situated knowledge in Thoreau's work, (2) the complex functions of agency as distributed across the human and non-human and, finally, (3) the ways in which these first two problems lead to a crisis of perception regarding linear history and liberal humanist conceptions of futurity. I will show how Thoreau represents a variety of complex intra-actions, to borrow Karen Barad's term, between the ice cutters ability to change the pond's winter cycles so dramatically and the unpredictability of nature's responses to their economic-driven actions.<sup>xix</sup> However, the concept of intra-action implies something more than

just human action followed by environmental response, or vice-versa. Instead, the narrative depends upon the, sometimes disquieting, inextricability of the two types of agency; so that, in actuality, we need to resist the impulse to assume the separation in the first place. My point, for now, is that Thoreau's telling of the removal of Walden's ice in the winter of '48, and his reaction to it, struggles with the question of an agency that is co-produced by the human and non-human; grappling with the relationship between a decentered human and a complex/active non-human world.

Thoreau depicts the ice cutters as adroit at their business, technologically savvy and generally succeeding with their enterprise, but also enthusiastically points to the instances in which "the frozen soil took a piece of steel out of a ploughshare or a plough got set in the furrow and had to be cut out" (536). Or, as he recounts, the bit of joy he felt when a laborer "slipped through a crack" in the ice. Though Thoreau does mention he was quick to offer the man "refuge in [his] house" to warm up safely, he seems to relish in depicting a non-compliant nature as he imagines the frozen pond and soil engaging in a type of non-human, unintentional "monkeywrenching" of the project (can non-human agency be deemed ecotage?). Even more interesting for our examination here, is the way that Thoreau depicts the relationship between the economic goals of the project and the final results in such a way as to highlight the interaction of human plans (economic, technological) and non-human agency. Thoreau writes of the ice,

"However, a still greater part of this heap had a different destiny from what was intended; for, either because the ice was found not to keep so well as was expected...or for some other reason, it never got to market. This heap, made in the winter of '46-'47 and estimated to contain ten thousand tons, was finally covered with hay and boards; and though it was unroofed the following July, and part of it carried off, the rest remaining

exposed to the sun, it stood over that summer and the next winter, and was not quite melted till September, 1848. Thus the pond recovered the greater part” (537).

The vagaries of the marketplace, in this case, leave the ice to melt and return to the pond once again in liquid form. The melted ice rejoins the unpredictable cycles of Walden pond and its surrounding ecosystem; the cycles are never quite the same as the season before, as each season is never, and can never be, a simple replica of the last. The changes made by human and environmental agency (by Thaw and Thor as he calls them in the Spring chapter and in which, admittedly, these two forces are seemingly presented as more distinct and independent of each other), are here more simultaneously organic - yet also integrated with and constructed by the cultural.

Even the pond itself, de-clothed of its icy outer layer, is not presented as necessarily right or wrong (a pristine or ruined ecosystem) as Thoreau seems to intimate that there is no “one way” the pond should be (as certain constructions of the natural world may argue). Thoreau’s analysis here is trying to get at exactly how these circumstances come to be, how they change, and, finally, in what way they are knowable to the human observer. This is indicative of the uncertainty that underlies Thoreau’s more straightforward critique of the ice cutters, the capitalist project employing these laborers, and his general happiness to see the water “return to the pond” (as the plan unfolds in ways that the “gentleman farmer” had not foreseen). It is not, at least only, that this imagined scene seems so “unnatural” – it is more accurate to say that he realizes that nothing is “unnatural” in the end. This becomes overtly clear when we read this scene in tandem with the thawing bank of the spring chapter where he concludes that “there is nothing inorganic”. After the ice has been removed, Thoreau reflects upon the strange possibility of Walden pond being ice-free drastically earlier than he has ever witnessed previously. Walden

pond, removed of its icy winter skin, becomes a condition of possibility firmly based in distributed agency. Here we see Walden pond as an ecosystem constructed by both human and non-human forces that together lead to Thoreau's narrative; at the heart of which are musings I contend are grappling with the effects of an agency distributed beyond the human subject in significant ways.

After describing the mechanics of the removal and the details of the story, Thoreau wonders whether he may, in as short as 30 days, "hear a solitary loon laugh as he dives and plumes himself, or shall see a lonely fisher in his boat, like a floating leaf, beholding his form reflected in the windows, where lately a hundred men securely labored" (Walden, 538). What could be read as a romantic vision of man's inability to impede the natural processes of the pond, despite his best efforts, becomes something else entirely here. This scene that Thoreau imagines is only made possible through his recognition of the distributed nature of agency. These musings upon the loon and fisherman descending upon Walden become infinitely more interesting when we consider that Thoreau imagines both of them as present only to take advantage of the pond being free of ice earlier than usual. He attempts to predict the effect the ice cutting may have on the area and its inhabitants (both human and non-human animal responses are considered which reminds us that environmental changes are made of complex interactions between the human and non-human and that both communities will also be affected by those very changes, reminiscent of Di Chiro's concept of "mixed-community"). In this manner, Thoreau seems to be thinking the interaction between a human economic system, which turns Walden's ice into a commodity, and the natural processes of the pond and surrounding ecosystem. Thoreau's engagement with the distributed agency that is the "mixed-community" of Walden pond's ecosystem raises a set of provocative questions: in what unpredictable ways do these non-human systems simultaneously

facilitate, alter, and even forestall human planning and action (economic or otherwise)? How will the removal of the ice, a human alteration of the ecosystem, alter those non-human forces? And, finally, what new stimuli, options and/or impediments emanating from these amalgamations will co-produce the upcoming spring season for both the human and non-human communities?

As he waits for the thawing of the pond, Thoreau's thoughts are brought back to this question of environmental agency and human knowledge; or, more accurately, the question of human's ability to empirically know and therefore control natural processes. In a detailed description of the thawing process of the pond (less well remembered than his attention a few short pages later to the thawing sandbank), Thoreau's attention to detailed accuracy is remarkable. First, in order to explain why Walden "never breaks up so soon as the others", we are informed that it is "on account both of its greater depth and its having no stream passing through it to melt or wear away the ice" (539). In case the reader is not content with these somewhat general explanations, Thoreau offers us a quantitative comparison of temperatures between Walden and Flints Pond. "A thermometer thrust into the middle of Walden on the 6<sup>th</sup> of March, 1847, stood at 32 degrees, or freezing point; near the shore at 33 degrees; in the middle of Flints Pond, the same day, at 32.5 degrees; [and] at a dozen rods from the shore...36 degrees" (540). These specific observations are indicative of what Laura Walls has, as pointed out earlier, persuasively argued are the influence of Humboldt's scientific practice upon Thoreau's relationship to nature.<sup>xx</sup> We learn about Walden by comparing it to nearby Flint and attempt to better understand the processes of the spring thaw through our general observation that Walden is perennially last to lose its ice in the area and the specific observations regarding pond depth, the thickness of ice, and water temperature. Through this process, Thoreau offers this final

explanation; “This difference of three and a half degrees between the temperature of the deep water and the shallow in the latter pond [Flints pond], and the fact that a great proportion of it is comparatively shallow, show why it should break up so much sooner than Walden” (540). The observed quantitative data are used to draw together a conclusive statement, however, my point is that this process is not necessarily a transcendental relationship to nature (as traditionally defined) nor is it a purely empirical study of nature.

Thoreau also pauses to draw attention to the parts of this process that, even as he closely observes and describes it, function to some degree outside his ability understand or “see” what is occurring. Of particular note to Thoreau are the great thundering cracks the ice lets off at random intervals during the thaw of spring. Thoreau begins by informing the reader that, “The cracking and booming of the ice indicate a change of temperature” (541). And, “In the right stage of the weather a pond fires its evening gun with great regularity. But in the middle of the day, being full of cracks, and the air also being less elastic, it had completely lost its resonance” (541-2). It is from these initial observations that Thoreau feels comfortable moving from these localized observations to a grander, more sweeping generalization of these *rules* of spring. He writes that, “The phenomena of the year take place every day in a pond on a small scale... The day is an epitome of the year. The night is the winter, the morning and evening are the spring and fall, and the noon is summer” (541). These famous lines comparing the cycle of a day to the seasons of the year exhibit Thoreau in his most poetic, universalist and confident tone. However, rather quickly Thoreau moves away from these rules pertaining to the thawing pond’s cracking sounds, and the greater order of the universe to which they portend, to consider the randomness of this material agency as well. He admits that, “The pond does not thunder every evening, and I cannot tell surely when to expect its thundering; but though I may perceive no difference in the

weather, it does. Who would have suspected so large and cold and thick-skinned a thing to be so sensitive?" (542). The sensitivity of the pond that Thoreau himself is unable to predict leads him to surmise that, "The earth is all alive and covered with papillae. The largest pond is as sensitive to atmospheric changes as the globule of mercury in its tube" (542). Thoreau's attentiveness to the sensitive, chaotic, and non-static quality of the non-human ecosystem encompassing Walden pond seems to temper any remaining tendency to look for universal and static laws of nature. The narrative of the ice removal quietly displays the importance of localized, personal, and flexible models of observation, comparison, and hypothesis based upon his year-in, year-out experience in the area. The story depicts the interplay of human (economic, technological, etc) and environmental agency (the pond's itself, other animals like the loon, and we may even include the human fisherman to this list) to what Thoreau imagines will be the open waters of Walden pond in some "thirty days or more" after the ice cutters complete their work.

It is not until the next and final chapter, Spring, where we receive a quick explanation of what actually occurs after the removal of the ice from Walden pond. As we have seen in the previous chapter, Thoreau explains how he imagines the loon and fisherman coming early to the pond that he assumes will not fully refreeze. Now he informs us that "The opening of the large tracts by the ice-cutters commonly causes a pond to break up earlier; for the water, agitated by the wind, even in cold weather, wears away the surrounding ice. But such was not the effect on Walden that year, for she had soon got a thick new garment to take the place of the old" (Walden, 539). At first he simply wonders what will happen, but then suggests that he knows what *should* happen: the pond, he predicts will open up earlier than usual. Yet, in the end, he must admit to being surprised that the opposite occurs (the pond fully refreezes and remains frozen till well into spring that year). He is clearly concerned here with the commercialization of

nature (ice as commodity and Walden's natural cycles as creation of capital) but *also* interested in the fact that the environmental response to these stimuli remains such an unknown.

There is a perceivable tension between the facts Thoreau gathers, and relates to his readers, and his continuing uncertainty as to whether this data is in any way predictive of future spring seasons. This tension might portend the desire for a return of the human subject into their assumed role of centrality. After allowing himself to wonder as to the possibility of human observation; the impossibility of determining the precise changes in the melting ice, Thoreau is suddenly compelled to offer the reader a list of dates displaying the first day the pond "was completely open". We are informed, at length, that, "In 1845 Walden was first completely open on the 1<sup>st</sup> of April, in '46, the 25<sup>th</sup> of March; in '47, the 8<sup>th</sup> of April; in '51, the 28<sup>th</sup> of March; in '52, the 18<sup>th</sup> April; in '53, the 23<sup>rd</sup> of March; in '54, about the 7<sup>th</sup> of April." One is compelled to wonder if the fact that these dates all fall within about 3 weeks of each other comforts Thoreau in some way. Or is it more simply his ability to observe, record and analyze the 'data' that rebuilds his confidence? In other words, is the result or the process itself most comforting? At any rate, the reader is pulled away from the messiness of distributed agency and its role in creating changes to the ecosystems cyclical processes in this moment and reminded of the empirical human observer's power to understand the non-human, or 'the other'. The subtle dualism of the empowered empirical observer privileges the human's role once again. It is not long at all until Thoreau is again working in the realm of the peace and comfort he feels for the cycles of the seasons. He soon writes glowingly and simply of the coming spring,

"At length the sun's rays have attained the right angle, and warm winds blow up mist and rain and melt the snow banks, and the sun dispersing the mist smiles on a checkered landscape...through which the traveler picks his way from islet to islet, cheered by the

music of a thousand tinkling rills and rivulets whose veins are filled with the blood of winter which they are bearing off” (544).

This confident and comfortable ode to spring directly precedes the transition to the famous melting sandbank scene to which we will turn in just a moment.

The “Pond in Winter” chapter, however, concludes with another investigation of the capitalist marketplace, and its ability to connect regions of the world, as Thoreau imagines the “sweltering inhabitants of Charleston and New Orleans” purchasing the ice and therefore, Thoreau muses, having “a drink at [his] well” (538). Beyond these imagined connections brought on by the commodification of Walden’s ice, the “unnatural” situation of the ice-free pond reminds Thoreau of the connection between global economic systems (demand and technological innovation, etc.) and local/regional ecosystems. In furthering this imagined trip of the Walden ice to reach as far as “Bombay and Calcutta,” Thoreau expands the market of global commerce to include a philosophical and intellectual exchange that he sees as having more potential (and certainly interests him more) than the former form of globalization. In this manner, “The pure Walden water is mingled with the sacred water of the Ganges. With favoring winds it is wafted past the site of the fabulous islands of Atlantis and Hesperides...floating by the Ternate and Tidore and the mouth of the Persian Gulf, melts in the tropic gales of the Indian seas, and is landed in ports of which Alexander only heard the names” (538). For Thoreau, in this scene, the chopped, stacked ice of Walden Pond becomes a hybrid product that contains within it both contamination and possibility. It becomes inextricably natural and cultural; a hybrid product with material, economic and philosophical potential.<sup>xxi</sup>

After this particular attempt to commodify the ice fails, as it slowly melts back into the pond, Thoreau imagines his own version of Walden's waters entry into the global marketplace. In this version, the ice, having melted back into the pond after its unsuccessful/aborted trip to the marketplace, rejoins the pond in liquid form. The water then becomes a vehicle for imagining the philosophical and spiritual exchange of ideas in a different type of global marketplace. At the pond, Thoreau imagines that he might "...meet [Bramin's] servant come to draw water for his master, and [their] buckets as it were grate together in the same well" (539). Walden and the Ganges River, and its "sacred water", are "mingled". Here we have yet another hybrid entity not so different from the railroad bank's "hybrid-product" (to which we shall soon turn our attention). In this case, however, it is important to remind ourselves that Thoreau examines the potentiality of the ice of Walden pond, as hybrid object, in a search for a moment, a space, of interdependency between human and non-human systems.<sup>xxii</sup> The value of nature in this case is defined not through a privileging of "pristine" or "untouched" landscapes or "natural" objects; nor do these passages solely operate to lament all human interaction with nature as destructive. Instead, for Thoreau, there is both contamination and possibility in these interactions taking place in each moment and in each place.

This narrative is of course also purely imaginative. In fact, we could say that it is a counter-factual story that highlights alternative mappings of the world in which the water of Walden and the Ganges River are impossibly blended together (and therefore the commodified and the spiritual aspects of each are intermixed as well). This mapping therefore, besides ignoring geographical factors, also refuses conventional political, economic and cultural categories.<sup>xxiii</sup> In a moment, we will return to this concept of alternative, and also oppositional, maps in regard to Thoreau's cartographical representation of Walden Pond itself. In moving to

the famous sandbank scene of the Spring chapter, we will also find another hybrid object of nature-culture in the bank of the railroad itself. And, finally, we will discover that both these hybrid-objects of Thoreau's study, the ice of Walden pond and the sandbank of the railroad line, serve as two parts of a "triangle" of hybridity that is sketched, both in literary and cartographic terms, in the final scenes of Walden.

## V – Hybrid-Objects and Alternative Mappings of the Future

Arguably the most famous and discussed passages in Walden are Thoreau's description of a thawing sandbank along the "sides of a deep cut on the railroad through which I passed on my way to the village" and that gave him great "delight" to behold (W, 544). Often read as an ecocentric ode to the 'oneness' of humans and nature but also singled out as unusual for its lingering depiction of the grotesque, I focus on this scene as it relates to Thoreau's exploration of hybridity, complexity of nature and also the nature-culture relationship. In reading this scene along with the ice-cutter scenes, I am interested in thinking about the Spring chapter in slightly less obvious ways. That is, I want to hold onto the uncertainty evident in Thoreau's disorientation caused by the iceless pond in winter (and more specifically the complex interactions between economics, technology, natural cycles, human and non-human inhabitants) while examining Thoreau's attention to the complex integrations occurring in the thawing bank. It is my impression that this scene, while appropriately read for its important attentiveness to materiality, its willingness to engage with the grotesque, and its blurring of boundaries, is often misconstrued in terms of Thoreau's optimistic take-away *and* over-simplified as a moment of ecocentric "oneness" with nature.

Thoreau explains that, as the sandbank thaws, “Innumerable little streams overlap and interlace one with another, exhibiting a sort of hybrid product, which obeys half way the law of currents, and half way that of vegetation” (545). This “hybrid product”, like Walden’s ice before it, is hybrid in multiple senses. It is important to note that this bank is cut along the railroad line and therefore is a hybrid and unintentional mix of technological innovation and natural cycles as well. As Thoreau admits, though this phenomenon is still a relatively rare occurrence, “the number of freshly exposed banks of the right material must have been greatly multiplied since railroads were invented” (545). The hybridity of the scene is clearly captured in Thoreau’s description of the thawing process as well. For instance, over the course of one rather dense and metaphor-laden paragraph, Thoreau describes the bank as indicative of how “blood vessels are formed”, as reminiscent of “the sources of rivers”, and finally as an exemplary model to raise the question: “What is man but a mass of thawing clay?” Thoreau leads us in this moment from the inner biology of the (human) animal body to the natural cycles and geographic realities of a river system; only in order to finally draw a parallel between the human body and the clay of the earth.

As Thoreau points out, the sandbank is a *hybrid product* that simultaneously follows the laws of both liquid and solid mass simultaneously. This is of course reminiscent of the ice of Walden pond, itself a hybrid product; as it is removed for entry into the market as commodity and remains partly frozen (and partially melting back into the pond) through the following year. Thoreau is enthralled by the boundary-blurring imagery he reads into that railroad cut which triggers an extended meditation upon the materiality of human existence. His careful attention to the particularity of this bodily existence breaks down supposed borders between the animate and inanimate, the human and the non-human, animal blood vessels and streams of inanimate melting clay. Inspired, Thoreau explains that, “...it is somewhat excrementitious in its character,

and there is no end to the heaps of liver, lights, and bowels, as if the globe were turned wrong side outward; but this suggests at least that Nature has some bowels, and there again is mother of humanity” (549). Thoreau values and lauds this sandbank for its “excrementitious” (what a word!) “character” – it is inside-out. Accepted and expected borders are transgressed and the reader is asked to face their corporeality (their mortality), through close examination of the “blood vessels” of the sand (of the material earth). In fact, the human body here becomes, not whole and impermeable, but rather almost as “excrementitious”, and pervious, as the sandbank.

This destabilization of human uniqueness serves as a stark and riveting/revolting reminder to the human as animal or our species-being. Karen Barad discusses this style of hybridity in her work on distributed agency: “As boundaries are reconfigured, ‘interior’ and ‘exterior’ are reworked. That is, through the enfolding of phenomena, as part of the dynamics of iterative intra-activity, the domains of ‘interior’ and ‘exterior’ lose their previous designations...Spatiality is intra-actively produced. It is an ongoing process of the material (re)configuring of boundaries...” (181). The swamp in “Walking”, the melting ice of the previous chapter, and the sandbank here all seem to ignite Thoreau’s interest in the permeable and dynamic borders between animate nature, material objects, and the human body.

Thoreau seems to engage with the chaotic elements of nature in much the same way as we have seen him to be interested in hybridity; the results of distributed agency’s unfolding. It is my contention that these foci of Thoreau’s point towards a realization of uncertainty, or, a recognition that his observations do not readily predict future events. Elsewhere, ecofeminist scholar Carolyn Merchant has usefully brought chaos theory and environmental theory into relation. She writes,

“Chaos theory and complexity theory suggest that only the unusual domain of mechanistic science can be described by linear differential equations...the world is more complex than we know or indeed can ever know. The comfortable predictability of the linear slips away into the uncertainty of the indeterminate – into discordant harmonies and disorderly order” (156).

Merchant here highlights a critique of linearity in concert with a presentation of nature as chaotic. And, in so doing, she links linearity with empirical science and modernity. On the other hand, situated knowledges unsettle the objective claims of empiricism while distributed agency unsettles the human claim to mastery over nature, as well as subject/object dualism, and throws futurity (and therefore linear history) into crisis. “The declensionist and progressive plots that underlie the meta-narrative of recovery [in terms of the environmental movement’s critique of progress] both gain power from their linearity. Linearity is not only conceptually easy to grasp; it is also a property of modernity itself” (Merchant, 156). However, what might the narrative of environmental sustainability look like after the liberal humanist conception of linear history is rendered obsolete?

It is intriguing that the melting bank fosters an optimism and hope in Thoreau, but it’s important to note that this is far from a wilderness scene, or even a pastoral garden. The bank is itself a border, it is a hybrid product – and it is ultimately the unintentional result of the mix of technology (the train) and nature (seasonal cycles, physics, etc.). The melting bank is unpredictable, unmanageable and temporary. It is not practical and cannot be instrumentalized, turned into empirical information or capital (as even the ice of Walden Pond can). Seeing the bank’s “bowels” confronts the viewer with the lack of clear and constant (consistent) borders between that which the human prefers to see as separated and stable “wholes”. Yet, Thoreau

contends that if we can only decipher this inner message, we can “turn over a new leaf at last” and hence his sustained attention to the minutia of the thawing and the imaginative processes it inspires within him.

Patrick Chura, in a recent study of the relationship between Thoreau’s literary life and his work as a surveyor, adds an intriguing layer to the hybridity of the melting sandbank. While describing the process Thoreau undertook to make his famous map of Walden pond, Chura highlights a further (and clearly intentional) connection between the human, the non-human and the socio-technological in Thoreau’s thought. He explains that, “By sighting his cabin from the center of the pond and the railroad embankment, Thoreau created a three-sided figure that brought key locations into a form of contact with each other” (31). In examining early field notes of Thoreau’s survey of the pond, Chura is able to determine that “...Thoreau recorded a numerical bearing between these points and used that bearing to create his sketch” (31). Chura is quite right when he goes on to suggest that the “idea that the surveyor determined the position of each location using the other two – that each location was a vertex of a planned triangle – is thought provoking” (32).

In the end, this mapping of Walden operates to subvert the reader’s expectations in a few key ways. First of all, as Chura also explains, it is presented upside down; in that the north end of the pond is at the bottom of the sketch. Secondly, property and town lines that Thoreau well knew crossed directly by Walden’s shores are left out. Yet, the 3 highlighted features of the landscape are Thoreau’s cabin, the railroad line, and a carefully surveyed Walden pond complete with length, breadth and depth. As a result, “To simply say that Thoreau’s priorities differ from professional norms seems inadequate. In turning his map upside down and eliminating property lines, he gave his reader a cartograph that was the inverse of utilitarianism, rejecting key tenets

of both mapmaking and land surveying as accepted cultural norms” (Chura, 40). The reader’s attention is drawn instead to the cabin, the pond and the railroad in turn. And, further, if one lingers long enough on anyone of the three, their connection to the other two becomes clear, as each form a corner of an almost perfect isosceles triangle. Could this triangulation suggest a particular orientation of the human actor? Could this non-instrumental mapping possibly model a certain type of agency that is somehow distributed between the land, the human subject, and technology?

I have already argued that readers should not fail to fully address the implications of the sandbanks hybridity: a simultaneously natural and cultural cut in the earth onto which Thoreau invests one of his most famous odes to the excess, dynamism, and beauty of nature. Chura’s study of Thoreau’s surveying process, and its literary connections, draws the railroad bank even further into the border space that Thoreau envisioned Walden to be. The hybrid sandbank is one aspect of Thoreau’s border existence in the liminal space between nature and culture; or, the all too often ignored intersections of nature and culture. Does reading for Thoreau’s attention to hybridity, border spaces, and alternative mapping strategies offer something different for contemporary environmental theory? In other words, if we take this version of Thoreau that I have produced in the above readings seriously, what type of field of environmental politics might emerge?

I would suggest that this focus, first of all, facilitates an important conceptual move away from the holistic nature of much ecocentric and/or deep green philosophy. However, what else is productive regarding this attention to the “mixture”, the porous and permeable borders, rather than the supposedly distinctive qualities of the human, the non-human animal and the material world? Environmental theory on hybridity and distributed agency (decentered human and

critique of nature-culture dualism) wants to argue that this offers an option (motivation) for more ethical (environmental and social) behavior. The argument generally suggests that a decentered human whom “recognizes” their lack of mastery over nature will adopt less destructive behavior. For instance, Jane Bennet writes, “The figure of an intrinsically inanimate matter may be one of the impediments to the emergence of more ecological and more materially sustainable modes of production and consumption” (ix). While I absolutely agree that decoding the nature-culture dualism that reifies human agency should bring human mastery into question, I also think we must be very careful not to assume that this new construction offers a stable environmental ethic either. We should also examine what happens to human agency in this interaction. If we are not vigilant in that work, then, as we move toward this supposed ‘ethical’ or environmentally sustainable behavior, we find that the human subject is all too easily reinserted to ‘act’, albeit more ethically, from their supposedly decentered (limited) position.

Rather than attempting to reconfigure this monumental thinker into simply a monument for a different environmental theory, I rather want to credit Thoreau with an intensely worthwhile engagement with a set of problematics that, as they bedeviled his own writing, continue to trouble environmental scholarship and activism today. It is not necessarily for answers that we should turn to Thoreau, nor should we attempt to define and label his work for one corner of ecocritical theory or another. Instead, this chapter has turned to Thoreau in an attempt to retrieve and renew the focus upon the contradictions and inconsistencies regarding the nature-culture binary that he failed to necessarily resolve. The contradictions of the ice-cutter scene, in which Thoreau straddles a border between accepting the unpredictability of natural processes and his desire to know and understand the natural world; as well as his problematic engagement with the hybrid product of the railroad sandbank are worthwhile examples. For

Thoreau, it seems, there is always a desire to know and understand nature coupled with the valuing of its chaotic inscrutability. A focus upon the border between these two impulses leads Thoreau to strive toward a practice of ‘relational knowing’ and motivates his engagement with the intersections of human and non-human agency.

Thoreau’s concept of “useful ignorance” implies that you can inhabit a sort of border space between the two apparently contradictory aims if only the human subject is willing/able to practice the humility of learning to learn differently. It is within this willingness to exist in contradiction that I find potential in returning and learning from Thoreau’s intense engagement with his own environment. In the end, environmental theorists must be careful to not too quickly assume that the decentered human, inhabiting a postnatural non-human environment, will automatically become a more ecological citizen. The moralism that is based in the trope of Nature is also decentered right along with liberal human subject; and the question of distributed agency even raises important questions about linear history and futurity itself. In the next chapters, I will further explore the potential, and the serious challenges, such a commitment to hybridity and a decentered human subject raises for environmental humanities scholarly practice and the socio-political projects which hope to refashion our world into a more humane and environmentally sustainable society.

## **Chapter 2: Insurgency and Distributed Agency in Yamashita's *Through the Arc of the Rainforest* and Silko's *Almanac of the Dead***

*Modern humanists are reductionist because they seek to attribute action to a small number of powers, leaving the rest of the world with nothing but simple mute forces. It is true that by redistributing the action among all these mediators, we lose the reduced form of humanity, but we gain another form, which has to be called irreducible. The human is in the delegation itself, in the pass, in the sending, in the continuous exchange of forms. Of course it is not a thing, but things are not things either.*

Bruno Latour, *We Have Never Been Modern*

### **I - Introduction**

Environment and literature scholars have, over the past decade or more, made a positive and concerted effort to move beyond an earlier privileging of 'nature writing'.<sup>xxiv</sup> Besides the ways in which literature outside of that limited spectrum can motivate scholars to think the relationship between environmental and social exploitation at the regional, national and transnational scales, Environmental Justice fiction also highlights the importance of moving away from the holism of a romanticized Nature towards a more complex, integrated and hybrid approach to the natural world and human society's relation to it (position within it). In this second chapter I turn to literary texts that grapple with issues of environmental justice in order to further consider the relationship between eco-minded critiques of anthropocentrism, the decentered human subject, and socio-political agency.

As discussed in the previous chapter, one ongoing line of inquiry through this project is an examination of the assumptions in environmental theory that privilege an ecocentric alternative to anthropocentrism. An ecocentric approach would, it is often argued, create a more environmentally sustainable and socially just society. However, the ecocentric tendency towards universal, static and romantic depictions of nature is challenged by productive re-figurations of

the nature-culture relationship that tend to highlight hybridity, complexity, and intra-relation. In the cases in which the inherent sustainable attributes of ecocentricity are not automatically assumed, then the alternative, it seems, is to re-insert the human political subject into a place of central agency (in this way environmentalists re-gift, if you will, the capability of the human to fully ‘shape’ a world in which, simultaneously, humans also recognize their definitive inability to operate without constraints from non-human, material world).

The previous chapter returned to the early-industrial period and the work of Thoreau in particular to examine a type of uncertainty, or ambivalence, regarding the relinquishment of human exceptionalism since these early American environmental writings. Building on this analysis and moving into the latter part of the 20<sup>th</sup> century, this chapter looks to two texts, Yamashita’s *Through the Arc of the Rainforest* and Silko’s *Almanac of the Dead*, as provocative explorations of the relationship between distributed agency and the struggle against socio-economic and environmental injustice. I argue that *Through the Arc*’s representation of distributed agency may help scholars rethink the genesis of certain real and perceived limitations to the environmental justice movement’s engagement with the logics and practices of global capital. *Almanac of the Dead*, I suggest, is an excellent text from which to pick up the provocative questions Yamashita’s narrative raises for environmental scholars inasmuch as it offers, in many ways, a fuller representation of (human) revolutionary political subjectivity. Silko creates a type of collective political agency within a framework that is still overtly attentive to the concept of distributed agency and the de-centered human subject. Putting these two literary texts into conversation is intriguing in that each text depicts revolutionary agency as, at least in part, a material non-human force. However, while at the culmination of *Through the Arc* we find essentially no organized human resistance to the subjugating powers of global capital,

*Almanac* depicts a tentative coalition of “people’s armies” that just might be capable of transforming the social, political and economic status quo (even while recognizing the constrained and contingent nature of human agency).

Karen Tei Yamashita’s *Through the Arc of the Rainforest* depicts the rise and fall of a socio-economic infrastructure based upon the extraction, production and hyper-consumption of a newly discovered, all-purpose resource in the Brazilian rainforest. The structural preconditions and initial catalyst for the collapse of the economic system at the culmination of the novel are presented as dependent upon both the human (cultural and economic flows of products, consumers and information) and the non-human (a deadly Typhus virus and a “devouring bacteria” that feeds upon the Matacao plastic). As such, Yamashita’s magic-realist narrative brings together a myriad of environmental, social, economic and political forces that manage to destabilize a whole series of conventionally accepted binaries; including the human and non-human, the local and global, empiricism and traditional ecological knowledge, to name a few. As these binaries are problematized, I suggest that the novel puts human agency into question in a manner that, ultimately, makes narrative closure impossible. Therefore, the novel displays both the potential opportunities and possible limitations of environmentally motivated critiques of anthropocentrism and unfettered human agency. Finally, I will suggest that these problematics, related to the attempted re-envisioning of the relationship between the human and non-human, have important implications for environmental justice (EJ) scholarship, environmental activism and social movement organizing more generally.

The initial catalyst for the narrative is the discovery of an amazingly adaptable material, Matacao plastic, which is extracted from the rainforest floor and easily transformed into everything from construction material that is sturdier than metal to hamburgers that prove tastier

than those made with actual food products. This seemingly magical substance draws the interest of the GGG Corporation, newly taken over by J.B. Tweep, and the company moves its entire headquarters to the Amazon and invests all its resources into extracting, commodifying and marketing the Matacao. Tweep's profit motive schemes quickly draw in several key characters from various regions of Brazil with quite divergent personal histories. First, the main character in a cast of many, Kazumasa, has moved from Japan to join his cousin in Sao Paulo. Kazumasa, as the result of a partly unexplained childhood accident, has lived his life with a companion "satellite ball" that hovers just inches in front of his forehead. This satellite-like object, which doubles as the non-human narrator of the novel, has an innate attraction to the Matacao which it enables it to discover new deposits of the plastic material. Upon this realization, the GGG Corporation enlists Kazumasa and sends him across South America in search of this newly profitable resource.

The arrival of GGG also carries great consequences for Mane Pena, a local inhabitant of the area where the first large deposit of Matacao is discovered. The increased media and government attention to the area and its inhabitants leads to the discovery of Mane Pena's traditional knowledge concerning the healing powers of certain Brazilian bird feathers. The global cultural trend that ensues, coined "featherology" by the media, quickly becomes the second extremely profitable discovery of Tweep's GGG Corporation. Soon Mane Pena, much like Kazumasa, finds his life turned upside down by the interests of global capital as he becomes a world renowned expert healer employed by GGG to teach the world the finer points of featherology and, of course, expand the market for the company's newest line of products.

Finally, Batista and Tania Aperecida DJapan, who breed carrier pigeons as a hobby, soon catch the attention of their neighbors as everyone excitedly anticipates the daily return of a

pigeon with a message in tow. For the waiting crowds, it seemed that “...no matter how simple nor how silly, the messages brought by the pigeon were more wonderful and exciting than a voice on a telephone” (15). It is quickly rumored that the pigeons carry coded messages of good fortune and Kazumasa, with numbers recently highlighted in one of those messages, does in fact win a fantastically huge lottery jackpot. Ultimately, it is this money that leads Kazumasa, as an investor in GGG, into the clutches of JB Tweep’s search for more Matacao deposits. Similarly, the DJapan’s small hobby grows into a huge global information business as the economic and population growth around the Matacao creates a need for increased communication between the growing rainforest community and the rest of the world’s leading marketplaces. As the network of carrier pigeons goes global, these birds will eventually carry more than supposedly lucky messages, playing a part in the deadly spread of Typhus as well.

Practically overnight, the discovery, extraction and marketing of the fantastic Matacao substance transforms this section of the Brazilian rainforest into both an industrial site and tourist destination. As the GGG empire seems to be at its peak, however, the human community is suddenly ravaged with disease in the form of a Typhus epidemic. The bacteria, traveling via bird feathers, spread quickly across the continent and beyond due to the two new global trends outlined above; Mane Pena’s “featherology” and the DJapan’s carrier pigeons. Almost simultaneously, the non-human community is also irrevocably damaged by the wholesale spraying of DDT (to stop the Typhus epidemic), destroying large swaths of the surrounding rain forest, and a separate, unexplained bacterium that literally devours the built environment. This social and economic collapse at the end of the novel is driven by a complex interaction between human (social, economic and political) forces and non-human (ecological and bacterial) agents of change. Therefore, while one may be tempted to read Yamashita’s novel as a rather

straightforward warning regarding the negative effects of global capitalism and resource extraction in South America, the complex depiction of the interaction between human and non-human agency effectively complicates any such straightforward reading.

I will argue that *Through the Arc of the Rainforest* substantially destabilizes the standard narration of resource imperialism and troubles commonplace expectations concerning human agency and subjectivity. The concept of distributed agency, or what Timothy Mitchell has elsewhere called hybrid-agency, raises “questions about the way the modern world is divided – into objects and ideas, nature and culture, reality and its representation, the nonhuman and the human” (Mitchell, 10). In the following sections, I will explore the importance of distributed agency in the novel’s plot in order to determine the ways in which attentiveness to environmental agency de-centers the human actor and breaks down dominant perceptions of the nature-culture binary. In the novel, these non-human agents of change, which we might term “insurgent bacteria”, represent the only effective resistance to global capital’s incursion into the Brazilian rainforest. Furthermore, recognizing the novel’s foregrounding of distributed agency as the genesis for the (temporary) dissolution of imperial conquest on the Matacao opens up new ways of understanding the consequences of capital’s exploitation of human and other-than-human communities. Distributed agency does not, of course, create a completely passive human political subject, however, it does indicate that resistant socio-political movements may find themselves operating within a redefined framework; one in which the relationship between political agency and human-intentioned futurity is less certain.

*Through the Arc* presents the commodification of Matacao plastic in the Brazilian rainforest as a threat to both the local human and non-human communities; as the social and environmental costs of intense resource extraction practices and global capitalism are

prominently foreground in the novel. However, the destabilization of liberal humanist subjectivity and political futurity, based in the novel's exploration of distributed agency, presents a formidable challenge to the environmental justice movement's ability to address inequalities produced by global capitalism. Importantly, for our purposes here, the novel's publication in 1990 places it squarely in the midst of a relatively visible public (and scholarly) attentiveness to both the early successes of the environmental justice movement and the build up to the Rio Earth Summit in 1992. Therefore, in order to offer context for my reading of the novel and its implications for political agency, I will briefly track the turn to an environmental justice focus that occurred during the final decades of the 20<sup>th</sup> century before moving to Yamashita's unique and productive representation of the intersections between environmental and social injustice.

Tom Athanasiou's *Divided Planet: The Ecology of Rich and Poor* is an especially pertinent work that tracks the history of the conversation regarding economic, social and environmental issues leading into that first Earth Summit. Athanasiou usefully frames the dominant, neoliberal economic and socio-political arguments regarding the relationship between economic growth, poverty and environmental degradation in the developed and developing worlds. *Divided Planet* also points out the ways in which the mainstream U.S. environmental community uncritically embraced many of these same problematic assumptions. That is, within both neoliberal economic and mainstream environmental discourse the issue of social justice became an increasingly popular rationalization for each group's primary policy goals. In fact, Athanasiou explains, each side argued that their policies would lead to better conditions for poor people domestically and internationally, even if this result was still a secondary (if not completely unintentional) consequence of their adversarial and more prominent motivations. Leading up to Rio in '92, ongoing deforestation in the Brazilian Rainforest had become a hot

button issue and Athanasiou draws our attention to a document drafted by GATT (General Agreement on Tariffs and Trade Committee) as indicative of neoliberal aspirations leading into the summit.<sup>xxv</sup> The document, entitled *Trade and the Environment*, presents the mainstream economic perspective on economic growth, resource extraction, and poverty in the developing world.<sup>xxvi</sup> The report “is as close to an official defense of *free trade as a road to environmental protection* as we will find. For all this, its arguments are only an elaboration of the dominant economic creed” (Athanasiou, 187).

Athanasiou accurately portrays the document as a specific example of the larger neoliberal argument which he generally defines as follows: free-trade globalization will inevitably raise the standard of living in developing countries for an ever increasing amount of people and these people will then attain the education and affluence to “care” about their local environment. In this argument, the growing attention to the environmental costs of resource exploitation in places such as Brazil only then operates to further fortify the proposed neoliberal solutions. However, Athanasiou explains, “The most fundamental of these claims – that traditional, trade and growth driven economic development will make people richer and thus move them to protect their environments – is based upon the assiduously cultivated myth that it is the poor who are destroying the earth” (186). This myth displaces the blame from northern countries and global corporations benefitting disproportionately from resource extraction in order to lay it at the feet of the developing world; and, consequently, the people who contributed to, and benefited from, this exploitation the least. Furthermore, this neoliberal rhetorical maneuver promotes global capitalism and free markets as the path to both socio-economic opportunity and environmental health in the developing world. In this version of the story, capital’s movement

into new markets is seen as inevitably creating a socio-economic “uplift” that will, in turn, create a so-called moral imperative for environmental stewardship.

*Divided Planet* cogently argues for a more trenchant and sustained critique from the environmental community regarding the great (and growing) disparities in accumulation of wealth within developed northern countries as well as between industrialized countries and the global south. Athanasiou argues persuasively that, in the end, a successful environmental movement must also be committed to social justice and that, without this commitment, environmentalists are themselves participating in the neoliberal narrative of growth that demonizes poor communities as solely (or predominantly) responsible for failed environmental stewardship. Unfortunately, for those environmentalists “...without the strength to see that the global economic system, in daily, routine operation, gives us billions of poor as automatically as it destroys their environments, it is comforting to blame those poor for their own predicaments...” (37).<sup>xxvii</sup> At the same time, the environmental justice movement was fervently calling upon these mainstream organizations to disavow the racist argument that the poor have created their own predicament due to a lack of environmental awareness.

As Athanasiou pointed out at the time, this was a crucial moment for so-called mainstream environmentalists to recognize that “social-ecological matters [would be] the pivots of the future” and that traditional preservationist rhetoric and policy were in need of serious revision (190). It became increasingly clear that environmentalists could not maintain the simple divide between social questions and environmental ones, nor could they afford to dismiss issues of economic inequality as not pertinent to their goals. In other words, if mainstream economic theorists were actually arguing that global capitalism was *the* path to environmental stewardship, how could the environmental community successfully articulate a counter-narrative without fully

engaging with these dominant socio-economic logics? Consequently, and at long last, what “counted” as an environmental issue simply had to be rethought.

More recently, Giovanna Di Chiro, in “Living Environmentalisms: coalition politics, social reproduction, and environmental justice”, extends Athanasiou’s argument regarding the relation between the environmental and the social while also more directly orienting our attention to the fundamental interface of human and non-human communities. Di Chiro effectively moves the debate from a concern with what “counts” as an environmental issue to the realization that the social and environmental are complexly intertwined in ways that demand a type of integrated critical attention. Specifically, Di Chiro argues that the concept of *social reproduction* usefully highlights the interconnections between social injustice and the exploitation of the natural environment. She writes,

“...environmental struggles are about fighting for and ensuring *social reproduction*.

While ecofeminists forcefully challenged mainstream environmentalism’s focus on protecting an external and endangered ‘nature’, and shifted the frame to an understanding of ecology as the interconnectedness between humans and nature, it is the women (and men) activists fighting for environmental justice who have most convincingly foregrounded the everyday life (and death) stakes at the root of their environmental politics” (Di Chiro, 285).

Social reproduction, as Di Chiro explains here, is the very basis of a continued healthy existence for both the human and non-human populations within a given locality. Yet social reproduction entails more than simple physical health, Di Chiro points out, in that it also draws a close relation between environmental sustainability and cultural practice.

By understanding the environment as the varied spaces in which humans “live, work and play”, Di Chiro illuminates the importance of social reproduction theory as a type of bridge that operates to more effectively integrate the environmental and social justice movements. In her article “Nature as Community” Di Chiro explains that, “Most environmental justice activists’ discussions of nature are balanced with an analysis of the impossibility of separating it from ‘life,’ from cultural histories, and from socially and ecologically destructive colonial and neocolonial experiences” (317).<sup>xxviii</sup> In this way, understanding environmental and social justice issues and movements in a more integrated fashion brings to light the importance of re-thinking the relationship between human and non-human communities; or what Di Chiro elsewhere terms “mixed-communities”. Together, these concepts have the potential to help environmental justice scholars re-imagine our understanding of, and approach to, issues of injustice that jointly effect human and non-human communities.<sup>xxix</sup>

I will argue in the next section of this essay that a particularly productive avenue of inquiry, intimately linked with the concept of social reproduction examined above, is the concept of *distributed agency*. Deploying distributed agency as a critical tool, in addition to helping environmental theorists rethink the human/non-human binary, usefully problematizes dominant historical understandings of imperial colonialism, postcolonial “techno-economic” state power and the resource extraction/pollution matrix of transnational corporate practice. Therefore, I will next briefly outline this concept via the work of Timothy Mitchell, and examine its relevance to environmental justice, before moving into a reading of *Through the Arc* that will highlight the possibilities and limitations of this particular critique of agency.<sup>xxx</sup>

Timothy Mitchell’s chapter “Can the Mosquito Speak?” within his book *Rule of Experts* produces a revisionist history of WWII-era colonial Egypt in which he deconstructs the simple

binary understanding of war as an unnatural, man-made phenomenon and disease as a natural, or other-than-human, event. Mitchell describes three major developments that combined to bring a new malaria-infected mosquito type into a newly epidemic-conducive environment. First, changes to the local and regional environment created by the construction of the Aswan dam. Second, the malnutrition of peasants due to shortages of fertilizers that had been redirected towards military weapons facilities. And, third, the change from sea to land-based shipping routes because of instabilities created by the war. Mitchell argues that this, "...chain of events in Egypt seem to create a triangle, formed by the interconnection of war, disease, and agriculture...But there are no accounts that take seriously how these elements interact...They shape one another, yet their heterogeneity offers a resistance to explanation" (27). A resistance, Mitchell argues, that emanates from modernity's imagining of the "movement of history...[as] the power of reason to expand the scope of human freedom" (1). Consequently, the dynamic and intensely intertwined relationship between technology, agriculture, war and bacterial disease (that he argues leads to the unnecessary death of thousands of laborers) is ignored and the stories remain separate; war and technology on one side of the narrative, disease and famine on the other.

Mitchell posits that a fuller recognition of what he terms "hybrid-agency", in which non-human agency is understood to have more than a simply passive role in an unfolding history created entirely by human-centered, rational agency, would radically alter our understanding of events such as the malaria-epidemic among the Aswan dam workers. For instance, an explanation for the causes of the malaria epidemic could not be so easily labeled as either solely a natural disaster or simply the unavoidable downside of war. It would also be much more difficult for the Egyptian government and its state sponsored corporations to disavow their

culpability for the political and economic decisions which, in the end, left locals so immensely undernourished and vulnerable to the disease. However, as pointed out above, Mitchell argues that accounts of hybrid-agency simply do not fit comfortably into modernism's conceptual understanding of human reason and unchallenged agency.

Mitchell's work highlights the sharp contrast between theories of hybrid-agency and traditional historical narratives. The dominant traditional narrative, he argues, operates to naturalize imperial practices via interpreting developments of domination as an undeniable progress of human reason and an increasingly unfettered agency over the non-human world. As a result, Mitchell argues, re-thinking agency as dispersed between the human and non-human world to better account for how human action both effects and is affected by environmental conditions,

“...means making this issue of power and agency a question, instead of an answer known in advance...It requires acknowledging that human agency, like capital, is a technical body, is something made. Instead of invoking the force and logic of reason, self-interest, science, or capital and attributing what happens in the world to the working of these enchanted powers and processes, we can open up the question...of what kinds of hybrid agencies, connections, interactions and forms of violence are able to portray their actions as history, as human expertise overcoming nature, as the progress of reason and modernity, or as the expansion and development of capitalism” (53).

Mitchell's call for critical attentiveness to questions of historical narrative, or how we understand the creation of environmental and social injustices, demonstrates an important connection between the concepts of distributed agency and social reproduction. When we move beyond the

assumption that environmental degradation or ecosystem restoration are solely human-caused despoliation or preservation of a passive non-human nature, then we can begin to debate seriously what cultural and political practices of ‘social reproduction’ are most effective within the context of a radically altered human/non-human relationship. In the long quote above, Mitchell points to three key concepts that he contends motivate the dominant narrative of history; these are “human expertise”, “the progress of reason” and the “expansion of development”. It is, of course, no coincidence that these three human-centered ‘authors,’ or ‘engines’ of history named by Mitchell, also form the foundational elements of the narrative upon which, as Athanasiou has argued, both capitalist and mainstream environmental discourse often rely.

Mitchell argues persuasively for the potentiality of distributed agency to alter our understanding of dominant views of history, however, he does not engage with the implications of distributed agency in regard to political activism and social movement practice. If taken seriously, the concept of distributed agency fundamentally alters our understanding of historical change and, in turn, political agency. While environmental, literary, and cultural studies scholars should continue to examine how these new formulations of agency operate to disrupt the dominant power structures of socio-economic inequality and environmental degradation, it is also imperative to investigate how further attention to non-human agency will inevitably alter our understanding of political efficacy more generally. Along these lines, the climax of *Through the Arc* raises important questions regarding the manner in which distributed agency destabilizes current human-centered conceptions of political agency and social movement organizing. Therefore, my reading of it attempts to grapple with the fact that the nature-culture binary will not break down selectively and that the de-centered human subject cannot suddenly be reconstituted as the sole agent of history when circumstances make it politically convenient. It is

with this newly de-centered human subject in mind that we now turn to Yamashita's fictional depiction of the environmental and social costs of resource extraction and transnational capitalism in the Brazilian rainforest.

## **II Insurgent Bacteria and Distributed Agency in *Through the Arc*:**

In *Through the Arc of the Rain Forest*, Yamashita depicts the environmental and social exploitation of the Brazilian rainforest through a story that, ultimately, critiques overly simplistic, anthropocentric views of human agency. The exploitative practices of the GGG Corporation, indicative of the logics of transnational capitalism, present a threat to the region's very ability to function (on both social and ecological terms). In this section I will contend that Yamashita's narrative critiques these exploitative practices, due to their dependence upon a theoretical and irreducible divide between the human and the non-human, as a threat to "social reproduction" rather than to the rainforest ecosystem only. Furthermore, I argue that the climactic moments of the novel are predicated upon an understanding of historical change based upon distributed, rather than human-centered, agency. The novel's culmination, more than merely indicative of Mitchell's theories, actually complicates the theory of distributed agency further by asking the question: once the human-actor is de-centered from the narrative of historical change, what becomes of political agency itself?

One could, erroneously I think, argue that the novel is merely an imaginative but fairly routine depiction of human agency and capitalist enterprise "ruining" a passive and pristine environment. However, attending to the representations of social reproduction and dispersed agency in the novel allows us to see imperialism's negative effect upon human communities and

the non-human environment in more complex and productive terms. Early in the novel, the GGG Corporation becomes the main extractor of a newly discovered material, called Matacao plastic, and literally begins to construct an entirely new built-environment in the rainforest, and around the world. The material proves to be as malleable as plastic but more indestructible than the hardest metals on the planet, and becomes a type of all-purpose construction material.<sup>xxxix</sup>

Yamashita is meticulous in her depiction of capitalism's ability to co-opt natural resources and also human spiritual beliefs, cultural interests and traditional local knowledge, into exchange value. The entire natural and social world of the Brazilian rainforest is reconfigured: indigenous knowledge of the healing-powers of Brazilian bird feathers is transformed into a world-wide consumer craze, a couple's hobby and passion for messenger-pigeons is turned into a highly profitable info-service, and Matacao plastic becomes the most fantastical and versatile commodity imaginable (from building material to food supply and everything in between).

Yamashita creates what could be termed a *techno-economic gold rush* in the Brazilian rainforest based upon the discovery of this new all-purpose material. Despite the shock to the scientific world upon the discovery of the Matacao, Mane Pena, really the only developed character who is actually a resident of the area, has known of this strange substance comprising the rainforest floor for years. As the government, international corporations, the media, and tourists from all over the world begin to descend upon the Matacao, we are told that Mane always knew that, "...the primeval forest was not primeval" (16). In the end, Mane's knowledge is confirmed when it is discovered that the Matacao plastic is the literal detritus of the industrial revolution and the global imperialist projects it spawned. The Matacao was formed when, "Enormous landfills of non-biodegradable material buried under virtually every populated part of the Earth had undergone tremendous pressure...liquid deposits of the molten mass had been

squeezed through underground veins to virgin areas of the Earth. The Amazon Forest, being one of the last virgin areas on Earth, got plenty.” (202). Interestingly, while the narrator refers to the Amazon as a “virgin” or unspoiled area, we simultaneously learn that this newfound substance is actually an amalgamation of “leftovers” from the previous imperialist incursion of the industrial revolution. Not the purely imaginative pristine environment but, instead, nature’s recycling bin. In this way, the myth of a *pristine nature* is simultaneously deployed and delegitimized in the telling of the Matacao’s creation and discovery.

The GGG Corporation sells the Matacao to build entire amusement parks, a new generation of cars, clothes, credit cards, and even hamburgers (it’s surprisingly tasty and nutritious once pumped with artificial nutrients). GGG, with its mobile headquarters which is literally moved from New York to the edge of the Matacao fields piece by piece, constitutes a transnational corporation without any real investment in U.S. nationalist aspirations or any significant regard for national boundaries and interests. The company operates within the novel, instead, as an example of global capital’s unregulated corporate profit-seeking and orchestrates what is essentially a second enclosure of the commons. At first, as one might expect, GGG is fantastically successful in extracting, producing and marketing the new plastic despite environmental concerns and the “growing concern over the mining process of Matacao plastic”. However, upon discovering that Kazumasa’s tiny satellite’s ability can detect new deposits of Matacao, the three-armed CEO J.B. Tweep explains to Kazumasa that, “...we could start to chip away at one obscure end of the thing [the main deposit of matacao rubber], but this place is crawling with scientists and environmentalists, with tourists to boot. Someone’s bound to notice, and when we get going, we are going to need a lot of Matacao” (113). Yamashita here depicts the temporary clash of interests between corporate profit-motive, state regulatory processes, the

tourist industry, and environmentalists emanating from the discovery of this resource. However, it is the corporate profit-motive that clearly wins the day as Yamashita depicts GGG as a symbol of predatory economic practices; capable of incorporating and co-opting any and all alternative or even resistant cultural, political or economic interests into its own bottom line.<sup>xxxii</sup>

As Kazumasa and his satellite are shuttled around the continent in search of new deposits, the satellite-narrator of the novel informs us that,

“JB was ruthless in his expectations, weaving and tossing GGG’s net farther and farther, oblivious to any obstacles...acres of flooded forest...hundreds of species of plant and animal life bulldozed under, rotting and stinking for miles in every direction; Indian homelands, their populations decimated by influenza. Kazumasa saw, smelled, felt and tasted everything” (144).

The destructive aftermath of imperialist resource-extraction is drastic, severe, and widespread. The (repeated) introduction of ‘free market capitalism’ in the Brazilian rainforest certainly does not increase the quality of life for local peoples nor increase their ability to protect the health of themselves or their environment. Rather than linear, the history of colonialism appears circular; a terrible nightmare on repeat.

The Matacao plastic itself unsettles the environmental imagination of the novel in such a way that the reader should not expect to be presented with a traditional presentation of preservationist environmental ethics. The myth of the pristine and uninhabited wilderness is quickly problematized through the discovery of this amalgamation of global pollution that has already infiltrated the Amazon forests. However, the extraction practices organized by the GGG Corporation present a challenging predicament nonetheless, and the novel confronts us with a

story in which the survival of both the human and non-human communities is seriously compromised. Yamashita's attention to the effects of global capital on the local "mixed-communities" of the Brazilian rainforest highlights the importance of thinking environmental inequalities and social injustice as interlinked. As seen through GGG's corporate practices, one specific aspect of this linkage is the relationship between predatory transnational capitalism and the drastic increase of income inequality and environmental degradation.

The discovery of the Matacao is paralleled by the discovery of Mane Pena's extensive knowledge concerning the healing powers of particular bird feathers. This knowledge is presented in the novel as a type of traditional ecological knowledge (TEK). Through the character of Pena, and his healing practice soon to be coined 'featherology,' Yamashita investigates the collision of empirical science and local knowledge (and the relationship between both systems of knowledge making and hyper-consumer culture). The GGG Corporation's instant success in commodifying both these resources first displaces Pena from his local village and then co-opts him into the feather business in a dual role of company spokesman and scientific expert. Walking barefoot from his first-floor office (he won't ride the elevators) in GGG's transplanted 23-story corporate headquarters to the lecture hall, followed by his personal secretary, Pena's educational talks soon make him a world-renowned expert, spiritual healer. Interestingly, Pena's traditional knowledge regarding the healing power of certain local birds is not accepted [when first interviewed outside his small home about the healing power of feathers, the reporter and the public are clearly skeptical of the local "superstitions" but play along a bit for the sake of an "exotic" news piece] until the GGG corporation transforms him into the role of a scholar. Yamashita effectively critiques the cozy relationship between institutions of science, higher education, and multi-national corporations here as she depicts the corporation's ability to

simultaneously present Pena to the world as a renowned “scholar” and a corporate spokesperson; which legitimizes the feather as a consumer must-have. All the while, GGG is profiting from the exploitation of TEK and indigenous cultural practice as it simultaneously destroys that culture via the negative social and environmental effects of its exploitative practices of resource extraction.

In this case, featherology, a healing practice with roots in indigenous culture and spiritual practice, becomes a global fad that, in turn, exponentially raises the demand for the feathers of Brazilian birds. J.B. Tweep proudly informs Kazumasa that the corporation has captured the market on all styles of ‘healing feathers’. He explains, “We’ve anticipated everything. Cases, accessories, post-yuppie tastes...that is top of the line, for the more affluent customer...But we’ve got a sort of Bic line, less expensive and by the pack...we’re also looking into a line of disposable stuff using dyed chicken feathers” (106). This commodification of various Brazilian bird feathers offers a glimpse into the intersections between corporate profit-motive on a global scale and the way in which alternative local cultural trends are quickly commodified and assimilated into the structures of global capital. Global markets are demanding this new “healing feather” and Tweep, to his logic, is simply meeting that demand with supply. The GGG Corporation has now cornered the market on the two major resources of the region (Matacao plastic and exotic bird feathers) and there seems to be no limit to their growth potential.

Even more quickly than it was constructed, however, the economic empire of GGG is quite suddenly undone by two distinct catastrophic events; linked only by the fact that the main perpetrator in each case is a microscopic non-human bacterium. The first causes a deadly outbreak of Typhus and the second bacterium mysteriously devours the Matacao plastic itself (destroying the built environment and economic structure based upon this all-purpose resource).

Emphasizing the impacts of non-human agency on both the human and non-human communities of the forest, an epidemic of Typhus with a high mortality rate, spread by the popular consumer product (Brazilian bird feathers) and the throwback global communication craze (messenger pigeons), moves quickly to nearby regions. The “Rickettsia were microorganisms that traveled via a minute species of lice, which in turn traveled via feathers, which, of course, traveled via birds and, of late, humans” (*Through the Arc*, 198). The bacteria’s biological behavior is represented as highly conducive to the newly configured human and non-human landscapes of the Brazilian rainforest. In fact, the very networks of exchange created by the imperialist practices of the GGG Corporation, originally meant to transport people, products and information around the globe, now transport the small bacteria, Rickettsia, and facilitate the uncontrollably fast outbreak of disease.

While neither human nor non-human agency is solely responsible for the severity and speed with which the Typhus spreads, both communities are nonetheless devastated by the result. The outbreak results in the death of thousands of Brazilians, including Mane Pena himself, as well as the destruction of huge swaths of the Amazon habitat. Tragically, in order to manage or limit the scope of the outbreak, the government responds by ordering a mass dispersal of DDT to eradicate the bird population of the forest. It is determined that, “Banning feathers was not enough...It would be necessary to go to the source...no birds could be spared if the disease were to be eradicated” (199). This devastating outbreak of Typhus attests to the novel’s attention to the confluence of human and non-human networks of exchange and the way in which these complex interactions create historical change. The resistance to explanation via simple binaries propels the reader towards an engagement with the everyday interactions between humans, technology, non-human animals, organisms and ‘natural’ forces that together comprise

distributed agency. Once contracted, the *Rickettsia* “were nasty creatures that invaded the pores in the ears and around the neck and sucked the skin into a rash” (198). The porous and vulnerable human body depicted in this passage, so susceptible to the bacteria’s invasive biological agency, reminds the reader of the fallacy of traditional western conceptions of the individuated, whole, and impermeable body.

Not long after the Typhus outbreak, Kazumasa’s satellite-ball suddenly begins to disintegrate due to what is described only as a “devouring bacteria”. Soon enough, we discover that this second bacteria is having the same effect upon the entire “plastic world” created by GGG. The Matacao plastic, along with GGG’s corporate profits, is soon disintegrating at breakneck speed. In fact, “The tiny munching sounds that became so familiar to Kazumasa while he kept a vigil for his dying ball were now a deafening unison (206). As the all-purpose material erodes, “People who stepped out in the most elegant finery made of Matacao plastic were horrified to find themselves naked at cocktail parties, undressed at presidential receptions. Cars crumbled at stoplights. Computer monitors sagged...The credit card industry went into a panic” (206-7). The “plastic-age”, which has completely redefined the core infrastructure of the human-built environment in the Amazon, is suddenly in complete ruins due to the previously unknown bacteria. In this case, the “devouring bacteria” remain noticeably unexplained. Through the mysterious nature of this destructive, non-human force, Yamashita challenges the assumed superiority of empirical science to explain a “passive nature” and emphasizes the limits of human knowledge, unchecked human agency, and one species’ superiority over the non-human environment. Therefore, despite capitalism’s ability to create a profitable market for every technological innovation, cultural trend or religious miracle in the rainforest, the novel

ends with the destruction of human and non-human communities, imperiling most Brazilian birds with extinction, and leaving in shambles the newly built plastic infrastructure.

The bacteria manifest at a moment in which transnational corporate capitalism, with its global market structure and profit motive models, has transformed the built environment and set the table for mass (rather than possibly somewhat more partial) destruction. There is a sort of multi-layered distributive agency at work in that these bacteria target and feed upon the Matacao plastic, which is itself the product of both human and nonhuman agencies. In these terms, it is fair to say that the two main agents that bring about the climactic moments of the novel, the bacterial insurgents, both exemplify distributed agency. Neither of these narratives within the novel limit agency to either the human or the non-human realm and, instead, present the reader with a scenario in which the interaction across these supposedly impermeable borders refuses explanation based upon currently dominant conceptions of human agency. The GGG Corporation, with its practices of resource-extraction, commodification of natural resources and indigenous knowledge, and its purposeful blindness to “social reproduction” and “mixed-community”, imposes its own empirical and transnational economic logic upon the human and non-human residents of the rain forest.

While the rise and fall of the GGG corporation’s economic empire is certainly based upon particular deployments of economic policy, scientific methodologies, and cultural practices that create the conditions for this massive threat to social reproduction; the catalyst for this destruction is also a distinctly other-than-human, material agency that operates, at least partly, outside of human control. There is no environmental action plan or social resistance movement depicted as even trying to combat GGG’s socially and environmentally destructive practices. Instead, the resistance emanates from unintentional, other-than-human organisms; the Typhus-

causing Rickettsia and the “devouring bacteria”. Their unintentional, non-human agency, in many ways facilitated by and blended together with the agency of human socio-economic and political systems, represents a new manner of imagining counter-hegemonic resistance.

My contention is that Yamashita’s novel insightfully challenges the neoliberal narrative of globalization in which market rationality and empirical science exert a type of total control over an inert and passive non-human environment. Furthermore, the presentation of a complexly integrated relationship between human and non-human agency throughout the novel productively opens up new avenues of inquiry for understanding the causes, and effects, of environmental and social injustice. In this way, the novel reminds us, as Timothy Mitchell has elsewhere, that it is important to disrupt any historical account that mobilizes a singular, overarching narrative of agency. However, I also suggest that *Through the Arc* presents us with an even more complicated effect of understanding historical change through the lens of distributed agency. That is, the novel does more than simply disrupt the dominant narrative of transnational predatory capitalism, but also envisions this disruption as an event without a conventionally defined, intentional political subject or activist. This productive destabilization, or de-centering, of the liberal human subject, while intellectually important, also brings with it some intensely difficult problematics of its own.

If Mitchell’s goal, in drawing our attention to distributed agency, is to articulate a different logic of history in order to disrupt dominant narratives of historical change that privilege certain singular and human agents of history, my reading of *Through the Arc* is more concerned with the implications of this move toward distributed agency for environmental justice and social movement practice generally. In the end, Yamashita’s depiction of distributed agency is not conducive to traditional forms of political activism and organizing. The Rickettsia and

“devouring bacteria” are undoubtedly imbued with agency (and in this case they create the only form of resistance that the GGG Corporation is unable to subsume into its business model), but this is clearly not a deliberative, conscious agency as typically envisioned. This raises some important questions for scholars and activists committed to thinking through the best practices of resistance to dominant systems of power and maximizing the political efficacy of movements working for environmental and social justice. While it is clear that the de-centering of the liberal human subject continues to be a productive project both theoretically and practically, scholars also need to investigate what type of social movement practice can and should exist in a posthuman, as well as postnatural, moment that no longer privileges an autonomous political agent. Consequently, we are forced to ask ourselves, at the culmination of *Through the Arc*; what is agency without an intentional subject and what are we to make of these *insurgent bacteria*? And, finally, what type of oppositional political imaginaries can co-exist with an increasingly de-centered human subject?

There is certainly ample fodder for a dystopian reading of the novel in regard to the above questions. For one, the subaltern subjects and all potentially alternative/oppositional institutions and practices are co-opted into the GGG’s monopolistic economic empire. Readers are also assured that even as the plastic world disintegrates, destruction of the rainforest continues relentlessly in surrounding regions. As a procession of local people carries their recently deceased religious leader, Chico Paco, from the Matacao to his birthplace on the coast they “passed mining projects tirelessly exhausting treasures of iron, manganese and bauxite” (209). The mourners even pass an ongoing “gold rush” and lose “a third of the procession to the greedy furor” (209). In this manner, Yamashita reminds the reader that the destruction of the rainforest for capitalist economic expansion continues despite the collapse of the GGG

Corporation, and productively forestalls any reading of the novel that might want to privilege an over-simplified narrative; one in which the environment “strikes back” to free itself of human incursion and exploitation forever. Consequently, when one considers the lack of alternative or oppositional political imaginaries, the DDT laden sections of the rainforest, and the continued destructive resource extraction practices, it certainly becomes difficult for the reader to feel anything akin to hopefulness. On the other hand, it would also be a mistake to discount the positive emotional response that the fantastically complete disintegration of the exploitative GGG Corporation’s empire might elicit from an environmentally minded, justice-oriented reader.

After absorbing GGG’s relentless quest for profit, the destruction of the human and non-human communities surrounding the Matacao field, and capital’s seemingly endless ability to co-opt any and all emergent alternative movements into its own profit model; witnessing the unraveling of the imperialist system is actually, for any reader, a quite pleasurable experience. The suddenly naked party-goers, the crumbling buildings and disintegrating credit cards finally offer a reprieve from the relentless success of GGG’s schemes. There is at once a type of pleasure in imagining a form of opposition to predatory capitalism of which *we* are not the subject; even as this very scenario seems to call our own agency to create and sustain our world into radical question. That is, while the reader might revel in it momentarily, she must also take into account that this great unraveling is not a function of a human political subject or traditionally organized social movement in any way. This unraveling must certainly be described as a type of distributed agency since the novel never presents its human characters, as we might expect, organizing in some recognizably intentional manner to defend the rainforest against the incursions of global capital.

The depiction of counter-hegemonic political agency (or lack thereof) in the novel leaves Yamashita with a problem when faced with the task of producing the narrative closure that is expected of the novel form. In the final passage, rather surprisingly, the narrator problematically conjures a 'lost perfection' of nature; this conclusion reifies the idea of a natural balance for nature before (or without) human interference that depends upon an outdated static, rather than dynamic, ecological model. We learn that, at some point in an undetermined future, "The old forest has returned once again, secreting its digestive juices, slowly breaking everything into edible absorbent components, pursuing the *lost perfection* of an organism in which digestion and excretion were once one and the same" (my emphasis, 212). Reinforcing the preservationist trope of a *pristine ecological balance* that existed prior to human intervention, the narrator also informs us that, despite its return, this forest can actually "never...be the same again" (212). The "lost perfection" will now apparently always be (at least partially) lost. Meanwhile, in the human realm, the conclusion of the novel finds Kazumasa, Lourdes and her two children retreating into the jungle to live the pastoral cliché of farmers hidden away from the vagaries of society. Our final image of these two characters, in fact, is that of a recovered heteronormative family structure reaffirming itself through a connection to their, presumably private, plantation land; "Lourdes put her baskets down on the rich red soil of their land and embraced Kazumasa, who now stood casually with a rather newly formed posture, the sort to accompany, quite naturally, the tropical tilt of his head" (211). After such a provocative portrayal of the interaction between the human and non-human in the novel, it is difficult to come to terms with these two rather unsatisfactory final scenes in which Yamashita relies upon several myths (the pristine wilderness, the pastoral retreat, possessive individualism, etc.) that are based upon an assumed nature/culture binary that she has so effectively destabilized up to this point.

Prominent environment and literature scholar Ursula Heise, whose analysis of the novel predominantly focuses on the relationship between the local and global in order to trace the contours of what she calls *eco-cosmopolitanism*, also finds Kazumasa's and Lourdes' retreat to the pastoral landscape troubling. Heise rightly wonders, "how this image of bucolic bliss, of successful reconnection with the rural soil might be compatible not only with the idea of the Matacao as a symbol of the impossibility of such a reconnection but also with the environmental devastation of the Brazilian landscape Yamashita had so eloquently mourned only a page or so earlier" (104). Thus, Heise concludes that, "...this moment of closure does not quite fit the complexities of the plot" (105). I agree and would suggest that the problem Yamashita faces in concluding *Through the Arc* is one that is endemic to the question of distributed agency itself. As it turns out, what is so interesting about the novel's (partial) resolution of global capital's exploitative practices is also exactly what turns out to be unresolvable, at least within the terms of traditional social movement organizing for environmental justice and social reproduction. The weirdly humanist and heteronormative conclusion, I suggest, is a result of the tension between the operations of distributed agency and the liberal humanist desire for narrative closure. This could be deemed a simple failure of the novel, however, I would argue it is more accurate to recognize this rather strange ending as indicative of the difficulty that distributed agency presents for our understanding of futurity and the human models of organization meant to sustain it.

The central paradox of *Through the Arc* emanates from the fact that its strength also appears to be a weakness. That is, the novel's attentiveness to distributed agency productively challenges the reader's assumptions regarding the relationship between human and non-human communities, helpfully destabilizing a presumed central position for humanity. It also forces us

to consider the importance of mixed-community and social reproduction by highlighting the ways in which humans are never actually fully in control of either the non-human or human built environment. Yet, these apparent strengths also facilitate a conclusion that falls back upon the very dualism it otherwise operates to disrupt. In the end, the fall of GGG could not happen *without* human action, but it also certainly did not occur *because of* human action. This seeming contradiction speaks to distributed agency's resistance to explanation via dominant models of human subjectivity, agency, and progressive temporality. At this point, a reader's first impulse may be to look to the human characters in the novel to find what will take the disintegrated plastic city's place. Will it be more of the same exploitative practices, they might ask, or are the people organizing and building towards a sustainable future? Yet, distributed agency as presented in the novel does not seem amenable to projects for social change and political organization as we currently understand them. It would be, of course, outright impossible for the "insurgent bacteria" to offer us a kind of "vision" or political platform. Yamashita herself seems unable to imagine an ending based in distributed agency and, rather, falls back upon several tropes dependent upon dualistic models of liberal humanism.

As the reader grapples with the fact that GGG's economic monopoly is in the end eradicated by a microscopic bacteria, an unintentional non-human agent, it becomes clear that this de-centering of the human subject, from the position of sole agent of historical change, has implications for how we understand the political project of the environmental movement. In fact, political agency itself, I would suggest, is thrown into crisis. I use the term crisis here cautiously, and certainly not for the sake of hyperbole, in order to draw attention to the fact that distributed agency raises a set of questions that do not appear readily answerable when approached through conventional intellectual lenses and frameworks. Furthermore, I certainly

do not use the term crisis in order to make another well intentioned, but ultimately unhelpful, environmentally focused doomsday prediction. Rather, I would like to suggest that this is an opportunity to rethink the relationship between social movements and teleology. That is, if we recognize distributed agency's power as a limitation upon human control of futurity, we then have to find new ways to imagine social movements. Distributed agency, read in this manner, forces scholars to revisit, and rethink, the relationship between political agency and human ownership of futurity. In fact, we must ask; what does it mean to organize a social movement absent the idea of a goal? What does it mean to let go of the deep-seated urge to "know" the future (pre-determined) destination of our present work?

I suggest this to be a crisis of political agency due to the fundamental role that progressive temporality, the sense of organizing towards a future-oriented "arrival", continues to play in social movement organizing. It is a maxim of sorts - the idea that the success of a socio-political movement depends on its ability to articulate a "promised land" – that is so deeply ingrained in political terms we barely stop to question its practicality. Consequently, it is almost impossible to imagine political agency without this 'endgame' in mind. This problematic most certainly speaks to Yamashita's difficulty developing a conclusion to a novel that is so deeply invested in exploring distributed agency as a model for historical change. Distributed agency's productive de-centering of the human subject, its call for humility in the face of environmental complexity, and its compatibility with important environmental justice concepts such as social reproduction and mixed-community, make it an important conceptual building block in environmental scholarship (and beyond). However, the destabilizing tendencies of distributed agency, along with its calling into question the myth of unfettered human agency and progressive temporality, also place political agency itself into crisis. My reading of distributed agency in

*Through the Arc* displays that this conceptual move presents serious challenges regarding how we are to understand political agency, futurity, and social movement organizing in the face of imminent and interlinked environmental and social justice crises on the horizon.

### **III – Silko’s *Almanac of the Dead* and its Revolutionary Temporalities:**

As we have seen, *Through the Arc of the Rainforest* depicts a global capitalism that incorporates all forms of traditionally defined socio-political resistance before it is able to manifest as oppositional in any significant way. Alternatively, Silko’s *Almanac of The Dead* tells the story of several disparate but connected subaltern individuals and groups that more actively oppose and challenge (however partially and incompletely) the social, economic and political system. In this manner, Silko’s novel offers a representation of subaltern resistance to socio-economic and political domination with a provocative depiction of revolutionary politics within the construct of distributed agency. Therefore, if we recognize that Yamashita’s sustained attentiveness to distributed agency presents her novel with the distinct challenge of creating narrative closure while simultaneously questioning the concept of futurity (which I argue above is due to the uneasy relation between distributed agency, the intentional political subject and progressive temporality); then *Almanac*’s intriguing disruption of linear history in its telling of a potential revolutionary transformative process is informative. Consequently, it becomes an excellent text with which to further this chapter’s investigation of the relationship between distributed agency, linear temporality, and environmental/social justice organizing.

The remainder of this chapter will examine *Almanac* in order to engage with two fundamental questions; what does it mean to organize an environmental justice movement in the present moment as scholars and activists grapple with the concept of distributed agency and the increasingly decentered human political subject? How can the environmental movement continue to work through the productive aspects of distributed agency – such as its emphasis on hybridity and interdependency - while at the same time attending to the challenges it poses for political organizing itself (particularly, its destabilization of linear history and futurity)?

The role the Mayan almanacs play within Silko's novel, and the overall narrative structure of the book, present a non-linear understanding of temporality that contrasts with the euro-american colonizers' view of expansionary progress and the project of "civilization". This unlikely narrative structure operates as a disruption of the linear history while the stories of the almanac also blend the spiritual and material, the human and the non-human, to such an extent that any attempt to decipher clear and definite borders between them becomes impossible. The almanacs present the human and non-human as inextricably intertwined, and postulates that the key for social justice activists is to prepare for and recognize the cultural, economic and environmental signs that denote impending transformative changes. In this manner, the novel itself emphasizes the interdependence of the spiritual and the material, the human and the non-human, and the cultural, political and violent aspects of radical opposition to injustice and dispossession.

*Almanac* presents a multitude of characters, storylines and temporalities; as the work itself takes on an almanac-like form. In this way, Silko is somewhat released from the expectation of narrative closure that seems to hinder the conclusion of *Through the Arc*. Environment and literature scholar Joni Adamson describes the almanac's central role within the novel as embedded in "...the story of how the Mayan people resisted domination, held on to their culture,

and survived into the twentieth century” (Adamson, 139). In the course of the narrative, we learn that, “...the almanac in Yoeme’s possession...include[s] a fifth, undiscovered Mayan codex, one that has been kept secret from anthropologists and museum directors, and protected for hundreds of years...” (139). In this manner, the books provide Yeome and her twin granddaughters, Zeta and Lecha, a way of seeing the world, and of understanding history and historical change, outside the framework of European imperialism; an increasingly global form based upon transnational capital and Western scientific empiricism.

Adamson is correct to point out that Zeta and Lecha’s personal relation to the almanac’s contents inspire the twins to do more than simply hold onto the stories as cultural relics; instead, the stories are a catalyst for nothing less than the retaking of the Americas from the euro-american colonizers. Adamson argues that, “Their books provide them with many of the details of their ancient culture and systems of knowledge as well as a comprehensive interpretation of the past, thus giving them a solid foundation on which to view the present and a ‘place to see’ how they move more intelligently in the future.” (141). It is interesting to note, however, Adamson’s retention of progressive temporality in her assessment of the almanac’s role in the narrative. Conversely, I would like to draw attention to the way in which Silko’s novel productively utilizes the almanac’s disruption of progressive temporality as a key tool for imagining an active and potent revolutionary model.

Channette Romero’s recent scholarship on *Almanac* also draws attention to the non-linear aspects of narrative in the novel; however, her work also displays the difficulty in thinking the relationship between non-linear history and distributed agency. Romero’s attempt to categorize the depiction of historical time in the novel displays a contradictory desire to at once extol the critique of linear history in *Almanac* while simultaneously limiting its radical potential. For

example, Romero writes that, “Instead of a linear movement toward a transcendental future, time and history [in *Almanac*] are viewed as circular and continually returning. Because every time exists simultaneously and will repeat itself, people are urged throughout *Almanac* to remember past times and histories in order to avoid repeating the same mistakes and injustices” (629).

While this assessment rightly highlights the privileging of non-linearity in the novel, the trope of circularity is unhelpfully inserted in linearity’s place. This over-simplification of non-western conceptions of time would have us believe that there are two simple choices; linearity or circularity. However, the above quote itself displays how this false choice oversimplifies the problem of thinking outside linear history. That is, Romero contends, within just these two sentences above that temporality, in the novel, is at once “circular”, “continually returning”, “exists simultaneously” and “will repeat itself”. While the difficulty to corral the depiction of time in *Almanac* is important to acknowledge (and it is exactly this difficulty that I will examine further below); unfortunately, Romero attempts to foreclose this question by moving back to a progressive temporality in which the past becomes a closed, knowable entity that humans can utilize in order to act in the present and future.

In her article, Romero goes on to contend that this non-linear understanding of time is only useful because it is another way to help humans ‘act’ (more justly, or pragmatically) in the present.<sup>xxxiii</sup> The desire to connect non-linear history to human (justice-oriented) agency is even more pronounced in her next observation. She argues, “Rather than seeing themselves as one inferior step in a progression toward a more superior future removed from the earth, readers of the text are encouraged to take responsibility for their present actions as they are continuously related to the history and future of the earth and its peoples” (629-630). In this construction, the intentional subject is fully invested with the ability to choose – to listen and to heed history or

not - and what is learned, according to Romero, is that they must “take responsibility” for their actions; because the “present actions” of humans will determine no less than the “history and future of the earth”. Among other things, this line of thinking seems particularly indebted to the long-running environmentalist trope in which humans play the role of caretakers to a fragile and otherwise static natural world. However, even more importantly, it is clear that human agency is not given such an unfettered role in *Almanac of the Dead*. In fact, as we’ll see below, Romero herself actually becomes a bit perplexed with what, in the end, she determines to be the *lack* of intentional (human) political agency in the novel’s revolutionary model. Both the construction of agency and time in the novel are much more complicated than Romero’s account allows.

I hope to further explore the relationship between critiques of human agency and linear history in the novel; particularly in regard to the limitations it foretells for the environmental/revolutionary activist subject and the question of futurity; that is, how do we imagine a viable future after the decentering of the human subject? Rebecca Tillet, writing of the relation between politics and history in the novel, argues that, “The bones of Silko’s dead...have resurfaced to emphasize indigenous beliefs that the past is never truly past; that past events can never be fully forgotten; that the past will be always present. Ultimately, the resurfaced bones indicate the impossibility of erasing either the past or the dead, who continue to live in a communal memory...” (33). Tillet’s synthesis of the relation between past and present, within a non-linear context, better allows for the complexity of this problem, however, her reliance on the concept of “communal memory” attempts to override the existent ambiguity too quickly. The non-linear representation of time and history in the novel can be de-radicalized via the trope of memory just as much as it can via oversimplifying the alternative as circular. Scholars such as Romero and Tillet seem to be struggling to understand non-linear temporality in

ways that still facilitate social movement organizing and a hope for a justice-oriented future. This is an understandable impulse and displays the fraught relation between distributed agency (in its decentering of human agency), temporality, and social movement organizing. It is clear that the novel foregrounds the question of radical political organizing and futurity through its non-linear representation of history, narrative and human agency. And, in so doing, raises the important question; how can we imagine a viable future in a way that does not problematically (uncritically) privilege human agency and linear history?

Environment and literature scholars recently turning to literary texts that move beyond traditional environmental concerns are confronted with a set of challenges in their attempts to think across the environmental and the social aspects of these works. The goal of such work should always be to avoid reinforcing the supposed binary while also not uncritically conflating these complex concepts and their relation to each other.<sup>xxxiv</sup> Adamson's scholarship on *Almanac* manages to (mostly) avoid these pitfalls as she reminds us that,

“Silko is not implying that by learning stories from the oral tradition we will all be inspired to cease our polluting ways and live ecologically ever after... Rather, she is imaginatively illustrating that the power of the oral tradition lies in the way the stories confront and critique Euro-American forms of nature talk by intimately associating nature with every social and cultural life” (174-175).

Euro-American forms of “nature talk”, as Adamson points out, operate to create and sustain a separation between the human and non-human world; such a construction relies on an “othering” of the non-human as a passive object.<sup>xxxv</sup> Whether it is capital's instrumentalization of natural resources or the environmental movements attempts to preserve supposedly pristine wilderness

areas; both variations of euro-american nature talk reinforce the human exceptionalism at the heart of the nature-culture binary. The othering of nature, in each case, is of course a part of a hierarchical power structure that reinforces the sense that human culture exists outside of the material, non-human environment.<sup>xxxvi</sup>

Whether the goal is to preserve or exploit the ‘other’, the nature-culture binary embedded in euro-american nature talk makes impossible any more productive and nuanced inquiry into the more likely interdependency between the two.<sup>xxxvii</sup> In the end, Adamson finds the almanac’s stories most informative in their ability to continually highlight the complex intersections between the social and the natural. Consequently, “The keepers of the almanac understand that this reduction of and “blindness” to the world, this refusal to interpret the earth’s responses to domination and control, is driven by greed and deliberately constructed over time in the colonizing effort to claim power over nature and society.” (Adamson, 144). The stories then play a fundamental role in the transformative shift that is predicted to move society beyond the era of the Destroyers; dominated as it is by a racialized (white) human exceptionalism. The questions become, then, do these stories offer some insight into what role exists for environmental justice activism in the struggle for a more just relation to each other and to the non-human community? What does it mean for environmental politics to confront, and attempt to displace, this anthropocentric binary through a critique of human exceptionalism? What are the opportunities for environmental politics to operate within the messiness of hybridity and dispersed/fragmented subjectivity?

Environmental scholar T.V. Reed also correctly points out that there is “nothing remotely sentimental in *Almanac*’s vision of indigenous people leading a multi-ethnic alliance to resist and reverse this ecological, economic, and social devastation. These are not Indians as ultimate

ecologists” (31). While this is indeed a helpful insight, in his attempts to avoid a romanticized account of the alternative society to euro-american colonialism, Reed offers what at times becomes an argument of economic determinism. In other words, if it’s not about Indians as “ultimate ecologists” for Reed, it is maybe too much about indigenous people as single-minded, anti-capitalist revolutionaries. For instance, he argues that the “...narrative points us toward radical critique of the neocolonial political economy at the dark heart of corporate globalization. Other economic forms are not only possible, they are essential, because this form of industrial capitalism is not sustainable” (Reed, 38). While in many respects I agree with Reed, I would also like to build from this point to argue that the critique of globalization, while certainly evident and in many ways central, is one aspect of a broader question the novel raises about the possibility of social movement organizing and revolution.

Reed finds himself on shakier ground in terms of the possible romanticizing of indigenous culture as inherently sustainable in practice. For instance, when he writes, “Healthy communities can constrain, if not wholly contain, evil. But healthy communities are few and far between in the postmodern world, even in its Native portions. The colonized in the novel as well as the colonizers (and those who are both) are subject to the distortions bred of oppression” (31). This type of analysis could easily lead to a romanticizing of earlier indigenous cultures as the alternative, a sustainable and morally superior one, to the “postmodern world” that has irredeemably shattered it. As a result, Reed goes on to say that the end of colonial domination by what Silko terms the Destroyers, and The Era of the Death-Eye Dog, will present an opportunity for native peoples to retake their land and create a society and political economy “in which human needs and the needs of the planet are aligned, and prosperity for some is not bought at the cost of poverty for others and environmental collapse” (33). Although the novel may very well

narrate just such an opportunity, environmental scholars should be careful to avoid overly simple associations between healthy communities, sustainability, and assumed Native American cultural traits. Clearly, Silko's depiction of the socio-political movement to displace euro-american colonialism in the Americas actively resists this problematic (primitivist) depiction of indigenous cultures and, as I have argued earlier, Di Chiro's use of the term social reproduction as a goal for environmental justice advocates can help us more productively theorize 'sustainability' (beyond its mainstream use in contemporary green capitalism).

In order to avoid an uncritical romanticizing of indigenous culture's relationship to the non-human environment, the concept of *social reproduction* provides the most productive theoretical focus, or context, for an investigation into what Reed terms Almanac's "(un)healthy communities". As outlined earlier in this chapter, the concept of social reproduction is most helpful in its emphatic emphasis on "mixed-community" (the interaction between human and non-human inhabitants of an ecosystem) and therefore helps to highlight the inextricable ties between the two communities. The fight to promote social reproduction is, in part, a battle to privilege a non-economic based quality of life, equitable distribution of wealth, and long-term sustainable practices over a growth-based, expansionary economic model that produces socio-economic inequality and environmental destruction. Therefore, if we take the critique of global capitalism, central to Reed's point concerning alternative sustainable systems, and place it in conversation with the cultural and socio-political aspects of Adamson's argument regarding the imperative of survival; we find that the revolutionary work of both the indigenous and homeless armies (and other subaltern subjects in the novel) is focused upon promoting social reproduction. Seeing the socio-political goal in this way seems productive to me in that it offers a more

dynamic account of the movement to retake indigenous land than a simply romantic, economic, or environmental account can individually muster.<sup>xxxviii</sup>

At this point, I'd like to return for a moment to the work of the scholar Channette Romero already referenced above. Her article "Envisioning a 'Network of Tribal Coalitions'; Silko's Almanac of the Dead," attempts to understand Silko's presentation of the relationship between the human, the spiritual, and environmental forces that are to participate in the forthcoming revolution. Romero, however, is surprisingly reluctant to recognize the critique of the nature-culture binary within Silko's novel. In fact, she contends that Silko privileges the role of the non-human (whether spiritual or environmental) almost exclusively – and this is a disappointment for the scholar. When Romero eventually allows that human action does have a certain role in the revolutionary forces gathering to challenge the Destroyers, she argues that Silko feels compelled to imagine "people as natural forces" in order to include them. She suggests that, for Silko, "Conceiving of people as natural forces in conjunction with wind, earthquakes, droughts, and volcanic eruptions opens up a place for human warriors to participate materially in this revolution..." (636). Romero's construction problematically reaffirms the binary by assuming that there is a clear delineation to be made between human and non-human agency. Labeling revolutionary agency in this way, would have us distinguish between people "acting" as humans (presumably somehow *unnaturally*) or "acting" as non-human forces (ie. *naturally*). When put in these terms, the absurdity of making such a distinction becomes clear. Therefore, I would suggest that we should not imagine the human actors as "natural forces," any more than we should see the "earthquakes" and "droughts" as somehow intentional, reasonable political subjects. Rather, in order to recognize a more fundamental point of the novels depiction of agency, we should investigate the ways in which agency is constantly being co-

produced by human and non-human “actants”.<sup>xxxix</sup> I will suggest below that distributed agency, understood as co-produced across and between human and non-human communities, clarifies and illuminates certain aspects of the revolutionary preparations in the novel and raises certain new (I hope more productive) avenues of inquiry.

Romero’s uneasiness is instructive, though, of the problematic nature of distributed agency for liberal humanist conceptions of progressive temporality and political organizing. Even from an author ready to engage with the non-linear temporality of the novel, her desired goal, to distinguish the ‘correct’ actions for humans in order to restore a more socially just world, leaves Romero almost desperate to find this correct role for human political activists. She complains that,

“Although the...[conclusion] suggests that people have the possibility of changing their world, *Almanac* expresses a profound ambivalence about the extent of human involvement in the revolution it prophesies. Despite all the space in the text devoted to describing the material actions of Zeta, Angelita, and other people preparing for social revolution, the novel seems ambivalent about whether the prophesied revolution can really be waged by humans” (635).

Through her desire to maintain a clear divide between non-human material agency and the action of the so-called human intentional subject, Romero has brought to our attention a key difficulty faced in thinking political agency within the framework of distributed agency. How are we to understand human action (of the social, political, etc.) in a world humans do not fully construct, control or understand?<sup>xl</sup>

Reminiscent of our discussion of *Through the Arc* above, Romero seems to worry that this emphasis on “natural disasters” means there is no role at all for humans to resist social and environmental injustice. She contends that, “...gusts of wind, floods, droughts, volcanic eruptions, and earthquakes, and other natural disasters killing people in the name of social justice is repeated throughout the novel” (Romero, 635). These natural disasters, Romero argues, act in the “name of social justice” however these phenomenon remain distinctly separate from the human mobilizations for justice recounted in the novel. This line of inquiry leads to some rather unhelpful questions such as; which is more important? When do humans get to direct this revolution? And to where? As it turns out, these questions are even less helpful than they may at first appear. Instead, it is imperative to recognize a new set of questions that might better help us make sense of political agency in the age of a decentered human subject. The droughts, floods, and forest fires are all a result of a complicated intersection between nature-culture; that is, of ecosystem function, industrial agriculture, greenhouse gas emissions, etc. In fact, Silko repeatedly emphasizes the connection between the subjugated humans and imperiled environment as well as their related response to the empire of the Death-Eye Dog.<sup>xli</sup> In this manner, the novel implores us to ask; how do we comprehend the catalysts of historical change once we recognize that these floods, droughts, and other ‘natural disasters’ are actually co-produced by human and non-human agency? And, furthermore, how do we understand humans ability to work towards a more social and environmentally just society when we recognize human action itself is intricately interwoven with non-human, material agency? My contention is that engaging with these questions will be productive for thinking the relationship between distributed agency and the work of environmentalism as a social movement.

Throughout *Almanac* there is a distinct insistence upon the intricate interconnections between human and environmental agency. It is important to note that this is a connection that neither dehumanizes the indigenous people of Mexico nor humanizes the other-than-human forces and their part in the revolution. Rather, Silko highlights the co-production of agency; that all human action is in part produced in conjunction with a non-human, material agency and vice-versa. That, in fact, to differentiate between human and non-human agency, when each is so integrated with the other, is simply not productive. It is this differentiation that emboldens humans (via empiricism, speciesism, etc.) to believe in their separateness from the non-human and allows for the relentless objectification, instrumentalization and exploitation of both nature and marginalized human groups.

Within the matrix of distributed agency, there is still space for human action of course, but it is fundamentally different than liberal humanist views of abstracted, individuated human actors that effect, codify and control the non-human environment. In the latter, the non-human is seen alternatively as unreasoned, unintentional, amoral, and unintelligent which thereby reaffirms and privileges these very attributes as exceptional to (particular) humans. If/When society recognizes a displacement of this human-centered agency, how do environmental and social justice scholars (and activists) find ways to effectively build new models of resistance to exploitation and inequality?

#### **IV A Homeless Army, Environmental Justice and “Decolonizing Environmentalisms”:**

In the highly selective reading of *Almanac of the Dead* that follows, my main goal is to trace the relation between two radical movements that are both organizing for rebellion against euro-american colonization of the Americas. These two groups are the Tucson “homeless army”

formed by homeless Vietnam veterans' Clinton and Roy, and the coalition of indigenous peoples, the "people's army," led by Angelita and the twin-brothers El Feo and Tacho. There are several important connections between the homeless army in Tucson and the indigenous army forming in Mexico and elsewhere in the Americas. Both sets of leaders are organizing revolutionary citizen armies while also patiently waiting and watching for the opportune moment to 'act'; an opportunity that the organizers understand will be the result of, what we might term, the distributed agency of colonial domination in the Americas; or, perhaps more optimistically, the disruptive and revolutionary potential of this distributed agency.

Silko's novel depicts a contingent of geographically, demographically, and politically unique, yet interrelated, movements for social and environmental justice throughout the Americas. At least some representatives from each of these groups finally meet at an Indigenous Healer's Convention held in Tucson, Arizona. At that point the reader is presented with a fuller picture of the scale of the revolutionary changes that Silko imagines these disparate, yet increasingly coordinated, radical activist groups may achieve. Importantly, and as will be explored more in depth below, Silko presents this coming revolution as one composed of a multitude of agencies that span the spiritual, material and the human. The prophetic nature of these coming changes also begs certain questions regarding non-linear temporalities. For example, the building revolution is described by one participant at the Convention as such:

"What was coming could not be stopped...what was coming was relentless and inevitable; it might require five or ten years of great violence and conflict. It might require a hundred years of spirit voices and simple population growth, but the result would be the same: tribal people would retake the Americas; tribal people would retake ancestral land all over the

world. This was what earth's spirits wanted: her indigenous children who loved her and did not harm her" (712).

The prophetic (spiritual), the non-human and human agency are all present in various ways in this description of historical change offered as evidence for the inevitability of the indigenous movement to retake the land. Among these various groups that are projected to play a role in such a revolution, I will look specifically at the homeless and indigenous armies in Tucson, Arizona and outside Mexico City respectively.

Before further exploring the connections between insurgency, distributed agency and non-linear history through these two related groups, I would like to first offer a brief analysis of the relation between mainstream environmentalism and social justice movements in the novel. Early in *Almanac*, we encounter the distrust that the homeless army's leaders maintain towards mainstream environmentalists' preservationist rhetoric. For instance, we learn that "Clinton did not trust the so-called 'Defenders of Planet Earth.' Something about their choice of words had made Clinton uneasy" (415). When the history of traditional mainstream conservationist values is considered, Clinton's concerns regarding the motivations behind certain types of environmental advocacy are understandable. For instance, "Clinton was suspicious whenever he heard the word *pollution*. Human beings had been exterminated strictly for 'health' purposes by Europeans too often. Lately Clinton had seen ads purchased by so-called 'deep-ecologists.' The ads blamed earth's pollution not on industrial wastes – hydrocarbons and radiation – but on overpopulation" (415). Here Clinton reminds us that overpopulation concerns are often used in environmental circles as a diversion that allows for a disregard of issues such as the uneven distribution of wealth; and this consequently criminalizes the poor while naturalizing an economic system built upon that very socio-economic inequality. Clinton is rightfully concerned

that this type environmentalist rhetoric seems to value non-human nature more than humans themselves; as well as deflects blame from the industrialized northern countries and multinational corporations. Even more important, however, is the opportunity this raises for a different type of approach; one that attempts to build a movement meant to fundamentally challenge the socio-political and economic system that creates both environmental exploitation and a racialized socio-economic hierarchy.

As noted above, Reed argues that *Almanac* offers a specific type of resistance to global capitalism that blends environmental and social justice goals in such a way as to offer both a mode of resistance and, importantly, a path towards an alternative society based on equality and justice. For Reed, “*Almanac* dramatizes the fact that current forms of free market fundamentalism have collapsed various kinds of economy (aesthetic, spiritual, textual, and environmental) in one: the commodity” (33). The commodification of all aspects of life, bringing each activity, institution or belief-set under the determination of the global market, creates a market-based evaluation system for the usefulness of any given human activity, or even humans themselves. After depicting this phenomenon in the American southwest as well as urban and rural areas of Mexico (with an emphasis on the permeability of the borders between), the novel spends a great deal of time imagining both a resistance to this process as well as the possible worlds that might succeed in its wake. Reed asserts that, “While the novel offers no easy way out of this situation, it is clear that this logic must be broken; the reduction of all things to their economic value in the market-place must be replaced by a process in which human and environmental needs are at the center” (33). Consequently, he argues that *Silko* is depicting a simultaneously diverse yet linked set of resistant movements, which Reed terms “decolonizing environmentalisms”.

Of course, the argument for “decolonizing environmentalisms” itself infers the continued existence of a real or perceived barrier between environmental and social justice activism. Reed explains that, “By this phrase I mean to indicate two interrelated processes: the decolonization of traditional environmentalisms and the creation of new decolonial environmentalisms that articulate the links between oppressed humans and exploited Nature via objectification, commoditization, and degradation” (38). In utilizing this term to describe the radical activism described in *Almanac*, Reed highlights the connectedness of environmental exploitation and the subjugation of the poor and indigenous communities north and south of the U.S.-Mexican border in the novel. If, as Reed argues, “*Almanac* makes clear that only a thoroughgoing economic decolonization process can undo the social and environmental impact of the European imprint on the Americas...”, then the novel becomes an excellent place to also consider the potential impact of seeing environmental and social justice activism in a more integrated fashion.

I hope to build from Reed’s theorization of “decolonizing environmentalisms” in order to address the questions of decentered human political subject and distributed agency. In other words, how can we decolonize environmentalism, in both senses Reed uses the term, within a posthuman construct of agency? Reminiscent of Athanasiou’s argument, discussed earlier in this chapter, in which he highlights the shared assumptions behind some neoliberal arguments for global economic expansion and certain regressive qualities of the environmental movement, Clinton’s skepticism of ‘deep green’ philosophy is of central importance. The issue of overpopulation, similar to immigration in many ways, is used in these instances to reify the status quo and promote free-market capitalist principles as the only route to achieving decreased poverty and increased environmental awareness. Importantly, Clinton’s skepticism allows us to see through both these flawed rhetorical devices and, instead, he explains a more concise yet

enlightening counter-history. As Clinton sees it, “The Europeans had managed to dirty up the good land and good water around the world in less than five hundred years. Now the despoilers wanted the last bits of living earth for themselves alone” (415). Here, in just two sentences, Clinton has decimated the focus on over-population in some environmental rhetoric.

Interestingly, this sentiment echoes El Feo’s belief, and the almanac’s predictions of the end of the Death-Eye Dog era more generally; that is, that the over-consumption and waste of environmental resources are at once at the heart of euro-american imperialism in the Americas and foretell its eventual demise. In this manner, Silko begins to work through the entrenched historical differences between mainstream environmentalism and indigenous social justice and land-based movements; while drawing a connection between the needs and goals of the homeless army in Tucson and the indigenous army in Mexico. It interesting to note that, along with Clinton, El Feo would be wary of mainstream northern environmentalism’s “nature talk”, while we can also imagine that Angelita might solicit funding from these very same groups by framing her work as something along the lines of rainforest conservation (though her practical/political approach signals just as little trust).

Silko explores the contours of the relationship between radical social justice movements and environmentalism further when the “radical eco-terrorists,” a group calling themselves Green Vengeance, seemingly modeled after Dave Foreman’s Earth First!, surprise the attendees of the International Holistic Healers Convention to announce their recent destruction of a dam in the U.S. and proclaim their support for the indigenous people’s uprising to retake their rightful lands. The Holistic Healers Convention “...had been called by natural and indigenous healers to discuss the earth’s crisis. As the prophecies had warned, the earth’s weather was in chaos; the rain clouds had disappeared while terrible winds and freezing had followed, burning, dry

summers” (718). Green Vengeance is seen as an opportune ally based on shared radicalism and their stated goal to destroy the energy grid of the United States. The spokespeople bring video evidence of “six eco-warriors...[giving] their lives to free the mighty Colorado” (728). In fact, “Green Vengeance eco-warriors would make useful allies at least at the start. Green Vengeance had a great deal of wealth behind their eco-warrior campaigns” (726). There is therefore potential for coalition via a shared vision of radical tactics. However, the problematic philosophical history of ecotage groups (particularly in terms of their primitivist assumptions regarding a so-called “return to nature”) would leave some philosophical and material differences between the people’s army and Green Vengeance plans for reclaiming the land from the State.

Silko makes quite clear the same forces that have dispossessed the poor of their right to social reproduction, the subaltern subjects of the Americas, were inextricably linked to the destruction of the environment (and the subsequent human-created and dangerous fluctuations in climate). Most of the leaders from the various radical groups believe that, “Once the earth had been blasted open and brutally exploited, it was only logical the earth’s offspring, all the earth’s beings, would similarly be destroyed” (718). In this case, we find the social, political, economic and environmental crisis depicted as a deeply interconnected phenomenon and a crisis that is directly correlated to the exploitative practices of the colonizers. Therefore, despite real philosophical and material differences between environmental and social justice movements historically, the more radical versions of each do find some common ground in their tactics and goals.

While Clinton and El Feo never do meet in the novel, both are working to ready their perspective ‘armies’ for the re-taking of land and property from the Destroyers. How such

disparate yet linked groups might effectively deepen this relationship and how to build an effective coalition as the time of transition rapidly approaches remain open questions throughout the novel. These differences are not fully overcome in the novel, by any means, but what is more important is that the context of their relation is changed. And, importantly, the disruption of nature-culture dualism allows for a broader perspective of environmental justice that emphasizes common cause between the two sets of revolutionary organizers.

El Feo, along with Clinton and other activists in the novel, describe the environmentally exploitative practices of the U.S as being a constitutive part of its imminent downfall. Through these perspectives, Silko explores the intersections of social and environmental exploitation and the types of resistance that these acts foster across human and non-human communities. Clinton, in describing the trigger to the revolution for which his group is preparing, explains that "...the presence of the spirits – the great mountain and river spirits, the great sky spirits, all the spirits of the beloved ancestors, warriors, and old friends – the spirits would assemble and then the people of these continents would rise up" (425). Pointing to a proclamation similar to this one, Tillett has pointed out that, "Drawing upon his own complicated and paradoxical descent from both African slaves and slave owning Cherokees, Clinton explicitly comments on the dead inhabiting the Americas" (32). Consequently, the acts of colonization and imperialism upon which the U.S. is built, from this perspective, cannot be ignored and are still a constitutive part of the present.

It is constructive to further investigate the relationship between the related conceptions of revolution within Clinton and El Feo's respective hopes that a catalyst for their respective revolutions is actually built into the euro-american colonialist system. We can note important similarities between El Feo's explanation of the causes for this coming revolution with Clinton's critique, seen above, regarding the U.S.'s exploitation of North American resources:

“The United States allowed huge stores of grain and cheese to rot El Feo had watched on television: the waste, great hills of discarded lumber and wire, and his heart had beat faster because he had realized someday the United States would spend all its money and sell off and strip everything that could take from the land. Finally, the United States would be poor and broke, and all the water would be gone; then the people would see European descendants scurrying back across the ocean back to the lands of their forefathers” (523).

The perspective outlined here by El Feo, in regard to the over-consumption of natural resources, and capitalism’s creation of a dispossessed poor within a highly racialized hierarchy in the U.S., compels the reader to consider environmental degradation and social collapse as intricately linked catastrophes. Therefore, what at first appear to be two distinct movements for social justice – Clinton’s battle for economic equality and the overthrow of a system that profits from war, crime and homelessness, and El Feo’s radical movement for retaking indigenous lands in Mexico and the U.S. Southwest – are connected here through Silko’s emphasis on the interconnectedness of social reproduction as a political organizing goal that connects all movements actively opposing the power of the Destroyers. Moreover, and perhaps most obviously, both these movements are what can be termed ‘radical’ positions in that they operate outside the usual rights-based social movements and, secondly, both advocate for radical restructuring of political, economic and social aspects of society through a militarized revolution.

El Feo’s political motivations are probably the most single-minded of any character in the novel in that the clear and absolute goal of his activism is to take back indigenous lands. For El Feo, “All that mattered was obtaining the weapons and supplies the people needed to retake the land...” (513). In fact, we are informed that “El Feo did not believe in political parties,

ideology, or rules” and that, in the end, he only “believed in the land” (513). El Feo travels from village to village tirelessly recruiting members for the growing indigenous army as well as ensuring practical support from the villagers to ensure solidarity as well as practical help such as safe houses and trustworthy messengers. We are consistently reminded that “El Feo understood he had been chosen for one task: to remind the people never to lose sight of their precious land” (524). However, it is also clear that, despite this singular goal, El Feo recognizes the complex multiplicity of approaches that will be necessary to achieve it.

“All across earth there were those listening and waiting, isolated and lonely despised outcasts of the earth. First the lights would go out – dynamite or earthquake, it did not matter. All sources of electrical power generation would be destroyed. Darkness was the ally of the poor. One uprising would spark another and another. El Feo did not believe in political parties, ideology, or rules. El Feo believed in the land. With the return of the Indian land would come the return of justice, followed by peace” (513).

However, it is also clear that this single-minded commitment to the retaking of indigenous lands is, for El Feo, the first step in a larger economic and socio-political change that will subsequently occur. He is certain that with “...the return of the land would come the return of justice, followed by peace” (513). Seen in this way, El Feo’s single-minded concentration on the land takes on a broader progressive vision of promoting equality between humans as well as between human and other-than-human communities. His vision is actually one that bridges the social and environmental. And, upon further inspection, it is also certainly much less simple (or singular) than El Feo might at first want his followers to believe. While El Feo’s brother, Tacho, interprets the messages of the Macaws (messengers of the spirits to the human world) and sees a possibilities for a peaceful transition and Angelita works the international political channels

necessary to procure funds and weapons; El Feo concentrates on preparing the people for what he believes will inevitably be a violent confrontation with the Mexican and U.S. governments.

Angelita, as known by her revolutionary name La Escapita, combines El Feo's willingness for militant revolutionary action with an astute and, what could be termed, opportunistic political mind. She is a radical activist inspired by Marx but not enamored with the western history of Marxism. Instead, she sees a connection between Marx's descriptions and denouncement of the exploitation of the working classes in Europe and the history (and present) of the subjugation of native peoples in the Americas. Angelita's speech before the gathered villagers, and just prior to the execution of the Cuban Marxist Bartholomeo, offers insight into her vision for the revolution and the realization of its goals. She tells the gathering that, "The ancestors' spirits speak in dreams. We wait. We simply wait for the earth's natural forces already set loose, the exploding, fierce energy of all the dead slaves and dead ancestors haunting the Americas. We prepare, and we wait for the tidal wave of history to sweep us along" (518). Her emphasis here is on the "ancestors' spirits" and the earth's "natural forces" whose combined agency will "sweep" humans along with it. However, it would be a mistake to read these expressions as a romanticization of indigenous beliefs and practice or a passive approach in which humans "simply wait" the "tidal wave of history". We should, instead, note that Angelita says these natural forces are "already set loose" by a "fierce energy" of dead "slaves" and "ancestors". The energy, she intimates, is an inextricable mixture of human and non-human (material) interaction and the non-linear nature of time means that this "fierce energy" is always present, waiting to manifest.

Angelita emphasizes that humans must "prepare" and so it seems that all human agency is not discounted here by any means. But prepare for what? And how? Angelita's speech offers

an opportunity for us to think political agency and environmental practice – and I think environmental scholars are often prone to do this – in a way that might read her as saying that humans have no role because nature will “strike back” and punish those who have mistreated her. However, this would certainly be an over-simplification and a mistake. Rather, as we have seen, Angelita and El Feo understand these agencies of historical change as co-produced by a blend of human and environmental actions already infused into the current system of the Destroyers. As they see it, this complex, unfolding intra-action between euro-american imperialism, the multifarious assortment of complementary and oppositional human social movements, and non-human, material agency will offer an opportunity for the people’s army to utilize the revolutionary forces that will end the Era of the Death-Eye Dog.

Joni Adamson, in her description of Angelita’s revolutionary work, argues that, at their core, her goals are essentially about promoting social reproduction. She writes, “Angelita sees herself as fighting for her people’s right to practice their traditional culture and religion, and to derive a sustainable living in the places where they were born” (Adamson, 153). The stakes are enmeshed with the social reproduction of a culture, or what constitutes a way of life. Nothing less than a revolution will make this possible for Angelita and the indigenous peoples of Mexico. She herself explains, “They [the Destroyers] had not understood that the earth was mother to all beings. But at least Engels and Marx had understood the earth belongs to no one. No human, individuals or corporations, no cartel of nations, could ‘own’ the earth; it was the earth who possessed the humans and it was the earth who disposed of them” (749). This articulation of the relationship between human institutions, agency and the non-human represents a radical decentering of the human.

The radical nature of the indigenous army's goals to retake the land coupled with their intricate understanding of the inter-connectedness of spiritual, human and environmental agency in their revolution implies that Silko is asking the reader to think beyond traditional political paradigms (whether those be reform and rights based discourses, civil disobedience, or so-called radical eco-sabotage). Adamson seems attuned to this as well when she argues that Angelita's "...organizing activities...will require her to search continually for new ways to express herself in a world dominated by national and international voices urging that she and her people be ignored or silenced" (Adamson, 153). Here I think Adamson accurately points out that the indigenous army's strategy and goals outstrip conventional environmental justice campaigns to this point (taking place so often within more conventional legal and political frameworks).

Angelita is by also far the most politically astute figure in the people's revolution. We learn that "El Feo left books and politics to Angelita, who was strong enough to stomach the poison about taxes, authorities, and the existence of states" (523). Angelita, while working outside both a simple rights-based discourse or a purely military revolution, looks to blend many aspects of Marxist thought, indigenous knowledge and history, and contemporary geo-political strategies, in order to achieve a radical and revolutionary goal. The goal is no less than the removal of euro-americans and western institutions and ideologies from her people's ancestral lands in the Americas. We learn that, "If Angelita was talking to the Germans or Hollywood activists, she said the Indians were fighting multinational corporation who killed rain forests; if she was talking to the Japanese or the U.S. military, then the Indians were fighting communism. Whatever their 'friends' needed to hear, that was their motto" (514). This represents a flexible strategy that works within, and exploits, the dominant economic and political system to the people's army's own radical goals.

Silko is clear that we must move outside traditional forms of advocacy for rights-based platforms. El Feo articulates this position most clearly when he explains that, “The masses of people in Asia and in Africa, and the Americas too, no longer believed in so-called ‘elected’ leaders’ they were listening to strange voices inside themselves. Although few would admit this, the voices they heard were voices out of the past, voices of their earliest memories, voices of nightmares and voices of sweet dreams, voices of the ancestors” (513). This is not a socio-political movement aimed at political/electoral reform, nor a rights-based application to the state for certain types of recognition; but, if not, then who or what becomes the target of the campaign? Yet, if the strategies are flexible, it is important to note that they are still operating within what might be seen as a rather traditional (if radical or revolutionary) goal-based social movement organizing strategy.

Therefore the question of temporalities and futurity in *Almanac* need a bit more of our attention. How is this future represented and what exactly is the goal?

“The night the lights went out and didn’t come back on, the tables would turn. The poorest, those living on the street or in the arroyo, they would laugh at the others because the homeless and poor lived everyday without electricity or running water. Turn out the lights and the police had no computers, no files, no names, no spy cameras, and police radios went dead...they all had weapons and they all were ready to fight. Because if they didn’t fight, they would be destroyed and Mother Earth with them” (748-749).

Part of this revolutionary work, to be sure, involves the un-thinking of euro-american economic, social and political ‘ways of seeing’ the world. It is both the material and philosophical challenging of western empirical traditions and the preparation of possible portals (launching

points) for an up til now mostly unimaginable future for the human and non-human communities of the Americas. Angelita proclaims that, “The dispossessed people of the earth would rise up and take back lands that had been their birthright, and these lands would never again be held as private property, but as lands belonging to the people forever to protect” (532). There is here expressed a vision for what takes the place of the current state of inequality and exploitation. This revolution to reclaim the indigenous peoples of the Americas rightful lands includes the construction of an economic and socio-political structure to replace the oppressive, destructive and essentially failed one. The latter, according to El Feo, is an undeniable consequence of the former.

In *Almanac*, as in *Through the Arc*, it is difficult to understand this type of political agency if we insist on asking for an intentional subject and a traditional goal-oriented political agenda. While El Feo and Clinton never meet, as the novel ends with El Feo’s unarmed, peaceful “army” of indigenous people still marching northward, we can imagine their rendezvous with the Homeless army in Tucson as at least possible, if not probable. Both El Feo and Clinton see the contemporary system as in a process of decomposition, if you will. It is a system that is crumbling, or decomposing, and this is a process that is in the end uncontrollable and has little, if anything, to do with human intention. Therefore, each of these groups focuses their work upon preparation that will allow them to take advantage of any tactical opportunities that might arise in the midst of this decomposition of the current order. With this in mind, what then would it mean to prepare to work with the other-than-human forces that are gathering energy and building around them (and how do we plan for a co-produced event)? And, in what ways does this radically flexible and opportunistic political approach relate to the revolutionaries non-linear perception of historical change?

At this point, to help answer these questions we should more clearly identify the key elements that create this alternative political agency. It is certainly opportunistic, as well as flexible; it moves beyond traditional political strategy and targets by embracing a vision of radical social and political transformation. The various movement leaders, to a person, embrace a hybrid agency of spiritual, human and non-human elements to some (varying) degree. And these aspects appear to propel the movement beyond a justice-oriented advocacy, at least in part, due to its multifaceted approach. Furthermore, the novel's focus upon disparate temporalities within its depiction of radical activism also operate to destabilize the assumptions of what would otherwise be understood as an exclusively humancentric narrative. The various revolutionary activists in the novel are able to relate their own seemingly limited day-to-day work to the radical goal of a de-colonized America in part because of a non-linear conception of time. The organizer and sometimes spiritual leader known as the Barefoot Hopi makes this re-orientation of the human to radical political activism and change particularly clear when he explains, when visiting with Clinton, Roy and others at the homeless army encampment, that:

“[He] knew he might work to make preparations the rest of his life, yet never see the day when prisons and jails all over the U.S. were hit with riots and strikes simultaneously. But that didn't discourage the Hopi. One human lifetime wasn't much; it was over in a flash. Conjunctions and convergences of global proportions might require six or seven hundred years to develop” (618).

So, there is a goal-orientation to the revolutionary work of Angelita, El Feo and Clinton. However, it is a revolutionary and idealistic one of radical transformation of society based in a concept of historical change we might liken to distributed agency. Distributed agency and a non-linear concept of historical change are both fundamental to this viewpoint. Futurity becomes

something that is based upon an amalgamation of human and non-human agency; colonialism, capitalism, disease, droughts, and technological advances and failures are each interconnected and building towards the demise of contemporary euro-american domination of the Americas. (It is here interesting to remember that Angelita is a dedicated scholar and admirer of Marx).

## **V - Conclusion:**

Although it is limited, contingent, and incomplete, human political and revolutionary agency is present in the novel (from the border crossing black market trade, Roy and Clinton's acquisition of Tucson elites' bank accounts, Angelita's funding efforts for the indigenous army, etc). This is even more strikingly clear when compared to *Thru the Arc* where collective political resistance from humans is practically non-existent.<sup>xliii</sup> Still, in *Almanac* the myths of human exceptionalism and unfettered agency are fundamental aspects of the colonizers culture and constitute a privileged position; therefore its undoing is a key aspect of the decolonizing environmentalisms forming in the novel to challenge the era of The Death-Eye Dog. However, the distributed agency depicted in *Almanac* leaves scholars, such as Romero, wondering what exactly Silko is suggesting in regard to the role of humans in this revolution. Are these, as several influential ecocritics have claimed, "responsible" and "reasonable" actors leading the movement, learning from the past to make a better future for all?

The relationship I outline above between Clinton and Roy's approach with their homeless army and Angelita and El Feo's organizing of the indigenous people's army is founded upon a recognition regarding the pivotal yet contingent and partial role of human action in constituting historical change. We find each group attempting to strike a balance between patience (without complacency) and opportunistic action (although not hemmed in by pre-conceived

expectations/limitations). Patience, watchfulness, imagination and opportunism are privileged in the hopes of building momentum that might just hit critical mass at the right moment – when the lights go out! - facilitating the creation of social structures more likely to enable social production based in an understanding of mixed-community.

This seems to be the key difference in depictions of human social movement organizing between *Through the Arc* and *Almanac*. In the former, there are no justice-oriented, alternative movements ready to fill the socio-economic and political void left as the Matacao plastic city crumbles and disappears. Instead, we are led to believe that new global capital projects will move into replace that one industrial marketplace and the safest thing for Kazumasa and Lourdes is to retreat into an apolitical, pastoral plantation life. However, in *Almanac*, although the cliffhanger style of the ending leaves us with only circumstantial and suggestive evidence, it is clear, at the very least, that a multitude of distinct yet interconnected radical social movements are readying to take advantage of what might be a series of imminent tactical opportunities to transform society (and its relation to the non-human community) in North America and beyond. The possibility for (effective?) social justice organizing within a framework of distributed agency is more fully apparent than in Silko's work.

For example, Clinton and Roy do not know exactly what will trigger the moment yet recognize the potential in urban unrest across the U.S. In this context, accessing and slowly drawing upon the bank accounts of wealthy, yet empty, Tucson homes are practical steps of preparation while both preach patience to each other and their allies. As the state decides to finally confront and remove the growing homeless encampment, Clinton, Roy and the others come face to face with the sanctioned violence of the state. However, we learn that as the police approached, the SWAT team had suddenly stopped and “seemed paralyzed by the sight of the

homeless war veterans standing at attention in their raggedy army-surplus uniforms without any weapons. Clinton would never forget that moment” (741).

“Clinton had listened to the Barefoot Hopi, and he had talked day and night with the African. Both had preached patience, the patience of the old tribal people who had been humble enough not to expect change in one human lifetime, or even five lifetimes. Maybe not tomorrow or next week, but someday Clinton knew, the other homeless people would remember the defiance of the homeless vets...Like little seeds, the feelings would grow, and the police violence that had rained down on the people would only nurture the growing bitterness” (741).

In the final two chapters to follow, I turn to an investigation of climate change and environmental politics, I will examine both science fiction (Robinson’s Capitol trilogy in chapter 3) and contemporary environmental advocacy work (such as 350.org in chapter 4). The goal is to further explicate the key limitations and potential in thinking environmental practice in a posthuman and postnatural world.

Climate change presents a challenge to environmental activists that is fundamentally about preparing for an uncertain (unknowable) future. The uncertainty of climate forecasts (not whether or not the planet is warming, but how fast and what will changes look like in various climates and regions, etc.) challenges organizers to work in the present without an easily definable future goal.<sup>xliii</sup> So far, it’s fair to say that it’s been a dismal effort by environmentalists by any standard. But why, exactly? Climate change is an issue that is at once an environmental and social justice, public health, political and economic challenge. It will undoubtedly take a multi-faceted, opportunistic and creative approach from the environmental community and more.

What Frank, in Robinson's trilogy, calls the "kitchen sink approach". In this context, we have to ask ourselves if science-based goals, such as those set out by 350.org to reduce CO2 back to 350 parts per million in the atmosphere OR the IOCC call to limit global warming to 2 degrees Celsius, suffice? Even with these supposedly motivating goals, the science is quite limited in terms of definite predictions, so there is little way to prove that even these relatively modest goals are appropriate. Clearly, some type of new environmental politics is necessary; one more comfortable acting within a context of uncertainty and limited human agency while at the same time expanding its creativity and boldness. Do Yamashita's and Silko's related yet unique depictions of revolutionary social movement organizing – contingent, limited, co-produced, and with agency dispersed across the human and non-human – offer a way of evaluating our options going forward? Much as *Almanac* usefully builds upon the questions and contradictions within Yamashita's *Through the Arc*, I hope my next two chapters will shed at least some light upon these quandaries of environmental politics in a posthuman and postnatural age.

### Chapter 3: The ‘Passionate Scientist’ and the politics of Geo-Engineering in Kim Stanley

#### Robinson’s *Science in the Capitol* Trilogy

*“An extraordinary social and psychological change is taking place right in front of our eyes – the impossible is becoming possible. An event first experienced as real but impossible...becomes real and no longer impossible (once the catastrophe occurs, it is ‘renormalized’ perceived as part of the normal run of things, as always already having been possible). The gap which makes these paradoxes possible is that between knowledge and belief; we know the (ecological) catastrophe is possible, probable even, yet we do not believe it will really happen”*

*Zizek, Living in the End Times.*

#### **I - Introduction:**

This chapter concentrates on a near-future science-fiction tale of climate change with a particular emphasis on the relationships between the natural, the technological and the discourse of scientific rationality. The following, and final, chapter will examine contemporary environmental activism’s responses to climate change; however, here I will first attempt to think through the implications of the abrupt climate change scenario imagined in Kim Stanley Robinson’s *Science in the Capital* trilogy. We will explore the depiction of science in the trilogy and how it affects the major social and environmental issue in the novel; terra-formation; or more specifically, the possibility of a techno-fix for a warming planet and what this may mean for our understanding of the relationship between the technological and the natural. This focus opens up a series of questions that build from the examination of distributed agency and the political subject in the previous chapter; such as, what does it mean to be human in a hi-tech society in constant struggle with an unstable nature? How would the material experience of an unstable and dynamic nature affect dominant conceptions of the relationship between human and non-human agency (say, as depicted in the trilogy, via the fluctuation between flood inducing

rains to freezing arctic winters in D.C. or an extended el nino season that leaves a drenched, eroding California coastline in comparison to a drought-ridden farming community just miles inland)? And, finally, in what ways are scientific practice, geo-mediation, and socio-political structures altered when confronted with the limitations of human agency?

These questions will be considered by first analyzing Robinson's critical approach to objectivity and the scientific method within this trio of novels. Secondly, this chapter will examine how this newly configured scientific practice relates to other proposed social, economic, and political transformative possibilities in the novel. Of particular interest to this study, besides the relationship between the scientific and the social, will be the way in which Robinson configures the relationship between individual and societal transformation as well as between reformist and revolutionary political struggle. A main contention of this chapter is that Robinson's trilogy is uniquely attuned to the manner in which distributed agency and the decentered human offer a possibly transformative opportunity for social and environmental justice; and simultaneously present a potential crisis for dominant conceptions of political subjectivity and linear history.

Near the conclusion of the trilogy, the environmentalist-minded President Chase argues, in a running online conversation with voters on his blog titled 'Cut to the Chase', that the crisis of climate change calls upon human society to "become the stewards of the earth". And he goes on to argue, "that we have to do this in ignorance of the details of *how* to do it" (my emphasis, *Sixty*, 517). This chapter and the next are then, in part, an attempt to think through Chase's proclamation; how will society grapple with not only the crisis of futurity brought on by climate change, but also the crisis of knowledge-formation and political agency in the contemporary moment? That is, a contemporary moment plagued by the sheer (planetary and geologic) scale

of the challenge and the significantly limited intentional agency at the institutional level of social, economic and political systems.<sup>xliv</sup> What are the impediments to our ability to know the “facts” of this unprecedented challenge? How do we assess best practices in an unstable moment of crisis?

Robinson’s near future, critical utopian sci-fi, specifically *The Science in the Capital* trilogy, examines the possible scientific, political and social challenges that climate change scenarios will present for the individual in particular and society at large. Robinson places his trilogy in a near-future U.S., with a predominant portion of the narrative unfolding in Washington D.C., which is undergoing drastic changes due to the unfolding of ‘abrupt climate change’. The novel begins during the second-half of what can readily be discerned as a Bush-like presidential administration’s first term. This environmental scenario is based on studies of earlier shifts in climate, particularly the Younger Dryas, in which it has been postulated that drastic changes from warm-wet to cold-dry weather (in other words, ice age conditions) took place in a matter of years, rather than decades or centuries.

The first novel opens with a description of the political and economic climate that will be very familiar to the contemporary reader. Although the introductory chapter introduces the reader to a description of a planet with warming air and ocean temperatures, record melting of Arctic ice pack, and a particularly strong ‘el nino’ season, this initiation to the fictional weather conditions is in many ways similar to contemporary media reports concerning increasingly erratic and severe weather. However, just a few chapters into the novel the accelerated pace of these changes becomes noticeable, and the reader begins to realize, in this particular near-future, the ability to evade or outright deny the issue of climate change is no longer an option. As such, the climatic shifts that occur, creating at least one major catastrophic weather-related issue in

D.C. in each novel (a major flood event in D.C at the end of *40 Signs of Rain*, a long arctic winter and “stalled” gulf stream in *50 Degrees Below* and, finally, the non-human environment’s unforeseen responses to geo-mediation projects in *60 Days and Counting*) operate, in some ways, as a type of “liberating crisis”.<sup>xlv</sup> In this manner, the trilogy becomes an experiment in possible futures, but one in which the debate over whether or not climate change is a *real* issue becomes, instead, a debate over the question: what is to be done?

The trilogy begins with a coda (a device used throughout the trilogy and in Robinson’s earlier Mars trilogy and that we will discuss more in just a moment) that introduces the reader to the theory of ‘abrupt climate change’ in a matter of fact manner. We learn that, “When the Arctic ice pack was first measured...in the 1950’s it averaged thirty feet thick in midwinter. By the end of the century it was down to fifteen. Then one August the ice broke up...leaving broad lanes of water open to continuous polar summer sunlight. The next year the breakup started in July...The third year, the breakup began in May. That was last year” (3). This explains the opening environmental context for the trilogy and just a few dozen pages later, another coda explains to the reader what scientists are suggesting might occur next:

“So the cooling water in the North Atlantic sinks well, aiding the power of the Gulf Stream. If the surface of North Atlantic were to become rapidly fresher, it would not sink so well when it cooled, and that could stall the conveyor belt. The Gulf Stream would have nowhere to go, and would slow down, and sink farther south. Weather everywhere would change, becoming windier and drier in the Northern Hemisphere, and colder in places, especially in Europe” (69-70).

We are further informed that scientists have postulated, in the past, “These flows apparently stalled the world ocean conveyor belt current, and the climate of the whole world changed as a

result, sometimes in as little as three years. Now, would the arctic sea ice, breaking into bergs and flowing south...dump enough fresh water into the North Atlantic to stall the Gulf Stream again?" (70). As the scientists, politicians, lobbyists and citizens of the U.S. capital soon discover, the answer to this question is undeniably in the affirmative. The increasingly severe and erratic weather presents relatively unknown and unpredictable challenges ahead; and this also presents both a set problems and opportunities (economic, social and political) for the communities of scientists and politicians explored throughout the work.

One of the challenges Robinson faces in telling a story containing such integral elements that occur on a scale outside the scope of the individual, the community, or even the human for that matter, is the issue of narrative device. As mentioned above, Robinson sporadically interrupts the narrative of the novel with short italicized codas at the beginning of each novel and between certain sections. The voice of these interruptions is inconsistent and alternates between a type of omniscient narrator, the inner thoughts or perspective of a main character such as Frank Vanderwal, minor characters such as Edgardo Alfonso, or even transcripts of President Chase's blog and his back-and-forth with his constituents. Even when the voice of these codas seems to be a character such as Frank for instance, rather than a fully exterior narrator, the character appears to be at some remove from the narrative itself.<sup>xlvi</sup> It is interesting to consider why these sections are separated from the rest of the narrative. In other words, why is the more traditional narrative of the novel form inadequate in these moments? In the previous chapter, we examined the ways in which posthuman accounts of distributed agency forestall narrative closure, in part due to the displaced human subject's unaccountability within liberal humanist concepts of linear history, narrative and futurity. However, here I believe it also important to note how these codas allow Robinson, in certain instances, to narrate that which, under traditional humanist narrative

structures, might otherwise be impossible. That is, namely, the non-human physical (including technological) worlds; thus allowing the author to incorporate a non-human point of view operating outside human subjectivity.

The new challenges abrupt climate change poses for both environmentalists and society at large are taken up in the novels in several related, yet also distinct, ways. First, the issue of the “techno-fix”, often referred to as geo-engineering or terraformation in scientific literature, is intricately explored; predominantly in terms of what technologies can and should be used, by whom and to what end? Second, the effects of the climatic changes (as well as the deployment and results of geomediation on that climate) upon the dominant cultural, economic and political structures of late-capitalism become a central question for Robinson. Robinson’s treatment of geo-engineering, as one appropriate and inevitable option among many toward climate change mitigation, unpacks the framework of assumptions that motivate scientific practice as well. In this way, specific debates over technological intervention into climactic ecologies form a central aspect of the narrative.<sup>xlvii</sup> For this reason, it is important for us to move, for a moment, into the contemporary conversation within environmental humanities regarding the relationship between environmentalism and technological innovation.

The trilogy’s environmentally focused, critical-utopian narrative attempts to re-imagine eco-politics in a posthuman world. While at times certain more traditional modes of mainstream, more conservative environmental thought are recognizable, Robinson consistently examines and redefines what a non-romanticized, politically trenchant and socially responsible environmentalism might look in a posthuman and postnatural context. The reified “Nature” of much environmentally focused writing is consistently disrupted and re-imagined through a fusion of at times unlikely partners; place-based ethics, technological innovation, social and

economic equality, and socio-biology to name just a few. At the center of these musings, is the ongoing work of what Timothy Morton calls “progressive ecocriticism”.

In his provocative book *Ecology Without Nature*, Morton continues the much-needed critique of subject-object dualism in environmental thinking. And as the title indicates, the work calls for a re-thinking of ecological thought that no longer relies upon a reified Nature (object) or a human ‘self’ (subject) that is somehow separate and unconnected to the environment. Taking from Hegel, Morton identifies these social constructs as the “Beautiful Soul” and “Beautiful Nature”. These terms become self-evident when one thinks of them in terms of traditional nature writing texts in which the construction of a reified and romanticized Nature builds a dualism between the *natural world* and the *human* writer, reader, hiker, etc. However, as Morton rightly points out, if we look more closely at this *beautiful dualism* it is difficult to define either the object or subject in any accurate manner. He writes that, “Wherever I look for myself I only encounter a potentially infinite series of alterities: my body, my arm, my ideas, place of birth, parents, history, society...The same goes for nature. Wherever we look for it, we encounter just a long metonymic string of bunnies, trees, stars, space, toothbrushes, skyscrapers...Of course, where the list ends is telling” (Morton, 175). According to Morton, to move toward a more progressive ecocriticism, or what he also calls *ecocritique*, ecocritics must do more than simply discard this dualism in favor of a simple monism of nature worship and/or celebration of a supposed unmediated relation to nature. Ecocritique, on the other hand, would allow for and analyze the difference; or, in other words, ecocriticism should move beyond the politically and socially limiting effects of this simple binary, not to further over-simplify the relationship between humans and the non-human world, but to grapple with the contradictions, similarities, and potentialities of an ecological position not reliant on a reified Nature. Morton argues

persuasively that a significant part of the problem is a lingering dualism within much of eco-theory generally. He argues that,

“By connecting what ecocriticism forbids us to connect – consumerism and environmentalism, even the ‘deep’ sorts – we could do fresh ecological criticism, awake to the irony that a national park is as reified as an advertisement for an SUV. Ecocritique should aim not only at globalized capitalism, but also at the ‘Nature’ that gets in the way of looking out for actually existing species, including the human species” (164).

In defining the political edge to ecocritique, Morton falls a bit short of other scholars, such as Latour and Haraway, due to his central interest in aesthetics and literary criticism. However, it is my contention, also, that Robinson’s critical-utopian science fiction (and particularly the trilogy at the center of this analysis) is developing a type of ecocritique itself through the creation of possible futures that do not shy away from the intersections of the ecological, the economic and the socio-political. The trilogy attempts to open up the “space between” the nature-culture dualism so that we can begin to move forward on Morton’s call for ecocritique to do more than break down the binary only to promote an impossible monism.<sup>xlviii</sup>

In their introduction to a collection on environmental and technology studies, published in 2008, the editors White and Wilbert refer to the relationship between human society, deployed and developing technologies, and the non-human environment as “technonatures”. They do so not to lament the loss of a somehow more ‘real’ or ‘beautiful’ nature, but rather to foster new ways for environmental scholars and activists to understand and engage with rural, suburban and urban landscapes that do not fit the traditional conception of so-called wilderness. The collection of works focus on the social construction of nature while at the same time insisting on the importance of a materialist approach to critical theory; the editors sum up the goal of the book by

paraphrasing Bruno Latour as they explain that, “The allusive goal here is to develop a politics that can envisage our world as ‘real, material, and discursive’” (Wilbert, 11). This goal is emblematic of the direction I understand “postmodern ecocriticism” to be charting.

Theoretically, the hope is to understand postmodern theories of constructionism to be a helpful tool in postulating a politics that understands the materiality of nature while also moving beyond simple reification of nature (critical theory is not an annihilation of nature altogether!).

At the same time, attention to materiality is also central to this new conception of the relationship between the human and non-human in the *Technonatures* collection. In other words, by no means does “progressive ecocriticism” want to argue for a purely social constructionist position. The editors assert that, “Additionally, many of these currents seek to reclaim agency – human agency, to be sure, but also the agency of non-humans – so as to demonstrate that social-ecological worlds are not simply social constructs but are in a very materialist sense co-constructed” (11). The authors go on to discuss the difference between interactions, which assume two separate entities to begin with, and *intra*-actions “so as to emphasize how humans, animals, materials, and things are not fixed prior to material discursive signification but in it. It is in this ‘between’ that many technonatural conversations want to be found” (11). It is also in this space “between”, I will argue, that Robinson attempts to imagine a possible (though arguably not probable), progressive, and environmentally and socially responsible response to abrupt climate change in the *Science in the Capital* trilogy. These techno-natural conversations raise and sustain a critical inquiry into the issue of human and non-human agency. The question of ‘distributed’ or ‘hybrid’ agency is rarely more intriguing, nor important, than in the study of technological advances and scientific process. Within the so-called hard and social sciences, the confluence of technology, nature and culture (with all their respective underlying cultural

assumptions) creates a particularly problematic, yet informative, framework in which to think through the question of agency.

One argument that I pursue throughout this project is the ways in which concepts of distributed agency help to destabilize any lingering dualism between materiality and social construction in the work of both ecocritical theorists and posthumanists. The traditional narrative of a destructive human agency, left unbound through the logics of capitalism, running roughshod through a passive natural world, has been thoroughly critiqued in second-wave ecocritical work, posthumanism, and the environmental social sciences. Therefore, many environmental theorists have recently argued that the moment has come to examine what can and should be done to imagine a new, more critically aware and politically trenchant environmentalism. It is increasingly and overwhelmingly clear that, as White and Wilbert argue, there is;

“a palpable sense of dissatisfaction with a certain style of environmental critique – romantic, ecocentric, and often new-Malthusian, that has arguably dominated the imaginative horizons of much mainstream “northern” environmentalism over the last three decades. We might identify this style of critique as a world view that while placing much emphasis on the word ‘holism’ nevertheless all too quickly defaults to a view that the world can be sharply separated into the discrete and singular categories of Society and Nature” (3-4).

As the nature-culture binary breaks down as a legitimate theoretical and political tool of compartmentalization, what will take its place to form an active and effective environmental politics? What are the goals and methods available to theorists in environmental studies willing to grapple with the economic, social and political ramifications of a techno-natural world?

Applying this to the *Science in the Capital* trilogy, Roger Lockhurst astutely points out that the near-future depicted in the trilogy, "...is still one hemmed in by the political forces of neoliberalism. It is "our" contemporary science and technology that has to deal with catastrophic climate change: there are no science-fictional mitigations invented in the course of the 1500 pages; they all sit inside the horizon of current scientific research" (Lockhurst, 171). In this way Robinson is depicting a possible near-future climate crisis within the framework of early 21<sup>st</sup> century political, economic and scientific "realities". The question that motivates my analysis in this chapter then becomes; how does the trilogy present the relationship between technology and the complex intersections between the human and non-human? And is it a good critical model? With these questions in mind, my reading of Robinson's trilogy will begin with the critique of empirical science that is fundamental to the utopian aspirations of the project. We will consider Robinson's presentation of a "passionate science" that he seems to suggest should replace traditional empiricist approaches; and how this then relates to his depiction of technological options for mitigating climate change. At this point, it is worthwhile to have a look into Robinson's earlier work to gain a sense of the approach and framework he subsequently brings to the newer *Science in the Capital* trilogy in regard to the issues the technological, the natural and distributed agency.

The second novel of Kim Stanley Robinson's famous *Mars* trilogy, *Green Mars*, opens with an intriguing description of the terraforming process that transforms the red planet into a livable habitat for humans as well as non-human animal and plant life. Robinson, in the midst of leading his readers through the process of the practically inconceivable planetary-scale terraformation project, takes a moment to consider the relationship between how technology is acting upon the planet and the evolving environment's return effect upon the human culture

developing on Mars. “Of course all the genetic templates for our new biota are Terran; the minds designing them are Terran; but the terrain is Martian. And terrain is a powerful genetic engineer, determining what flourishes and what doesn’t, pushing along progressive differentiation, and thus the evolution of new species” (3). The feedback loop becomes a distributed agency of which humans are a part but certainly do not have control over. In addition to the differences between Earth and Mars that the first 100 settlers must adapt to, even while they deploy their technologies of geo-mediation, the second sentence of this passage specifically highlights the limitations of human agency (even within such an ambitious human project). In fact, one of the “genetic engineers” is the terrain itself; working alongside the engineers and scientists that land on the red planet, it also operates its material influence on the evolution of life on the planet.

Continuing his focus on the complex relationship between humans and the non-human environment, Robinson goes on to proclaim that,

“...all the members of a biosphere evolve together, adapting to their terrain in a complex communal response, a creative self-designing ability. This process, no matter how much we intervene in it, is essentially out of our control. Genes mutate, creatures evolve: a new biosphere emerges...And eventually the designers’ minds, along with everything else, have been forever changed” (3).

In the Mars trilogy Robinson refers to this process, the confluence of human and non-human agency and its consequences for the development of both Mars itself and the human culture forming there, as “areoformation”. Furthermore, he also explores a more mystical and spiritual cultural formation that develops during the “greening” of Mars, led by the character Hiroko, and referred to as “viriditas”. The red planet’s impact on the new human colonizers is more than

simply physical in nature, although this is certainly important (as in the effect of lower gravity on their muscle mass). An even more important emphasis is placed on the physical environment's impact upon the development of a new Martian culture. This is an excellent example of narrating the concept of distributed agency in that rather than the human and martian landscape effecting each other, the Mars trilogy, with the exception of the preservationist 'reds' led by Anne, predominantly refuses the initial separation of agents. The emphasis instead is on the inextricability of a co-produced agency.

## **II - The 'Passionate Scientist' and Situated Knowledges:**

Frank Vanderwal is a professor from UC San Diego in the midst of a one-year loan to the National Science Foundation (NSF) while Anna Quibler is the director of the biomathematics division in the same government agency. At NSF they manage case-work for the government's main science foundation and oversee the approval of grants based on the objective scientific method. Therefore, in so many words, Frank and Anna are not rebel scientists engaged in radical or subversive work outside the institutionalized structures of western science. And of course they are not, because it is exactly these semi-influential positions they hold within both the scientific and governmental worlds that will allow Robinson to imagine the possibility of science and policy changes based on a model of *passionate science*. In fact, it is Frank and Anna, along with Diane Chang, the director of NSF, who will direct the scientific approach and greatly influence the scientific and technological response to the imminent techno-natural process of abrupt climate change. As we will see, the presentation of this systematic change in the practice of science and its relation to government policy will take on the multiple and exploratory characteristics of what Donna Haraway describes as 'situated knowledges'.<sup>xlix</sup> For Frank, then,

the question becomes what is to take its place? In other words, if we can't separate science from cultural values, then in what ways are scientists able to manage this infusion of what is undeniably a political question into the scientific method? What is to become of this contradiction, once recognized, between the subjective position of the scientist and a supposed all-important objective knowledge? Exploring these questions will help us investigate how Robinson's 'passionate science' will approach the issue of technological responses to quickly changing global climate systems.

When we first meet Frank at the NSF, we find that he is (a bit awkwardly) fascinated with Anna due to what he initially describes as a contradiction he notices within her; a contradiction that somehow, and unlike him, she seems to have successfully managed to integrate into her scientific work. Anna's approach to her work unsettles Frank and he struggles to explain why, until he admits that it was, "...the way her hyperscientific attitude combined with her passionate female expressiveness to suggest a complete science, or even a complete humanity. It reminded Frank of himself" (Forty, 17). But Frank goes on to say that he sees these two sides of himself as unreconciled; he has not yet come to terms with combining the rational and the emotional in his personal life nor as a professional scientist. In fact, he thinks of himself as "too stuffed with extreme aspects of both rationality and emotionality. This was what made him uncomfortable: Anna was too much like him." And, therefore, a link between Anna and Frank, centered around this question of the expectation of rationality in their professional lives and the emotionality of their beings as humans, is formed very early.<sup>1</sup>

The integration of the rational and the emotional in his personal and professional life seems a sacrilege to Frank. Yet, in fact, "She [Anna] reminded him of things about himself he did not want to think about." And, while Anna was "pretty well integrated", according to Frank,

he is not. At this point the rational and the emotive remain irreconcilable for him. Or, possibly even more noteworthy, is the very fact that Frank's goal is integration. He is uncomfortable with the disparate qualities he sees within himself; or what we might recognize as a type of fragmented subjectivity. For Frank, integration, or holism, is still the necessary goal.

Frank's preoccupation with a whole and integrated self at this early stage will also become a part of his transformation, as Robinson emphasizes the act of embracing the multiple and split nature of subjectivity. If Frank thus far seems to be the embodiment of privilege (white, male, hetero-sexual, able-bodied), it is true also that his approach to science is preoccupied with rationality, objectivity and remains confident in the singularity and autonomy of self. His recognition of the failure of his quest for objectivity is the beginning of a personal transformation away from empiricism and toward something akin to 'positioned rationality'. At any rate, early in *Forty Signs of Rain*, Robinson has drawn the reader's attention to the obviously problematic nature of objectivity itself and the authority of the scientist's supposed ability to achieve the disembodied, god-like status it entails.

Frank continues to think through this apparent dichotomy between objectivity and emotion, or subjective positions, as he conducts the peer review process at the National Science Foundation. His charge is often to, "Solicit seven intensely subjective and sometimes contradictory opinions; quantify them; average them, and that was objectivity. A numerical grading that you could point to on a graph. Ridiculous, of course. But it was the best they could do. Indeed, what other choice did they have?" (133-34). This final question seems the catalyst for the journey that Frank, at times very consciously and others less so, undertakes through the remainder of the three novels. If it is Anna Quibler that forces Frank to first recognize this seemingly unnavigable divide, it is Frank himself who will attempt to cross it. It is important to

note that this dichotomy so unsettles Frank exactly because of his prior rather uncritical acceptance of rationality and objectivity in science. In addition, his experience at NSF, where science takes place in a more inter-personal, conversational way further unveils to him the subjectivity of the work in a way laboratory work never has.

We discover that Frank has also recently turned to sociobiology to explain the interactions of humans and he consistently relies upon game theory – such as “prisoner’s dilemma” – to explain, in objective and rational terms, the decision-making processes that unfold within human interactions. These are important early forays into the question of rationality for him as they bring into question the disembodied approach of empirical science, yet they do not, on their own, offer the elusive answers for which he searches.<sup>li</sup> Furthermore, these investigations into socio-biology certainly relate to the transformative process and critical utopian imaginaries at the level of the individual (and community) scale. This introduces the difficulty of human nature, is it resistant to social transformation in some fundamental way?

Donna Haraway’s work is informative here again due to her particular interest in empiricism’s role in creating and upholding structures of hierarchy in both the human and non-human worlds. In *Primate Visions: Gender, Race, and Nature in the World of Modern Science*, she draws a parallel between primatology and Said’s orientalism. She writes,

“Simian orientalism means that western primatology has been about the construction of the self from the raw material of the other, the appropriation of nature in the production of culture, the ripening of the human from the soil of the animal, the clarity of white from the obscurity of color, the issue of man from the body of woman, the elaboration of gender from the resource of sex, the emergence of mind by the activation of body” (11).

Haraway's critique of scientific positivism as based on the cultural construction of hierarchy between human and non-human, and the intricate relationship of this domination to those based on race, gender and sexuality, offers an excellent entryway into the common hierarchical structures of power linking the exploitation of nature and the exploitation of humans. She continues, "Nature/culture and sex/gender are not loosely related pairs of terms; their specific form of relation is hierarchical appropriation...Symbolically, nature and culture, as well as sex and gender, mutually (but not equally) construct each other; one pole of a dualism cannot exist without the other" (12). I find this presentation of the dominant dualistic conceptions of the human and non-human, and its hegemonic systems of racialized hierarchy, a productive starting place for thinking through the limitations and possibilities within Robinson's presentation of U.S. and global socio-political cultures, human-deployed technology, and an active, dynamic, non-human environment.

When considering, as posited above, that the Mars trilogy acts as a thought experiment on the types of sciences and cultures (economic, political, social, etc,) that might help inform the creation of a technologically advanced, socially just, utopian society; it is striking to notice a particular similarity in Robinson's development of this concept in science fiction and Haraway's feminist and posthuman critiques of objectivity and empirical science in her theoretical work. However, unlike many traditional environmental theories, these critiques of objectivity do not subordinate their critical interest in the role of the sciences in their respective representations of hierarchy and postulations for a more egalitarian society. Haraway's "situated knowledges" and what Robinson, somewhat more mundanely, refers to as the "passionate scientist" both have at their heart an emphasis on the multiplicity, embodiment and subjectivity of knowledge. The first

task is to engage with Haraway's representation of the egalitarian possibilities of what is often termed a "successor science".

Situated knowledges, or positioned rationality, both in theory and practice, must account for what Haraway calls the "god-trick" of objectivity. She writes, "The science question in feminism is about objectivity as positioned rationality. Its images are not the products of escape and transcendence of limits, i.e., the view from above, but the joining of partial views and halting voices into a collective subject position that promises a vision of the means of ongoing finite embodiment, of living within limits and contradictions, i.e., of views from somewhere" (*Simians*, 196). This process is reminiscent of Latour's emphasis on the multiplicity (and inherent interplay, connection, debate and conversation) of *the sciences* over the hierarchical connotations of the singular *Science*<sup>lii</sup>. In both cases, the scientist, is asked to recognize their own subjective partiality, their own "situated" self, and allow a new embodied process of knowledge-making to become an important step toward relinquishing the quest for the god-like claims of objectivity; the being everywhere and therefore nowhere. Importantly, and here is where we will begin to see even further connections to Robinson's concept of *passionate science*, Haraway goes on to say, "...rational knowledge does not pretend to disengagement...to be free from interpretation, from being represented, to be fully self-contained or fully formalizable. Rational knowledge is a process of ongoing critical interpretation among 'fields' of interpreters and decoders. Rational knowledge is a power-sensitive conversation" (196). These qualities highlighted by Haraway are evident in the type of scientific work that Robinson attempts to present as fundamental to the personal (as marked by Frank Vanderwal) and socio-political revolutions (the incursion of this new scientific method of positioned rationality into the politics of bureaucratic in-battling and national political campaigns) that occur within the trilogy.

Haraway notes a connection between her concept of *situated knowledges* and Annette Kuhn's use of the term "passionate detachment"; and she goes on to argue that, "'Passionate Detachment' requires more than acknowledged and self-critical partiality" (192). That is, according to Haraway, because "...we are also bound to seek perspective from those points of view, which can never be known in advance, which promise something quite extraordinary, that is, knowledge potent for constructing worlds less organized by axes of domination" (192). This articulation of a scientific method, aware of multiplicity and the scientist's own subjectivity, seems central to so much of Robinson's work on the possible intersections of science and culture; and particularly when he is interested in these intra-relations as they effect the question of human agency and the techno-fix. It is quite right to note the fundamental connection between the scientific approaches determined best practice for climate change mitigation and the embryonic yet suggestive socio-economic transformations in the novels. As Prettyman argues, in Robinson's trilogy, "geomediation is not a silver bullet, but one element of a cultural and economic shift as well...even the science itself that Robinson imagines is different due to its incorporation of human bias, politics," (191). This difference in Robinson's depiction of the relationship between the scientific and the socio-economic responses necessary to respond to the challenges of climate change are what makes this series and, for that matter, the Mars trilogy before it, such an interesting depiction of geo-mediation.

Rather than seeing geo-engineering as simply another expression of human power and control over a passive non-human environment, the approach sketched in the trilogy is open to an examination of the multiplicities and contingent agencies involved in all human projects. Readers are presented with a fairly complex critique of the assumptions from which the scientific world operates as it continues to worship at the altar of objectivity; the god-like, disembodied

“everywhere and nowhere” that Haraway and other feminist critics have so thoroughly elucidated. The alternative model offered in the trilogy, as we will find, is inevitably flawed and somewhat incomplete, particularly in its inability to imagine a science operating more considerably outside of the profit-motive. However, Robinson is successful in offering a vision of how Haraway’s *situated knowledges*, as newly conceived scientific method, could affect the science, economics and culture framing the U.S. political decision-making machine in the face of complex and dangerously unstable climactic changes.

Two critical events become catalysts for Frank’s exploration for an applied and passionate scientific method. The first is his reaction to a brown-bag lunch speaker, a visiting Buddhist monk from the sinking island nation of Khumbalung, and the second is the result of a surprise punch to the nose. This second, and more physical, transformative moment we will look into a bit later in the chapter. First, we will look into Frank’s meta-physical reaction to an argument for the importance of compassion in all human endeavors, including science, by Buddhist monk Rudra Cakrin, as translated by his interpreter Drepung.

Rudra Cakrin informs the group of NSF scientists gathered for the informal luncheon that, “An excess of reason is itself a form of madness (244)”. The whole speech, but particularly this line, has a profound effect on Frank and he essentially has an existential crisis of sorts. From our initial impressions of Frank outlined above, we can see that, taken seriously, these words would provide a profound shock and could feasibly bring him to the point of questioning his reliance on rationality. Leaving the lunch, he thinks to himself, “An excess of reason. Well, but he had always tried to be reasonable...Dispassionate; sensible; calm; reasonable. A thinking machine. He had loved those stories when he was a boy. That was what a scientist was, and that was why he was such a good scientist” (247). Here Frank’s thoughts return to his recognition of

both the objective and passionate or subjective qualities in his colleague Anna Quibler's work. Yet he hesitates to fully accept that reason alone is not a sufficient qualifier for the relationship between science and culture and/or science and policy. He reminds himself, "That was the thing that had bothered him about Anna, that she was undeniably a good scientist but she was a passionate scientist too, she threw herself into her work and ideas, had preferences and took positions and was completely engaged emotionally in her work. She cared which theory was true...But it wasn't science. To care that much was to introduce bias into the study" (248). Despite this lingering skepticism, Frank is struck by Rudra's argument drawing out the impossibility of a purely rational self.

Frank soon decides to forego his return to San Diego, his teaching position, his pastime of surfing, and a possibly lucrative advisory role with a biotech start-up called Torrey Pines Generique, to stay at NSF and see what an applied and passionate approach to science might be able to accomplish in regard to climate change mitigation. In a letter to director Chang, he calls out NSF as too reserved and non-political, and Chang essentially challenges him to put his own ideas to work by outlining a scientific approach to climate change mitigation. But, before we move to Robinson's depiction of passionate scientists' approach to geo-mediation, more needs to be said concerning what this transformed individual subjectivity really entails, and what it might mean for broader societal and institutional change in the sciences, government policy and the environmental movement in Robinson's eco-thriller.

In the second novel, *Fifty Degrees Below*, Frank begins to adopt a lifestyle that he terms "optimodality" and slowly begins to create a routine that revels in multiplicity and contradiction. Although he still believes he should be able to integrate the objective and the passionate qualities of himself, the embrace of "optimodality" signifies a process of accepting his own fragmented

subjectivity. No longer searching for an integrated self, he instead begins to redefine his relationship to the human and non-human elements of the city in a manner that, just weeks earlier, would have been completely unthinkable. He allows his apartment lease to run out and buys a van which he plans to live in. Soon after this he builds and begins to live in a well-hidden tree house in Rock Creek Park (which is officially closed by the Park Service after the Flood at the end of *Forty Signs of Rain*). He is, interestingly, enticed there by an article in *The Washington Post* that chronicles the story of homeless folks camping there and terms it, in true romanticist fashion, a “return to wilderness“. And, if this is clearly what first attracts Frank to the place, with his sociobiological interest in “returning to the Savannah” still an important influence upon him; Robinson does more than simply describe a sort of return to nature that we might at first expect. Instead, and more interestingly, Frank’s so-called optimodal existence becomes an investigation into the highly fluid boundaries between the second-nature of the built city park and the third-nature of the human-built environments of D.C. In this way, Frank’s life begins to blur the artificial lines usually drawn between wilderness, city green-space, and the “actual” city.

Originally drawn to the park in search of a classic wilderness experience, he is motivated by the myth of “uninhabited” and “pristine” wilderness as a truer type of Nature. Once in the park, however, his solitude is quickly broken by two men arguing nearby. However, “Frank didn’t want to deal with any such people. He was annoyed; he wanted to be out in a pure wilderness, empty in the way his mountains out west were empty” (*Fifty Degrees*, 14). There is an interesting connection here, which at first goes unrecognized by Frank, between the supposedly “empty” mountains out west, due to the dispossession of indigenous peoples who were the earliest inhabitants of these regions, and the “not-empty” city park, where those

dispossessed of their homes, now come to sleep. Frank's initial reliance on these environmental, and outdoor enthusiast, tropes regarding the restorative qualities of pristine nature (as well as the idea of wilderness a place outside of, and separate from, human culture) will slowly be unsettled by his optimodal existence.

On a given day, Frank will wake up in this tree house at dawn, walk along Rock Creek in search of exotic animals let loose from the zoo during the flood, exercise and shower at a local city gym, work on the scientific and political implications of geo-mediation during the day at the NSF offices, eat at his favorite international restaurant for dinner and finally return to Rock Creek for an evening fraternizing with his fellow squatters in the closed park. The varied experiences and communities of people that this new sociality brings Frank into contact with begin to have dramatic effects on his understanding of society, economics, ethics and even the scientific method itself. Frank's daily experiences are radically changed by his decision to "go optimodal" and to embrace the fragmentary and segmented aspects of his daily life. In so doing, he begins to embrace both the natural and human built environments of a city he had failed to get to know, or even begin to see, in his first year in the Capitol. The applied, practical, and subjective nature of his own experience leads him to further disown the concept of objectivity and integration that he once treasured as the keys to *good science*. In fact, Prettyman argues that, "Through the story of Frank and his transformation, Robinson suggests that for science to be potentially revolutionary or utopian, it first must change its own forms of thought significantly" (188). The relationship sketched here between Frank's individual transformation and how it might be mapped onto the societal is an integral question raised by the trilogy and something we will look at more extensively below. First, we must return briefly to Haraway here in order to

better understand the reasons for, and consequences of, Frank's exploration into the multiplicity of environments, experiences and communities that begin to constitute his life.

Furthering her critique of objectivity that we explored above, Haraway investigates the relationship between western concepts of self and the fantasy of rationality. In the end, she argues for the benefits of what she terms "splitting" rather than the dominant image of "being"; and does so in order to further articulate an alternative to the patriarchal and racist underpinnings of western empirical knowledge. She writes,

"The split and contradictory self is the one who can interrogate positioning and be accountable, the one who can construct and join rational conversations and fantastic imaginings that change history. Splitting, not being, is the privileged image for feminist epistemologies of scientific knowledge. 'Splitting' in this context should be about heterogeneous multiplicities that are simultaneously necessary and incapable of being squashed into isomorphic slots or cumulative lists" (193).

The heterogeneous multiplicities that become Frank's every day, allow him to let go of his desire for a fully integrated self, a world of strict rationality, and a belief that he can or should perform science in such a manner. While it is also true that, to some degree, we might suggest that this 'optimodal' lifestyle is really only a sort of experiment for Frank at first; and an opportunity broadly based in his privilege of mobility as an educated, professional, white male. However, it results in a much more important reformulation of self that alleviates his unsatisfied desire for god-like objectivity and universal truth. William Lockhurst calls to our attention, "That this personal crisis coincides with Frank's recommitment to the NSF and his call for an institutional paradigm shift indicates how we are to map the personal onto the collective. Reformulating subjectivity will itself be part of the conjectural changes required in the permanent climate crisis

of advanced capitalist nations” (177). Through the character of Frank, Robinson begins to imagine the relationship between individual and societal transformation. Frank’s individual transformation is not solely an individuated experience but is instead connected to broader reformulations of the scientific, cultural, and economic worldviews so as to drastically reposition the scientist-human, the “passionate scientist” or the “split and contradictory self” in constant interdependent relationship with, rather than outside or above, the non-human environment.

Within this redefinition of the terms and locations of Frank’s sociality, an emphasis on positioning is also important and instructive. Haraway insightfully highlights the significance of positioning when she writes that, “Positioning is, therefore, the key practice grounding knowledge organized around the imagery of vision, as so much Western scientific and philosophic discourse is organized. Positioning implies responsibility for our enabling practices. It follows that politics and ethics ground struggles for the contests over what may count as rational knowledge” (193). Frank’s personal transformation into the optimodal life results in a radical re-positioning, and most interestingly highlights the multiplicity of positions and/or perspectives, from which the scientist can and does view the physical (and social, economic, etc.) world. Robinson effectively begins a larger destabilization of the concepts of scientific objectivity, the integrated and rational self, and the simple binary between human and non-human. In so doing, *The Science in the Capital* trilogy explores the possible consequences of such transformational changes at the level of the individual and the societal; with a particular focus on how individual transformation can link to broader social change.

As we have already seen, outside the scientific circles of NSF and the political intrigue of the white house, the trilogy also follows Frank’s experimentation with optimodality in his social life. Of particular interest regarding the question of economic systems, Robinson sketches one

emerging community in D.C. committed to a life led “off the grid”. This seems to be the extreme end of the cultural and economic practice of *permaculture*; one based upon a type of social-anarchist model. During Frank’s time living in the tree house in Rock Creek Park, he befriends a small group of younger men who play an intense, fast-paced version of Frisbee golf each day in the park. Joining them on a semi-regular basis, he soon learns that these young people are, like Frank himself, nominally homeless. Yet, like him, they are attempting to redefine this existence. The group members refer to themselves as nomads, fregans, and/or ferals intermittently, and are part of an emerging culture within D.C. that apparently number in the thousands. They explain to Frank that, “There are lots of empty buildings in this city. If you work as a team and spend your time taking care of business, then you can find shelter and food for free...you can step outside the money economy almost entirely. Live off the excess, so you don’t add to the waste. You reduce waste, you pour energy back into the grid” (*Fifty Degrees*, 286). The fregans of D.C. have built a large network of contacts, and a system of shared labor, in order to organize nightly meeting places in abandoned homes, acquire leftover food from restaurants, and remain off the radar of city officials and police. This group operates as a very urban counterpoint to any traditional notions of an environmentally sustainable lifestyle. Frank’s optimodality, the fregans’ “off the grid” society, and even the Quiblers’ attempts to reduce the carbon footprint of their suburban home, are all examples of the various responses to the extreme climactic changes that Robinson tracks throughout the trilogy.<sup>liii</sup> Here again, as in the depiction of geo-mediation strategies, no “silver bullet” is offered as a cure-all to contemporary levels of hyper-consumption.

As with the technological innovations, cultural responses to abrupt climate change are imagined as experimental, reactive, and innovative. Rather than demonization of particular

people and cultures (of the kind that can be prevalent in the worst types of regressive environmentalism), all of these examples offer possibility for eco-critical thinkers to re-imagine urban space and environmental sustainability. To this end, White and Wilbert argue,

“...there is no such thing as an unsustainable city in general; rather, there are a series of urban and environmental processes that harm some social groups while benefiting others. It follows that a just urban socio-environmental perspective must consider who gains and who pays and ask serious questions about multiple power relations...In other words, environmental transformations are not independent of class, gender, ethnicity, and other power struggles” (75).

While class and gender seem to be at the front of Robinson’s mind in much of his analysis of the urban society of D.C., race does often appear, somewhat conspicuously, to recede to the background. At times Robinson’s depiction of racial difference is clearly sensitive to the racialized aspects of social, economic and political systems of hierarchical power structures, however, these structural issues do seem to be outweighed by a possibly naïve optimism that, at its worst, could be understood as falling prey to the well-rehearsed ‘happy multiculturalism’ of a post-racial society. That is to say, the trilogy seems to suggest that issues of race in D.C. will be attenuated by the structural changes depicted in the larger economic, cultural and scientific systems and institutions. Issues of race are not foregrounded though in the same way that class and gender are; as, for instance, the trilogy contains a distinct lack of engagement with the experience of black Americans in D.C. (where they constitute a large majority of the citizenry). Nonetheless, Robinson’s vision of a “just urban socio-environmental” transformation is a direction that progressive eco-criticism must continue to develop, critique, and labor to more fully enact a socially just environmental response to future climatic changes.

In his critical work on Robinson in *Dying Planet: Mars in Science and the Imagination*, Robert Markley draws our attention to the important connection between Frank Vanderwal and the character of Sax Russell in the Mars trilogy. Both characters begin the respective trilogies as symbols of professionalized scientific objectivity and, more generally, white male privilege; and their transformations lead them to integrate subjectivity, emotion, and politics into a scientific method they originally saw as distinctly ‘removed’ from everyday life and emotions.

Interestingly, both characters’ conversion is complicated (or possibly facilitated) by a physical injury to the brain. Sax’s injury is brought on by torture at the hands of the private police force employed by the corporate conglomerate vying for political and economic control of Mars. Robert Markley tells us that Sax must “...relearn the intricacies of putting thoughts into words. Sax’s efforts to regain his speech metaphorically underscore his emergence as a symbol and practitioner of a science committed to the ethical imperatives of viriditas and eco-economics” (378). Viriditas, as referred to here by Markley, is a religious/spiritual movement similar to some conceptual versions of ecofeminism, created and organized by Hiroko, which believes in and promotes a benevolent, green “life-force” spreading through the universe. On Mars, Hiriko and her followers represent a political and spiritual environmental ethic that challenges both the corporate powers and the preservationist Reds (these are Ann’s followers who believe Mars should remain untouched as a type of outer-space ‘pristine wilderness’ for scientific study).

Therefore, the transformation that Sax undergoes after his injury causes the *practitioner of pure science* to recognize the integral relationships between politics, economics, social movements and scientific practice. As Markley notes, “Science, for Sax, loses none of its commitment to exploring the cosmos but, transformed and embodied, redefines the relationship between objective values and ethical commitment. Science creates rather than simply describes” (378).

Sax comes to realize that the knowledge making process of empirical scientific practice is most useful when we understand the practice and process of scientific work as fully imbricated with the social.<sup>liv</sup>

Elsewhere, Elizabeth Leane describes Sax's transformation as part of Robinson's larger interest in the promotion of a utopian science; and she also refers to it as a "successor science" to the objective scientific method that Sax is originally committed to practicing. She writes, "Sax's conversion represents... a move towards a science which refuses the colonial and patriarchal impulse to naturalize and objectify the other" (Leane, 54). According to both Markley and Leane then, Robinson's representation of this "successor science" in the Mars trilogy is one that generates the potential for political, economic and social change. Building from that work to the *Science in the Capital* trilogy, it now becomes clear that Frank's conversion is a continuation of these ideas; a transformation that Robinson now situates in a very near-future context on Earth. In this case, the possibility for a "successor science" to develop in the U.S. must find a way to directly challenge the contemporary economic, political and social structures of neoliberalism.

Frank's injury is due to a blunt-force blow to the nose, at the hands of unknown assailants, as he attempts to defend his homeless companions from an unprovoked attack in Rock Creek Park. However, rather than losing the power of speech, Frank's injury seems to impair his decision-making abilities. Prettyman reads this injury, much like Sax's, as integral to Frank's transformation in that it,

"forces Frank to combine the habitually abstract observations of science with a fully-engaged emotional involvement, so that the understanding of material reality (the hallmark of scientific method, properly conceived) is situated in the fullness of lived reality, rather than wielded as a 'rational' tool... Both Frank and Sax discover that

becoming more fully-human and effective scientists is a never ending process”

(Prettyman, 190).

The timing of Frank’s injury, just about halfway through the 1500 page trilogy, creates a sort of tipping-point in Frank’s metamorphosis. Rethinking an earlier uncritical acceptance of his privileged position as observer, he now comes to realize that he cannot move through these social spaces (Rock Creek Park, the ferals’ squatting communities, etc.,) undetected; and that he cannot be an invisible spectator but is instead, undeniably, “situated in the fullness of lived reality.”

The perceived lack of agency he experiences during his recovery, the acute indecision, and the emotional swings brought on by the resulting injury to his brain all operate to further his growing distrust of objectivity. Along with discussions with Anna and the Tibetan Buddhist exile Rudra Cakrin, Frank also turns, quite predictably, to recent scientific research on the human decision-making process. What he finds surprises him; “It looked to Frank that all the new research was adding up to a new understanding of the roles played by the various elements of human thought, consciousness, behavior; a new model or paradigm, in which emotion and feeling were finally understood to be indispensable in the process of proper reasoning” (Fifty, 447). The passionate science that Frank is beginning to comprehend and practice is Robinson’s answer to the over-determined objectivity that Haraway criticizes as the “god-like everywhere and nowhere”. Instead, emotion, and therefore subjectivity itself, is a central characteristic of a science that promotes social justice, economic equality and environmental health. Frank realizes that, “The definition of reason as a process that abjured all emotion had been wrong. Descartes and most of Western philosophy since the Greeks had been wrong. It was the *feel* one was looking for” (Fifty, 448). Clearly, both Sax and Frank as symbols of a wider change in scientific

thought and practice. However, it must be asked, how does this personal transformation relate to more systemic institutional and societal shifts?

Through detailed depictions of Frank's personal and professional transformation, including his attempts to redefine his own relationship to various human and non-human communities in and around D.C., Robinson offers the reader an imagined world where we might begin to see the strict binary of human and non-human, society and nature, city and wilderness break down in potentially productive ways. During the long cold spell (weather is between zero and 40 below for over a week in the usually mild D.C. area) that dominates the narrative of *Forty Degrees Below*, Frank's expertise in the outdoor life proves quite an asset; not only to himself but also to his friends (the homeless and the ferals (or "ferals") but also to many of the humans and non-human animals in Rock Creek Park and the surrounding neighborhoods. More accustomed to outdoor conditions than most city-dwellers, and a serious "gear-head" and lover of technological advances in cold-weather clothing, Frank volunteers all his time during the week-long freeze to helping emergency crews with their work. He outfits the homeless with any of his winter gear he doesn't need or that he can find at second-hand outdoor shops, he goes from home to home to check on those in need, and even joins a volunteer group chopping up fallen trees that are disrupting the roads and power lines around the city.

This severe climatic event offers Frank the opportunity to practice the Buddhist maxim of "always generous", and importantly, continue to disrupt the reflexive binary thinking that has previously led him to accept the dichotomy of subject and object, society and nature, or, even, city and wilderness. On one particularly cold day we find Frank,

"Kicking through piles of fallen leaves" until "the cold air struck him like a splash of water in the face. It felt good. He had to laugh: all his life he had traveled to the

mountains and the polar regions to breathe air this bracing and heady, and here it was, right now in the middle of this ridiculous city. Maybe the seasons would become his terrain now, and winter would be like high altitude” (*Fifty*, 282).

The idea that Frank’s remove to Rock Creek Park could be something akin to the romanticized wilderness experience of the western environmental tradition is quickly eliminated in this passage and several others like it. Even if it is still a “ridiculous” city to Frank, we can see the beginning of end for his traditional view of Nature as a place at remove from humans; whether it be the “mountains” or the “polar regions” the pre-optimodal Frank *knew* he had to travel *away* from human society to find Nature. At this point, however, optimodal Frank begins to understand that the divide between city and wilderness is, in many ways, less than absolute.

Robinson’s writing here seems to be a fictional representation of what many second-wave ecocritics have recently argued in regards to the relationship between traditional views of Nature and a progressive environmental movement. That is, as Morton has articulated it, “Ironically, to contemplate deep green ideas deeply is to let go of the idea of Nature, the one thing that maintains an aesthetic distance between us and them, us and it, us and “over there.” How deep does deep ecology want to go? In a truly deep green world, the idea of Nature will have disappeared in a puff of smoke, as nonhuman beings swim into view” (204). The key is to see both the *naturalness* of the city and the social production of wilderness at once. As Morton would have it, they are at once distinct yet inextricably intertwined.

If the environmental activists and popular writers continue to insist upon a separation between the natural world and that of humans (culture, technology, etc.) it may very well become impossible to handle the environmental challenges of the 21<sup>st</sup> century. Much as the critique of objectivity is central to Robinson’s presentation of the potential for a passionate science to

handle social, political and environmental challenges ahead, the breakdown of the nature/culture binary is equally significant to Robinson's scientific approach to climate change mitigation. Robinson's point here is, first, that it is not empirical science alone that is the problem, but also the network of neoliberal economics and politics in which it is entangled; and second, that environmentalism must redefine its understanding of the natural world in order to become more politically effective.

Beginning to move away from the romantic version of a Nature that is wholly separable from human society is a key element of this reconfiguration. William Cronon, in the preface to his excellent environment history *Nature's Metropolis: Chicago and the Great West*, he recounts his own realization of this issue as such,

“...decriing the ‘unnaturalness’ of city life in a place like Chicago was merely one more way of doing what my own environmental ethic told me to oppose: isolating human life from the ecosystems that sustain it. Putting the city outside nature meant sending humanity into the same exile. And yet this is precisely what I and many other modern environmentalists have unconsciously often done...” (8).

In the novels, Robinson raises the stakes by making this realization about more than simple political relevancy or individual ethics. In fact, by portraying a world that is undoubtedly in the midst of severe and abrupt climate change, he argues that new forms of knowledge-formation and experimentation are necessary in order to develop and deploy the correct strategies for climate change mitigation and adaptation. This is a broad process that involves entrenched social norms, political battles, scientific breakthroughs, and the redirection of public and private funds. With this in mind, Frank's personal realization that, as an outdoor jock-type, many of the *natural* places he visits in the mountains on climbing trips is as socially produced as the city

parks of D.C. is an important aspect of his transformation. In this way, the hierarchies of nature, particularly one based on the myth of the pristine wilderness, is substantively destabilized. Again, however, we are left with the question of how this individual transformation maps onto the needed societal change.

This is another aspect of the importance of optimodality in the novel; Robinson, by depicting the changes in a character least likely to renounce the power and possibility of reason and objectivity to study, understand, and develop the natural world, disrupts an entire set of assumptions that have stymied the political effectiveness of the environmental movement. First, it disrupts the deep green politics of a ‘return to Nature’ through exposing that Nature as a romanticized and socially constructed idea. Second, not content to then restrict the non-human world to social construction, Robinson insists that the reader takes seriously the importance of his or her situated-ness in the world. Frank is very much located in an environment and it is this very *positionality* that he realizes inflects his view of the environment. Not only is it subjective, but it is also fluid; and this is not to be feared but embraced. And, in that respect, Frank begins to learn that reason alone will not provide him, or anyone else, the perspective needed to respond to the climactic crisis befalling humanity.

“So each blustery afternoon changed his life. That was autumn, that was how it should feel, Frank saw, the landscape suffused with the ache of everything fleeting by. A new world every heartbeat. He had to incorporate this feeling of perpetual change, make it an aspect of optimodality. Of course everything always changed!” (Fifty, 268).

The significance of Frank’s optimodality is at the center of the broader political, social and economic changes that Robinson depicts by the culmination of the trilogy. In other words, none of the environmental, political or economic changes that he presents in the books could become

reality if humans, and particularly western capitalist countries like the U.S., do not begin to re-invent their relationship to the non-human world (and therefore the knowledge-making practices they deploy to gain knowledge of - and supposed control over - environmental processes).

As we will see in just a moment, exactly what the role of human agency will be in relation to these transformative changes (the potential and crisis of distributed agency) is difficult to determine and necessarily entails a rethinking of political subjectivity. To more fully explore the effects of “passionate science” upon the entrenched politics and capitalist interests in the trilogy, we’ll need to move to another scientific location – the laboratories of Torrey Pines Generique, a biotech start-up in San Diego working in the field of biotechnology.

### **III - The Political Economy of a ‘Successor Science’:**

In the opening novel of the trilogy, Robinson uses the Torrey Pines company to explore the expanding private scientific economy; particularly the biotech industry. This particular lab is searching for the insertion technique that would allow for gene therapy in humans. Later, when the Torrey Pines facilities are transformed into a publicly funded research institute, it operates as an example of a more open and public practice of science dedicated to present-day social justice and future environmental sustainability. However, when we first meet the lead lab researcher at Torrey Pines, Leo Mulhouse, early in the trilogy, competition for private patents between start-up biotech companies has led to high levels of secrecy and spy agency-like security measures. We learn that high-levels of secrecy and security are “all standard in biotech now, after some famous incidents of industrial espionage. The stakes were too high to trust anybody” (Forty Signs, 30). The profit-motive, private patents, and trade secrets are a part of the everyday fabric in the laboratories of these research companies, and Robinson’s highlights the lack of shared,

peer-reviewed work that is central to the scientific method as proposed elsewhere in the trilogy. Frank is a small investor and part-time consultant for the firm as well during his tenure as a professor at San Diego State University. Consequently, as he uses his growing powers at NSF to help shape the work on climate science and geo-mediation, Frank successfully creates a publicly funded and essentially open laboratory at Torrey Pines that operates as a bridge between government research and the California university labs. The idea, as he puts it, is that "...the new institutes [are] in full control of their scientific results. No private trade secrets or patents" (Fifty Degrees, 235). In this way, the trilogy sketches a new scientific approach, new methodologies and ways of seeing, that will also re-shape the structure of scientific practices and the institutions (both public and private) within that system. Clearly, the author here is arguing for the potential benefit of what some of the characters, including Frank, call a Manhattan Project to discover and promote technologies designed for climate change mitigation. This, on its own, is only a beginning because, obviously, many major biotech companies are not simply going to give up their patents and profit. Therefore, the question of capitalism and scientific practice becomes a difficult theoretical hurdle for Robinson as he sketches these new structural systems.<sup>lv</sup>

While the novels do entertain and explore the future possibilities of a sustainable economics, in the end, the narrative relies on the profit-motive (especially in the new directives of Democratic president Phil Chase) to ratify what is termed a win-win approach to climate change mitigation. That is, the opportunity to address the worst affects of climate change and make money in new green economies and terra-formation projects simultaneously. In a conversation with his environmental advisor, Phil Chase reminds Charlie Quibler that "...right now we have capitalism. So we have to use it" (*Sixty Degrees*, 374). When presented with a

skeptical response to capitalism's potential as a cure to environmental degradation, Chase continues to press his case; "For one thing, capital has a lot of capital...It runs into the trillions of dollars. They want to invest it. At the same time there's an overproduction problem. They can make more than they can sell of lots of things. And so all capital of all kinds is on the hunt for a good investment..." (*Sixty Degrees*, 374). This attempt to strike a balance between public works projects and private investment in climate mitigation is quite likely attributable to the trilogy's commitment to a realistic, near-future approach. However, is this reformist approach, rather than, say, the revolutionary politics of the Mars trilogy, fundamentally productive for the environmental movement? Or is it simply a capitulation to the intractability of neoliberal policies in the early 21<sup>st</sup> century? And, finally, in what ways, if any, is it different than the 'go green' movement or corporate greenwashing with which readers are already well familiar?<sup>lvi</sup>

If President Chase argues for a more politically palatable and reformist approach, Robinson offers us a more strident voice for radicalism in Anna's husband, and environmental advisor to the president, Charlie Quibbler. In one important scene in the final novel, Charlie represents the new administration in a meeting with the IMF and World Bank leaders. Charlie lays out a plan of climate mitigation, international in scale and vaguely socialist in contemporary political parlance, to which the world's economic leaders are steadfastly and unanimously opposed. Charlie, in a fiery speech, accuses the economists of ignoring the exteriorization of costs, building private profit while adding to public economic and health costs. He argues that this is essentially a false system and comes to the realization that, "...being economists, they were still exteriorizing costs without even noticing it or acknowledging such exteriorization had been conclusively demonstrated to falsify accounts of profit and loss. It was as if the world were not real – as if the actual physical world, reported on by scientists and witnessed by all, could be

ignored...” (Sixty Days, 202). In this case, Charlie emphasizes the role capitalism plays in structuring both the science and politics of climate change and mitigation techniques. While Senator, and then President, Chase argues for the need to utilize the profit-motive at the center of neoliberal economic policy to combat the worst effects of climate change, other characters, such as Charlie and Frank’s colleague Edgardo, attempt to sketch a future economic system that incorporates environmental costs into its budget equations.<sup>lvii</sup>

It is in these sections of the trilogy that Robinson’s work is most successful in imagining alternative economic, social and political systems that focus on environmental sustainability and social justice rather than perpetual growth. I would argue that Robinson’s attempt to explore the effects of neoliberal economic policy should be commended even if the end result remains unsatisfying to some, myself included, in terms of a more radical critique of capital.<sup>lviii</sup> In one particularly interesting scenario, Edgardo, in a memo to this newly politically-engaged scientific team at NSF, argues that, “A scientifically informed government should lead the way in the invention of a culture which is sustainable perpetually. This is the only normative bequest to the generations to come. It is not adaptive to heavily damage the biosphere when our own offspring and all the generations to follow will need it...to survive (Fifty, 323-324)”. A scientific government, consequently, quickly becomes interested in environmental sustainability and the economic system most likely to lead to *permaculture*. Edgardo’s memo goes on to say, in fact, that, “Protection of the environment, therefore, along with restoration of landscapes and biodiversity, should become one of the principal goals of the economy” (324). The scientists at NSF determine that science itself needs to be more political, rather than more ‘objective’, due to the extreme consequences of inaction during abrupt climate change. They use Edgardo’s ideas to imagine just exactly what a scientific government might look like, and put these theories into

practice as they propose a type of “shadow” candidate during the presidential election – the virtual scientific politician with an appropriately passionate-scientific political platform.

In another work, *Antarctica*, Robinson explores a similar idea through a representation of “a continent ruled by scientists,” as the Antarctic environment and its human communities undergo ecological and political challenges brought on by global warming. Several of his characters are fond of saying that “if it’s true in Antarctica; it true everywhere!”. One character in particular is rather reminiscent of Edgardo; that is Carlos, a Chilean who was actually born in an Antarctic outpost, has spent most of his childhood and adult life on the continent. Carlos considers himself a native of Antarctica and this position offers him a certain credibility with his peers that goes beyond general knowledge of the local environment; rather, Carlos’ consistent voicing of alternative systems of power and knowledge in opposition to the broader world’s status quo is credited, by his peers, as somehow taken more seriously. In many ways, Robinson constructs this very intriguing character as a voice speaking for both the global south in general and the frozen continent in particular. And, in so doing, highlights the connections between science, politics and environmental justice.

Carlos explains the imminent environmental catastrophe to a co-worker, X, and a visiting senate-staffer, Wade Norton, in plain terms; “It’s an emergency situation [global warming]. Governments have to guide us through this tight spot in history, if we are going to get through it without supercatastrophes. But how will they do it?” (349). Using the slang term for scientists in Antarctica; X answers that it will most likely be “Beakers”. Carlos clearly agrees and continues to explain this idea to Wade, “...you [the government] make your decisions by consulting with a technical staff, the technocrats, and they make their decisions by consulting with the scientific bodies, the scientists. And so the scientists call the shots!” (349). Despite the somewhat over-

simplified nature of this analysis, it is made clear that Carlos is also very aware that, for the most part, science can not help but be implicated in the larger economic and socio-political structure of capitalism. In fact, throughout the novel Robinson seems to suggest the smaller scale of economic, political and scientific activity on Antarctica possibly allows for a more fundamental view (and imminent critique) of the current relationship between nominally public science and private, for-profit science.

While recognizing the issues involved in the professionalization of science, Carlos also insists upon the idea of science as a potentially utopian organizational system. He argues that, "...the great outsider, the system that capitalism cannot conquer, is science. The two are actually at odds with each other, the one trying to defeat the other. This is the great war of our time!" (349). As if to underscore this claim, in a dream near the end of the novel as Wade Norton leaves the frozen continent, he remembers a (possibly real) conversation with the head of the National Science Foundation in Antarctica. "Wade said again in his dream, maybe technocrats have taken over the world, maybe scientists have taken over the world. Maybe the highest, driest, coldest, least significant of the continents would show the way" (630). The path that Wade dreamily imagines seems to point towards "scientific government". Therefore, Antarctica is never really a continent run by the typical qualities, objective and isolated, of the scientific method (as it is often conceived) but, instead, science here is always already emplaced, subjective and political.

Other than listening to Carlos's intriguing arguments, Wade Norton's time on the frozen continent is spent as a political emissary of the environmentally-focused senator Phil Chase (who we see again in his successful bid for president in the *Science in the Capital* trilogy). Antarctica is ground zero for research into climate change, government funded scientific research run by the National Science Foundation, and the first forays of private investment and energy resources and

natural resource extraction. There is an international treaty generally being ignored and an icescape beginning to melt; Robinson's depiction of this continent of scientists is one in which politics is everywhere. This future 'successor science' is embedded with the power to energize politics and offers a transformational opportunity for environmental and social justice on a continental scale. Yet, what would a government based on passionate science actually look like and how does it function? Would such a government be possible outside of Antarctica and, rather, within a developed, capitalist nation-state? These questions reappear as the central problematic of the *Science in the Capital* trilogy. As we have discussed, before it is possible to even imagine a "scientific government", Robinson must first tackle the question of what constitutes scientific knowledge and 'best practice' itself.

#### **IV - Optimodality as Permaculture for the "Unknowable Now":**

At this point, it is important to consider the scale and durability of the changes Robinson foretells through Frank's transformative process. For example, Lockhurst reads Frank's optimodality as only a temporary response to a crisis situation. However, I would argue that this too quickly dismisses the relevance and potentiality of this new sociality embodied in Frank's parcellated life and mind. Lockhurst argues, mistakenly I think, that the novels "...seem to suggest that optimodality is the subjectivity of a time of crisis, but that the readjustment of nature and culture that comes from a committed ecological politics will allow a more holistic sense of self to emerge" (Burling, 178). The critic himself, in this analysis, seems to desire a return to the 'normalcy' of the whole, impermeable human Self, while effectively ignoring the trilogy's persistent and trenchant critiques of monism and holism as simply a coping mechanism to crisis. In actuality, it is Frank's acceptance of a split-subjectivity that informs the passionate science

and scientific government, which the trilogy foregrounds, as necessary to any appropriate geo-mediation projects aimed at climate change mitigation. The crisis is far from over as the trilogy comes to a close and the challenges of adapting to climate change are only beginning. Therefore, optimodality is central to Frank's critical rethinking of his relationship to science and the non-human world; and this subsequently motivates his attempts to re-calibrate NSF's response to climate change and geo-mediation in fundamental and lasting ways.

It is productive, I have argued up to this point, to read Robinson's trilogy as, in part, an attempt to redefine the terms of the scientific method, political process, and social interaction of human communities in the 21<sup>st</sup> century. But the reader committed to long-term environmental politics must consider the response, as exemplified by Lockhurst's desire to return or "readjust" back to the 'normalcy' of a holistic Self, to the narrative of environmental catastrophe as it is so often posited by eco-writers. Not only does Robinson imagine these changes as precipitated by the environmental crisis of abrupt climate change, but much of the political will of Chase's administration comes to fruition after another crisis – the attempted assassination of Chase himself. Chase becomes newly energized, immune to partisan ideology, and begins to use the "bully-pulpit" of the presidency without remorse after his recovery from the near miss of the assassin's bullet. Consequently, in terms of the narrative of environmental and social transformation, the trilogy wraps itself around the concept of crisis and catastrophe in some problematic ways. Does it matter that these changes are presented as reactions to environmental and human crises? Are they then seen as drastic responses to imminent danger rather than durable models for sustainable permaculture?

Frank's optimodality is presented as more than a survival skill in a time of catastrophe; it is the core ingredient allowing for the inchoate, broader and more systemic social, scientific and

political changes that are crystallizing by the end of *Sixty Days and Counting* (more on this below). Furthermore, optimodality itself is a practical and revolutionary development of Haraway's critique of objectivity outlined in the early sections of this chapter. Frank's parcellated social life is one part of the larger emphasis on 'situated knowledges' in the trilogy, and it is this splitting of Self and the splitting of Objectivity into something more like "subjective rationality" that drives the environmental message of the novels. With this in mind, suggesting that Robinson presents a simple "readjustment" followed by a quick return to 'normalcy' is certainly an underestimation of the trilogy's ambitious narrative. Rather, the new socio-economic contract that may be achieved after the initial crisis of climate change, what Robinson terms 'permaculture', is not presented as a type of stasis or romantic balance between human and non-human nature. More accurately, it should be understood as a continual process that, as Chase often quotes from FDR, is driven by "bold and persistent experimentation". However, more must be said about the issues of agency and futurity within this experimental model.

At the a fundamental level, we can now ask; what is there to make of the lack of effective narrative closure in the trilogy? Superficially, it appears difficult for Robinson to conclude a narrative that has worked so diligently to unsettle the reader's sense of holism; the hybridity of optimodality, among other things, offers a challenge to linear thinking and futurity as understood within liberal humanism. The reader might tend to be initially disappointed with a wedding between Chase (politics) and Chang (science), as it is a rather weak and allegorical symbol of this new relationship between these reformed versions of the political (scientific and practical) and science (as positioned rationality). However, in concluding this chapter, there are several other important, and I hope more suggestive, final points I would like to make regarding the open-ended emphasis on experimentation at the conclusion of the trilogy.

The first argument relates to the critical utopian project more generally and the relation between individual and societal transformation. Better understanding Robinson's attempts to present the relation between these can help us sift through the reformist and revolutionary elements of the trilogy. That is, first, how the relation between the individual and the societal in Robinson's trilogy frames the distinction we must make between reformist and revolutionary agency. And, the second argument, building upon this distinction, brings us to our central concern regarding the potential and crises of political agency and futurity brought on by the decentering of the human. That is, the trilogy figures the crisis of futurity, brought on by climate change's fundamental challenge to liberal humanist conceptions of subjectivity, agency and the stability of the natural world, as in actuality also a question of knowledge and agency in the present moment.

In regard to our first argument, Frederick Jameson has famously argued that the role of critical utopia is to invite the reader to engage with their own inclination for and/or objections to particular aspects or manifestations of utopia in a given narrative. Rather than what he calls the more traditional "monological" utopias where the transformation is based upon a singular event or reconfiguration of society, economics, etc (Jameson, 410).<sup>lix</sup> Inviting this level of engagement from the reader, as well as the inherent multiplicity of a non-traditional critical utopian narrative, might lend itself to the writing of conclusions that deliberately do not provide a sense of closure. Rather than the aesthetic expectation of closure offering the reader a level of consolation, in this case the problematics of the text are left open-ended, asking the reader to continue their engagement with the critical (utopian) project of the work beyond the reading experience. Perhaps, as scholars have suggested of Leslie Marmon Silko's *Almanac* (a work we examined earlier), the open-endedness here is even an invitation to participate in the everyday work of

socio-political transformation of contemporary society. The lack of narrative closure also certainly highlights the realities of inhabiting the present while facing an increasingly uncertain future. Critical utopian science fiction, in this reading, becomes a type of didactic tale. That is, to leave open space for the reader to get involved, to imagine a continued narrative of which they are a part and to think about where this reflection upon the contemporary and possible futures might inspire engagement with the full range of impediments to, and possible transformative potential of, contemporary movements for justice.

In this chapter we have outlined the distinctions between Frank's radical transformation on the personal and professional level (optimodality, passionate science, etc.), and we have also discussed the ways in which the societal transformations seem to be much more limited and invested in a reformist approach. Although President Chase embodies a type of populist liberalism that seems to practically no longer exist within the U.S. political spectrum, even he strikes a cautious tone in regard to appropriate socio-economic change. After asserting that, "What we have right now is capitalism so we have to use it" (*Sixty*, 374), he goes on to explain that, "Without conceding that private ownership of the public trust is right....Right now we have to harness it to our cause, and use it to solve our problem. If we can do that, then the capitalism we end up with won't be the same one we began with anyway" (374). The capitalism he hopes to "end up with" is something along the lines of the quite revolutionary ideas of eco-economics or permaculture, however, the process he foresees is a more traditional step-by-step D.C. insider-politics reform. So what of a more radical revolutionary or utopian politics that might be expected in this open-ended conclusion?

Chase's blog posts, appearing in a coda near the end of the final novel, focus on working in the present towards a utopian future, namely *permaculture*. Yet, it is not the traditional

“monological” version of utopian literature that Jameson correctly assesses as over-simplified (Jameson, 410). Chase predicts that there will be a series of experimental actions needed to determine what does and doesn’t work. This is about more than simply climate change mitigation; rather it is broader, transformative social, economic and political change with a goal of social justice as much as environmental sustainability. For instance, in an earlier blog post Chase writes, “Globalization has gotten far enough along that the tools are there to leverage the whole system in various ways. You could leverage it toward justice just as easily as toward extraction and exploitation. In fact it would be easier, because people would like it and support it” (*Sixty*, 464). One aspect of this process is clearly a critical project; that is, societies must search out the contemporary problems before each can “experiment” with the cures. In actuality, this is an ongoing process performed throughout the trilogy as various characters hold sporadic yet persistent conversations that assess the current state and groundbreaking work in their respective fields of science, economics and politics. Chase, by arguing that politics can be used to tilt the power of global capital towards justice, echoes Frank’s inclusion of “compassion and right action” into scientific practice. As Frank comes to contend that science should help make a more just and livable society, now Chase argues that politics must do the same through its power to incentivize and de-incentivize particular types of capital investment and development.

This now brings us to the second argument, central to the critical problems of this project, and back to where we began the chapter. That is, does the trilogy suggest that these more revolutionary changes might actually be possible at the institutional and societal level, resulting in a systemic and lasting tilt “towards justice”? In fact, Chase asks both his political followers and critics to embrace experimental action even though he recognizes that decision-makers are

dealing with a fundamentally uncertain future and also a type of inaccessible contemporary moment; an unknowable now that nonetheless demands action of some sort.

The culmination of the trilogy, and its open-endedness, revolves in many ways around the question of how to proceed while acknowledging the linked challenges of (limited) knowledge and (distributed) agency in the contemporary moment. Comparing the situational assessment of the two symbolic newlyweds, President Chase and Science Director Chang, actually offers an illustrative and integral point. First, we are told that Frank finds his mind returning repeatedly to what Diane Chang once told him; “we know but we can’t act”. This may sound quite familiar to climate scientists and activists alike in a political climate in which, not only can we not act but, so many won’t even publicly admit what we certainly by now know.<sup>lx</sup> Chang’s truism is indicative of a traditional understanding of the empirical and unassailable nature of scientific facts versus the dysfunctional socio-political system (such as the supposed popular unwillingness to heed the science; or corporate interference based in a desire for the status quo profit streams). However, in an intriguing twist on Chang’s version of the problematic, President Chase argues something quite different. In his blog, he suggests that society has to act even if we do not know exactly what to do or fully understand all the consequences of these actions (516-517). This is fundamentally different from Chang’s more traditional construction.

Chang’s point, we know but we can’t act, assumes both the power of empirical knowledge and, if it were only to be accepted by a superstitious or dysfunctional general public and political class, also assumes an unfettered human agency to act upon that knowledge. On the other hand, Chase presents us with a new, and I think more interesting, even if possibly more difficult, problem. First, it highlights our lack of knowledge and, in so doing, brings to light an

uncertainty over our ability to know the non-human environment and how to act upon it with anything near real confidence. Second, in terms of agency, by arguing that even withstanding this uncertainty we must still find ways to act, Chase is suggesting a process of developing a more situated (emplaced, contingent and reactive) knowledge making process that recognizes both the limits of our abilities and their still yet powerful import upon our planet. Thus, we can still act, Chase suggests, but we must do so while consciously developing a different (posthuman) understanding of and relation to our agency generally and each action's consequences more specifically.

While this type of "...openness to radical contingency is difficult to maintain..." (Zizek, 352), it appears to be exactly what Chase is attempting to call forth in his updated version of FDR's call for "radical and persistent experiment". And he expands upon the point to his online readers,

"That's what we're doing in history; call it the invention of permaculture. By permaculture, I mean a culture that can be sustained permanently. Not unchanging, that's impossible, we have to stay dynamic, because conditions will change, and we will have to adapt to those new conditions, and continue to try to make things better – so that I like to think the word permaculture implies also permutation. We will make adaptations, so change is inevitable" (*60 Days*, 516).

According to Chase, we must respond to the challenge of climate change but do so with an approach founded in awareness of our limited knowledge and the unstable nature of the circumstances within which human acts will occur. The keys to this "experimentation" are caution, flexibility and attention to the consequences and/or new developments outside human control. This interpretation and presentation of the disruption of current models of agency and

linear history presses the problem, or the topic of speculation, ever closer to the present moment. The uncertainty is not just enveloped around human's continued existence in the future, but also highlights the ways in which our social, political, economic and scientific structures currently function in absence of the knowledge each purports to maintain. Interestingly, this aspect of the trilogy is indicative of Neil Easterbrook's recent argument concerning the increasing amount of science fiction set in the present; writers such as Gibson, perhaps, do not feel the need to turn to the past or possible futures in order to depict/uncover the unusual and the unknown.<sup>lxi</sup>

Chase's suggestive twist on the conventional truism then raises some extremely simple, yet fundamental, questions. Such as, do we really not know what to do? Or how to do it? If not, how do we decide upon any action at all? In the end, how much will it matter either way? The fundamental nature of these questions are indicative of the astounding challenges faced by human society by climate change; coupled with the complications that come along when the autonomous *Human* actor is replaced by a decentered human and *Nature* by a postnatural environment. In other words, as socio-political strategy takes distributed agency more fundamentally into account, the political potential and the recognition of a radical limitation of human knowledge and agency calls for a rethinking of our very notion of creating change, of what radical transformation looks like, and move from a promisory to an uncertain future.

It is not a given that this newly decentered subjectivity and the acceptance of the inaccessible, or *unknowable*, now will somehow automatically lead us toward the justice-oriented transformative change Chase calls for; rather, it could just as easily lead to a type of reactionary, terror-filled uber-conservatism. Frank's inspiration for infusing scientific practice, and climate science specifically, with Thoreau's concept of *Useful Ignorance* is broadened here by Chase to confront the challenges faced by any attempts to mobilize a full-scale social

transformation. In many ways, Chase's final blog posts, outlining his goals to use his political power to initiate a socio-economic transformation to permaculture, bring the individual transformations Frank has undergone throughout the trilogy to a societal level. If Frank learns to bring a value-laden, justice oriented approach to scientific practice, then Chase is proposing to infuse global capital with a similar broad-based, justice-oriented core mission. However, it is certainly not clear that Chase's program will win the day; even as the trilogy closes we find him hopeful, yet not convinced, that his fellow Democrats will win the majority in Congress after upcoming mid-term elections.

The following chapter turns to examine some emerging trends in climate change environmentalism during a time of fairly public self-reflection and assessment within the movement. Are these suggestive problems in the trilogy helpful in some ways when brought to bear upon contemporary climate change activism? Is climate change environmentalism in any way prepared to operate within the constructs of decentered human agency to lead climate change politics toward a goal that looks similar to Chase's permaculture? As Frank's outspoken colleague at NSF so blithely puts it to his fellow scientists: "I told you, we're stupid! We're going to have a tough time getting out of this mess, we are so stupid!" (*Sixty*, 149).

## Chapter 4: Global Climate Change Environmentalism, Environmental Justice and “Distributed Political Action”

*“If you could do it nonstop, it would take you six days to walk from Henry David Thoreau’s Walden Pond to President Barack Obama’s White House. For the Sierra Club, that journey has taken much longer. For 120 years, we have remained committed to using every ‘lawful means’ to achieve our objectives. Now, for the first time in our history, we are prepared to go further...the Sierra Club will officially participate in an act of peaceful civil resistance. We’ll be following in the hallowed footsteps of Thoreau, who first articulated the principles of civil disobedience 44 years before John Muir founded the Sierra Club.”*

*Michael Brune, Executive Director, Sierra Club*

*“The planet on which our civilization evolved no longer exists. The stability that produced that civilization has vanished; epic changes have begun...We may, with commitment and luck, yet be able to maintain a planet that will sustain some kind of civilization, but it won’t be the same planet, and hence it can’t be the same civilization. The earth we knew – the only earth that we ever knew – is gone.”*

*Bill McKibben, Eaarth*

### **I - Introduction**

In February the Sierra Club announced that its leadership had for the first time agreed to participate in, and fully endorse, an act of civil disobedience. On February 13 2013, Club President Allison Chin and Executive Officer Michael Brune sat down on the sidewalk adjacent to the White House (apparently this is illegal) and, along with 46 other environmental leaders and celebrities of various degree, were promptly arrested.<sup>lxiii</sup> The protest that so motivated the venerable mainstream organization to this illegal, non-violent tactic targeted none other than President Barack Obama (whom the Club had staunchly supported in his ’08 presidential campaign and, though possibly with less enthusiasm, again in 2012). Obama has the final

decision power on the proposed Keystone XL Pipeline; a plan which would bring Tar Sands Oil from Alberta, Canada to ports on the U.S. Gulf ports for export.<sup>lxiii</sup>

The announcement of this action arrived with further explanation of the rationale behind the break with a 120-year tradition of advocacy by only lawful means. A debate reminiscent of the one between Diane Chang and President Chase in Robinson's *Science in the Capital* trilogy, discussed in the previous chapter, emerges here between the Sierra Club's official statements on Keystone XL and the nominal leader of the movement opposing that project, 350.org's founder Bill McKibben. According to the Sierra Club's announcement, this is a simple case of "we know but can't act". On her blog, Sierra Club President Allison Chin wrote, "We are watching a global crisis unfold before our eyes. To stand aside and let it happen -- even though we know how to stop it-- would be unconscionable. Enough is enough. Today at the White House, I am standing up and doing whatever it takes to fight the climate crisis and stop the Keystone XL pipeline" (Chin). This logic is reminiscent of Stephen Colbert's satirical response to Fox News' dismissal of climate change mitigation options as too disruptive and too little too late.

There is a fundamental difference, however, between knowing that the planet is warming, knowing exactly what the consequences of that warming will be, and/or knowing exactly what can and should be done about it (not to mention our ability to act upon that knowledge). That is, to argue that we know how to "stop it" is a purely political, not to mention fanciful, statement. Rather, it might be more fair to say that we 'think we know how to lessen its severity and disruptiveness'.

If in Robinson's trilogy the scientific debate over 'knowing what to do' was more focused upon a complex relationship between social and scientific practice, capitalism, political

processes, and planetary scale geo-mediation; the Sierra Club hopes to simplify the message by focusing upon so-called political will. Chin explains, “It couldn’t be simpler: either we leave at least two-thirds of the known fossil fuel reserves in the ground, or we destroy our planet as we know it. That’s our choice, if you can call it that” (Chin, 1/22/13). Therefore, by simplifying the question in this manner, she can confidently conclude that, “We have a clear understanding of the crisis. We have solutions. What we don’t have is time. We cannot afford to wait, and neither can President Obama” (Chin, 1/22/13). While it is apparent that the early stages of global warming have arrived, the statement’s unambiguous treatment of our current knowledge of, and readiness to solve, climate change is either overly hopeful or simply disingenuous. Yet, this raises a key point for our purposes here. That is, upon first glance, it really does seem that it would be practically impossible for the Sierra Club to ‘rally the troops’ around this unique decision to participate in civil disobedience while at the same time admitting that whether or not we stop the Keystone XL pipeline may not actually matter (and we’ll turn to one of the main organizers of the action, Bill McKibben, to find out why Keystone XL really is in many ways a symbolic fight). But, for now, it is worth considering; how else might we expect the president of the Sierra Club to depict the political intervention necessary to combat climate change? The options do seem limited and this contributed to their reliance upon a very familiar type of environmental rhetoric.

This familiar rhetoric was recently reinforced by a recent New York Times opinion piece by Elizabeth Rosenthal, entitled “After Oil and Gas”, which was circulated at record numbers across environmental organizations social media and email listservs in March 2013. Rosenthal argued that the U.S. can, based in technical and economic terms, transition to a “clean energy” economy but lacks the political and social “will” to do so. But again, what do we understand

“political will” to mean exactly. If this simply means the courage of elected officials to “stand up” to the fossil fuel industry (and their lobbying power) and vote for legislation that undermines their economic dominance of the energy market, does that not underestimate the power of neoliberal economics and market logics upon our government (not to mention it’s deep infiltration into our social consciousness)? This gets to the crux of one major frustration within the mainstream circles of the global climate change environmental movement. The idea that we have the economic and technical expertise to transition away from the worst CO<sub>2</sub> producing energy sources, but that there is almost zero movement in that direction due to political inertia (based on lobbying power of fossil fuel industry) is particularly vexing for the likes of the Sierra Club.<sup>lxiv</sup>

Rather than trying to identify the correct political maneuvers within this particular construction of the problem, this chapter will attempt to elucidate some of the problems, limitations and possibilities of thinking seriously about the relation between distributed agency and political efficacy. Although this will necessarily be only an initial and partial attempt to theorize this relationship, I will begin with an analysis of two contemporary yet disparate responses to the political inertia surrounding the issue of climate change. First, I will look at a recent policy proposal from the Breakthrough Institute which, in the face of skepticism about climate change from the public and the imposing force of the fossil fuel energy companies, recommends a path that backgrounds the attempt to regulate CO<sub>2</sub> emissions in favor of more “achievable” political goals that work within the dominant economic logics and the U.S.’s global imperial project. Second, we will turn to the environmental group leading the fight against the Keystone XL Project, 350.org, which is struggling to build a politically influential social movement calling upon government leaders to take action on climate change. 350.org, and its

founder and leader Bill McKibben, I will suggest, finds itself (while suddenly in the spotlight of probably the most well known environmental issue in the U.S.) searching for new strategies of organizing that more fully recognize the more and more apparent disinterest of the corporate state.

350.org is an organization headed by author and climate change activist, Bill McKibben, which hopes to promote an international social movement to respond to and mitigate climate change.<sup>lxv</sup> Created in 2007, the group's main emphasis is the reduction of greenhouse gases through a transition from fossil fuel to so-called "clean" energy. Specifically, the number 350 comes from climate scientist James Hansen's calculation that 350 parts-per-million of CO<sub>2</sub> is the upper limit at which human life as we know it can be sustained. 350.org's campaign focused more specifically on one north american fossil industry project; the proposed Keystone XL Pipeline. The pipeline would transmit shale gas from the TarSands region of Alberta, Canada all the way down to the Gulf Coast of Texas thus enabling what the corporations involved believe will be a cost effective way to excavate and ship this huge deposit of oil (shale oil is a particularly dirty and energy-intensive oil to extract and refine, and therefore doing anything with it has been cost-prohibitive up to this point). 350.org has most recently identified this as *the* environmental issue of the moment due to their overall emphasis on global climate change and their identification of transitioning away from the fossil-fuel economy as the best solution. Making the pipeline an even more enticing target, the decision will be President Obama's alone because the pipeline crosses the U.S.-Canada border (and due to some finer points of U.S. energy law this means the State Dept and, finally, the president have final say with no Congressional approval necessary).

In the fall of 2012, over 1250 people were arrested during the first 2 weeks of September (between 50-75 per day) for “sitting-in” on the public sidewalk in front of the White House to protest the proposed XL Pipeline.<sup>lxvi</sup> This is particularly noteworthy in that this direct action campaign differs quite a bit from 350.org’s previous more symbolic acts of global solidarity among climate change activists (I will go into more detail in regard to this change of tactics later in the chapter). At the D.C. sit-ins, the protestors raised wore Obama For President ’08 buttons in order to draw attention to the environmental community’s volunteer work on behalf of the president’s successful ’08 campaign. It’s quite interesting that even as they resort to activism outside the electoral process, this emphasis on their electoral work signifies a certain reluctance of these protestors to fully “give up” on creating environmental change through electoral work (more on this in my later analysis of political agency and 350.org later in this chapter).

Although climate change is *the* global issue for 350.org, their strategy does emphasize regional environmental justice issues as well. One of the less likely aspects of this particular action was a collection of folks who joined the usual actors, scholars and activists to get arrested in D.C. to stop the XL Pipeline; these were ranchers worried about oil spills on their lands and in their water supplies and First Nation peoples from the Alberta area concerned for their local environments from construction and extraction industries. However, in the end the huge majority of these folks were educated upper-middle class white men and women as would be traditionally expected. Interestingly, protestors planning to get arrested were even asked to dress nicely (ie. so as not to be perceived by the media as hippies or, even worse, poor people) and most seemed to heed the advice from the pictures emanating from the protests.

A second development we will examine emanates from the arena of environmental policy. I will discuss this report, entitled “Climate Pragmatism: Innovation, Resiliency and No Regrets,”

published by the Breakthrough Institute, in much more detail below but for the moment will offer a brief history and summary of the piece and its authors in order to highlight its significance in relation to the above two activist campaigns. While calling attention to the intellectual history of pragmatism in the U.S. (Dewey among others) the authors write that, “A pragmatic approach to climate change seeks positive and politically achievable steps that yield discernible benefits, which in turn provide the rationale for the next steps” (23). They boast that the climate pragmatism will be flexible, plural, practical and reality-based. Most importantly, the paper argues that, in the wake of failed international summits and national policies, environmentalists should now relinquish hopes for a unified international or national climate policy. In fact, the paper argues that climate change as an issue should be “back grounded” altogether. Instead, environmentalists should focus on “green energy” innovation, building resiliency to extreme weather events globally, and concentrating on pollution controls that have immediate impact on human health (mercury, particulate matter, etc) rather than CO2 emissions.

In these 2 contemporary examples we can already see a much more complex relationship forming rather than a simple binary competition between Environmental Justice and Global Climate Change (GCC) environmentalism. The 350.org campaign message is focused squarely on climate change exemplifying mainstream U.S. environmentalism’s increasing focus on moving beyond the fossil fuel economy in order to lower carbon emissions. However, we will also see the ways in which their strategy bridges gaps between GCC and EJM and outstrips traditional environmental politics. Meanwhile, the Breakthrough Institute’s proposal exhibits all the problematic aspects of what we see below described as environmentalism 2.0; while actually arguing for less attention to curbing global CO2 emissions.

## II - Climate Change Environmentalism and the Local-Global debate:

There is an ongoing debate within environmental theory and activism in regard to the question of scale and the most effective mobilization techniques for environmental campaigns. The unfolding conversation concerning the efficacy of local/regional campaigns and transnational/global approaches has led some environmental scholars to explore whether the Environmental Justice Movement will be able to successfully adapt its strategies to remain relevant in an environmental movement increasingly focused upon global climate change. A popular argument in favor of the global approach is to cite the potential for localized movements to rely upon regressive politics that legitimate essentialized and problematic concepts of nature, race, class or culture. However, it is also important to remember that globalized conceptions of the environmental movement can also quite readily fall victim to monolithic narratives, also often based upon essentialized concepts of nature and culture, in their attempts to formulate a singular vision of global ecological citizenship. While the question of scale is certainly important and generative of worthwhile questions for environmental scholars and activists, it should also be noted that there is no one answer, in terms of scale, which will serve as *the fix* to the environmental movement's future success. Or, for that matter, a tweaking of scale alone will not erase the possibility of regressive environmental politics.

In the intro to her influential recent book *Sense of Place and Sense of Planet: The Environmental Imagination of the Global*, Ursula K Heise argues that an effective environmental movement needs to embrace what she terms "eco-cosmopolitanism". She promotes an ecological awareness that is detached from "particular geographies" in order to move beyond the potentially regressive and essentialized formations of place-based identity formations so often extolled by environmentalists. The 'politics of place' is invested in promoting a closer

relationship between human communities and their local non-human environment in the hopes that this relationship will result in a new-found environmental ethic to protect the non-human. These familiar “go local” campaigns span a scale from radical (off-the-grid) communities and eco-consumerist trends (the 100-mile diet for instance) in environmentalism that either fervently critique or dutifully ignore their relation to global capitalism. Certainly, place-based environmental ethics have a long history in environmental philosophy (including but not exclusively Deep Green philosophies originally proposed by philosopher Arne Naess).<sup>lxvii</sup> However, Heise points to a certain contradiction in current environmentalism’s “utopian reinvestment in the local” and a “commitment to planetary vision”. She argues that this is part of a larger contradiction in environmental thought, stemming from the “Blue Planet” image taken from the Apollo 17 space shuttle in 1972, in which the movement at once seems to embrace and resist the concept of global connectedness (20-21). Consequently, she argues that even those environmental scholars who are emphasizing the global aspects of environmental issues and possible solutions “do not, by and large, question the assumption that identity, whether individual or communitarian, is constituted by the local” (42). In her attempts to upend this uncritical acceptance of ‘place-based ethics’ as always already a net gain for environmental thought and behavior, Heise argues that a “sense of place” on its own is not actually enough, and can even become unhelpful, if it inhibits building an “understanding how a wide variety of natural and cultural places and processes are connected to shape each other around the world” (22). In regard to the effects of globalization on environmental thought, Heise posits that,

“The challenge that deterritorialization poses for the environmental imagination, therefore, is to envision how ecologically based advocacy on behalf of the nonhuman world as well as on behalf of greater socio-environmental justice might be formulated in

terms that are premised no longer primarily on ties to local places but on ties to territories and systems that are understood to encompass the planet as a whole” (10).

Heise builds on the concept of “deterritorialization” developed by John Tomlinson, who has argued that globalization has created “a complex connectivity [that] weakens ties of culture and place”, in order to argue that environmentalists’ call for a return to localism (re-territorialization) is not practical for the average citizen in most parts of the globe (53).

In regard to environmental scholarship, Heise suggests that, “crucial insights of the last twenty years of cultural theory into the ways local and national identities depend on excluded others, how they rely on but often deny their own hybrid mixtures with other places and cultures, and in what ways real and imagined travel to other places shapes self-definitions have not left lasting marks on American environmentalist ecocritical thought” (42). Heise goes on to argue that this reliance upon localized identity formation leaves ecocriticism mostly uninformed by the “recent cultural theory that identities are at their core made up of mixtures, and dispersed allegiances to diverse communities, cultures and places...” (43). The fragmented subject can be understood in terms other than spatial of course, and, while I agree with Heise here to a point, the question of a posthuman, decentered political subject raises many questions that will not be answered simply through an emphasis on the global. This is particularly true if it is one that assumes an always already more progressive politics than a place-based value system.

Heise is quite correct, however, to question whether environmental theory has been vigorous enough in its attention to the ways that the relationship between humans and the non-human world is culturally constructed. She writes that, “ecocriticism has only begun to explore the cultural means by which ties to the natural world are produced and perpetuated, and how the

perception of such ties fosters or impedes regional, national, and transnational forms of identification” (Heisse, 61). Recent work by Neil Everndon, Stacy Aliamo, Dana Phillips, among others, that Heisse generally commends, as well as the work of others from outside ecocriticism, such as Bruno Latour and Timothy Mitchell, has helpfully increased the critical attention to the cultural construction of nature within ecocriticism and environmental justice scholarship in the past decade or so.

The difficulty of locating political targets that are at once powerful enough to create change and actually responsive to social movement organizing is becoming increasingly difficult with the rise of the corporate state. Therefore, who (or what) is Heisse’s eco-cosmopolitan subject meant to target their environmental claims towards - the United Nations? Transnational corporations? Individual nation-states? This problem is elucidated by the recent inability of international policy-makers to address climate change with anything other than non-binding promises to act. Many groups concerned with global climate change committed time, energy and resources into campaigns designed to raise awareness of GCC, and to raise pressure on policy-makers and negotiators to strike a binding agreement via the Copenhagen meetings in 2010. As they fell flat spectacularly, and laid bare just how far the international community really was from any chance of agreement and cutting greenhouse gas emissions, it seems many environmental groups are left wondering where the accessible levers of power might exist to create the change their campaigns believe is necessary.

Below I will look more closely at two recent examples of global climate change environmental campaigns that respond to this dilemma quite differently. While the Breakthrough Institute proposes working within the system of global capital, 350.org is targeting corporate power (particularly the fossil fuel industry) in an increasingly direct manner. My own

project is in many ways also quite invested in exploring the relationship between environmental activism and political agency. Specifically, I am suggesting that environmental scholars need to develop a more thorough investigation of the materiality of non-human nature and environmental (distributed) agency in order to inform how we understand environmental politics and political subjectivity/activism itself within these debates.

If some level of globalized environmental thinking is inevitable and probably quite necessary, the manner in which environmentalism makes its move to the global will matter immensely. EJ scholar Giovanna Di Chiro speaks to this point eloquently when she explores how the ‘global commons’ is being constructed, understood and deployed in Global Climate Change environmentalism in her chapter within the recent compilation *Race, Nature and the Politics of Difference* (Moore, ed.). Di Chiro astutely points out that much of mainstream environmentalism is in its own way becoming co-opted into global capital. She coins the terms “neoliberal environmentalism” and “ecoliberalism” to denote the deployment of the ‘global commons’ in such terms that reassert “cultural difference in the terms of making the world environmentally secure for unrestrained capitalist accumulation on a planet of finite resources and limited ecosystemic resilience (in the name of ‘sustainable development’)” (205). Therefore, “Ecoliberalism in this sense is about constructing an ideology of the ‘global commons’ in order to justify the enclosure of, and guarantee ongoing access to, more and more of the world’s dwindling resources by multinational corporations and the national regimes that underwrite them” (205). Ultimately, the debate over a local or global environmental ethic is limited in its usefulness until environmental scholars concentrate more attention upon how best to inject that debate with a more forceful commitment to socio-economic justice.

Di Chiro argues that while ecoliberalism can be seen as a “new set of justifications for social/environmental control (over land, natural resources, environmental expertise) by environmental science authorities and political-economic elites,” the concept of the global commons also “provides opportunities that create new political spaces and identities for environmental change” (206). Therefore, for Di Chiro, the question becomes: “Can we fashion non-imperializing formulations of the global commons – those that retain its ‘gathering together’ impulse without obscuring real differences in livelihood and survivability, power, and environmental consequences?” (206). The turn to the political efficacy of such a move is of course central for environmental justice scholarship (as it generally should be for environmental scholars who are committed to informing a more viable and just sustainability movement). She goes on to explain, “As an anti-racist movement, the EJM aims to reduced the disproportionate impacts of environmental problems on people of color and poor people and simultaneously attempts to create multicultural alliances among people of different racial/ethnic, national, and class backgrounds” (205). Di Chiro offers a slightly different perspective to Heise’s call for ecocosmopolitanism in that she is less interested in an either/or debate (recognizing correctly that that social inequality and environmental degradation are both created and play out across multiple spatial scales often simultaneously).

Di Chiro argues that a hybrid-approach that utilizes strategic analysis and action based upon “situational pragmatism” is the most likely to promote political efficacy for people of color and low-income communities to create adequate and just sustainability in the face of existing global inequality and unpredictable climatic changes. In other words, she asks us to consider whether or not local, place-based environmental ethics can be progressive? And, importantly, can global environmental imaginations avoid a monolithic and totalizing conceptual framework

in order to deny the neoliberal erasure of important racial, ethnic, class and cultural difference? In the latter case, if done successfully, “The metaphor of ‘one worldism’ emerges as analytically and strategically powerful for people of color and low-income communities fighting to reclaim and sharpen the ecological commons debate and to improve their environmental conditions. It becomes a counterhegemonic move...” rather than one that erases difference in order to grow the neoliberal marketplace (205). With this in mind then, it is worth considering whether or not Global Climate Change Environmentalism is doing enough to address, critique, and distinguish itself from mere ecoliberalism.

### **III - Ecoliberalism as “Environmentalism 2.0”:**

Mainstream media in the U.S. has coined a term for the so-called new environmentalism: Environmentalism 2.0. It is generally seen as distinctive in its increasing focus on the issue of climate change, its global perspective and strategies, and its desire to reduce greenhouse gases through both national and international policy and law. Environmental justice scholars Michael Ziser and Julie Sze have recently expressed concern that mainstream U.S. environmentalism, as it concerns itself with climate change and greenhouse gas emissions more exclusively, is returning to certain traditional (and problematic) values and goals that will undermine the success of the environmental justice movement (EJM). While mainstream environmental organizations, their campaigns, and staff certainly acknowledge the importance of regional, national and global inequality – most often within the discussion of unequal distribution of pollution (environmental racism) and the expected disproportionately high effects of climate change upon the world’s poorest – Ziser and Sze identify a trend in recent environmental

discourse that they argue ultimately undermines important connections recently cultivated between environmentalism and social justice movements.

Environmentalism 2.0, according to Ziser and Sze, is based upon, 1. a “ritualized forswearing” of earlier preservationist environmental models 2. the erasure of class and race based environmental injustices from GCC narrative 3. a nationalist perspective – “geopolitical anxieties” about China and the global position of U.S. power, and 4. the return of problematic traditional U.S. environmental assumptions that essentialize nature and approach environmental solutions “in ways that soft-pedal environmental justice goals in favor of a geopolitical agenda that aims to preserve U.S. economic and political power” (Ziser, 400). This critique of climate change environmentalism is important as the authors suggest that what is at stake is no less than the loss of EJM’s recent successes in redefining the relationship between race, poverty and contemporary environmental issues. Furthermore, on a theoretical level, trend #4 depicts an interest in recreating the hierarchical natures of the preservation movement. In this instance climate change becomes such an important issue that environmentalists can’t be worried about their policy proposals effects on most often underrepresented and often disenfranchised low-income communities of color.

There is, therefore, plausible concern that GCC environmentalism could re-invigorate a regressive environmental politics due to its response to issues such as population, immigration, socio-economic racialized hierarchies, and geopolitical struggles involving so-called developed and developing countries, to name just a few. If mainstream environmentalists are concerned with creating the most effective approach to GCC, then it should not begin within the disproven contention that it’s possible to build a wall between what constitutes an environmental issue and

what is *merely* a social issue; based, as it would be, on a conclusion that climate change presents the need for such immediate action that all else is necessarily secondary.

Ziser and Sze's desire to defend EJM leads to a few problematic assumptions that too casually correlate environmentalism 2.0 with other more theoretical attempts to move environmentalism past the trope of a reified Nature. For example, their paper argues that "a justice-oriented GCC cultural response can be mounted without radically postenvironmental policies like the ones advocated by the Breakthrough Institute or postmodern/posthumanist literary innovations of the sort called for by Heise" (404). I have several problems with this statement. First, I do not agree with the author's above conjoining of what they term Breakthrough's "postenvironmental" policy proposals and Heise's "posthumanist" theories. I see little relation between critically responsible posthumanist scholarship and the deeply humanist and nationalist assumptions that motivate Nordhaus and Schellenberger (founders of the Breakthrough Institute). Second, the outright dismissal of posthumanist thought, in terms of forming a "justice-oriented GCC cultural response," ignores ways in which posthumanist critiques have the potential to disrupt the foundations upon which political, social and economic hierarchical structures of power are built. In fact, below I hope to display how certain elements of posthumanist thought have much to offer, as well as much to learn from, environmental justice scholarship and activism. Understanding environmental justice as only a localized movement that is successful because of some type of inherent anti-theoretical impulse misses much of the dynamism of EJM in integrating social justice and environmental campaigns.<sup>lxviii</sup>

These authors do however offer an important perspective on the potential dangers of global climate change activism. For instance, they are certainly correct to argue that "...an effective response to GCC [Global Climate Change] requires a more careful integration of global

environmental justice, environmental justice cultural studies, and ecocriticism in order to produce new kinds of ecocultural narratives that do not pit nation against nation, race against races, or species against species” (Ziser, 386). I would also add that the manner in which agency is scripted in these “ecocultural narratives” will have a significant impact upon their ability to motivate effective and progressive social, economic and political change.<sup>lxix</sup>

The remainder of this chapter explores contemporary environmental trends not in terms of Environmental Justice versus a monolithic Environmentalism 2.0. This overly simplistic good versus evil narrative will only limit our work as scholars and activists who care deeply and equally about the human and non-human communities on our planet. I do find the 4 trends identified to be helpful in thinking about these relationships and, furthermore, am not arguing that Sze and Ziser necessarily do try to limit the complexity in any purposeful way. Rather, I suggest that in that their rightly zealous defense of the EJM they may overlook certain trends in climate change environmentalism that will prove more worthwhile than they allow.

#### **IV. The Authors of the Environmental Movement’s “obituary”:**

In 2005 Ted Norhaus and Michael Schellenberger, wrote an essay entitled “The Death of Environmentalism” in which they argued that the earlier forms of environmentalism focused on lobbying had left the environmental movement as a niche concern, just another special interest lobbying group, that was placated to but mostly ignored by D.C. policy makers and Corporate headquarters around the country and globe. They followed this up with a book entitled “Breakthrough: From the Death of Environmentalism to the Politics of Possibility” the following year. The two authors create a persona for themselves as the “bad boys” of environmentalism

(and actually refer to themselves as such in the documentary “Everything’s Cool”). Indeed, their argument did create quite a stir in the environmental community and created a new space of self-evaluation that was at times possibly difficult but, in the end, productive. The concept of “climate pragmatism” that they espouse in their recent policy paper actually has its roots back in these earlier publications and I’d like to return to this history now in order to track the ways in which the Breakthrough Institute is at once exemplifying the trends of environmentalism 2.0 AND in some significant ways outstripping Sze and Ziser’s initial analysis.

I will begin by looking at the ways in which *Break Through* begins with trend #1 of environmentalism 2.0. That is, Nordhaus and Shellenberger do take some positive steps in their critical treatment of the nature/culture binary and traditional environmentalists’ over-reliance on empirical science’s claim to objectivity. The authors argue in the introduction that their, “...intention was, in part, to question whether the category of ‘the environment’ made sense any longer”. They go on to say, “If ‘the environment’ includes humans, then everything is environmental and the concept has little use other than being a poor synonym for ‘everything.’ If it excludes humans then it is scientifically specious, not to mention politically suicidal” (10). While admittedly this argument is typically hyperbolic, the increasingly accepted critique of the nature-culture binary has important implications for environmentalism 2.0. In this approach, within the realm of public mainstream environmental discourse (a discourse focused on the practical future of environmental work), we see the problematizing of the concept of nature. I give credit to the authors of *Break Through* here as this critical approach to the human/non-human binary, and the social construction of knowledge more generally, allows them later in their book to usefully problematize the idea of nature in much preservationist environmentalism. Nordhaus and Shellenberger argue that, “In reducing the complexity of the

nonhuman world to concepts of nature and place that are then depicted as essentially harmonious and unchanging, environmentalists often become obstacles to change and unwitting accomplices to the industrial status quo that they abhor” (95). Here the oft-romanticized and reified nature, the concept of an environment separate from humanity that must be protected by these same humans, is usefully problematized. This argument from the authors of *Break Through* indicates the extent to which the critique of past environmentalist constructions of the natural world has penetrated mainstream environmental discourse. Therefore, the work is indicative of trend #1 as it has adequately “foresworn” traditional environmental constructions. However, as they begin to construct their own “pragmatic environmentalism” we will see that assumptions concerning U.S. imperialism, neoliberal economic logics, and liberal humanist values receive less critical attention.

The deconstruction of the nature-culture binary has obviously played an important role in internal ecocritical conversations regarding the relationship between it and postmodern cultural theory. William Cronon, in his famous essay “The Trouble with Wilderness”, defines nature through an insightful fusion of social constructivism and material reality. In fact, Cronon argues that,

“Our challenge is to stop thinking of such things according to a set of bipolar moral scales in which the human and the non-human, the unnatural and the natural...serves as our conceptual map for understanding and valuing the world. Instead, we need to embrace the full continuum of a natural landscape that is also cultural, in which the city, the suburb, the pastoral, and the wild each has its proper place...” (89).

Cronon helps us negotiate the space between nature and culture in such a way that postmodern theories of deconstruction are not necessarily seen as irreconcilable to the undeniable materiality of nature. In other words, nature is at once a social construction while also clearly retaining a materiality all its own (as seen through, for example, through the concept of distributed agency).

The nature-culture boundary Cronon destabilizes above is in many ways a result of the relationship between traditional environmentalism and science. It is important to note that *Break Through* points out the connection between western culture's desire to separate nature and humans and our dedication to objective scientific practice. The authors write, "In the West, nature has been seen at various times as something to either fear or love, as something chaotic or harmonious, and as superior or inferior to humans. But what has remained dominant is the belief that something called nature exists, that it has an essential quality separate from human beings, and that it can be understood objectively through science – *as a thing*" (232). After reading this useful problematizing of terms such as nature, culture, empirical science and objectivity, a more generous reading of Nordhaus and Shellenberger would suggest that the authors simply fall short of their lofty goal to articulate a forward-looking, inclusive and progressive environmental ethic. A more critical stance, and one that I tend to lean towards, might suggest that *Breakthrough's* "failures" stem from its active desire to configure an environmental movement that works within rather than against neoliberal logics and nationalist geopolitical vision privileging U.S. imperialism. In fact, Sze and Ziser point out that the *Breakthrough* authors are in places "...actively attack the EJM, calling for a moratorium on the kinds of community organizing that have been the hallmark not just of NIMBY preservationists among the elite but also of economically disadvantaged local neighborhoods fighting against the disproportionate harmful health effects caused by heavy industry" (402). Therefore, they conclude Nordhaus and

Shellenberger appear to be worried that "...community based environmental justice poses a threat to the smooth operation of a highly capitalized, global-scale Environmentalism 2.0" (402).

A key weakness in this book is a typical one in environmental political discourse; an inability, or unwillingness, to recognize the institutional and systemic racism existent in U.S. political, economic and cultural formations of power; and further, an inability to recognize the intricate and important connections between social injustice and environmental degradation. In fact, rather inconceivably, the authors are at pains to discount the efficacy of the environmental justice movement in the U.S. altogether. They actually argue that although;

"...poor communities have long been subjected to more pollution than wealthier ones, and communities of color have been subjected to more pollution than white ones...these communities have not been targeted for pollution because of the race of their inhabitants...executives and government officials are not siting facilities in those neighborhoods out of racism" (72).

This is, of course, a gross oversimplification of the complexities of institutional racism as it operates in our contemporary historical moment. To suggest that it must be proven that these predominantly white and exclusively upper-class executives are motivated by overtly "racist" assumptions or goals is beside the point. What is important is that the authors pay no critical attention to the institutionalized and systemic racism that ultimately produces racialized socio-economic inequality and centralizes harmful industrial pollutants in poor communities of color.<sup>lxx</sup> Sze and Ziser, writing about Nordhaus and Shellenberger's earlier work, argue that "The Chinese menace in their view requires a radical break from the piecemeal democratic

patchwork of current environmentalism in favor of large-scale public expenditures exclusively targeted at the research-and-development costs associated with green technologies” (402).

I would argue this problem emanates from the fact that public green discourse often seems reluctant to move from the liberal humanist argument (one that calls for “rights” for the non-human, and *for* morality and restraint from humans) into a full-fledged critique of the socio-economic situation. This makes the “green movement” susceptible to capitalist appropriation as we have seen through green-washing advertising campaigns and green-consumerism more generally. In his essay “Ideas of Nature,” Raymond Williams argues that the exploitation of nature for capital accumulation by the elite of society is a key part of the creation of a society based on racial and class exploitation. He writes, “It will be ironic if one of the last forms of the separation between abstracted Man and abstracted Nature is an intellectual separation between economics and ecology. It will be a sign that we are beginning to think in some necessary ways when we conceive these becoming, as they ought to become, a single discipline” (84). Thinking of the ‘ecology of economics’ could not be of more pressing concern for ecocriticism today. As the “go-green movement” is appropriated by capitalism into a consumption bonanza (don’t stop buying, just buy this instead and, in fact, get two just in case) the environmental movement’s inability to level a consistent and trenchant critique of “greenwashing” is a problem.

Ecocritic Lance Newman makes a similar point convincingly when he implores scholars of environmentalism to pay more attention to political economy. He writes, “Encouraging people, in Aldo Leopold’s famous phrase, to think like a mountain, is finally, if we leave it at that, a dead end. Those who make the decisions about building nuclear power plants, toxic waste incinerators, private automobiles, and gated subdivisions..must go on thinking, not like mountains, but like capitalists. Environmentalist commitment is finally a matter of consciously

attempting to change the most basic structures of social power” (211). It is important, I would argue, that the relationship between environmentally engaged literary and cultural studies and political economy be seen as a dynamic and beneficial one due to a shared commitment to challenge the supremacy of capitalism and its system of racialized hierarchical domination and exploitation of humans and nature. An ecocriticism attentive to the connections between environmental and social justice needs to continue this conversation in order to expose mainstream environmentalism’s reluctance to recognize this issue as central to any political and social responses to climate change. Ecocriticism has a unique opportunity to enter into this discussion with a focused and committed effort to analyze the dominant discourse of both late-capitalism and environmental activism from the perspective of environmental justice and political economy.

#### **V - Environmentalism’s Life after Death: Or, “Environmental Pragmatism”:**

Despite Nordhaus and Shellenberger’s being rather quickly dismissed by most environmental scholars, their Breakthrough Institute continues to publish policy papers that are well covered (and received) in mainstream media outlets and carry weight in the environmental community. Most recently, one of the institute’s more recent policy papers, entitled “Climate Pragmatism: Innovation, Resiliency and No Regrets,” attempts to position itself within an intellectual history of pragmatism in the U.S. (drawing most heavily from Dewey).<sup>lxxi</sup> They boast that the climate pragmatism will be flexible, plural, practical and reality-based. It proposes that, in regard to addressing climate change, the environmental community must be ready to utilize “what works” in a case-by-case scenario. In the paper, U.S. national interests are unapologetically foregrounded and the proposals are roundly reformist as it advocates for

activism within rather than against current power structures. For example, the paper argues that environmentalists should talk about energy innovation because it has the potential for rewarding *good work* with serious *economic gains*.

The plan organizes itself around a 3-part framework that calls for attention to: 1. Energy innovation 2. Building resiliency to extreme weather events and 3. Instituting what is termed “no regrets” pollution reduction policies. I turn to this paper as an example, and a complication of, the conventional understanding of environmentalism 2.0 so far posited. I will show that “Climate Pragmatism” both exemplifies Sze and Ziser’s worries about new environmental trends but also displays that these changes are not necessarily simply because environmentalism 2.0 focuses on climate change. Rather, as this paper calls for the overt back-grounding of climate change, it remains rife with many of the same problematics that concern Sze and Ziser. That is, it works within problematic nationalist and geopolitical structures, downplays class and race as central issues, and re-formulates certain traditional and problematic environmental assumptions while simultaneously disavowing these previous models.

The authors argue that a continued growth in energy consumption is an opportunity for research, development and innovation to transition into a post-carbon economy. The authors note that, “Global energy use is expected to rise nearly 50 percent by 2035 and as much as double or triple by midcentury” and that this is an “opportunity — to catalyze innovation, to enfranchise hundreds of millions of people who now lack access to modern energy sources, and to discover new decarbonization paths” ( Pielke, 9). They suggest that R&D funding from the U.S. government for clean energy should be increased from the current 3-4 billion to 15 billion or more. The authors stress that by not focusing on international treaties to limit carbon emissions, their plan is actually more egalitarian and allows for the continued growth of

developing countries in an equitable fashion. In regard to carbon emissions regulation, they argue;

“The world’s emerging economies thus have every reason to be wary of both climate destabilization and, if structured poorly, the very policies designed to mitigate greenhouse gas emissions. This is one of the central paradoxes of climate change policy, one the old UN framework has addressed poorly, focused as it was on raising the cost of fossil energy — and thus potentially slowing the development prospects of the global poor” (18).

Although this is at first appears a fair point, it rather too quickly discounts the importance of the “climate debt” of industrialized nations to the developing world as worked out in most proposals at the international and even at the level of U.S. federal plans (although it’s important to recognize that none of these have been successful). Essentially, the authors argue that “climate debt” is not going to be accepted by industrialized nations and is therefore an impediment that should be discarded from environmental discourse altogether. This is definitely convenient for those nations (or should I say “pragmatic”), as well as the multi-national corporations operating within and between these nations, but to argue that the U.N frameworks only “focused on raising the cost of fossil energy” without considering the effects upon developing nations is not accurate. More accurately, the U.S. under the Bush administration removed itself from the Kyoto treaty and was reluctant (under the Obama administration) to negotiate a fully binding treaty on greenhouse gas emissions in Copenhagen in 2010, very much *because* of their concerns about having to actually meet their “climate debt” to the developing world. In other words, the authors are saying that the U.N. plans were flawed because they didn’t promote growth in the developing world.<sup>lxxii</sup> But, in actuality, the U.N. plans would have done exactly this – through the payment of “climate debt”, however, developed nations had no interest in paying anything more than was

minimally necessary. So, in an effort to be pragmatic, it seems the Breakthrough Institute's plan would have the developing world forgive that debt and take their chances with development and modernization (ie. privatization); a developmental model based upon the increasingly expensive and difficult to access fossil fuel reserves currently owned by the largest transnational corporations on the planet. Yes, convenient indeed.

The 2<sup>nd</sup> goal, resiliency to weather extremes, is admittedly a very important goal. And, in an astute political messaging ploy, the authors might be quite correct that more will happen here if we uncouple the funding from the concept of anthropogenic climate change. The problem with this section of the paper is that it does not go far enough – resiliency to weather extremes should not be solely a techno-fix but a serious challenge to socio-economic inequality and the institutions and structures that enable and maintain these inequalities. This is what the environmental justice movement, so often scoffed at by Nordhaus and Shellenberger, has done effectively in other areas and could bring to the climate change environmentalism. If social factors can increase the damage of a “natural” disaster as the authors rightly contend, then we must see that these social factors are more difficult to solve than through solely technocratic means. But, rather simplistically, the authors contend that, “...the best route to improved resilience is economic development and modernization” (17). Resiliency and adaptation to climate change simply cannot be addressed through calls for ‘more development’! Instead, the problem demands activism aimed at challenging those institutionalized hierarchies in order to imagine a new set of systems based in egalitarian and environmentally sustainable goals. Therefore, the authors are either wrong or insincere when they argue that *more of the same* will this time result in improved resiliency for poor communities at risk from increased and more dangerous extreme weather events.

The third focus looks to take on pollution as a public health issue while de-emphasizing regulation of traditional greenhouse gases such as CO<sub>2</sub>. Rather, the authors suggest that environmentalists promote policies that reduce non-CO<sub>2</sub> pollution that still add to climate change, such as methane, black carbon and deforestation. While I applaud the concept of focusing on a myriad of industrial pollutants (mercury is another though not related to climate change) and emphasizing the important link between pollution and human health, ignoring CO<sub>2</sub> emissions altogether (other than promoting R&D and innovation in green energy) seems like a recipe for disaster. I would venture to guess that the authors feel this is a logical consequence of “backgrounding” climate change as an issue while still working an “end-around” to mitigate its consequences. However, it could also be suggested that ignoring CO<sub>2</sub> would certainly make for an environmental movement that is more in-tune with the fossil-fuel economy and neoliberal global growth models. In this latter case, it begins to seem that pragmatism is turning into a rather complete capitulation.

“Climate Pragmatism” lays out a “way forward” that leaves power vested in the developed world and existing international political and economic institutions. The focus seems to be to create a “pragmatic” environmentalism by being sure to present an argument that will not conflict with global corporate profits. The paper claims to take a multiplicity of viewpoints into mind, but either undermines or completely ignores international and community grassroots groups that do not fit its corporate flavored environmentalism. And we are left to ask in many places; what type of “modernization” and “development” should environmentalists try to promote? In more than one instance, the authors suggest that human actions are inevitably and quite naturally determined by the same market principles that motivate multi-national corporations. At times here the authors’ goals seem quite indistinguishable from the goals of

global capital. For instance, they argue that the U.S. government and the G8 and G20 should “lead by example” rather than negotiate international plans of action. Economic profits will then *correctly and naturally* flow to those companies and nations that take the risk in innovations for this new economy. Is it then that poor communities will benefit by becoming slightly less poor?

## **VI - Keystone XL Pipeline and the Politics of Global Climate Change:**

Following President Obama’s 4<sup>th</sup> State of the Union address, in which he declared his willingness to use executive power to confront the challenge of climate change, several leading environmental organizations, including the Sierra Club and 350.org, launched a “Forward on Climate” campaign. This was billed as “100 days of political activism” directed specifically at President Obama to pressure him to “act upon his verbal commitments” to do more to confront climate change (“Forward on Climate”). It was this campaign that led to the Sierra Club’s historic change of policy regarding civil disobedience outlined in the opening of this chapter. Michael Brune, executive director of Sierra Club, was one of the leadership team arrested. In a public statement, he declared; “We need Barack Obama at his absolute, formidable best. We need the Barack Obama who was able to inspire millions to believe in the possibility of change and the power of hope. We need that leader to passionately and eloquently show the American people that solving the climate crisis is not a burden but an incredible opportunity” (2/16/13). In addition to a seemingly ill-placed confidence in the president’s commitment to the issue, this proposed response is one that relies upon a growth-based global economy via the public investment into renewable energy sources. In other words, we can continue to grow the economy, but it must be driven by green energy.

Much as Allison Chin argued in her announcement of the policy change at the Sierra Club, Brune's message continues by further emphasizing that this is indeed a political question, rather than a technical or economic one. He argues, "The clean energies we need to reverse climate disruption already exist. They are affordable, competitive and ready for primetime. Already, we've doubled our wind power to 60 GW (enough to power nearly 15 million homes), and we generate five times more solar power than we did just a few years ago. That's explosive growth..." (2/6/13). However, 350.org's founder and Brune's fellow arrestee Bill McKibben, writing in his 2010 book *Eaarth*, is less optimistic and explains that in actuality, "... 'solving' about a ninth of the global warming problem would require 2 million large windmills; we need to build four times as many as we built in 2007, every year for the next forty. Doable, perhaps, but again that would only get us a ninth of the way – to 450 parts per million [Co<sub>2</sub>], which is already way too high" (*Eaarth*, 59).

For our purposes, it is important to note the ways in which McKibben's relative pessimism regarding our ability to address climate change coincides with tactical changes in 350.org's organizing strategies. First, McKibben's own narration of the formation and evolution of 350.org from 2007-10 is an informative starting place for our analysis of the political transformation 350.org might be signaling for global climate change environmentalism. It began with a realization of McKibben's own. He explains that he suddenly came to realize that, after 20 years of writing about the perils of climate change, "Nothing concrete had come of my work or anyone else's; Washington had done absolutely nothing to slow down climate change. I wanted to try and make something happen politically – but what?" (206).<sup>lxxiii</sup> McKibben goes on to explain that, after a few small events in Vermont, he developed a sense that local and regional political work was limited in terms of its reach and ability to address such a global issue. "So we

wondered if we could do something beyond funky Vermont. When I say ‘we,’ I mean myself and six seniors at Middlebury College. We had no money and no organization – no mailing lists, no fundraising apparatus. But the six of them did have the kind of intuitive knowledge of the internet that comes with being twenty-two years old” (207).<sup>lxxiv</sup> The plan, that McKibben and his students finally settled upon, was to help folks organize actions in their own communities, with a unified political message calling for 80% cuts in Co2 emissions, across the U.S., organized and coordinated via 350.org’s website.

At the event they stream photos from each action at an event in D.C. while invited political figures witness the procession. In this manner, the action was both local and national in scale simultaneously. “It turned out that we’d ‘organized’...one of the largest days of grassroots environmental protest since the original Earth Day” (208). McKibben admits that the work was satisfying and writes that, “It was unbearably moving to watch the pictures come in – this was distributed political action, the way that a farmers’ market is distributed food production or a solar panel is distributed power” (209). The result of their work was about 1,400 organized events across the country. They felt great, even “smug” he concedes, until “...about six weeks later, when the Arctic began to melt, and it became clear that almost everyone had underestimated the speed and size of global warming now under way” (209). And that “...led to our small group deciding to see if we could make our same tactic – distributed political action – work on a global basis” (210).

Two aspects of this narrative strike me as particularly relevant. First, McKibben’s choice of the phrase “distributed political action” begs for a comparison to this project’s interest in distributed agency and political efficacy. In what ways, if any, is 350.org’s strategy representative of the distributed agency that this project has explored? Second, I also find it

intriguing that McKibben most overtly is using the term distributed to bridge a perceived gap between local and global political action. It appears McKibben is deploying the term ‘distributed’ to indicate a type of decentralized political organizing strategy. The actions then are dispersed across human communities; below I will return to the idea of distributed political action in order to theorize the term a bit further. In so doing, we will ask; what would it mean to take seriously a distributed political network that more fully considered the relation between human and non-human agency? For now, it is enough to note that breaking down the spatial binary does help to highlight the links between global climate change environmentalism and the environmental justice movement rather than maintaining a simple binary between them based in an overly simplified local/global dualism.

As an organization, 350.org is indicative of a shift in focus of mainstream environmentalism in the U.S. in the age of climate change. It is not officially aligned with the previous mainstream giants such as the Sierra Club or The Nature Conservancy, however the group’s planned “day of actions” (one major global day of action in each of the past 3 years) are often co-sponsored by local branches of the Sierra Club and other mainstream organizations. However, 350.org presents itself as a grassroots campaign that certainly is indebted to the EJM successes in late the 20<sup>th</sup> century. It’s also, other than McKibben, a predominantly youth led movement that has used social media aggressively since its inception in 2007 to become a global movement. The group has, until commencing the keystone campaign, mostly focused on rallying citizens from around the world to participate in small symbolic acts that bring attention to what they term the “climate crisis.” For instance, on their website they promote the fact that “at the end of last year, we coordinated a climate art project so large it had to be photographed from a satellite in outer space.” The 350.org website also boasts that, “In October of 2009 we

coordinated 5200 simultaneous rallies and demonstrations in 181 countries, what CNN called the 'most widespread day of political action in the planet's history'" (Our Mission, 350.org). And, "On 10/10/10, we organized a day of climate solutions projects--from solar panel installations to community garden plantings--and changed communities from the bottom up with over 7000 events in 188 countries" (Our Mission).

The movement understands its power to be centered in its ability to activate thousands of people in hundreds of countries around the world. They write on their website that, "350.org is building a global grassroots movement to solve the climate crisis. Our online campaigns, grassroots organizing, and mass public actions are led from the bottom up by thousands of volunteer organizers in over 188 countries." Importantly, this quote highlights both the global scale of the group's reach and also the locally based leadership that helps 350.org make decisions from the "ground up". This distinction is clearly made in order to distinguish 350.org from the nation and international environmental NGO's that have sometimes come under fire (from the EJM for instance) for being top-heavy, institutional, and too caught up in D.C. big money lobbying.

The name of the group itself belies something that it has in common with almost all major environmental mainstream campaigns before it: a deep-seated belief in empirical science's ability to understand environmental problems and lead policy-makers to practical solutions. In describing the inspiration for the moniker, their website explains matter-of-factly that "350 means climate safety. To preserve our planet, scientists tell us we must reduce the amount of CO<sub>2</sub> in the atmosphere from its current level of 392 parts per million to below 350 ppm. But 350 is more than a number—it's a symbol of where we need to head as a planet." They base their arguments in what they promote as empirically based, quantifiable facts *and also* using the

number 350 as the basis for creative works of art and collaborative projects that attempt to present a global solidarity and commitment to address climate change among ordinary people. For instance, here in Seattle over 1,000 people met on 10/10/10 at the Space Needle to make a human 350 as a specially commissioned photographer took pictures from a helicopter above. In any case, the campaign's strategy up until now has been to raise public awareness about, and to petition governments and policy-makers to respond to, the scientific facts of climate change. However, the assumption that public sentiment can force the government to take steps to "solve" the problem seems to be in crisis.

The move to the campaign opposing Keystone XL Pipeline is the result of a shift in strategy from public outreach (a strategy that assumes if more people understand the problem, they will become politically active, and governments will respond to the will of the people) to actions directed more specifically at a supposedly sympathetic executive in President Barack Obama and the fossil fuel industry itself.

## **VII - The "Terrifying Math" of Climate Change:**

McKibben's public exposure outside of environmental circles skyrocketed in the summer of 2012 with the August 2<sup>nd</sup> publication of his article "Global Warming's Terrifying New Math" in Rolling Stone Magazine. The subtitle to that article clarifies why McKibben is asking us to do a little *new math*, it reads, "three simple numbers that add up to global catastrophe – and that make clear who the real enemy is". McKibben claims that these three numbers, which were first published in a financial analysis report in the UK, "upend most of the conventional political thinking about climate change. And it allows us to understand our precarious – our almost but

not quite finally hopeless – position with three simple numbers” (Terrifying Math). The first number is 2 degrees Celsius; this is the target limit for temperature increase allowable under the Copenhagen Accord signed by 167 countries. The second number is 565 Gigatons; which McKibben explains is important because “scientists estimate that humans can put roughly 565 more gigatons of carbon dioxide into the atmosphere by mid-century and still have some reasonable hope of staying below two degrees” in temperature rise (Terrifying Math). And the third and final number is 2,795 Gigatons; this is the “fossil fuel we’re currently planning to burn. And the key point is that this new number – 2,795 – is higher than 565. Five times higher” he explains. This number, only an estimate, is derived from an analysis of “how much oil, gas, and coal the world’s major energy companies hold in reserve” (4). While the Rolling Stone article takes a cautionary tone, it is also simultaneously a rallying cry to action.

The final paragraphs begin to outline 350.org’s newest campaign; to begin a divestment campaign at the university, city and municipality level, from investments in the top 200 companies most directly profiting from the fossil fuel economy. The reason for this more direct campaign targeting the economic and social capital of the world’s most highly profitable corporations such as Exxon and Shell, is that “We’d have to keep 80 percent of [fossil fuel] reserves locked away underground to avoid that fate. Before we knew those numbers, our fate had been likely. Now, barring some massive intervention, it seems certain” (5). Furthering the likelihood of drastic climatic change in coming decades is the fact that “...those 2,795 gigatons of carbon emissions are worth about \$27 trillion. Which is to say, if you paid attention to the scientists and kept 80 percent of it underground, you’d be writing off \$20 trillion in assets” (5).

McKibben also speaks to the predicament of 350.org’s thus far politically ineffectual attempts to create action on climate change mitigation. After discounting individual action and

consumer choices as well meaning but hopelessly miniscule, McKibben offers a brief analysis of environmental politics. He writes, “A more efficient method, of course, would be to work through the political system, and environmentalists have tried that, too, with the same limited success. They’ve patiently lobbied leaders, trying to convince them of our peril assuming that politicians would heed the warnings” (6). And while he concedes that “sometimes it has seemed to work”, he also points out that Obama’s most significant move to lower carbon emissions, the increase in fuel efficiency for automobiles, is the type of minimal reform that would have helped if “adopted a quarter-century ago” (6). However, McKibben now contends that, “in light of the numbers...just described, it’s obviously a very small start indeed” (6). McKibben goes on to suggest that climate change environmentalists need an “enemy” and should begin to target their energies in directions other than just politicians. Consequently, he suggests, “Given this hard math, we need to view the fossil-fuel industry in a new light. It is Public Enemy Number One to the survival of our planetary civilization” (7). Building on this idea, he (almost in a tone of wondering aloud) concludes that, “If people come to understand the cold, mathematical truth – that the fossil-fuel industry is systematically undermining the planet’s physical systems – it might weaken it enough to matter politically” (10). Speculative thinking indeed.

In the face of this type of institutional and economic obstructionism, what does political intervention look like in a situation in which political agency, as it has been commonly conceived for decades if not centuries, is beginning to appear less and less effectual? And, more broadly, how do we imagine human intervention into the dynamic feedback loop of climatic change that we instigated but no longer have “control” over? Thus far, 350.org has tried traditional public outreach (albeit utilizing new tech tools), petitions and letter writing to elected officials, civil rights era type actions of civil disobedience, and now, inspired by the similar

campaign against South African Apartheid, institutional economic divestment. The search for what a global climate change movement looks like continues.

In a tone reflecting that of the Sierra Club's rationale for civil disobedience outlined earlier in this chapter, McKibben in "Terrifying Math" attempts to simplify the political goals for climate change environmentalism. Even more than raising the issue of Keystone XL to a "line in the sand" moment, McKibben targets the fossil fuel industry. The argument is that if we can transition to green energy sources in time to limit the globe's use of fossil fuel to that cap of 565 tons of carbon, then the effects of climate change will be more manageable. We will see in other writing, specifically his most recent book *Eaarth: Making a Life on a Tough New Planet*, that McKibben actually allows that our clean energy alternatives may very well not be able to replace current energy sources fast enough to get us anywhere near his group's 350ppm CO<sub>2</sub> goal.<sup>lxxv</sup> However, for the purposes of building the movement, McKibben here is cautious yet hopeful:

"The three numbers I've described are daunting – they may define an essentially impossible future. But at least they provide intellectual clarity about the greatest challenge humans have ever faced. We know how much we can burn and we know who's planning to burn more. Climate change operates on a geological scale and time frame, but it's not an impersonal force of nature; the more carefully you do the math, the more thoroughly you realize that this is, at bottom, a moral issue; we have met the enemy and they is Shell" (10).

This is one example of the rhetorical move from the "daunting" challenge of climate change to the more hopeful "call to arms". I will have more to say about this below, but for now it is

important to note that McKibben here is unwilling to linger too long upon the idea that, no matter what we do from here on out, climate instability to some degree is upon us and will increase.

The more pessimistic, or we might say realistic, tone that McKibben strikes in his newest book *Eaarth*, published in late 2010, raises even more serious questions about the political agency of the global climate change movement. The sense that McKibben is attentive to the limited options we have in the face of climate change seems in part dependent upon an understanding of agency as distributed across the human and non-human in ways that disrupt traditional concepts of political subjectivity and action. Early on in the book McKibben warns his fellow environmentalists that,

...first we really do need to come to terms with where we are. We need to dampen our intuitive sense that the future will resemble the past, and our standard-issue optimism that the future will be ever easier. We do not live any longer on the flat earth that Tom Friedman postulated, Eaarth is an uphill planet now, where gravity exerts a stronger pull than we're used to. There's more friction than we're used to. You have to work harder to get where you're going" (*Eaarth*, 85-86).

As this excerpt indicates, McKibben has a tendency to act as if it is climate change that has brought on this "uphill planet." Alternatively, I would suggest climate change places a spotlight, or magnifies, the nature of agency as distributed across the human and non-human. However, the point is nonetheless an interesting one; the transition away from the fossil fuel era will not only mean a slowing down of the economy but a fundamental change in the planet itself. And, thus, a fundamental change within human society and its relation to the non-human. McKibben

is here beginning to think about what potential and limits/problems exist with a decentered human subject.

There is of course an obvious degree to which climate change can highlight the limits of human power; increased intensity of major storms, a decrease in predictability of weather, social and economic disruptions, and so on. However, on a slightly more subtle level, McKibben, in the article but particularly in the book, is interested in the distributed nature of climate change itself. In particular, he is fascinated, not to mention appalled, by the way in which the increased amount of CO<sub>2</sub> in the atmosphere due to human action has triggered a series of feedback loops that he calls “booby traps” of sorts. He writes;

So far we've been the cause for the sudden surge in greenhouse gases and hence global temperatures, but that's starting to change, as the heat we've caused has started to trigger a series of ominous feedback effects. Some are fairly easy to see: melt Arctic sea ice, and you replace a shiny white mirror that reflects most of the incoming rays of the sun back out to space with a dull blue ocean that absorbs those rays. Others are less obvious, and much larger: booby traps, hidden around the world, waiting for the atmosphere to heat.

Bill McKibben, *Eaarth* (20).

One of those “booby traps” is described in terms that further exemplify the distributed nature of climate change. He explains that, for instance, “...temperatures over eastern Siberia had increased by almost ten degrees in the last decade. That's melting permafrost on the land, and hence more relatively warm water is flowing down the region's rivers into the ocean, where it may in turn be melting the icy seal over the underwater methane” (21). In this manner, the complex inter-relations between human and non-human agency become more apparent.

Distributed agencies that may normally occur below the level of consciousness, or outside the purview of the scientific community, are suddenly essential agents in propelling our present moment into an uncertain and largely unpredictable future. And, he tells us,

“That’s scary. Scarier even than the carbon pouring out of our tailpipes, because we’re not directly releasing that methane. We burned the coal and gas and oil, and released the first dose of carbon, and that raised the temperature enough to start the process in motion. We’re responsible for it, but we can’t shut it off. *It’s taken on a life of it’s own*” (21-22, my emphasis).

This realization of our initial creation but limited control over the changing climate is admittedly scary.<sup>lxxvi</sup> But we must be careful how we respond to that fear.

In one aspect, *Eaarth*’s reaction offers a cautionary tale. In attempt to visualize the local and dispersed socio-economic network of localism, McKibben offers five words that he suggests “may help us think usefully about the future. Durable, Sturdy, Stable, Hardy, Robust” (102-103). He continues, “These are squat, solid, stout words. They conjure a world where we no longer grow by leaps and bounds, but where we hunker down, where we dig in.” The choice of descriptive terms for this local-oriented future seems rather problematically gendered. In fact, the author unabashedly admits as much by using the following metaphor to describe these words as ones “we associate with maturity, not youth; with steadiness, not flash. They aren’t exciting, but they are comforting – think husband, not boyfriend” (103). The assumption of a certain necessary masculinity to sustainable practice is worrisome inasmuch as it lends credence to the argument often posed regarding the inherently regressive aspects of localism (often at the heart of environmental critiques of globalism as discussed earlier by Heise). Furthermore, it

essentially erases the work of environmental justice advocates that is so often led by women, and particularly women of color in underrepresented urban communities. As discussed earlier in this project, this work is fundamentally concerned with sustainability because of its commitment to promoting the conditions necessary for social reproduction (economic equality, public health, access to resources, etc.).

McKibben also exhibits an ambivalent attitude, one endemic to the history of environmental theory, to science and technology. On the one hand, the entire argument of 350.org is based on some of the most technical and speculative scientific work of climatologists around the globe. The software, computer models, and simulations that are attempting to better understand future changes to climatic patterns are the foundation of the group's argument calling for national and global action to mitigate climate change. On the other hand, McKibben is almost completely dismissive of technological options for that very same mitigation and adaptation project.<sup>lxxvii</sup> This is an aspect of the "go local" campaign that often appears to be a nostalgic desire to return to a "simpler" time. In describing the scale at which human society might find its most resilient self, he writes;

The project we're now undertaking – maintenance, graceful decline, hunkering down, holding on against the storm – requires a different scale. Instead of continents and vast nations, we need to think about states, about towns, about neighborhoods, about blocks. Big was dynamic' when the project was growth, we could stand the side effects. But now the side effects of that size – climate change, for instance – are sapping us. We need to scale back, to go to ground (124).

McKibben is more effective when his argument astutely focuses its critical attention upon the fossil fuel industry and its influence (control?) over the state. He recognizes that, “They’ll fight to the end to defend that business model, for it produces greater profits than any industry has ever known. We won’t match them dollar for dollar: to fight back, we need a different currency, our bodies...and our creativity. That’s what a movement looks like; let’s hope we can rally one in time to make a difference” (219). Despite McKibben’s desire to define for his readers “what a movement looks like”, what I find more intriguing here is the level of experimentation he admits is necessary.

In actuality, it appears that McKibben knows, on some level, that he is not exactly sure what particular elements are necessary for this movement to succeed. Or even, for that matter, exactly what success, or political victory, will look like. Entitling the book *Eaarth* is suggestive of this uncertainty; this significantly different planet will also necessarily play a role in the transformation of human society and therefore our understanding of political subjectivity and social movement organizing. McKibben closes the book with this final thought upon the socio-political project ahead:

The momentum of the heating, and the momentum of the economy that powers it, can’t be turned off quickly enough to prevent hideous damage. But we will keep fighting, in the hope that we can limit that damage. And in the process, with many others fighting similar battles, we’ll help build the architecture for the world that comes next, the dispersed and localized societies that can survive the damage we can no longer prevent. *Eaarth* represents the deepest of human failures. But we still must live on the world we’ve created – lightly, carefully, gracefully. (212)

This passage emphasizes the fact that human society will have to adapt to the world we have partly created and that we do retain some agency within our relation to this changing planet. Therefore, our political, economic and social decisions still matter and McKibben implores his readers to “keep fighting”. However, what these “dispersed and localized societies that can survive” changing climate patterns might look like is less clear. This brings us back to the ongoing and unresolved problematic that this project has traced throughout; what might an effective environmental politics look like in a postnatural, posthuman, and post-earth context? How might we articulate a socio-political movement in the absence of a clear and identifiable goal? 350.org, we must remember, is built upon the idea of establishing a definite and measurable goal (350ppm Co<sub>2</sub>); yet here we see its leader contemplating the unknowable nature of our predicament as well.

### **VIII - Conclusion: “Distributed Political Action”...Or, What is to be done?**

The difference in tone between the Rolling Stone article and *Eaarth* can be attributed, perhaps somewhat too quickly in fact, to their respective audiences (a more general reading public in the former versus the more environmentally aware advocates in the latter) as well as to the more overt political project of the article. However, I also think within that distinction there is an important point to be made in regard to the question of political agency. First of all, that the more pessimistic tone, as I have already noted, is at least in part the result of McKibben’s own grappling with the limitations of human agency in regard to mitigating climate change. Additionally, if McKibben is less willing to dwell on these limitations (that result from the distributed nature of agency related to climate change) in the Rolling Stone piece, I would

suggest that this is exactly because we have yet to fully grapple with what distributed agency might mean for political agency. It seems a dangerous political position to maintain and, therefore, time and again the argument moves quickly to a solutions-based rhetoric; and away from the question of our limited options in the face of the Anthropocene.

Even in *Eaarth*, McKibben worries that admitting the planet is fundamentally different no matter what we decide to do now (ie. it is too late to remain in the Holocene, we have entered and will remain in the Anthropocene) may lead his readers to apathy.<sup>lxxviii</sup> He writes, “My only real fear is that the reality described in this book, and increasingly evident in the world around us, will be for some an excuse to give up. We need just the opposite – increased engagement.” Certainly, the article does not pull punches in regard to the immense challenge that is presented by its “terrifying math”, however, it quickly moves to offering a political target and a socio-economic solution: a campaign to divest from fossil fuel companies. It is clear that this move is meant to prevent the “reality” from leading to a sort of resignation, and instead foster and expand a “movement” of engaged individuals acting collectively. And it makes sense from just about any rhetorical or messaging perspective. In other words, we don’t want depressed potential advocates for the environment, we want angry, hopeful or otherwise motivated activists! Therefore, McKibben quickly moves to the “what you can do” finale of his rhetorical piece.<sup>lxxix</sup>

Dwelling on the limitations of human agency is “scary”, as is thinking about the contingency of our actions, the (partial) lack of control we actually have over the manner in which the present will become the future, because of a sense of loss regarding the myth of human autonomy. Of course, no one is asking McKibben to go into all of this in a 2,000-word essay for a popular magazine, however it does seem to be a question his book *Eaarth* at last begins to raise. This is the challenge of thinking political intervention in a postnatural and posthuman

moment in the midst of a geologic change (a result of a distributed agency) from the Holocene to the increasing erratic weather of the Anthropocene. And it's a challenge that eco-theory must be ready to take on if it contends to have a commitment to environmental politics.

Another dominant trend within the above manifestations of environmental activism is a recurring and underlying feeling of transition, an uncertainty in both strategy and potential targets of the movement. It is clear that while the Breakthrough Institute remains fully invested in the political maneuverings of Washington D.C. and other capitals in the developed world, groups like 350.org have been slowly recognizing and openly discussing corporate lobbying power over elected officials. It is also apparent that this uncertainty emanates from the recognition of the challenges from material, non-human agency; and particularly the temperature rise already built into the climatic system and set to unfold in coming decades can be an overwhelming realization. I would suggest that a portion of this uncertainty in the environmental movement also stems from the predicament of a decentered political subject and the question of the political 'act'. This decentered, post-human subject, one who recognizes that the breakdown of the human/non-human binary also poses challenges to liberal humanist conceptions of political change, must inhabit a position that is fraught with both challenges and opportunities. If we too quickly turn to solutions we may be missing an opportunity to better understand our predicament.

Bill McKibben himself, as we noted earlier, utilizes the term distributed political action. The question is what it would mean to consider this political agency as not only distributed across human communities but also as interspersed with the non-human. That is, not only a network of distributed human organizations but also to think these human political movements as decentralized themselves; as integral and influential, yet only a part of the co-production of what

is to come. In what ways would this change our conception of the political act or intervention? Is there any way in which this space can seem other than “scary”? Other than de-motivating?

While I do not propose to be able to predict, at this point, what comes next (or, to know exactly what a ‘movement’ looks like in the face of these challenges), growing opposition to the XL Pipeline is serving, in my mind, as a test case in many ways. While these movements must continue to target the fossil fuel industry and the corporate state, the correct targets, and the correct strategy, so far remain elusive. Currently the XL Pipeline is caught up in a game of political maneuvering between Obama and the Republican House. The original environmental impact review had come under fire after it became public knowledge that it was performed by an agency with direct financial ties to TransCanada, the corporation hoping to build the pipeline. Therefore, the president announced he would commission another, presumably more independent, review and make no decision until 2013. In response, Republicans successfully tied a provision in January 2012 that forced the president to make a decision within 60 days. Ultimately, however, within the broader postponements of budget and tax questions until after the Fall 2012 election, the President was able to defer a decision on the Pipeline until sometime in 2013 as well. Conveniently, this placed the decision well after what became his election to a 2<sup>nd</sup> term that November.

That follow-up State Department Environmental Impact Review, which argued the pipeline itself will not add significantly to overall CO<sub>2</sub> emissions in coming decades, seems to have primed the pump, if you will, for an approval of the project.<sup>lxxx</sup> Most impartial observers foresee some sort of compromise (from a president well know for them) in which the pipeline will be approved coinciding with the announcement of some other CO<sub>2</sub> emissions-reducing plan. Will the environmental activists be assuaged by such a political maneuver or will they see it as

another example of the so-called liberal Democrats caving to big business? Will there be potential grassroots energy to somehow corral at that point?

As the above indicates, the Pipeline decision is now clearly embroiled in what many have come to see as the confluence of the corporation and the state. As such, the critics of the pipeline project are, in more and more discernible ways, echoing the complaints that emanated from the Occupy movement recently and the left more generally (particularly since the Citizens United Supreme Court decision in January 2010). This creates an interesting question for the major grassroots, climate change oriented environmental campaign of the moment; that is, how do citizen protest campaigns petition the state to make policy on climate change issues if the state is answering to the very corporations the movement wants to regulate? Environmentalists' confidence in reformist and rights based political strategies, particularly those activists concerned with the relation between environmental and social justice, is in crisis at the moment. The corporate state's unresponsiveness can only invigorate this search for alternative methods of social movement organizing.

My readings of several literary depictions related to distributed agency display that posthuman representations of human and non-human agency, and its effect upon the liberal humanist subject and political agency, pose unique challenges to the social movement organizing in the era of late-capitalism. Yamashita's novel reveals the ways in which a certain understanding of global capitalism and material agency can leave the human political subject as at best a spectator (at worst a victim) to the devastation of environmental degradation and socio-economic inequality. *Through the Arc* presents very little hope in the way of human agency to fight back against the GGG Corporations devastating environmental practices in the Brazilian rainforest. In the end, the insurgent bacteria are the only actors capable of bringing down the

GGG Corporations extractive resource economy, and the remaining living characters can only retreat further into the rainforest in a pastoral seclusion. The rainforest itself, with time, the narrator tells us will regenerate and grow over. The reader is left with the distinct feeling that this regeneration will inevitably be targeted for extractive purposes in another round of imperial conquest. The cycle continues; and traditional, human-centered socio-political movements directed against the networks of global capital are not even present, let alone effective.

Recalling McKibben's narrative, we might notice that his assessment of his career as a writer and his initial forays into politics elicited a similar feeling; none of it had had much effect he came to realize. McKibben's story, as we noted earlier, is reminiscent of the Sierra Club's argument for civil disobedience (which, in turn, may remind us of Diane Chang's argument in the *Science in the Capital* trilogy); that is, "we know but we can't act". In this construction, it is assumed we cannot act because our politicians do not have the will (or the capacity?) to "stand up" to the fossil fuel industry and global capital more generally. So, a social movement must somehow "force" them to do so.

As we have discussed earlier, the "we know but we can't act" argument seems to be based on liberal humanist conceptions of subjectivity, knowledge-formation, political agency, and linear temporality (particularly the promissary future). Clearly, an environmental politics in the Anthropocene, or on Eearth if you will, necessarily will need to embrace a new set of assumptions and a new assessment of the political 'act'. This will at first appear, as McKibben admits, quite scary; because it seems impossible, or dangerous even, to imagine political struggle and social movement organization outside of a human-centered, strategic, purposeful, and goal-oriented action. If we are not 'acting' upon a strategy toward a measurable and specific goal, then we must be complacent or apathetic, right? And McKibben is correct to be worried

certainly; allowing an acceptance of limited agency to become hopelessness is at the very core of the newest conservative argument (ie. there's nothing to be done so let's not bother).

Besides drawing our attention to the challenges of distributed agency and the limitations of the decentered human subject, the literature reviewed in this project has also suggested an interesting relationship between non-empirical forms of knowledge formation and distributed agency. Kim Stanley Robinson's attempt to think the relationship between individual (Frank's optimodality) and societal (Chase's permaculture) transformation is provocative. In the trilogy, attention to situated knowledges and distributed agency act as central catalysts as they simultaneously raise multiple challenges to the individual and societal response to climate change. The links between how/what we know and how/what we do are dense and difficult to delineate and no movement can promise to "solve" climate change. The challenge for social movement organizing, and even more particularly for climate change environmentalism, is to learn to act from this new (decentered) location while also learning to accept a level of uncertainty and a lack of complete knowledge. In the end, our action alone will not fully determine the future, but the approaches explored here offer opportunities for an environmental movement more fully entrenched in non-hierarchical forms of knowledge-making and political practice.

---

## Endnotes

<sup>i</sup> The guest that night, incidentally, was Michael Shellenberger; the co-author of the infamous “The Death of the Environmentalism” essay and who we will run across again later in this project.

<sup>ii</sup> Rabe, Barry. “The Climate Change Rebound.” [www.brookings.edu](http://www.brookings.edu). Accessed May 1, 2013.

<sup>iii</sup> From the enlightenment to the present we can discern the dominant liberal humanist historical narrative highlighting ever-expanding freedoms while a series of critiques (ie. Marxism and more recently postcolonial) might variously focus upon colonialism, imperialism and growing economic inequality as a result of globalization. However, quite possibly, each of these misses another current that destabilizes our notion of human agency and, with it, traditional narrative of linear history.

<sup>iv</sup> Hayles goes on to say, “...they [Deleuze and Guattari] write as though the reader can deterritorialize and reterritorialize herself at will, as though the desire that is the motive force directing movement along planes of consistency can be made to do the bidding of conscious resolve. Through their performative language, they necessarily exercise agency even as they also deny it. Where as Dawkins has to deny his own agency in order to have the ‘selfish gene’ meme propagate through the culture, Deleuze and Guattari cannot avoid inscribing into language the agency implicit in their performance of desire” (158)

<sup>v</sup> I offer a fuller review of this concept, relying heavily upon and expanding Timothy Mitchell’s theory of hybrid-agency, in Chapter 2.

<sup>vi</sup> Linda Vance’s concise and persuasive work on dualism and ecofeminism is an excellent primer.

<sup>vii</sup> In some ways, it is reminiscent of the idea of diversity as that term is deployed in contemporary corporate and university cultures; in that both phrases superficially offer a nod to a complex and systemic problem while at the same time taking away its radical potential.

<sup>viii</sup> Timothy Mitchell, Dana Phillips and Neil Everndon’s work are all excellent examples. As I will examine in the following chapter, work in environmental justice scholarship from theorists such as Giovanna Di Chiro and Julie Sze have been very important in a much needed opening up of what counts as an environmental issue. And, finally, recent studies of non-human materiality are very helpful; such as Karen Barad influential work on intra-agency discussed below, Stacy Alaimo’s *Bodily Natures*, and Kate Bennet’s *Vibrant Materialism*.

<sup>ix</sup> For instance, we might imagine an instance in which a person’s experience in nature is a horrifying one that they would never want to repeat, should we say this is an “incorrect” response based on a lack of ‘correct’ knowledge about why the human should deeply appreciate and slowly get “in tune” with nature? Or, what are the determining factors that make the place “nature” per se? Along these lines, it seems important to ask how ecocentrism builds a socio-political movement; rather than remaining the philosophy of a small cadre of mostly white, upper-class nature lovers with the leisure time and means to enjoy what they deem Nature *correctly*?

<sup>x</sup> This term is discussed more later in this chapter but get its most consistent treatment in chapter 2. Karen Barad, in *Meeting the Universe Halfway: Quantam Physics and the entanglement of matter and meaning*, writes; “Crucially, agency is a matter of intra-acting; it is an enactment, not something that someone or something has. It cannot be designated as an attribute of subjects or objects (as they do not preexist as such). It is not an attribute whatsoever. Agency is doing or being in its intra-activity. Agency is about changing possibilities of change entailed in reconfiguring mater...articular possibilities for (intra-)acting exist at every moment, and these changing possibilities entail an ethical obligation to intra-act responsibly in the world’s becoming, to contest and rework what matters and what is excluded from mattering” (178).

---

<sup>xi</sup> Seeing New Worlds was published in 1995. Walls' earlier work on Emerson and her more recent book on Alexander Von Humboldt, *Cosmos*, also usefully investigate the relationship between 19<sup>th</sup> century American culture, early environmental thought, and scientific practice.

<sup>xii</sup> Essentially, Walls' argument above suggests that Thoreau attempts to move beyond the ecocentric narrative; that is, the tale of an eco-transformational process that relies upon a simple recognition of the "correct" relation to nature that then naturally compels an appreciation for that nature from the human subject. It is in this attempt that we find Thoreau's attention to hybridity, chaos and liminal space so heightened, and also where we find such frustrating contradiction and inconsistency.

<sup>xiii</sup> This serves as an alternative to the science of Agassiz, for instance, which removes the agency of nature for a passive non-human world to be catalogued, classified, and explained through the agency of the professional and discipline-oriented scientist. From this perspective, with which Thoreau engages early on yet ultimately discards, Nature is unitary and divinely ordered. Therefore, humans, from their perch at the top of the pyramid, so to speak, can search for and ultimately determine the laws that together form that unified order.

<sup>xiv</sup> This is an intriguing problem that should receive more attention if space and time allowed. The way I read this quote, Walls is really emphasizing that Thoreau's later writing moves beyond traditional Transcendental concepts such as correspondence theory and nature as a 'mirror' of social facts, etc. At the same time though, Thoreau is attempting to create an alternative to objective knowledge-making practices at a time when one might argue empiricism is only at the earliest stages of its dominant role in the professionalization of Science. It is interesting then that Robinson returns to Thoreau in search of alternatives to empirical science in the early 21<sup>st</sup> century when it has been so fully institutionalized.

<sup>xv</sup> This includes a healthy dose of American exceptionalism and a variant of Manifest Destiny in which the poetry, culture and religion of America soar to the forefront of the American nation's future as the city upon a hill; rather than a political/economic empire.

<sup>xvi</sup> This is reminiscent of Haraway's later work on the human as animal and Cary Wolfe's on posthumanism that critiques speciesism which also looks at human as species/animal/embodied which has not necessarily been my focus in this project.

<sup>xvii</sup> However, it is this more democratic and community oriented aspect of Thoreau's thought that many environmental scholars have been returning to in recent years as pointed earlier. Lance Newman discusses the community-based nature of much of Thoreau's critique of the industrial revolution, slavery, etc. in his *Our Common Dwelling* cited elsewhere.

<sup>xviii</sup> This is a central step in the critique of liberal humanism on certain important levels: Cartesian dualism, scientific (disembodied) objectivity, instrumentalization of nature, etc).

<sup>xix</sup> Karan Barad writes of agency and futurity in relation to the nature-culture binary and hybrid objects: "Rather, it is inherent in the nature of intra-activity [ie. Distributed agency] – even when apparatuses are primarily reinforcing, agency is not foreclosed. Furthermore, the space of agency is not restricted to the possibilities for human action. But neither is it simply the case that agency should be granted to nonhumans as well as humans... What is at issue, rather, are the possibilities for the iterative reconfiguring of the materiality of human, nonhuman, cyborgian, and other such forms. Holding the category human (non-human) fixed (or at least presuming one can) excludes an entire range of possibilities in advance, eliding important dimensions of the workings of agency" (178).

<sup>xx</sup> The close observation of details, place-based system of knowledge-making, is central to Thoreau's way of interaction with and better understanding the non-human world. He does certainly look for larger cycles and unities in nature, but it often begins with what is reminiscent of, as Walls also points out, a commitment to what Haraway has since termed situated knowledge.

<sup>xxi</sup> This is not a Thoreau that easily lends itself to a “deep green” or simply ecocentric vision (in which it is often assumed that when humans simply “leave nature alone” all will be well). The idea that nature has it “all worked out” and that humans are an outsider that throws off the “rhythm” of natural balance, though certainly present in some moments of Thoreau’s writing, is not the impression that this layer of uncertainty, that exists beneath his critique of the capitalist funding the ice cutting enterprise, offers the attentive reader.

<sup>xxii</sup> Stacy Aliamo in her recent *Bodily Natures* writes of this interdependency, “. . . understanding the substance of one’s self as interconnected with the wider environment marks a profound shift in subjectivity. As the material self cannot be disentangled from networks that are simultaneously economic, political, cultural, scientific, and substantial, what was once the ostensibly bounded human subject finds herself in a swirling landscape of uncertainty where practices and actions that were once not even remotely ethical or political matters suddenly become the very stuff of the crises at hand” (20).

<sup>xxiii</sup> This raises so many questions for future consideration when time and space allow. What is the water of Walden pond in relation to the water of the Ganges river? Is it most notable that the water of Walden and Ganges are brought (blended) together? Another Hybrid form like the ice and the sandbank – nature and culture? East and west? Two aspect of nature - the commodity form and spiritual ideal - are intermixed or even always already inextricable. What does this re-imagining of globalism through this imaginative journey that follows the circulation of Walden’s ice in its commodified form accomplish here? What is this merging of nature, commodity, knowledge and philosophy (in the form of Walden’s ice) actually doing in terms of Thoreau’s representation of (distributed) agency? What is the global exchange of ideas in relation to the commodity form?

<sup>xxiv</sup> Many of these texts are discussed elsewhere in this project, such as Jeffrey Myers’ *Converging Stories* and Stacy Aliamo’s *Bodily Natures*.

<sup>xxv</sup> GATT’s main implementation body is the now well-known WTO.

<sup>xxvi</sup> “Trade and Environment” document accessed at <http://www.ciesin.org/TG/PI/TRADE/gatt.html>. July 1, 2012.

<sup>xxvii</sup> As is generally recognized, a less than critical acceptance of this neoliberal narrative has at times led to, among some mainstream and fringe environmental organizations, non-justice oriented, Malthusian arguments regarding topics such as global population and U.S. immigration policy.

<sup>xxviii</sup> This article appears within William Cronon’s deservedly popular edited edition *Uncommon Ground: Rethinking the Human Place in Nature*.

<sup>xxix</sup> The importance of Di Chiro’s theoretical work becomes clear when examining, for example, the disposal of toxic waste upon communities of color. In their article “Indigenous Struggles, Environmental Justice, and Community Capabilities”, Schlosberg and Carruthers build upon Amartya Sen’s capabilities-theory of justice focusing on indigenous peoples on reservation lands in the southwest. This concept of community-based justice highlights struggles for environmental justice as an attempt to maintain “social reproduction,” and argues that these battles serve as an important reminder that environmental justice is a community, rather than individual, project. Bringing to the foreground the stories of 13 Native American Tribes fighting to preserve sacred lands in the San Francisco Peaks and Chile’s Mapuche Indians struggle against industrial development in their ancestral lands, the article describes the threat to the indigenous people’s land as necessarily environmental and cultural at once, and therefore it becomes what should be understood as a battle for “social reproduction”. Consequently, “Indigenous leaders thus articulate environmental injustice as a set of conditions that remove or restrict the ability of individuals and communities to function fully – conditions that undermine their health, destroy economic and cultural livelihoods, or present general environmental threats” (18).

<sup>xxx</sup> Karen Barad, Stacy Aliamo, Kate Phillips, among others have all, relatively recently, offered excellent studies of the relation between human and non-human agency. I turn to Mitchell here due to his interest in agency and historical narratives of progress is particularly useful for this study. For consistency, I use the term distributed

agency in this paper and attempt to offer my own perspective on its significance to environmentalism as a socio-political movement, and speak to the potential and challenge it poses to political agency more generally.

<sup>xxx</sup> Interestingly, one of the many complexes constructed with Matacao plastic in the course of the novel, an amusement park named "Chicolandia," alludes to an earlier adventure of imperialism in the Amazon Rainforest. In her reading of the imperialist histories embedded within the novel, Aimee Bahng recounts the history of a "US neo-colonial presence in the Amazon" from the 1930's called Fordlandia. An entire industrial town, centered around the rubber mines, was created in the image of a U.S. suburb, which was the "the largely forgotten, early twentieth-century US rubber plantation and civilizing mission introduced by Henry Ford" (131). Bahng argues that Yamashita utilizes this particular historical event in order to highlight the forgotten history of U.S. imperialism in South America.

<sup>xxxii</sup> It is important to recall that this contemporary economic boom is literally based upon the leftovers of previous colonialist adventures in Brazil by the U.S. government and corporations. As Bahng points out, by the end of the novel the collapse of this new economy, one essentially based on recycling this regurgitated first-world waste, destabilizes the narrative of linear progress and the benefits of free-market fundamentalism.

<sup>xxxiii</sup> This raises a few questions for me in terms of progressive temporality and its relation to social movement organizing. How does the knowledge of history – and its relation to the present and future – change when understood in a nonlinear context OR a context that embraces the uncertainty of historical change? Can it be relied upon realistically to facilitate a type of mistake-free human enterprise (why do we so often fall back on that benefit in respect to 'remembering' history so as to inform our present)? Is this another reason that linear history is such a pervasive assumption?

<sup>xxxiv</sup> One of the most important challenges regards the pitfalls that await the environmentally focused search for an alternative, more sustainable society to contemporary consumer capitalism (which they see as spiritually/morally bankrupt as well as wasteful and destructive). And how to deploy an effective critique of anthropocentrism that does not rely on an uncritical trust in ecocentrism as a morally superior construction...

<sup>xxxv</sup> See Di Chiro's article, referenced elsewhere, entitled "Understanding the Human Place in Nature".

<sup>xxxvi</sup> See Mark Dowie's *Conservation Refugees* for instance.

<sup>xxxvii</sup> Linda Vance's ecofeminist scholarship, for instance, very effectively traces the mutually reinforcing links between hierarchical constructions of gender, race and nature. See "Ecofeminism and Wilderness".

<sup>xxxviii</sup> What are the most integral differences between "sustainability" and "social reproduction"? I would suggest that sustainability, in most manifestations and certainly in its deployment within mainstream green capitalism, is uncritical of capitalism and its growth-based model. There are examples, such as "permaculture" and "slow/no-growth economics" concepts, which move a bit more substantially into critiques of capital's externalization of costs, etc. On the other hand, social reproduction re-emphasizes human relation to each other (community) and relation to non-human world (mixed-community). It changes the qualifications for 'quality of life' in significant ways and, at its best, provides a goal that is more difficult for capital to subsume into its own logics. I generally agree with Di Chiro that it is a more productive way of theorizing the goal of much environmental justice work due its unromantic concentration upon an integrative and systemic approach to quality of life.

<sup>xxxix</sup> Jane Bennett, in her recent *Vibrant Matter; A Political Ecology of Things*, uses this term effectively in borrowing and expanding from Latour's postulations on the agency of non-human materials.

<sup>xl</sup> The next two chapters look at climate change, and various responses to it within environmental literature and social movement organizing, as an example of this type of challenge for environmental politics.

<sup>xli</sup> If taken out of context, there are passages that can lead to relatively understandable misreadings of the relationship between the human and non-human in this novel. For example, at one point Clinton suggests that, "...the time had come when people were beginning to sense impending disaster and to see signs all around them – great upheavals of

the earth that cracked open mountains and crushed man-made walls...All of man's computers and 'high technology' could do nothing in the face of the earth's power (424). Earth's power in this particular passage does appear to be rather discreet from human technology, for instance. What we must recognize, as readers, is that the "impending disaster", in terms of the environmental catastrophes, and what Romero insists on calling "natural forces", is actually in part attributable to colonial practices of exploitation (of both human and non-human communities) as well. This is the result not of two discreet agents (the human and non-human) acting and reacting upon each other but, much more fundamentally, the result of an integrated, distributed agency in which we no longer can determine separate individuated actors of either form.

<sup>xlii</sup> Silko describes the subaltern subjects ability to operate outside of the legalized capitalist system to some degree and their re-purposing of mainstream political tools to further their own cause, as Angelita raises funds via the Cubans and other nations differently motivated desires to be seen as "friends of the Indians". But it must be understood that this is a means to an end as it becomes clear that, for these subjects, revolution, and not reform, is the only hope for a future of any kind – political, economic or cultural.

<sup>xliii</sup> ie. the awkward phrases like "let's END/STOP climate change", "we must mitigate climate change", "reverse climate change!"

<sup>xliv</sup> Chakrabarty discusses this problematic for concepts of linear history and the crisis of futurity brought on by climate change in "The Climate of History: Four Theses" as discussed in the introduction. Zizek's recent extension of Chakrabarty's argument in *Living in the End Times* informs my reading of Robinson's trilogy as a critical utopia. Zizek argues, I think plausibly, that Chakrabarty underemphasizes the importance of socio-economic change as an essential adaptive response to climate change.

<sup>xlv</sup> Gib Prettyman has argued this point exactly. Later in this chapter I will address the ways in which I do and do not agree with this assessment.

<sup>xlvi</sup> In these instances, it is as if we've accessed an inner dialogue, or sometimes a dialogue between characters, that would, for some reason, otherwise not be contained in the traditional narrative.

<sup>xlvii</sup> The conflation and simplification of progress and technology as root causes of environmental destruction, then prescribes a certain attitude from many mainstream environmental groups, and particularly so-called deep green activists, towards technology in all its forms. In some cases, it could be argued that a type of techno-phobia is just as prevalent in environmental circles as the eco-phobia they discern and lament within contemporary postmodern culture. With this broader mainstream environmental context in mind, it is interesting to see arguments for particular types of technology as saviors (solar and wind power) and against others as untenable or risky (coal sequestration and nuclear power). The tendency towards a romanticizing of a stable yet delicate (edenic) nature that some environmental maxims presume existed before human intervention is radically countered by the realities of material agency and climate change; recent scholarship is taking up the task of working through these changes to foundational assumptions of the preservation movement.

<sup>xlviii</sup> Robinson uses Frank Vanderwal's engagement with Thoreau as a catalyst for his interest in the relation between human and non-human communities. The prominence of border/liminal spaces, fragmented subjectivity, urban wildernesses, and hybrid notions of agency are reflections of a Thoreau that recent ecocritical scholarship (Walls, Newman, Myers) is bringing to light; and that we addressed in chapter one.

<sup>xlix</sup> More on the theories of 'situated knowledges' and its relation to Robinson's depiction of a "passionate science" below.

<sup>1</sup> The gendered aspect of this contradiction between professional objectivity and subjective passion is intriguing. Although Frank sees the latter as "feminine", the emphasis here seems to be more about Anna's ability to integrate these two and his own inability to do so. This gendered construction of professional life connects to Robinson's depiction of Anna and her husband Charlie's domestic roles; in which Charlie has embraced the role of stay-at-home

dad while Anna works full time (Sixty Days, 48-49). In this case, the internal debate and struggle between career as environmental policy analyst and domestic labor is represented through Charlie rather than Anna (a workaholic putting in 70+ hour weeks).

<sup>ii</sup> The questions regarding the role that sociobiology plays in Frank's transformation are provocative and deserve more attention than they receive here; it seems that a good starting place would be the connection to major works such as *The Adapted Mind* and *The Selfish Gene*

<sup>iii</sup> See Latour's *The Politics of Ecology* for the fuller articulation of this particular aspect of the argument. For this chapter, I will depend most heavily upon Haraway's work.

<sup>liii</sup> By the end of the trilogy, the Quiblers, frustrated with their inability to lower their carbon footprint significantly while living in a single family home, are investigating a move to a communal living structure at the Khembali's property

<sup>liv</sup> One more Markley quote from page 382 on distributed agency (or somewhere else)?

<sup>lv</sup> Melinda Cooper, in her book *Life as Surplus*, describes how the bio-economy divests itself from the present costs of waste and pollution in the public commons by emphasizing the promissory future of a techno-utopia. Interested as it is in restructuring the social, political and economic communities in which technological innovation unfolds, how does the Science in the Capitol trilogy, deal with this seemingly intractable, externalized environmental cost of capitalist development? First, the critique of private science that is outlined above is a central aspect of Robinson's approach to making scientific work more attuned to social justice as exhibited through Frank's transformative process. Second, passionate science builds from this critique of private science, because prioritizing rational knowledge in scientific practice, that is the recognition of any relevant limits, contradictions, and hierarchical power relations, explicitly introduces social and environmental justice issues as a key determining factor in regard to the usefulness of a new innovation.

<sup>lvi</sup> Also, in the wake of the great recession of 2008, one must wonder if it is all that realistic to imagine private Capital releasing its trillions for any projects of a public or private nature (no matter the urgency)? We certainly have not seen any willingness to re-inject any of the money held by transnational corporations to create jobs, etc.

<sup>lvii</sup> Zizek, in response to Chakrabarty's *Climate of History* paper, has commented on the need for critique of capitalism in face of climate change. Robert Markley's piece cited elsewhere on eco-economics investigates alternatives that might be suggested by Frank's optimodality and the larger question of permaculture in the trilogy.

<sup>lviii</sup> Zizek argues that, "...the key struggle is the particular one: one can solve the universal problem (of the survival of the human species) only by first resolving the particular deadlock of the capitalist mode of production" (*Living*, 334).

<sup>lix</sup> In *Archaeologies of the Future*, Jameson writes, "This is why it is a mistake to approach Utopia with positive expectations, as though they offered visions of happy worlds, spaces of fulfillment and cooperation, representations which correspond generically to the idyll or the pastoral rather than the utopia...the Utopians, which, like those of the great revolutionaries, always aim at the alleviation and elimination of the sources of exploitation and suffering, rather than at the composition of blueprints for bourgeois comfort...these are however maps to be read negatively" (12).

<sup>lx</sup> There has been a lot of discussion in environmental circles recently regarding the fact that discussion of climate change has been completely absent from the 2012 presidential campaign even after the worst drought in North America's recorded history this previous summer, and the hottest year on record, etc. This is obviously a stark contrast to President Chase's successful campaign in the trilogy. There is general skepticism, even in mainstream democratic environmental organizations, following President Obama's focus upon climate change in his 2<sup>nd</sup> inaugural address (of course, the optimistic – or gullible? – continue to hope for some presidential action that skirts the fossil-fuel dependent congressional delegates).

---

<sup>lxi</sup> Easterbrook's uses Gibson's "Pattern Recognition" and other works to make this point. It's also clear that this is simply a more obvious manifestation of the claim that science fiction, whether alternative futures or alternative histories, is in actuality always about its contemporary moment.

<sup>lxii</sup> The civil disobedience act, strangely, was "invite only."

<sup>lxiii</sup> More details on the economic and environmental aspects of the pipeline (both practically and politically to come below; with particular emphasis on its relation to environmental justice and global climate change environmentalism

<sup>lxiv</sup> Interestingly, the event that probably did the most to bring climate change back into public discourse, following a presidential campaign season in 2012 in which it wasn't mentioned by the Democrat and openly mocked by the Republican candidate, was the flooding and destruction Hurricane Sandy caused along the highly populated northeast coast in the fall of 2012.

<sup>lxv</sup> McKibben is the author of the first book on climate change intended for a public audience; *The End of Nature*.

<sup>lxvi</sup> The quite sizable number of arrests in D.C. did not garner mainstream news coverage in the U.S.

<sup>lxvii</sup> Devall and Sessions are the most likely reference point for American environmental theorists, from their 1985 work *Deep Ecology*.

<sup>lxviii</sup> An obvious example would be the ongoing battles regarding what Di Chiro has theorized as "social reproduction" which we discussed in chapter 2.

<sup>lxix</sup> *The Breakthrough Institutes 3-part plan to continue work on climate change issues while "back grounding" climate change as an issue itself is rather fascinating in its own Machiavellian way. I will suggest, however, that these proposed changes to mainstream environmentalism go beyond so-called environmentalism 2.0 in some very problematic ways. This certainly complicates Ziser and Sze's understanding of mainstream environmentalism in what appears to be becoming a landscape in which hope for a binding and effective international treaty to reduce greenhouse gases is all but vanished. Furthermore, the Institute's recent report is in many ways an excellent example of Di Chiro's "ecoliberalism" outlined above.*

<sup>lxx</sup> See Robert Bullard, Joni Adamson, Julie Sze.

<sup>lxxi</sup> The piece is published under Roger Pielke Jr. as lead author and Nordhaus and Shellenberger among others as contributors.

<sup>lxxii</sup> James Gustave Speth's *The Bridge at the Edge of the World* offers a very interesting take on the economics of climate change that in many ways furthers my brief critique of Breakthrough's interpretation of climate debt despite its publication 3 years prior to this position paper.

<sup>lxxiii</sup> McKibben adds, "The people we consulted were helpful, but they were mostly veterans of an earlier era of social protest, and they kept talking about the need for a march on Washington. That seemed wrong, and not just because we lacked the chops to pull it off... The architecture of the U.S. had changed... in a way that opened up new possibilities" (207).

<sup>lxxiv</sup> It is interesting to note that 350.org, which has become one of the most influential environmental organizations in the U.S. working on climate change, is the direct result of a senior seminar at an expensive liberal arts college in the northeast, Middlebury College.

<sup>lxxv</sup> For instance, in the preface to *Eaarth*, McKibben writes, "It's true that we've lost that fight, insofar as our goal was to preserve the world we were born into. That's not the world we live on any longer, and there's no use

---

pretending otherwise. But damage is always relative. So far we've increased global temperatures about a degree, and it's caused the massive change chronicled in chapter 1. That's not going to go away. But if we don't stop pouring more carbon into the atmosphere, the temperature will simply keep rising, right past the point where *any* kind of adaptation will prove impossible" (Preface, xv).

<sup>lxxvi</sup> Elsewhere he likens it to a serious disease; "But between global warming and the end of oil and the economic backwash from both, it's as if we've come down with a chronic disease that slows us down, stoops us over. Now we have to engage in some triage, decide what from our previous life we most want to keep, and how we plan to do it" (124).

<sup>lxxvii</sup> He writes, "We need to choose safety instead of risk, and we need to do it quickly..." (124). And, "It's not just poor people in poor nations who are exposed to the elements now, but all of us. We've got to make our societies safer, and that means making them smaller. It means, since we live on a different planet, a different kind of civilization" (125).

<sup>lxxviii</sup> The apathy he fears may look very much like the cynical argument recently making the rounds on conservative news stations; and that Colbert has dubbed the conservative move straight from climate change denial to acceptance.

<sup>lxxix</sup> Thankfully, at the very least, it is better than a "change your light bulbs" type list (such as the infamous 'to do' list at the end of Al Gore's *An Inconvenient Truth*).

<sup>lxxx</sup> United States. U.S. Department of State. "Keystone XL Pipeline Project: Draft Supplementary Environmental Impact Statement." N.p.: 1 March 2013.

---

### Works Cited

- Adamson, Joni. *American Indian Literature, Environmental Justice, and Ecocriticism: The Middle Place*. Tucson: U of Arizona Press, 2001. Print.
- Aliamo, Stacy. *Bodily Natures: Science, Environment, and the Material Self*. Bloomington: Indiana University Press, 2010. Print.
- . "Sustainable This, Sustainable That: New Materialisms, Posthumanism, and Unknown Futures." *PMLA* 127.3 (May 2012): 558-564. Print.
- Athanasidou, Tom. *Divided Planet: The Ecology of Rich and Poor*.
- Bahng, Aimee. "Extraplotating Transnational Arcs, Excavating Imperial Legacies: The Speculative Aspects of Karen Tei Yamashita's *Through the Arc of the Rainforest*." *Melus* 33.4 (2008): Jstor. Web. 1 March 2013.
- Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham: Duke UP, 2007. Print.
- Barkow, Jerome H., Leda Cosmides and John Tooby, eds. *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*. New York: Oxford UP, 1992. Print.
- Bennet, Jane. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke UP, 2012.

---

Print.

Brune, Michael. "The Day We Move Forward On Climate." *Coming Clean: The Blog of*

*Executive Director Michael Brune*. 6 Feb. 2013. Web. 1 March 2013.

---. "From Walden to the White House." *Coming Clean: The Blog of Executive Director*

*Michael Brune*. 22 Jan. 2013. Web. 1 March 2013.

Buell, Lawrence. *The Environmental Imagination: Thoreau, Nature Writing, and the*

*Formation of American Culture*. Cambridge, Mass: Harvard UP, 1995. Print.

---. "Ecocriticism: Some Emerging Trends." *Qui Parle* 19.2 2011, 87-115. JStor. Web. 1

March 2013

---. *The Future of Environmental Criticism: Environmental Crisis and Literary*

*Imagination*. Malden: Blackwell, 2005. Print.

Chakrabarty, Dipesh. "The Climate of History: Four Theses." *Critical Inquiry* 35

(Winter 2009). JStor. Web. 1 March 2013.

Chin, Allison. "Today We Take Part in Civil Disobedience for the Climate." *Compass:*

*Pointing the Way to a Clean Energy Future*. 13 Feb. 2013. Web. 1 March 2013.

Chura, Patrick. *Thoreau the Land Surveyor*. Gainesville: U of Florida Press, 2010. Print.

Cooper, Melinda. *Life as Surplus: Biotechnology and Capitalism in the Neoliberal Era*.

---

Seattle: U of WA Press, 2008. Print.

Cronon, William. "The Trouble with Wilderness; or Getting Back to the Wrong Nature."

In *Uncommon Ground: Rethinking the Human Place in Nature*. ed. William

Cronon. New York: Norton, 1995. Print.

Devall, Bill and George Sessions. *Deep Ecology: Living as if Nature Mattered*.

Layton, UT: Gibbs Smith, 1985. Print.

Di Chiro, Giovanna. "Living Environmentalisms: Coalition Politics, Social Reproduction

and Environmental Justice." *Global Environmental Politics* 17.2 (2008): 276-

298. Print.

---. "Nature as Community." In *Uncommon Ground: Rethinking the*

*Human Place in Nature*. Ed. William Cronon. New York: Norton, 1995. Print.

---. "Beyond Ecoliberal 'Common Futures'; Environmental Justice, Toxic Touring, and

a Transcommunal Politics of Place." In *Race, Nature and the Politics of*

*Difference*. Eds Moore, Kosek, Pandian. Durham: Duke UP, 2003. Print.

Donahue, Brian. *The Great Meadow: Farmers and the Land in Colonial Concord*. New

Haven: Yale UP, 2004. Print.

Easterbrook, Neil. "Recognizing Patterns: William Gibson's Hermeneutics from the

- 
- Bridge Triptych to Pattern Recognition.” *Beyond Cyberpunk: New Critical Perspectives*. Eds. Graham J. Murphy and Sherryl Vint. New York: Routledge, 2010. 46-64.
- Everndon, Neil. *The Social Construction of Nature*. Baltimore: John’s Hopkins UP, 1992. Print.
- Haraway, Donna. *Primate Visions: Gender, Race, and Nature in the World of Modern Science*. New York: Routledge, 1989. Print.
- . *Simians, Cyborgs, and Women: The reinvention of Nature*. New York: Routledge, 1991. Print
- . *When Species Meet*. Minneapolis: U of Minnesota Press: 2008. Print.
- Posthumanities, 3.
- Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: U of Chicago Press, 1999. Print.
- . “Desiring Agency: Limiting Metaphors and Enabling Constraints in Dawkins and Delueze/Guattari.” *SubStance* 94/95 (2001): 144-159. Project Muse. Web. 1 April 2013
- Huggan, Graham. “Greening Postcolonialism: Ecocritical Perspectives.” *MFS* 50.3

---

(2004): Project Muse. Web. 1 April 2013.

Heise, Ursula. *Sense of Place and Sense of Planet: The Environmental Imagination of the Global*. New York: Oxford Press, 2008. Print.

Jameson, Fredric. *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions*. London: Verso, 2005. Print.

Klinge, Matthew. *Emerald City: An Environmental History of Seattle*. New Haven: Yale UP, 2007. Print.

Latour, Bruno. *Politics of Nature: How to Bring the Sciences into Democracy*. Trans. Catherine Porter. Cambridge: Harvard UP, 2004. Print.

Leane, Elizabeth. "...". In *Kim Stanley Robinson Maps the Unimaginable; Critical Essays*. Ed. William J. Burling. Jefferson: McFarland, 2009. Print. Critical Exploration in Science Fiction and Fantasy, 13.

Lockhurst, Roger. "The Politics of the Network: The Science in the Capital Trilogy." In *Kim Stanley Robinson Maps the Unimaginable; Critical Essays*. Ed. William J. Burling. Jefferson: McFarland, 2009. Print. Critical Explorations in Science Fiction and Fantasy, 13.

Markley, Robert. *Dying Planet: Mars in Science and the Imagination*. Durham: Duke

---

UP, 2005. Print.

McKibben, Bill. *Eaarth: Making a Life on a Tough New Planet*. New York: St. Martin's, 2010. Print.

---. *The End of Nature*. New York: Random House, 1989. Print.

---. "Global Warming's Terrifying New Math." *Rolling Stone Magazine*, 19 July 2012: Web. 1 Dec. 2012.

Merchant, Carolyn. "Reinventing Eden: Western Culture as a Recovery Narrative." In *Uncommon Ground: Rethinking the Human Place in Nature*. Ed. William Cronon. New York: Norton, 1995. Print.

Mitchell, Timothy. *Rule of Experts: Egypt, Techno-Politics, Modernity*. Berkeley: U of California Press, 2002. Print.

Morton, Timothy. *Ecology Without Nature: Rethinking Environmental Aesthetics*. Cambridge: Harvard UP, 2007.

---. *The Ecological Thought*. Cambridge: Harvard UP, 2010. Print.

Myers, Jeffrey. *Converging Stories; Race Ecology, and Enviornmental Justice in American Literatre*. Athens: U of Georgia Press, 2005. Print.

Newman, Lance. *Our Common Dwelling; Henry Thoreau, Transcendentalism and the*

---

*Class Politics of Nature*. New York: Pelgrave, 2008. Print.

---. "Thoreau's Natural Community and Utopian Socialism." *American Literature* 75.3

(2003): 515-544. Web. Project Muse.

Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge:

Harvard UP, 2012. Print.

Nordhaus, Ted and Michael Shellenberger. *Breakthrough: From the Death of*

*Environmentalism to the Politics of Possibility*. New York: Houghton Mifflin, 2007. Print

Opperman, Serpil. "Theorizing Ecocriticism: Toward a Postmodern Ecocritical

Practice." *ISLE* 13.2 (2007): 103.128. Web. JStor.

"Our Mission." [www.350.org](http://www.350.org). Web. 1 April 2013.

Outka, Paul. *Race and Nature: From Transcendentalism to the Harlem Renaissance*.

New York: Palgrave, 2009. Print.

Peet, Richard and Michael Watts, eds. *Liberation Ecologies*. New York: Routledge,

2004. Print.

Phillips, Dana. *The Truth of Ecology: Nature, Culture and Literature in America*.

Oxford: Oxford UP, 2003. Print.

Pielke, Roger Jr. and Ted Norhaus and Michael Shellenberger et al. "Climate

---

Pragmatism: Innovation, Resiliency, and No Regrets.” *Breakthrough Institute* 25

July 2011. Web. 1 April 2013.

Prettyman, Gib. “Living Thought: Genes, Genres and Utopia in the Science in the Capitol Trilogy.” In *Kim Stanley Robinson Maps the Unimaginable: Critical Essays*. Jefferson: McFarland, 2009. Print. Critical Explorations in Science Fiction and Fantasy, 13.

Reed, T.V. “Toxic Colonialism, Environmental Justice, and Native Resistance in Silko’s *Almanac of the Dead*.” In *MELUS*: 34:2 (2009). 25-42. Print.

Robinson, Kim Stanley. *Blue Mars*. New York: Random House, 1996

---. *Fifty Degrees Below*. New York: Random House, 2005. Print.

---. *Forty Signs of Rain*. New York: Random House, 2004. Print.

---. *Green Mars*. New York: Random House, 1994. Print.

---. *Sixty Days and Counting*. New York: Random House, 2007. Print.

---. *Red Mars*. New York: Random House, 1993. Print.

Romero, Channette. “Envisioning a ‘Network of Tribal Coalitions’ in Leslie Marmon

Silko’s *Almanac of the Dead*.” In *The American Indian Quarterly*: 26:4 (2002). 623-640.

Print.

---

Rosenthal, Elizabeth. "Life After Gas and Oil." *New York Times* 23 March 2013.

*Newyorktimes.com* Web. 30 March 2013.

Schlosberg, Eric and David Carruthers. "Indigenous Struggles, Environmental Justice, and Community Capabilities." In *Global Environmental Politics*: 10:4 (2010). Print.

Silko, Leslie Marmon. *The Almanac of the Dead*. New York: Simon & Schuster, 1991. Print.

Speth, James Gustave. *The Bridge at the End of the World; Capitalism, the Environment and Crossing from Crisis to Sustainability*. New Haven: Yale UP, 2008.

Tillett, Rebecca. "'The Indian wars have never ended in the Americas': the politics of memory and history in Leslie Marmon Silko's *Almanac of the Dead*." *Feminist Review*. 85 (2007): 21-39. Print.

Thoreau, Henry David. *The Portable Thoreau*. Ed. Carl Bode. New York: Penguin, 1982.

Thoreau, Henry David. *The Journal; 1837-1861*. Ed. Damion Searls. New York: NY Review of Books, 2009.

United States. U.S. Department of State. "Keystone XL Project Environmental Report." N.p.: Nov. 2008. Web. 1 April 2013.

United States. U.S. Department of State. "Keystone XL Pipeline Project: Draft

---

Supplementary Environmental Impact Statement.” N.p.: 1 March 2013. Web. 15

March 2013

Vance, Linda. “Ecofeminism and Wilderness.” *NWSA Journal* 9.3 (1997): 60-76.

Jstor. Web. 1 Sept. 2012.

Walls, Laura Dassow. *Seeing New Worlds: Henry David Thoreau and 19<sup>th</sup> Century*

*Natural Science*. Madison: University of Wisconsin Press, 1995. Print.

Walls, Laura Dassow. “Believing in Nature: Wilderness and Wildness in Thoreauvian

Science”. In *Thoreau’s Sense of Place: Essays in American Environmental*

*Writing*. Ed. Richard J. Schneider. Iowa City: U of Iowa Press, 2000. Print.

White, Damien F. and Chris Wilbert, eds. *Technonatures: Environments, Technologies,*

*Spaces, and Places in the Twenty-first Century*. Ontario: Wilfred Laurier UP,

2009. Print.

Williams, Raymond. *The Country and The City*. Oxford: Oxford UP, 1973. Print.

---. “Ideas of Nature.” In *Problems in Materialism and Culture*. London: Verso, 1980.

Print.

Wolfe, Cary. *What is Posthumanism?* Minneapolis: U of Minnesota Press, 2010. Print.

Posthumanities, 8

---

Yamashita, Karen Tei. *Through the Arc of the Rainforest*. Minneapolis: Coffee House

Press, 1990. Print.

Ziser, Michael and Julie Sze. "Climate Change, Environmental Aesthetics, and Global

Environmental Justice Cultural Studies." *Discourse* 29.2 (2007): 384-410. JStor.

Web. 30 Aug. 2012.

Zizek, Slavoj. *Living in the End Times*. London: Verso, 2010. Print.

"9051." *The Colbert Report*. Comedy Central. 28 Jan. 2013. Television.