Anthropocene Entanglements:

The Novum, Policy, and Environment in Science Fiction by Wyndham, Atwood, and Liu

by

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Abstract

This dissertation argues that Darko Suvin's proposed literary device unique to science fiction, "the novum", is entangled with national state policy and environmental politics, and that up to now this has not been studied with sustained focus. I propose that the emergent sub-genre cli-fi is really just the distillation of ongoing concerns about the compounding problems of life in the Anthropocene that have long been present in much science fiction. By exploring the relationship between the novums of science fiction novels and national state policies the project reveals the unique perspectives the science fiction genre offers for addressing the Anthropocene.

I put forward the notion of the "national political imaginary" as a concept useful in understanding temporary landscapes of thought that include political discourse and artistic production alike. I argue that the novum helps reveal how the subtext and themes within the fiction and the social forces driving the policy are connected through an axis of environmental concern. The case studies span three distinct time periods in the UK, Canada, and China connecting geo-political, bio-cultural, and socio-political policies to novels by John Wyndham, Margaret Atwood, and Cixin Liu respectively.

Adopting a New Historicist approach, the chapters first explain the historical conditions and particular cultural and national elements that give rise to each policy, before undertaking close readings of the novels. The close readings explore the environmental subtext in the novels that is revealed through each novum's function as a conduit to each respective national state policy. Ultimately finding the novum to have more significant political dimensions than previously theorized, and that it is resonant with Fredric Jameson's theory of the political unconscious, the project serves as a bridge between policy studies and literary studies, potentially opening new dialogical possibilities for future scholars.

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Dedication

To all those whose imaginations allow the specters of the future to speak:

thank you, we are trying to listen.

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Introduction

"Deep in the human unconscious is a pervasive need for a logical universe that makes sense, but the real universe is always one step beyond logic."

– Frank Herbert, *Dune* (1965)[1]

The biomes of our world are increasingly sensitive to the human presence, and the complexities of the damages our interconnected societies are perpetuating are leading to more global volatility and unpredictability for life, including our own. It is imperative that individuals, communities, and nations around the world seek new ways of thinking further ahead, creatively, and predictively, to restrain and mitigate such complexities of damage.

This project enforces my belief in the power of science fiction to expand global understanding about environmental issues and to help scholars address some of the complexities of life in the Anthropocene. I do not see science fiction being read frequently or taken seriously enough as a component of environmental study. In fact, science fiction still seems widely considered a form of escapism or as distinctly separate from the concrete realities of our daily lives. This project shows that it is time for an overall readjustment, or reorientation to science fiction that more fairly considers its political potential.

The reason such a reconsideration of science fiction seems necessary to me is that the genre enjoys a wide general readership, is increasingly being given more serious study by literary scholars and is capable of motivating future-oriented thinking. More importantly, science fiction is a genre filled with significant political subtext relevant to environmental thought, a

[1] See Frank Herbert, *Dune*, New York: Berkley Pub. Corp., 1978 (1965), Page 383, Print.

good deal of which has not been identified in scholarship to date. By reading science fiction novels from different time periods in dialogue with national state policies, this project promotes the political relevance of science fiction studies.

The Project Thesis

My hypothesis when formulating this research project initially was that putting science fiction novels into dialogue with the national state policies concurrent with the time periods of their creation would generate dynamic avenues for understanding and relating to the Anthropocene in our times. The most basic definition of the Anthropocene defines it as an "era of geological time during which human activity is considered to be the dominant influence on the environment, climate, and ecology of the earth" (OED).[2] By studying novels by John Wyndham, Margaret Atwood, and Cixin Liu alongside national state policies, this project has found that the Anthropocene can be explored through the diversity of ways in which nations contribute to exacerbating it. More specifically, my research has identified, and the chapters reveal, that the novum can and should be read as a political artifact, and through interplay with the characters and other elements of a text, makes a useful conduit for identifying environmental subtext.

The novum, first proposed by Yugoslavian-Canadian science fiction scholar Darko Suvin, is the structurally integrated estrangement device unique to science fiction, and is discussed at length in the coming pages and chapters.[3] My research shows that there may be significant interplay between the conscious choices and the unconscious forces that inform the

[2] See "Anthropocene, n. and adj.", *OED Online*, Oxford University Press, www.oed.com/view/Entry/398463.

[3] For a sustained explanation of the novum as a device, see: Darko Suvin, *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre*, Yale University Press, New York, 1979, Print. For a very detailed explanation of the novum that is far too in-depth to repeat here, see in particular chapter 4: "SF and the Novum" (pages 63-84).

creation of the novums of science fiction novels.[4] The conscious choices shaping the novum come from the individual authors and are motivated by the particular conventions of science fiction, by each author's unique imagination, and by their extrapolations about uncertain futures. This project closely examines each novum, arguing that each is partly informed by unconscious collective forces that are more often political than not, and can be traced directly to the particular policy orientations of the three nation-states in specific time periods. I argue in this project that science fiction writers are driven by what I have chosen to call the *national political imaginary*, a concept that is a fusion of several other ideas, including Arjun Appadurai's ideoscapes, Fredric Jameson's the political unconscious, Lisa Cooke's national–cultural imaginaries, and the economically-centered "historical semantics" tied to Darko Suvin's theory of the novum in science fiction.[5]

The National Political Imaginary

The trace or even the distinct outline of the national political imaginary can be discerned by a careful examination of the novum in science fiction novels. Further sustained examination of the novum offers complex alternatives to surface readings of science fiction that privilege plot or character-based analysis. I see my project as written in the spirit of philosophical interplay between Roland Barthes call to eliminate critical focus on the individuality of the author, and Michel Foucault's claim that the discourses surrounding authorship need to be more fully understood.

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[4] In this dissertation I prefer not to abbreviate science fiction to "sf", "SF", "sci fi" or "sci-fi", with the exception being within my footnotes. There are many reasons for this, not the least of which includes potential confusion with the term "speculative fiction", which I dislike. Mostly however, I prefer the more formal term for its constantly reminding the reader of the genre's connection to science as a particular branch of knowledge.

[5] All of these concepts will be defined in this introduction in order to explain how they have influenced my decision to use the term "national political imaginary".

Study of characters and plot in literature that explore biographical connections to the authors of those texts have long been problematized by Roland Barthes's influential essay "The Death of The Author", in which he claims that "ordinary culture is tyrannically centered on the author", and that "explanation of a work is always sought in the man or woman who produced it, as if it were always in the end [...] the voice of a single person, the author 'confiding' in us" (143).[6] I have considered throughout completing this project the warning inherent in Barthes essay about assumptions relating to the intentions of authors or to the details of their biographies. And yet, it is equally difficult to ignore Foucault's naming of the characteristic traits of author-function, especially his assertion that "author function is linked to the juridical and institutional system that encompasses, determines, and articulates the universe of discourses" and that "it is not defined by the spontaneous attribution of a discourse to its producer, but rather by a series of specific and complex operations" (113).[7] This project does not ignore but rather decenters the author in favour of exploring how the national political imaginary is revealed and expressed through the novum.

To accomplish this decentering, the chapters build on an understanding of the novum as a literary artifact created by subconscious influences that come from the author's primary environment of ideological development and political attachment, the nation. The internal political discourses of nations are the places from which this project demonstrates the novum is primarily drawn. Nations are collective political spaces—contentious spaces in constant flux—but discernible spaces where dominant and competing ideologies coalesce, nonetheless. This

[6] See Roland Barthes and Stephen Heath, *Image, music, text,* Fontana, 1977.

[7] See Michel Foucault, "What is an Author?", in *The Foucault Reader,* edited by Paul Rabinow, New York, 1984.

project shows that the arena of policy is the site of contention from which the national political imaginary contributes to how authors subconsciously shape the novums of science fiction novels.

Each chapter explores in detail how the novum of a particular novel (or series of novels) is nested in national policy, and each proves that dialogically reading the novels against that policy allows for more dynamic understanding of the subtext of the novels. Specifically, once the ideological influences on the novum are discerned, distinctly unique readings of the novels that have political value become possible. As these readings rely in part on the subconscious motivators behind each author's work and the collective forces shaping the novum, in small or large part, important political meaning is revealed as repressed, yet detectable within the subtext. By subsequently exploring how the characters in the novels under study interact with each novum, environmentally correlated nuance is revealed. The fact that study of the novum reveals a predominant environmental subtext has implications for scholarly reconsideration of the power of science fiction to address the Anthropocene.

The close readings in my three major chapters show the novum is useful in understanding important differences in how the UK, Canada and China have shaped their policies and to what degree they are environmentally relevant. Even though each chapter engages with different policies in different time periods, the project reveals one chapter at a time how entangled these policies are with the novum, with environmental thought, and even with one another. I use entanglement in the spirit of Karen Barad's definition of the term as "not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence" (ix).[8] Entanglement seems to me a most important term when thinking the

[8] See Karen Barad, *Meeting The Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, Duke University Press, London, 2007, Ix, Print.

Anthropocene, as nothing that the diversity of different human groups do is really ever as insulated or separate as we think.

My sense is that the general public, even those already environmentally conscious, experience a fatigue from hearing about problems that cannot be solved without sacrificing their livelihoods or their happiness when the Anthropocene is presented too simplistically as the result of pollution, our reliance on fossil fuels, and overpopulation. By retroactively reading selected science fiction and policy together within national contexts and then comparing the findings, this project reveals underexplored facets of the Anthropocene in the three overarching areas I have chosen for the focus of this project: geo-political, bio-cultural, and socio-political.

The Anthropocene and Science Fiction Studies

One of many difficulties arising from the notion of the Anthropocene as an era of geological time, is that the Anthropocene—and the Holocene epoch of which the Anthropocene makes up a small portion—are still ongoing time periods whose relative points of termination are unknown. In their influential book *The Great Acceleration* (2016), J. R. McNeill and Peter Engelke show how both the Anthropocene era and the Holocene epoch that contains it, define the outside edges of the story of human development: "all of what is conventionally understood as human history, the entire history of agriculture and of civilization, has taken place in the Holocene" (1). The authors link the dramatic rise in humanity's ability to significantly impact the earth to the advent of the nuclear age, a position that I find persuasive and share for the purposes of this project, despite the fact that there is much debate in both the geological and wider scientific communities about exactly when the Anthropocene began.

The reason connecting the Anthropocene to the advent of the nuclear age makes the most sense is not a matter of debating the question of how much impact humanity has had on the geological record before that time, but of the new potential for negative impact inherent in stored nuclear materials, including weapons and fuel rods. Aside from an extensive global history of nuclear testing,[9] and the disastrous nuclear accidents at both Chernobyl and Fukushima, the world has so far avoided the worst-case scenario of all-out conflict between nuclear powers, which leading scientists estimate could trigger a nuclear winter resulting in the mass die-off of most species. This unrealized potential power of human beings to shape the geological future of the earth is many magnitudes greater than at any time in history previous to the Trinity test, including the previous invention of any technology, the historical use of any resources, or the scale of any agriculture.

In Rachel Carson's book *Silent Spring* (1962), she identified in slightly different terms the profound impact radiation would have on the natural environment:

> The most alarming of all man's assaults upon the environment is the contamination of air, earth, rivers, and sea with dangerous and even lethal materials. This pollution is for the most part irrecoverable; the chain of evil it initiates not only in the world that must support life but in living tissues is for the most part irreversible. In this now universal contamination of the environment, chemicals are the sinister and little-recognized partners of radiation in changing the very nature of the world—the very nature of its life. (6)

[9] See Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), "Nuclear Testing World Overview": "The history of nuclear testing began early on the morning of 16 July 1945 at a desert test site in Alamogordo, New Mexico when the United States exploded its first atomic bomb. Designated as the Trinity Site, this initial test was the culmination of years of scientific research under the banner of the so-called "Manhattan Project". In the five decades between that fateful day in 1945 and the opening for signature of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) in 1996, over 2,000 nuclear tests were carried out all over the world."

Throughout *Silent Spring*, one of Carson's main concerns is the chain of events initiated by the nuclear and chemical age and our inability to understand the extent of the damage. I see in the subtext of the science fiction I selected for this dissertation project, and in the science fiction I read generally, a manifestation of the desire to understand the implications for the environment of the general trajectory of the various human manipulations of the natural environment.

The human impact upon the planet is a long and complicated story of manipulations on a widely varied scale. Whether traced to our ability to manipulate fire, the invention of the printing press, the burning of coal and subsequently discovered fuels, the rampant creation of pharmaceuticals, the atomic age, the creation of nanomaterials or artificial intelligence, the Anthropocene is a process and a concept too large for any one accounting. We live nevertheless, and all of us contribute daily to this era of manipulation that we will never see from the outside. We stand inside the future's history, surrounded by scientific data confirming our worst fears that we are destroying our only home. Data, however, is cold and emotionless. Data has never been enough to change the world.

Literature on the other hand, has long been an important resource offering readers the opportunity to understand the lives of others, diverse views of history and the present, and the flaws inherent in the human condition, arguably with the added benefit of motivating readers to change their thinking or their behaviour. Literary scholars have been increasingly exploring how literature can help to understand the Anthropocene, beyond the data, as cultural and political object. The policy subjects I have chosen to study in their national contexts and at particular time periods for this project help reveal three relatively stable national political imaginaries that give rise to three distinct novums. The exploration of the interplay between these novums and

national policy allows this dissertation to identify the dynamic nature of the science fiction genre's power to address the Anthropocene.

Popularized by chemists Paul J. Crutzen and Eugene F. Stoermer, the term "Anthropocene" came into common use only recently (around the year 2000), and it has since that time been generating interest in many academic disciplines, including in the field of literary studies. In 2016, my dissertation advisor, globalization and cultural studies specialist Diana Brydon, called the term Anthropocene "a possible successor to globalization as a new grand theory to describe the challenge of our times".[10] Though also critical of the pitfalls of such a broad term, she notes that "it pushes our thinking beyond interdisciplinary dialogue into bringing together categories that we have traditionally been encouraged to keep apart: local and global, nature and culture, public and private, national identity and multicultural identity".[11] My hope is that this project, by reading science fiction novels alongside policy, represents such an unconventional merging of categories. Such a merging could lead to important changes to patterns of thinking the fantastic and the real separately in the study of literature.

Some scholars have explored the relationships between literature and the Anthropocene and others have been incorporating the term more explicitly into their research and writing. A very partial list might include: Stacy Alaimo, Brent Ryan Bellamy, Diana Brydon, Frederick Buell, Gerry Canavan, Timothy Clarke, Amitav Ghosh, Jon Gordon, Donna Haraway, Ursula K. Heise, Timothy Morton, Rob Nixon, Imre Szeman, Adam Trexler, Sheena Wilson, and Molly Wallace.[12] With varying focus on science fiction, these thinkers have explored the genre's

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[10] See Diana Brydon, "Renewing Transcultural Dialogues in the Age of the Anthropocene", Paper for the 4th International Conference on Multicultural Discourses, "Multi-Inter-or Trans-cultural Communication: Reflections", DianaBrydon.com, 2016.

[11] Ibid.

[12] For an accounting of the works attributed to these authors, all of which have been in some way influential to me in the process of composing this dissertation, please see the works cited at the end of the document.

relationship to, and utility for understanding, the Anthropocene. This would seem to make sense, given that science fiction has frequently concerned itself with the future, and increasingly directly with the possibilities and vulnerabilities offered to humanity in the Anthropocene.

The development of the subgenre of climate fiction for example (hereafter cli-fi), is often noted as one way in which science fiction is evolving to grapple with the enormity of the Anthropocene, and though that would at first seem self-evident, I argue that cli-fi is only the proof that science fiction was always already the genre of the Anthropocene.[13] Even the two texts most commonly taught as the "first" or "most significant" science fiction novels in English literature, Mary Shelley's *Frankenstein* (1818) and H. G. Wells' *The Time Machine* (1895), are concerned with humanity's desire to manipulate the systems and relations of the natural world. Both novels teach of the danger and the futility of such endeavours, with scales ranging from life within the individual body to the life of the globe within the solar system. This project is designed to motivate serious investigation of the nuanced ways that science fiction is the de facto literature of the Anthropocene, and by extension a genre deeply concerned with the development of ecological thinking about the future.

Within the literary tradition generally, science fiction has often been the testing ground for imagined potential futures, both positive and negative. A common method of understanding science fiction then, has been through the utopia/dystopia binary, one that however carefully explored by critics like Fredric Jameson and Slavoj Žižek, helps to further the impression that science fiction is only topically connected to the Anthropocene through narratives about disasters or the cornucopian prevention of such events. In his book *The Great Derangement*, Amitav

[13] For examples, see the article "The literature of the Anthropocene: A genre called Cli-Fi" by Gautham Shenoy, or *The Great Derangement* by Amitav Ghosh, page 72. It is important to note that Ghosh seems to believe that cli-fi, and by extension sci-fi, both fail to engage the full scope of the Anthropocene because of their narrow focus on the future, a position that I disagree with because it relies only on literal, and rather abstract interpretations of the texts.

Ghosh, citing from Margaret Atwood, agrees with Atwood's claim that speculative genres draw from worlds "located somewhere apart from our everyday one" (8).[14] I strongly disagree with this assessment, and find the truth to be quite the opposite. In partial response to this kind of disassociation of science fiction worlds from the everyday worlds of the Anthropocene experience, I argue that the source science fiction texts draw their particular speculative power from, is the national political imaginary. Cultural flows therefore move from direct public political discourse to inform the creation of science fiction novums.

Postcolonial scholar Arjun Appadurai, building on work by Benedict Anderson, identified five different "dimensions of cultural flow which [he] termed: (a) ethnoscapes; (b) mediascapes; (c) technoscapes; (d) finanscapes, and (e) ideoscapes" (296).[15] These, Appadurai argued, are what make up the "imagined worlds" that are "constituted by the historically situated imaginations of persons and groups spread around the globe" (297). These imagined worlds are to Appadurai, never precisely stable and together are responsible for "global flows" that "occur in and through the growing disjunctures between [the different scapes]" (301). There is a lot of resonance between the ideoscape and the novum as expressions of, and reactions to, policy: as Appadurai notes, ideoscapes are "often directly political and frequently have to do with movements explicitly oriented to capturing state power or a piece of it" (299).

This dissertation embraces the logic of ideoscapes for how they gesture to collective thought. That is, the study of ideoscapes involves exploring not only the specific authors, but also the ideological political landscape those authors draw upon when they write fiction, or that

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[14] See Margaret Atwood, *In Other Worlds: SF and the Human Imagination*, 1st U.S. ed. New York: Nan A. Talese/Doubleday, 2011, page 8, print. For Ghosh's use of the quotation from Atwood and response of agreement to it, see *The Great Derangement*, page 72.

[15] See Arjun Appadurai, "Disjuncture and Difference in the Global Cultural Economy", *Theory, Culture & Society* 7.2-3 (1990): 295–310, Web.

they identify with, likely subconsciously. In other words, though Atwood wrote portions of her *MaddAddam* trilogy while in Australia, and although it is set primarily in The United States, this project shows that she is still informed primarily by a Canadian ideoscape.[16] Though my project concerns itself with the ideologies of nations, it is also about the imagined worlds presented in the science fiction, so I feel it necessary to make use of a hybrid term for this project, one that speaks to both the political and the speculative, hence, the national political imaginary.

The idea of a national political imaginary is a theoretical measure of that which can never truly be quantified, the changeable will of a nation's peoples in the political sphere and how it orients itself within the global order of nations, and towards common issues. However, I believe there are some metrics for identifying the national political imaginary, such as historical context, political movements of support and opposition to particular political issues, and cultural production such as the publication of literature. It strikes me for example that the current Covid-19 pandemic that is playing out globally as I finish this dissertation will occupy a large place in the political national imaginaries of many nations for decades to come. Undoubtedly however, the national imaginary of Italy will reproduce a different trace of this historical event than that of Singapore or of Canada. The dominant political group in any nation will not always guide the national political imaginary, though its presence will be readily detectable in the policy discourse that it contributes to or controls.[17]

For example, I would argue that the Canadian national political imaginary of the past decade has been guided in large part by policy leading to the formation of and subsequently the

[16] For further explanation on this point, see Chapter 2.

[17] Consequently, sometimes the national political imaginary *could be* driven by a party that has no chance of forming national government, such as the Parti Québécois. This was the case during both the 1980, and the 1995 referendums, which dominated the national political focus during those years.

enacting of the recommendations of the *Truth and Reconciliation Commission of Canada*. The historical context for the development of the commission—including the marginalization, systematic oppression, and genocide of Indigenous peoples—is now well known to many settler -colonial Canadians and is now being included as part of elementary school curriculums. The recommendations of the commission have led to increased political authority behind protests for Indigenous rights,[18] critiques about perceived failures to implement the "calls to action",[19] and even a CBC website "Beyond94" dedicated to tracking such progress.[20] Finally, there has been an increase in recognition of and attention to Indigenous literary fiction and testimony written by those who experienced systematic racism or colonial violence. For example, books such as *Kiss of the Fur Queen* (1998) by Tomson Highway,[21] and *Broken Circle: The Dark Legacy of Indian Residential Schools, A Memoir* (2010) now feature more regularly on university reading lists.[22]

The focus of the Canadian national political imaginary of the past decade that is mentioned above does seem to hold real promise for changing the lives of Indigenous Canadians, but it is also possible that the release of the 94 recommendations could perpetuate the illusion that Indigenous groups have achieved some measure of equality of opportunity with settler-colonial Canadians. This could become a real problem if political groups in Canada adopt the

[18] See Leyland Cecco, "Pipeline battle puts focus on Canada's disputed right to use Indigenous land", *The Guardian*, Friday, January 11th 2019, https://www.theguardian.com/world/2019/jan/11/canada-pipeline-Indigenous-trudeau-treaty.

[19] See Maura Forrest, "It's been two years since the Truth and Reconciliation Commission's final report. Are the Liberals living up to their promises?" *The National Post*, December 15th, 2017, https://nationalpost.com/news/politics/its-been-two-years-since-the-truth-and-reconciliation-commissions-final-report-are-the-liberals-living-up-to-their-promises

[20] See "Beyond94: Truth and Reconciliation in Canada", CBC News, March 19th, 2018. https://newsinteractives.cbc.ca/longform-single/beyond-94?&cta=1.

[21] See Tomson Highway, *Kiss of the Fur Queen*, Doubleday, Toronto, 1998, Print.

[22] See Theodore Fontaine, *Broken Circle: The Dark Legacy of Indian Residential Schools, A Memoir*, Heritage House Publishing, Oct. 2010, Print.

fantasy that the end of the TRCC equates to the end of systemic racism in Canada. Adopting fantasy such as this as a part of one's cultural identity is not that unusual.

For example, social anthropologist Lisa Cooke writes about the variety of ways that the idea of "[the] 'North' figures in Canadian national–cultural imaginaries as a phantasm" (236).[23] She finds that these imaginaries are really "settler colonial national-imaginaries", whose work is "to produce stories, places, and symbols that draw people into the 'imagined community' of these settler colonial nations by creating a comfortable distance between a historical colonial 'then' and a contemporary 'now'" (237). Science fiction makes a very similar move, only in the opposite temporal direction, creating a much less comfortable distance between an extrapolated "then" and a contemporary "now", inherently conveying through its subtext a position about the now.

The fact that stories can be tied to particular geographic locales is also important, because according to geography and environmental studies professor Emilie Cameron, stories "express something irreducibly particular and personal, and yet they can be received as expressions of broader social and political context, and their telling can move, affect, and produce collectivities" (574).[24] Though much science fiction writing is clearly informed by national political imaginaries expressing settler colonial utopias and the dissertation chapters show awareness of this fact, the main focus of each chapter is on how the national political imaginaries in question can be associated primarily with the policy focuses of particular times and places, giving a unique shape to the novum of each text.

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[23] See Lisa Cooke, "'North' in Contemporary Canadian National–cultural Imaginaries: a Haunted Phantasm", *Settler Colonial Studies* 6.3 (2015): 235-251, page 236, Web.

[24] See Emilie Cameron, "New Geographies of Story and Storytelling", Progress in Human Geography, vol. 36, no. 5, SAGE Publications, Oct. 2012, Web.

The Novum

Before exploring the relationship of the novum to policy in more depth, I would like to address the utility of the very concept of the novum in its application to recent science fiction. Two major questions relevant to my argument about the broad applicability of the concept of the novum must be addressed here: first, is the novum as a theoretical idea flawed due to its having been developed in tandem with the study of a relatively narrow cultural selection of science fiction literature? And second, in being used to theoretically engage with contemporary science fiction writing, does the term novum only prove useful when studying a science fiction novel with a wholly original, or "new" premise?

In reference to the first question, I argue that no, the novum is not a theoretical device of convenience; rather than simply an academic buzzword, the novum represents a very complex and multi-faceted approach to understanding science fiction. According to Suvin, it is not enough to state that cognitive estrangement is simply the experience readers have when they read science fiction. In *Metamorphoses of Science Fiction* (1979), in his chapter "SF and the Novum", Suvin lays out what he calls the *differentia specifica* of how the novum operates in science fiction texts. Suvin details not only why the novum is particular to science fiction, but also why the novum is not a concept applicable to other genres. For example, Suvin explains that supernatural fantasy typically "rejects cognitive logic and claims for itself a higher "occult" logic" (68), while what Suvin calls "limit-cases" like Stevenson's *The Strange Case of Dr. Jekyll and Mr. Hyde* are really "cheating in […] basic narrative logic" (69). Suvin then spends the bulk of *Metamorphoses* diligently testing all of the major tenets of the novum against the canonical western history of science fiction. If Suvin had stopped there, one might suspect it possible that

the novum was somehow specific to particular cultural-historical understandings of both cognition and estrangement developed first in the UK and then America.

Suvin however, seems to anticipate the need to test the veracity of the novum, and in his chapter "Russian SF and Its Utopian Tradition", explores the history of Russian science fiction with the same attention to the need to validate certain cognitive ideas and explores what tales delivered an experience of estrangement, when, and why. Suvin's exploration of Russian science fiction reveals, perhaps unsurprisingly, that many of the social aims of Russian science fiction were at odds with those of American (268), and that novels with an extra-terrestrial contact theme like Yefremov's *Andromeda* were primarily concerned with looking forward to a "unified, affluent, humanist, classless, and stateless world" that echoed the long enduring Leninist political visions in the Soviet Union (266). This observation serves as good support for Suvin's contention that the novum is "always a *historical* category since it is always determined by historical forces that both bring it about in social practice (including art) and make for new semantic meanings that crystalize the novum in human consciousness" (80).

This leads to the answer to the second question about whether the study of a novum requires the device to be wholly new when comparing the text to others in the field, which is a resounding no as well. Despite the diversity of science fiction texts, and the likelihood that many texts will use a similar or even identical novum, a seemingly unoriginal novum does not lose the qualities that make Suvin's theoretical framework about cognitive estrangement applicable. This is because each and every novum is informed by a different national political imaginary, and therefore through its interplay within the bounds of the story and with the characters, creates unique subtext that could help to reveal national ideological positions.

Though I hope the above paragraphs make clear this dissertation's acceptance of the key precepts of the novum, others have attempted to show a critical weakness in Suvin's writing, best exemplified by the detailed critiques of science fiction scholar Andrew Milner in his book *Locating Science Fiction* (2012). It isn't the novum per se that Milner disagrees with, but rather Suvin's, and by extension Fredric Jameson's, use of it to trace a history of science fiction as that which has been inherited from the older tradition of utopia, as well as its application as a tool for reinforcing genre as a classification. Milner does not agree on both of these points, using Raymond Williams theory of the "selective tradition"[25] to argue that both Suvin and Jameson are mistakenly trying to "redefine the tradition selectively by reselecting its ancestors" (37-38). Milner also takes issue with Suvin and Jameson's attempts to police the boundaries of science fiction as a literary genre, noting there is a cultural elitism in the selective nature of their respective studies: "In each case, the emphasis falls on either the European 'literary' SF of the late nineteenth and early twentieth centuries or its late twentieth-century North American counterpart" (57).

Milner also makes a strong case for the fact that seeking to identify a poetics or literary excellence within science fiction (as Suvin and Jameson do), is a transparent practice: "The 'literariness' of Literature is not, in fact, a property of a certain type of writing but rather a function of how different kinds of writing are socially processed, by writers themselves and by readers, publishers, booksellers, literary critics and so on" (58). I agree with many of Milner's arguments, including his criticisms of Suvin and Jameson's attempts to use theoretical ideas to selectively shape genre. I do not however, believe that the novum as a theoretical approach suffers any damage to its utility; if anything, I think that Milner successfully reveals a new way

[25] Milner cites both *Culture and Society* (1958) and *The Long Revolution* (1961).

to understand the novum as a framework for thinking about "formal expectations" that become "forces of production" in the science fiction story (37).[26]

Milner also aligns his work with theory by Mark Bould and China Miéville, arguing that the "scientific pretensions" in science fiction are "ideological fantasy" that merely advance a sort of justification of capitalism (103).[27] Though I can agree that on the surface many science fiction texts could possibly be understood in this way, this obscures some of the most important components of Suvin's theory of the novum, including the idea that science fiction is "postulated on and validated by the post-Cartesian and post-Baconian scientific method", which according to Suvin "does not mean that the novelty is primarily a matter of scientific facts" (64-65).[28] Milner's claim also ignores the fact that sometimes the scientific pretensions within the genre, such as those often showcased in hard science fiction stories, are scientifically accurate, and even when only theoretical in nature can occasionally become reality.[29]

Generally, Suvin and Jameson both seem to be, as Milner claims in *Locating Science Fiction*, "attempting a redefinition of the SF selective tradition […] aimed at retrospectively" including utopia (91). Milner seems sceptical about the inclusion of utopia in the genre of science fiction, and towards the end of the book he claims that "SF, utopia, dystopia and fantasy are analytically distinct but cognate genres" (178); I choose the middle path in this debate,

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[26] See Milner, *Locating Science Fiction*, 37.

[27] Milner cites China Miéville to support this claim: "The 'scientific pretensions' of SF, so effectively endorsed by both Suvin and Jameson, are thus critiqued by Miéville as themselves little more than ideological fantasy" (Milner 103).

[28] See Suvin, *Metamorphoses*, 64-65.

[29] Carl Sagan's *Contact*, Larry Niven's *Ringworld*, Isaac Asimov's *I Robot*, and Kim Stanley Robinson's *Mars Trilogy* are all good examples. *Contact* has partly helped to shape institutional and scientific approaches to extra-terrestrial contact efforts, not to mention public perception and funding (see: Sarah Sloat, "Alien Hunting 19 Years After *Contact*", Inverse.com, https://www.inverse.com/article/18040-alien-hunting-contact-jodie-foster-seti. Accessed July 31st, 2018.

because I believe that these extreme arguments about a genre as vast as utopia are not really tenable.

Some examples of utopic science fiction texts such as Arthur C. Clarke's *Childhood's End* (1953) still hold up to the theoretical application of the major tenets of the novum. In fact, like Cixin Liu's *Remembrance of Earth's Past* trilogy (the subject of chapter 3 in this project), Clarke's novel operates based on the first contact novum, the difference being that it offers a positive utopic vision for humanity's future rather than the dystopic one offered by Cixin Liu. Despite the cogency of some of Milner's ideas about the theoretical limitations of the novum outlined in the previous paragraphs, he does however admit the importance of the novum to science fiction theory. In *Locating Science Fiction*, Milner calls Suvin's definition of the novum "foundational", and notes that he frequently uses Suvin's novum related components "as pedagogical devices for teaching SF" (23).

Ultimately, when it comes to utopia, I follow Fredric Jameson's assertion that understanding the proximity of science fiction and utopia involves understanding what makes fantasy so very different from both.[30] Jameson uses the conceptual language offered by Suvin in *Metamorphoses* to argue that fantasy has "two other structural characteristics […] which contrast sharply with SF and can also serve as *differentia specificae* for this genre, namely the organization of fantasy around the ethical binary of good and evil, and the fundamental role it assigns to magic" (58).[31] These two observations alone make me less inclined to agree with Milner about the cognate nature of science fiction and fantasy, and convince me that the novum

[30] See Jameson, "The Great Schism", *Archaeologies of the Future* (2005), 57-58
[31] Ibid., 58.

remains a crucial tool in serious explorations of science fiction, even while many other aspects of the genre are continually debated.

Milner's work on genre has helped me to understand the breadth of the divisions that have developed in science fiction scholarship, but his work has also been informative to this project in another way. In *Locating Science Fiction*, he laments the predominance of fantastic apocalyptic visions for the earth: "What I want to see, in print, in film, on radio and on television, is SF that takes environmental problems as seriously as Cold War SF did the threat of nuclear war" (194). In his article "Changing the Climate: The Politics of Dystopia", Milner elaborated by stating that "SF, whether utopian or dystopian, whether in print, film or television, is as good a place as any for thought experiments about the social effects of climate change" (834). Milner acknowledges in the same article that "[p]roto-ecological thematics are clearly present in SF", with reference to Australian science fiction examples that grapple in subtle and more obvious ways with the serious threat posed to humanity by climate change (834). Milner finds that such texts are not as highly valued for their sobering warnings or received with the appropriate level of alarm by the reading public, at least "not yet" he ends (836). By focusing on widely read science fiction texts, I believe this project contributes to illuminating the real-world policy connections to the proto-environmental thematics as they manifest through novums as expressions of national political imaginaries in novels by John Wyndham, Margaret Atwood, and Cixin Liu.

National Political Imaginaries and the Anthropocene

Using novels by John Wyndham, Margaret Atwood, and Cixin Liu as case studies, the dissertation highlights how national political imaginaries can be understood through the novums

of the novels, in what ways they reflect on or connect to specific real-world policies, and why they matter to human life in the Anthropocene. The chapters that follow this introduction demonstrate how the novum is both tied to and shaped by policies themselves driven in turn by human manipulations in the era of the Anthropocene. The depth of each novum's connection to policy is revealed by each chapter first outlining the important social, political, and cultural contexts of each author's home nation and the discernible influences of those nations on each of the authors before carefully examining the subtext surrounding the novum in the respective novels. This parallel reading strategy helps this project offer a reconsideration of science fiction as an important literary chronicle of the Anthropocene and its entangled history with the evolution of human societies and their national political imaginaries. The project also positions the novum as the primary loci of the manifestation of the national political imaginary in science fiction, and therefore as a logical conduit for thinking critically about the environmental histories and politics of nations.

The history of science fiction's contribution to the development of environmental thinking might be easily overlooked by some readers and critics, as might the subtle ways that particular novels connect with national environmental policies. This is why the project closely interrogates exactly how science fiction is tied to policy by exploring the three nation states and their respective policies, the three authors, and the works produced by these authors in the chosen time periods. By doing so, this dissertation contributes to the study of literature, and specifically to science fiction studies, by highlighting the connections that have the potential to be valuable to scholars invested in making concrete connections between fiction and society, and to scholars interested in thinking about the less obvious aspects of the Anthropocene.

The relatively new conceptualization of the term Anthropocene, the fact of its dynamics being driven by increasingly discernible human activity, and its sheer scale raise epistemological and ontological questions that this project answers. These questions include: 1) In what less obvious ways can the Anthropocene be known? 2) How can individuals, social groups, nations, and the global community relate to the Anthropocene? 3) How can authors, politicians, and humanities scholars address the Anthropocene? My hope is that the answers offered to these questions by the three main chapters and by the conclusion, will motivate further experimental reading strategies, or similar research into the relational nature of policy and science fiction.

The importance of seeking answers to these questions now is high, as there is increasing awareness that unchecked human activity is causing a plenitude of environmental problems and could lead to full global environmental collapse. The popularity of books such as Diane Ackerman's *The Human Age* (2014), Gaia Vince's *Adventures in the Anthropocene* (2014) and Elizabeth Kolbert's *The Sixth Extinction* (2014) are noteworthy examples of the increasing attention being paid to the Anthropocene. These books also all represent efforts to understand and to criticize the human role in shaping, and possibly unmaking, the global environment.

While the extreme scenario of full collapse is the subject of much science fiction, it takes public awareness and the pressure of environmental activism to encourage policy makers to tackle concerns such as chemical contaminants in local rivers and lakes or city smog. The divergence in scale between some of these "smaller" ecological problems in reality and the complete crisis depicted in much fiction leads to a disconnect that seems to be partly responsible for a sense of hopelessness about the ability and willingness of individuals and governments to take action, a hopelessness that is expressed by scientists, political activists and artists alike. This

project is invested in contributing to a sense of hope about the future by carefully exploring what science fiction's attachments to various political pasts can teach us.

I am not trying to discount the role that ignorance, willful obstinacy or blissful innocence might also play in a situation of such environmental acrasia. Generally though, news headlines such as "Climate change may be escalating so fast it could be 'game over', scientists warn" tell us that hopelessness is an increasingly appropriate epistemic condition (*The Independent*).[32] This hopelessness exists despite the fact that concrete global policy initiatives such as The Kyoto Protocol (in force from 2005), The Copenhagen Consensus (2009), and The Paris Agreement (2015) are in force and represent years of work on the part of scientists and policymakers to understand and slow the effects of global climate change. Similarly, dystopian, apocalyptic and disaster fiction focused on climate, such as in the novels of Paolo Bacigalupi, seem increasingly popular, perhaps because they are in part expressions of the same sense of hopelessness. This sense of hopelessness rising within cli-fi, as the recent vanguard of science fiction, is partially responsible for the impressions of some critics that science fiction is not a useful genre for generating critical thought about life in the Anthropocene.

Science Fiction and the Political Value of Extrapolation

Though considered by some to lack utility,[33] science fiction is often an imaginative extension of national social and political realities, making the genre useful for thinking about the different ways countries approach environmental stewardship (or do not), and the difficulties of

[32] "Climate change may be escalating so fast it could be 'game over', scientists warn", by Ian Johnston, *The Independent* (Nov. 2016), Web.

[33] See Adam Trexler's *Anthropocene Fictions* and Amitav Ghosh's *The Great Derangement*.

international environmental cooperation. In fact, before negotiating international environmental cooperation, some countries have trouble negotiating internally.

Canada is a clear example, with recent energy policy decisions about the Trans Mountain Pipeline dividing Canadians along political and provincial lines, and at odds with the declared intention to reduce emissions. On April 30th 2019, Alberta premier Jason Kenney signed off on a piece of legislation that would allow Alberta the ability to "turn off" the gas pipes to British Columbia if the neighboring province refused "to co-operate with Alberta in getting the Trans Mountain pipeline expansion built" (Rieger).[34] According to CBC news, B.C. premier John Horgan responded to Kenney's threat by saying "there's no promise that any new capacity in the pipeline would be used for more batches of consumer-ready gas, as there's no hint of that in the current proposal before the National Energy Board" (Brend).[35]

As of this writing, the comments sections of both articles have exploded into a flurry of partisan political vitriol. There is no doubt that both of these leaders are representing what they think is in the best interest of their constituents at the provincial level. Yet what is missing from the discourse is any thinking about the long-term environmental impact of increased flows of oil, about the impact on Indigenous communities whose land rights will be violated, or about the alarming trend of provinces increasingly behaving like corporations. Even Horgan, an NDP politician elected based partly on his environmental politics, seems to have lost touch with the wider environmental issue about oil pipelines, as his comment above focuses on consumer access to refined gas product, and not on environmental concerns.

[34] See Sarah Rieger, "Alberta premier says he's proclaimed turn-off-the-taps law but won't use it on B.C. yet", CBC News, April 30th, 2019.

[35] See Yvette Brend, "B.C. premier pushes back against Alberta's threat to turn off taps", CBC News, May 1st, 2019.

The spat between rival premiers outlined above is a smaller symptom of a wider economic and social rivalry that has been going on for years between B.C. and Alberta. Science fiction often extrapolates a future big picture from regional conditions like this, so a rounder understanding of the national political imaginary would involve looking at the history of provincial disagreements over policy like this in relation to how Canadian science fiction authors see them playing out through extrapolating their novums. This project's specific focus on revealing the policy foundations of the novum could for example invite reading the science fiction novels of an author such as Larissa Lai against the history of the corporate energy policies of B.C. and Alberta.

Lai has lived both in B.C. and Alberta, and her novel *Salt Fish Girl* (2002) is set in a futuristic British Columbia in which corporate control has extended to almost every facet of human existence, and citizens either live under tight biopolitical control, trapped inside a walled city, or are treated more or less as subhuman and live in the unregulated zones outside the walls. Lai's novel provides the necessary environmentalist counterbalance to the history of profits-focused provincial economic energy competition through its anti-corporate narrative and its conveying a bioethical message via its cloning-centered novum. The chapters that follow in this project demonstrate that seeking conduits between the novums of science fiction and the national policy reveal particular regional environmental challenges that complicate the globalized approaches pursued by the same nations at the federal level.

Even when popular science fiction texts have an obvious environmental ethos, many of these texts have a tendency to present generic sets of problems as though shared by the global community, as well as often oversimplifying environmental policy that develops in response. Cli-fi is particularly prone to taking this approach, and the novels of Kim Stanley Robinson are a

good example, because they succumb to the same tropes as many Hollywood movies by imagining environmental disasters such as flash flooding hitting cities like New York and elaborating on the policy changes enacted in Washington (and by extension through Washington's influence at the U.N., the world). The best example would be his novel *New York 2140* (2017). Rather than study the more obvious political explorations of environmental catastrophe in fiction that speak to globally recognized issues, this project reveals the less obvious environmental dimensions of national politics that are nevertheless equally important.

Globalized approaches to environmental issues that at times play out loosely in science fiction often fail to address the local ecological problems that narrower national policy must. This doesn't mean however, that science fiction can't be a useful genre in motivating new thinking about the Anthropocene, but rather that we might consider altering our reading practices. This is why there is value in bringing together the broad and the narrow, the real and the imagined; to get the full scope of the problems and the possible solutions, and in essence to develop a clearer view of national political imaginaries. Science fiction and policy are entangled, and not mutually exclusive in their engagements with the environmental dimensions of the Anthropocene. For example, both policy and science fiction use the technique of extrapolation in order to craft their narratives and their approaches to human futures (local or global).[36]

Extrapolation is defined as "the drawing of a conclusion about some future or hypothetical situation based on observed tendencies [and] the inference resulting from such a process" (OED).[37] This also includes making decisions based on predictions and patterns, which

[36] For discussions of this technique as it relates to sf, see Darko Suvin's *The Metamorphoses of Science Fiction* and Fredric Jameson's *Archaeologies of the Future*. For a similar justification of the value of science fiction read alongside nonfiction, see Eric C. Otto's *Green Speculations*, page 7.

[37] See "extrapolation, n.," *OED Online*, Oxford University Press, March 2019, www.oed.com/view/Entry/67127.

is clearly the kind of thinking that has motivated the premiers of both Alberta and B.C. in the example discussed earlier in this introduction. It is most certainly what Larissa Lai has done to imagine the world of *Salt Fish Girl*. This intersection between the importance of prediction to science fiction and its role in the formation of policy motivates this project to question what other features might be common to both science fiction and policy, and how dialogically reading select national examples could influence, in subtle ways, how scholars of literature and science fiction approach their work.

The Structure of the Project

After brief introductions, each chapter in this project is divided into three main sections: a review of relevant criticism, an exploration of policy history, and close reading. The first section of each chapter details criticism of the author and their work, with particular emphasis placed on scholarship more directly related to this project. The second section is devoted to understanding the history of each individual nation's orientation to a specific policy during a specific time and linking that time period with the author and work being studied. Devoting this space to the policy history of each nation allows each chapter to explore the collective political forces that helped shape the novum of each text. Informed by the policy influences on each novum, the third section of each chapter engages in a close reading of the author's work that focuses on how play between the novum and the characters reveals political and environmental subtext. The close readings are each guided by different principles drawn from ecocritical or posthumanist theory. These close readings reveal significant thematic and more precise links between the novum of each science fiction novel and the national policy discourse, and also reveal the shape of each national political imaginary.

Specifically, this approach is designed to enhance understanding of the geo-political, bio-cultural and socio-political as significant contributing factors in shaping the national political imaginaries of the UK, Canada, and China respectively. The chapters identify convergences of historical social and political significance between the selected literary texts and the selected national policy discourses through the novum as nexus. In addition to relying primarily on Darko Suvin's theoretical framework for identifying the historical semantics of each given novum, I also rely on the specifics of Fredric Jameson's overall notion in *The Political Unconscious* (1981) that the production of art is itself an inherently symbolic political act (61).

Jameson lays out a convincing argument that Marxist perspectives are "necessary preconditions for adequate literary comprehension", and that such literary comprehension should take place in consideration of "political history", "society", and history in its "vastest sense of the sequence of modes of production (60). I try to follow this model in my own work and find this theory particularly useful for understanding science fiction and its various scales of concern but am also wary of Jameson's warning that "each phase or horizon governs a distinct reconstruction of its object" (61). Throughout this project, in each chapter I refer to Jameson to show how each of the science fiction novums I explore are essentially at the heart of symbolizing the national political imaginaries of their nations in given historical moments.

The ethos of my approach is guided by posthumanist ecocriticism,[38] building on work by theorists engaged in: ecological critiques utilizing science fiction (Alaimo, Haraway, Heise, Milner, Otto), sustained considerations of the language and development of policy (Bennett,

[38] Rosi Braidotti notes that "ecological posthumanism […] raises issues of power and entitlement in the age of globalization" (*The Posthuman* 48-49), while Lucinda Cole, Donna Landry, Bruce Boeher, Richard Nash, Erica Fudge, Robert Markley and Cary Wolfe draw attention to the importance of posthuman theory in negotiating beyond liberal humanism in ways that could be useful in advancing ecological thinking (in their article "Speciesism, Identity Politics, and Ecocriticism: A Conversation with Humanists and Posthumanists", 87-89).

Sandford), and exploration of the environmental questions raised by reading science fiction in the context of globalization (Heise).[39] The logos of my approach is guided by a combination of critical principles from the theoretical schools of new historicism (Veeser), Marxist literary criticism (Jameson, Suvin), cultural studies (Milner), and postcolonial studies (Appadurai, Wenzel).

The Broader Themes of the Project

Models for my work include Ursula K. Heise's books *Sense of Place and Sense of Planet* (2008) and *Imagining Extinction: The Cultural Meanings of Endangered Species* (2016). Like Heise's work, this project resists what in *Sense of Place and Sense of Planet* she calls "the primary investment in the local", comparing the national political imaginaries of the UK, Canada, and China in the spirit of "emphasiz[ing] the urgency of developing an ideal of "eco-cosmopolitanism", or environmental world citizenship" (10).

In *Imagining Extinction* Heise focuses on the importance of the larger stories humans tell about their past, present and future, what she calls the "broader structures of imagination", by using close readings of literature to understand how local and national narratives contribute to the global imaginary (5). My project builds on Heise's call in the same book "for a cosmopolitanism that does not take for granted anything about humans as a biological species but instead constructs versions of the human in a careful and painstaking, cross-cultural process of assembly in both its technological and its political meanings" (18). My project focuses on

[39] Examples of some of the theorists include Donna Haraway, Stacy Alaimo, Imre Szeman, Brent Ryan Bellamy, Ursula K. Heise, Rosi Braidotti, Jane Bennett, Timothy Morton, Gerry Canavan, Dipesh Chakrabarty, Jon Gordon, Andrew Milner, Robert William Sandford and Eric C. Otto.

those assemblies of political meanings that make up national political imaginaries and compares those three different imaginaries to reveal useful insights about life in the Anthropocene.

Another model for this project is Eric C. Otto's book *Green Speculations* (2012), in which the author identifies an overlap between science fiction and environmental nonfiction for their "employ[ing] a rhetoric of *estrangement* and *extrapolation* that compels readers towards critical reflection on seemingly invisible everyday attitudes and habits" (7). This dissertation is very much in the spirit of Otto's work; the difference between Otto's book and this dissertation is that my focus is on national policy rather than transformative environmental non-fiction more generally (though like Otto I also cite from Rachel Carson and other environmental writers).

Yet I disagree with Otto's notion that ecology is a subversive and even transgressive subject in outwardly environmental science fiction and ecofiction because it erodes the philosophical separation between humans and nature (20). I find ecological thinking much more subversive when it is found in texts not typically acknowledged as ecofiction or cli-fi (chapters one and three of this project are clearer examples of such fiction than chapter two). Nevertheless, I see this dissertation as a kindred spirit to *Green Speculations*, and I respect its aim to identify science fiction as a genre that "reflects more deeply on ideological structures that without accident require us to forget about nonhuman nature and our uncontestable embeddedness in it" (18). This project contributes to the genre work of Otto and others in revealing the entanglements between science fiction and ecological thought, but with a sustained attention specifically to how political ideologies are cultured, namely how policy discourse and science fiction each contribute to, and help reveal the shape of, national political imaginaries.

The Dialogical Chapter Structure: Policy History and Close Reading

While Heise's and Otto's work are each examples of the types of broad cultural gestures this project makes, Stacy Alaimo's theory of trans-corporeality in *Bodily Natures* (2010) helps motivate my readings to reveal the enmeshment of the national subject in the "messy, contingent, emergent mix of the material world" (11). Alaimo defines trans-corporeality as an erosion of the lines between "the environment" and "the human", that is both theoretical and literal (11-13). As Alaimo points out, "[t]he recognition that bodies and places are continuous incites transit across traditional disciplinary boundaries" (11). This project makes such a transit between the study of literature and the study of politics in considering how dialogically reading policy and science fiction reveals the essential political nature of the novum and the utopian leanings of political discourse.

This project is also in kinship with *Bodily Natures* for how it traces the development of an environmental posthuman ethics in literature and for how it identifies an important (but underexplored) correlation with policy, noting that "environmental health involves both individual decisions and public policy, regulations, and enforcement, it requires the involvement of a great many professions other than medicine" (92). The study of literature is one of those professions, and Alaimo's work helps motivate this dissertation to apply close reading techniques to help add to critical ecological discourse.

A model for the sustained comparative study of policy that I undertake within each chapter, is Robert W. Sandford's *North America in the Anthropocene* (2016), a book attentive to regional water policy that argues the "great challenge and urgency is to make […] goals and targets a priority at the national level", and ultimately on a global scale (37).[40] Like Sandford's

[40] Sandford focuses in this section of his book on the importance of the regional and national dynamics of water policy if the global community is going to have any hope of responding to the UN's *2030 Transforming Our World* sustainable development agenda, pages 33-37.

work, this dissertation traces the formation and the implications of policy (national instead of regional), and examines and compares these policies to one another in order to generate useful insights about the problems that come with living in the Anthropocene.

Period-specific national political imaginaries, whether geo-political, bio-cultural or socio-political, have all contributed, but certainly not always positively, to the overall thrust of global environmental policy today. After all, national political imaginaries are by their name and nature fantasy, but they help shape the decisions of politicians and international political bodies, and so impact upon the lived experience of global citizens nonetheless. This is important because global environmental policy positions are still the subject of much debate and are susceptible to the changeable environmental priorities and political positions of the world's most powerful nations, which are often at odds with global economic policy positions.[41] This is what makes the national political imaginary a useful scope for the project.

My dissertation works inside a gap I perceive between the macro view Heise's work takes of global culture and imagination and the micro view Alaimo's takes of posthuman environmental ethics; in this sense my project positions science fiction as a form of interpretive mediation between an enormous "hyperobject" such as the Anthropocene[42] and the comparatively small nature of specific human activities. The role of science fiction as a mediator

[41] See Jeffrey Frankel, "Global Environmental Policy and Global Trade Policy", Harvard Kennedy School Belfer Center for Science and International Affairs, web, https://www.belfercenter.org/publication/global-environmental-policy-and-global-trade-policy.

[42] I find Timothy Morton's book *Hyperobjects* useful for coming to terms with the scale adjustment required to connect human level concerns with vast geological or temporal patterns represented by the term Anthropocene. In the book for example, Morton notes that Hyperobjects such as the Anthropocene "are what have brought about the end of the world", even only if because they dissolve the utility of that very word (Location 199/4946). A good example in science fiction of work that does address the Anthropocene on a useful scale, would be Kim Stanley Robinson's *Mars* Trilogy, in which humans must terraform Mars because the earth has become increasingly uninhabitable at the end of the Anthropocene.

of scales of concern is therefore revealed by my close readings of the nationally relevant policy documents with attention to their contemporary contexts.[43]

Historical Semantics and New Historicist Influence

Realizing that this project involves understanding national policy orientations in their historical context has helped me to understand the significance of Darko Suvin's theory of the novum to the study of science fiction, and also led to my embrace of the guiding principles of new historicism. I have always been interested in the implied complexities and nuances of the novum and the possibilities the concept offers for scholars to research science fiction, captured best in this long quotation from Suvin:

> [I]t is possible to distinguish various dimensions of the novum. Quantitatively, the postulated innovation can be of quite different degrees of magnitude, running from the minimum of one discreet new "invention" (gadget, technique, phenomenon, relationship) to the maximum of a setting (spatiotemporal locus), agent (main character or characters), and/or relations basically new and unknown in the author's environment. […] I might say that this environment is always identifiable from the text's historical semantics, always bound to a particular time, place, and sociolinguistic norm […] in other words, the

[43] In this sense, my project essentially disagrees with Adam Trexler's negative view of science fiction's utility in approaching the Anthropocene. Trexler writes of science fiction's approach to global warming in this way: "early narratives I found treated it as an afterthought or a symptom of wider environmental collapse. There were unfocused novels by literary giants (Margaret Atwood's *Oryx and Crake*) and self-published e-books I couldn't ask anybody to read […] there was entirely too much science fiction" (6). I don't see the logic in expecting sf as a genre to take some responsibility for global warming or even for individual authors to understand global warming in the same way that climate scientists do. But I also don't think that these considerations make science fiction a dead-end for environmental studies, as I see the genre as so crucial to the experimentation required in the development of Anthropocene directed thinking.

> novum can help us understand just how is SF a historical genre. (*Metamorphoses of Science Fiction,* 64)

Suvin's statement about how "historical semantics" tie novums to the environments of the authors that create them motivated me to begin looking for real world connections to the novums in science fiction novels as I began reading many of them for my doctoral examinations. I was often surprised by the possible connections that I found in peripheral biographical and historical research, which motivated me to reconsider the possible weaknesses of close reading practice that centers exclusively on the texts alone.

A methodology that helped me read in informed ways beyond the fiction for my project, is found in Aram Veeser's introduction to *The New Historicism* (1989). Veeser writes that one of the values of new historicism as a critical endeavor is in how it "brackets together literature, ethnography, anthropology, art history, and other disciplines and sciences, hard and soft" (xi). This project brackets together literature and policy through the historical lens. Attempting to further define the critical practice, Veeser outlines what he sees as the five key assumptions of the new historicist, three of which more distinctly inform my work. They are: first, "that every expressive act is embedded in a network of material practices"; third, "that literary and non literary "texts" circulate inseparably"; and fourth, "that no discourse, imaginative or archival, gives access to unchanging truths nor expresses inalterable human nature" (xi).[44] I follow these three ideas as guiding principles in an effort to bring "historical considerations to the center stage of literary analysis" (xi), which I see as true to the spirit of Suvin's theory of the novum. Reading

[44] Note that the three points I cite here are actually Veeser's first, second, and fourth tenets of new historicism. Veeser's other assumptions, being second "that every act of unmasking, critique, and opposition uses the tools it condemns and risks falling prey to the practice it exposes" and fifth, "that a critical method and a language adequate to describe culture under capitalism participate in the economy they describe", seem to me more generally obvious, ultimately similar, and less relevant to the aims of this project (xi).

the historical contexts of national policy discourse as carefully as literary scholars would normally read novels produces the analytical alignments between the novels and policy – this conjuncture allows me to put forward my claims about the specific national political imaginaries in the chapters that follow.

I have chosen to focus on three examples to best highlight the dialogue between policy and science fiction in specific locales and periods: the UK in the 1940s and early 50s, Canada in the late 90's and early 2000's, and the People's Republic of China in both the 1980's and post 2015.[45] Comparing these three national examples allows for the temporal, geographical, social, and political ranges necessary to offer useful insights about global environmental politics and science fiction.

For example, though the UK and Canada are similar socially and are both parliamentary constitutional monarchies, China provides an important counterbalance to the project in being a one-party socialist republic. Similarly, while China and the UK are both great powers, Canada is a middle power.[46] These considerations help the project to more dynamically explore the primary thesis about the influence of policy on the novums of science fiction novels more generally, and to evaluate to which extent the national policy positions are relevant to environmentalism in globalized contexts.

In total the dissertation chapters engage with seven science fiction texts by John Wyndham (one), Margaret Atwood (three) and Cixin Liu (three), in order to illustrate how

[45] The authors I have selected for the project are all recognized figures in their nations and within the genre of science fiction and represent the three nations I have chosen to focus my policy discussions on. The time periods chosen reflect the discourse and formation of the specific policy initiatives I will examine.

[46] I am using the terms "middle power" and "great power" here as they are conventionally used in geopolitics and political science. For example, for an interesting article about Canada's position as a middle power vis-a-vis the jockeying for superpower status between the United States and China, see: Bruce Gilley, "Middle powers during great power transitions", *International Journal*, Vol. 66, No. 2, Canada, the US, and China: A new Pacific triangle? (Spring 2011), pp. 245-264.

science fiction novels can contribute in small but meaningful ways to shaping global human actions in the era of the Anthropocene.[47] Each of the these national political imaginaries are best understood for how they in turn give geo-political, bio-cultural, and socio-political shape to the novum of each respective science fiction text.

Chapter Structure and Selected Texts

Chapter one juxtaposes the oil-related novum in John Wyndham's *The Day of the Triffids* (1951) with UK postwar oil policy discourse and reveals how the national political imaginary in the UK during the post-WWII period was guided by the necessity of securing non-renewable resources, as well as by competition for these same resources with the United States and with Russia.[48] The chapter also helps identify the Anthropocene as a geo-political hyperobject created over long time spans and across large distances partially by the competitive nature of nation states under capitalism.[49]

In section I of the chapter I review the small body of criticism of *The Day of the Triffids*, in order to explain how that criticism has typically focused on reading for metaphor, gender politics and socially conservative fantasy. I explain why my reading reconsiders the novel in light of the history of UK oil policy, and explore the limited extent to which other critics have focused on John Wyndham's editorial practices, arguing that available information about cuts that Wyndham chose to make are potential evidence of the author's subconscious awareness of

[47] These authors have been selected for the ways in which their work traverses time, place, gender and race, and because the narratives are entangled with national political discourses. Each choice of a particular national narrative that bridges fiction with policy is explained in each chapter summary.

[48] With this competition being decidedly friendly with the former nation, and decidedly not with the latter.

[49] See Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World*, University of Minnesota Press, New York, 2013, Print. According to Morton, hyperobjects are "things that are massively distributed in time and space relative to humans. A hyperobject could be a black hole. A hyperobject could be the Lago Agrio oil field in Ecuador, or the Florida Everglades. A hyperobject could be the biosphere, or the Solar System" (1).

differences in the national energy policies of the US and the UK. Rethinking the novel in this way allows for exploring critical ideas about finite energy and offers readers of Wyndham new ways to understand the novel's thematic connections to energy.

In order to advance this argument, section II of the chapter differentiates a more literal reading of the author's conscious choice to focus on the edible oil industry in the novel from the subconscious links to policy relating to petroleum oil and how it contributed to shaping the triffids as novum. Understanding the historical political conditions that led to the presence of oil within the text aligns my work in this chapter closely in spirit to research by the *Petrocultures* research cluster, especially that by Jon Gordon, Brent Ryan Bellamy, Imre Szeman, Gerry Canavan and Graeme Macdonald.[50] In particular, this chapter is theoretically in tune with the theory of energy unconscious, itself an adaptation of Fredric Jameson's theory of the political unconscious, as discussed above. The chapter's attention to the history and context of UK oil policy adheres to the spirit of Jameson's call to "always historicize!"[51] albeit through the lens of petromodernity.

Informed by a historical understanding of UK oil policy and its influence on the national political imaginary of the post-war UK, my close reading in section III of the chapter focuses on revealing the subtext surrounding the triffid novum as petroleum focused. In order to do so, I turn to work by Karen Barad to understand how triffids and humans might be viewed as entangled in the text through application of her theory of intra-relation. I pair this with work by Jane Bennett to understand how the human characters survive by embracing their place in a form

[50] The book *Green Planets* (2014), edited by Canavan and Kim Stanley Robinson, is an excellent example, and particularly Bellamy and Szeman's article "Life After People: Science Faction and Ecological Futures" (192-205) which firmly argues for the importance of a grounded political ecology.

[51] See Fredric Jameson, *The Political Unconscious / Narrative as a Socially Symbolic Act*, Cornell University Press, 1981, Print.

of assemblage that involves developing a new understanding of oil.[52] This reading strategy reveals the geo-political subtext of the novel that exists between the triffids as novum, the human characters, and UK oil policy. The close reading also involves questioning whether the novel might suggest to more environmentally aware contemporary readers that "green" utopias are available to humanity. Highlighting the subtext suggests the triffids as novum operate as a subconscious expression of the national political imaginary in the UK during the post-WWII period.

Stephanie LeMenager, in her book *Living Oil: Petroleum Culture in the American Century* (2014), presents the posthumanist idea that oil has a life force of sorts, given the fact that it "is a medium that fundamentally supports all modern media forms concerned with what counts as culture" (6). She then asks, "can the category of the human persist, practically speaking, without such forms indebted to fossil fuels?" (6). Keeping the indebtedness of human societies to fossil fuels in mind, the chapter traces this relationship as one fraught with individual and national existential anxieties.

In order to support applying the same close reading strategies to *The Day of the Triffids* and 1950's UK oil policy to better understand this anxiety, I turn to historical policy studies such as Simon Smith's *Britain's Revival and Fall in the Gulf: Kuwait, Bahrain, Qatar, and the Trucial States, 1950-71* (2004). This book demonstrates anxiety in the post-war UK, particularly at the diplomatic level, about the process of negotiating oil contracts and trade relationships in the gulf region. According to Smith, Britain's approach in the 1950s to "amalgamating contiguous

[52] In this sense, I find Karen Barad's "agential realism" useful for understanding the triffids as the "unification of cultural and natural forces" (*Meeting the Universe Halfway*, 66) that could motivate us to consider other matter whose docility we take for granted. I like the way that Stacy Alaimo approaches this idea in her own reading of Barad: "a profound reconsideration of matter needs to be at the root of a posthumanist environmental ethics. Matter is not a passive resource for human manipulation and consumption, nor a deterministic force of biological reductionism, nor a library of codes, objects, and things to be collected and codified" (*Bodily Natures*, 142).

territories" under its influence had become a standard (and successful) approach to policy, and Smith makes clear throughout his book that the value placed on political control of the Trucial states was related to securing a ready supply of oil (49). This work serves as an example of the types of critical studies foundational to my understanding of UK oil policy in this particular time period.

This time period in Britain and the world more generally, 1950-64 (also sometimes referred to as the "age of affluence"),[53] is noted by Gerard Delanty and Aurea Mota as a time that "led to the rapid development of new technologies, which all required increased energy on a scale previously unknown" (15).[54] The postwar story of oil policy is of particular importance in the narrative of the Anthropocene, and by placing more emphasis on how the UK related to oil during the Great Acceleration, the chapter helps in identifying problems in the way nations relate to oil and other non-renewable resources today. The importance of reading Wyndham in this way is justified in light of the work of Jon Gordon, who points out in his introduction to *Unsustainable Oil: Facts, Counterfacts and Fictions* (2016), that "histories all show a motivation

[53] See Tony Judt, "The Age of Affluence", *Advertising & Society Review*, vol. 8, no. 4, 2007, http://muse.jhu.edu/journals/advertising_and_society_review/v008/8.4judt.html, Web. Judt explains: "The post-war economic "boom" differed slightly in its time from place to place, coming first to Germany and Britain and only a little later to France and Italy; and it was experienced differently according to national variations in taxation, public expenditure or investment emphasis. The initial outlays of most post-war governments went above all on infrastructure and modernization—the building or upgrading of roads, railways, houses and factories. Consumer spending in some countries was deliberately held back, with the result—as we have seen—that many people experienced the first post-war years as a time of continuing, if modified, penury" (para. 3).

[54] In a special issue of *The European Journal of Social Theory*, "The Anthropocene and Social Theory" in their article "Governing the Anthropocene: Agency, governance, knowledge". The full context of the quote: "This occurrence is probably better placed within the wider context of the Great Acceleration that happened in the aftermath of the Second World War, with a marked general rise since 1950 of the influence of human activity on the Earth, of which the fall-out of nuclear testing is only one. The Second World War itself was a major contributory factor, as was the Cold War that followed in its wake, in that it led to the rapid development of new technologies, which all required increased energy on a scale previously unknown (see Steffen et al., 2011; McNeill and Engelke, 2014)".

to secure the future by controlling an energy source that had been recognized since before the first European explorers saw it" (XXIV).

My chapter helps build a historical understanding of UK oil policy and contributes to revealing the rounder dimensions of contemporary national policy dialogues in the UK, such as *The Climate Change Act* (2008), and the UK's role in global initiatives such as *The Paris Agreement* (2015). As Delanty and Mota note, the Anthropocene is a "new cultural model" that will require a "new understanding of governance" (10).[55] The first chapter contributes to new understandings of how policy engaged with the Anthropocene can be understood or possibly even shaped by recognizing how historical political decisions about resources have complicated today's global efforts to mitigate the long-term geological shape of the Anthropocene.

Chapter two is focused on bioethics and compares Canadian genetic and virology policies and their discourses with how their contexts are depicted in, and inform the novum of, Margaret Atwood's *MaddAddam* trilogy of novels including *Oryx and Crake* (2003), *The Year of the Flood* (2009) and *MaddAddam* (2013). This approach allows my project to highlight how Atwood's trilogy reveals that damage inflicted upon the living biosphere is a crucial dimension of the Anthropocene, a concept that has so far been relatively under-explored in critical studies of science fiction.[56] In *The Great Acceleration*, McNeill and Engelke trace the exponential increase in human impact on the environment and warn that while we now have the power and the knowledge to manipulate biological processes, to take those measures will likely lead to

[55] See Gerard Delanty and Gerald Mota, "Governing the Anthropocene", 2011: The full argument regarding social theory reads: "In this introductory article we argue that the Anthropocene amounts to a new cultural model and we set out four main areas that are particularly pertinent to social theory: (1) the question of temporality; (2) the nature of subjectivity and agency; (3) the problem of knowledge; and, (4) ultimately, a new understanding of governance" (10).

[56] In *Green Speculations: Science Fiction and Transformative Environmentalism*, Eric C. Otto seems to implicitly explore these ideas, though without specifically invoking the term Anthropocene.

unforeseen and devastating phases of the Anthropocene (5). The second chapter approaches Atwood's trilogy as a satirical extrapolation of such a warning.

In reviewing the relevant criticism of the trilogy in section I of the chapter I align my study of the novels with several significant environmental and ecofeminist readings. I also identify my claim that Canadian policy has influenced the Craker novum as a unique approach to studying an already heavily examined series of novels. More specifically, I argue that the Canadian national political imaginary in great part informs the trilogy's ecologically centered tone of satire, which seems directed at American-led bio-cultural practices.

I show that Atwood uses speculation and hyperbole to question the logic of contemporary obsessions with power, individual entitlements, and commodification—all hallmarks of late state capitalism and driving forces behind climate change. However, I also differentiate how Atwood's conscious politics inform the text and have been the main focus of critical study, from how her novum functions as an expression of the political unconscious about posthumanist environmental ethics in the Canadian national political imaginary. In this section, I also draw attention to a gap in scholarship about the trilogy's environmental race politics and explore the implications for my chapter of the theory of racialized assemblages set out in Alexander Weheliye's book *Habeus Viscus*.

Section II of the chapter analyzes the specific language of, and the public discourses surrounding, both the *Assisted Human Reproduction Act*,[57] and the *Canadian Environmental Protection Act*,[58] in order to demonstrate that the two acts together occupy a large position in the

[57] A Canadian law (enacted in 2004 and in force from 2007) governing research methods and ethics surrounding human reproduction, for example prohibiting the creation of hybrids and chimeras and seeking to regulate the "integrity of the human genome" (Ch. 2, sec. 2, Line 12).

[58] Enacted in 1999, and specifically Part 6 "Animate Products of Biotechnology" (Part 6, pages 104-115).

Canadian national political imaginary in the 1990s and early 2000s. The dialogue between the two acts and the runaway biotechnologies in Atwood's trilogy (the gene-splicing to create new lifeforms and the BlyssPluss pill to cause a global pandemic) help to illuminate the bio-cultural dimensions of the Anthropocene. In other words, Atwood's conscious extrapolation from a world that acts based on the shape of policies like these, is to show how absolutely devastating they might be for the future of humanity. This section of the chapter also reveals the existence of concern over literal posthumanism within this particular Canadian ideoscape, which I argue directly informs Atwood's conscious creation of the Craker novum. As Atwood's trilogy represents a social critique of the commercialization of biological materials and helps identify areas where Canadian genetic policy diverges from that of US policy, I refer to work by experts in this field such as Gilles Paquet,[59] Stephen Bocking, Benjamin J. Hurlbut, and Timothy A. Caulfield.[60]

Section III argues that the Crakers as novum are also a manifestation of the political unconscious, particularly in relation to posthumanist philosophy. However, rather than representing literal posthumanism, I argue that through their role in helping characters forge unconventional kinships, the Crakers and their associated subtext reveal the ecocritical posthumanist sensibilities of the trilogy. In particular the close reading in the chapter focuses on the second novel in the trilogy, *The Year of the Flood*, and the way in which the patriarchal system of capitalism places female characters, particularly Toby, in marginalized positions from which they must "make kin" with non-human entities in order to survive. Eco-feminist theory

[59] In his book *Crippling Epistemologies and Governance Failures: A Plea for Experimentalism,* University of Ottawa Press, 2009. Print.

[60] Including a number of essays, and the books *Imagining Science: Art, Science, and Social Change* (2008) and *Is Gwyneth Paltrow Wrong about Everything*?: *When Celebrity Culture and Science Clash* (2015).

partly guides my approach to close reading the subtext of this chapter, and I focus on exploring the trilogy for these alliances with the non-human by building on work by Rosi Braidotti,[61] Donna Haraway,[62] and Stacy Alaimo.

For example, in *Bodily Natures* (2010), Alaimo focuses specifically on how natural resources and animals are commodified through the unrestrained use of biotechnology. She argues that Atwood's *Oryx and Crake* depicts a dystopia in which corporations "breed monstrous hybrid creatures for human consumption or organ replacement. The same culture that sentenced myriad creatures to extinction now reduces animals to malleable, unthinking material for genetic engineering" (147). My close reading uses ecofeminist theory to link the horrors visited upon animals and the environment through the Crakers to Canadian bioethics policy.

Chapter three considers the socio-political dimensions of Cixin Liu's *Remembrance of Earth's Past* trilogy of novels, including *The Three Body Problem* (2014), *The Dark Forest* (2015) and *Death's End* (2016),[63] as disruption to narratives that politically position Western capitalist nations as both the cause of eco-disaster and the last bastion of hope in the age of the Anthropocene. The chapter reads for the presence of a subtextual critique surrounding the Trisolaran novum in the text;[64] a critique that takes the form of disrupting western narratives of global hegemony, even while also critical of the disruptive effects of regional disregard in China for the *Environmental Protection Law*.[65] I also trace connections in this chapter between fictional

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[61] Particularly her ideas about post-anthropocentrism and how it "displaces the notion of species hierarchy" (67) and offers a new political frame for resisting the "commodification of life in all its forms" (72), *The Posthuman* (2013).

[62] Using her theory of sym-poiesis, or making-with, rather than auto-poiesis, or self-making, *Staying With The Trouble: Making Kin in the Cthulucene* (58-63).

[63] The dates given here are the initial publication dates of the English translations. Please see the works cited for the publication dates of the Chinese first editions.

[64] The Trisolarans being the alien species that are on their way to invade earth in the trilogy.

[65] And also with the discourses surrounding the major revisions to the law in 2014. For example, this law, since being revised in 2014, has attracted considerable criticism from environmental scientists like Bo Zhang, who writes: "enforcement and implementation of the law may be foiled by a lack of capacity and by conflicts of interest.

aspects connected with the extra-terrestrial novum and real-world Chinese Space Policy, namely the construction of the FAST radio telescope and the militarization of satellite technology.

Cixin Liu's trilogy begins by tracing the narrative of China's development after the Communist Revolution and into the Cold War period and ends with the destruction of our solar system – in this sense, it shares in common with the Wyndham and Atwood novels the depicting of the destruction of human civilization (only with a much broader scope). There is a major difference between the texts, however, in that Liu's series places China and Chinese fictional characters at the center of the narrative in ways that forcibly displace the Euro-American humanist subject. The decentering of the white, male, Euro-American humanist in Liu's trilogy as well as in China's resistance to Western directed climate change initiatives, demonstrates that racialization and repression of non-white subjects and also resistance to racialization are important socio-political aspects of the Anthropocene and worthy of further study in non-western science fiction.[66] Attention to the racial dimensions also allows this project to make transnational and ideological comparisons with the work of Wyndham and Atwood that helps me to generate useful insights into alternative social and political avenues of thought for addressing the Anthropocene in the project conclusion.[67]

Environmental governance in China is mainly exercised locally by environmental protection bureaus. The environment ministry primarily provides guidance to these bodies, but does not have sufficient authority over them" (*Nature* Vol. 517 page 434).

[66] In a paper at Mosaic's 50th Anniversary Symposium *Living On*, Dr. Axelle Karera presented a paper entitled "Asymmetries of Suffering: Race and the Visual Scenes of Exile", in which she criticized Anthropocene scholarship, including that of Timothy Morton and Claire Colebrook for its neglect to consider the experiences of minority groups and racialized others (as those more likely to bear the brunt of environmental disaster).

[67] This also resonates with posthumanist ecocriticism by critics such as Rosi Braidotti and Claire Colebrook that advocates for a decentering of the European and male versions of the human.

Liu positions China as the global center of environmental disaster through deforestation in the first novel, [68] and also as the center of global military and industrial progress through the trilogy's narrative of extraterrestrial contact. China's position of global power in the trilogy is therefore read alongside discussions of China's rapidly shifting position in respect to global sustainability, as outlined by such environmental studies as "Power Politics in the Revision of China's *Environmental Protection Law*", which identifies China's environmental gestures as problematic because of the predominance of regionalism and of "powerful individuals and organisations in the administration [that] can still impede the building and strengthening of environmental institutions" (1034).[69]

The shifts in China's global power position (both fictional and actual) are significant because my chapter argues that the trilogy serves partly as a response to continuing Western Cold War mentalities that position communist China as threat to the current global order. Liu's novels serve as an alternative to the Western view of post WWII history as the struggle against communism, tracing communist China's important position in the globalized world, while resistance in China to Western policy discourse identifies China's power to influence global political approaches to the Anthropocene.

China's new position of power in the shaping of environmental discourse is thrown into sharp relief by a recent article by Jennifer Wenzel, "Reading Fanon Reading Nature" in the book *What Postcolonial Theory Doesn't Say* (2015). Wenzel identifies Rachel Carson's *Silent Spring* as an environmental narrative that "drew upon, rather than rejected, Cold War geopolitical logic"

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[68] For great discussion of how serious a threat the scale of China's industrialization poses to the environment, see Michael Marshall and Andy Coghlan's "China's Struggle to Clear the Air", and Mark Elvin's *The Retreat of the Elephants: An Environmental History of China* (2004).

[69] See L Zhang, et al."Power Politics in the Revision of China's Environmental Protection Law", *Environmental Politics* 22.6 (2013): 1029-035, Web.

(194), with clear language patterns that presented "bugs-figured-as-communists" (195). This is important to my project because Liu has incorporated *Silent Spring* into his narrative for thematic environmental reasons and has also rewritten Carson's nationalist logos. Liu has the character Mike promote a version of global ecological sustainability through what he calls "Pan-Species Communism" in a segment of the novel that connects with Liu's use of Rachel Carson's *Silent Spring* (*The Three Body Problem*, 307).

Here the chapter reads Liu's own science fiction novum, an inevitable extraterrestrial invasion, as a device through which familiar power structures that mimic colonialism are applied against both East and West, unifying humanity (in principle but not practice) and highlighting the need for a Pan-Species coalition to save the earth. Ending on Liu highlights the value of comparatively analyzing science fiction texts for how they help bridge connections between novums and policy, and thereby reveal subtle or even subtextual environmental critiques that exist in spite of major socio-economic differences between nations.

The conclusion to the project returns in summary to the geo-political, bio-cultural and socio-political entanglements amongst the three chapters in order to attempt answers to the specific ontological and epistemological questions posed in this introduction about how global society can know, understand and address the Anthropocene. In adding to the growing body of work studying literature and the Anthropocene, the conclusion proposes that this dissertation helps to fill the more specific lack in scholarship clearly devoted to extending literature's dialogue with policy, and to understanding the place of science fiction in studies of the Anthropocene. The conclusion also reiterates my contention that the novum is best understood as a distinctly political device, and that its place in science fiction can be traced to the national political imaginary of its nation of origin. With the incorporation of Liu's translated novels and

their comparison to the work of English language novelists such as Atwood and Wyndham, the dissertation conclusion stresses the need to encourage further study of the Anthropocene that does not privilege western national political imaginaries, whether they manifest in policy, fiction or both.

Chapter 1

The Geo-Political Novum: *The Day of The Triffids* and Oil Policy in the UK

Introduction

This chapter argues that postwar petroleum policy discourse in Britain contributed to the shaping of the novum of John Wyndham's *The Day of the Triffids* (1951). The chapter proposes that an anxiety about fuel oil sustainability is present as subtext and argues that Wyndham's triffids and their interactions with the characters in the book are guided in part by energy unconscious. I follow the logic of Patricia Yaeger's use of energy unconscious in her 2011 PMLA editorial, as well as her suggestion that reading methodologies might change to include attention to that which is repressed (310).[70]

As Yaeger makes clear, the energy unconscious as a concept is built directly upon the foundation Fredric Jameson lays in his influential *The Political Unconscious* (1981).[71] When I refer to the term energy unconscious throughout the chapter, I particularly have in mind Yaeger's idea that "energy invisibilities may constitute different kinds of erasures" and that they have the potential to "enter texts as fields of force that have causalities outside class conflicts and commodity wars" (309).[72] In relation to Wyndham's novel, I argue that which is erased or

[70] Laurie Shannon et al., "Editor's Column: Literature in the Ages of Wood, Tallow, Coal, Whale Oil, Gasoline, Atomic Power, and Other Energy Sources", *PMLA*, vol. 126, no. 2, 2011, pp. 305-326, doi:10.1632/pmla.2011.126.2.305.

[71] Fredric Jameson, *The Political Unconscious / Narrative as a Socially Symbolic Act*, Cornell University Press, 1981. Print.

[72] Laurie Shannon et al., "Editor's Column: Literature in the Ages of Wood, Tallow, Coal, Whale Oil, Gasoline, Atomic Power, and Other Energy Sources", *PMLA*, vol. 126, no. 2, 2011, pp. 305-326, doi:10.1632/pmla.2011.126.2.305.

invisible in the text is the influence of petroleum-centered oil policy in shaping the novum. This is one of the reasons that my chapter does not explore the edible oil industry through investigations of palm or fish oil. Wyndham's connection of the triffids to these industries is a conscious choice, while this project is concerned with the subconscious influences that inform the novum.

Instead of exploring the shape of the novum using Jameson's more broadly defined notion of the political unconscious, this chapter focuses on energy unconscious. In the same PMLA volume that Yaeger first uses the concept of energy unconscious, Imre Szeman writes that, "it is not just energy that constitutes a limit but also our present understanding of its social role and significance" (324).[73] This chapter will help to enhance that understanding and will also provide one potential model for scholars interested in exploring how geo-political forces can shape the novums of science fiction novels.

Part I of this chapter introduces the novel and its prevalent themes and develops an overview of the relevant scholarship. I position reading for energy unconscious as a socially productive method of returning to understudied novels. Part II highlights the ways in which *The Day of the Triffids* might be understood (or re-read) in light of the history of British petroleum policy in the 1940s and 1950s, including differentiating the place of oil policy in the national political imaginaries of the UK and America respectively. I argue that Wyndham's writing and editorial practices, as well as the novum of his novel, are partly shaped by energy unconscious. In Part III, I engage in a close reading of the novel through Karen Barad's concept of intra-

[73] Laurie Shannon et al., "Editor's Column: Literature in the Ages of Wood, Tallow, Coal, Whale Oil, Gasoline, Atomic Power, and Other Energy Sources", *PMLA*, vol. 126, no. 2, 2011, pp. 305-326, doi:10.1632/pmla.2011.126.2.305.

relation and Jane Bennett's understanding of the assemblage to reveal the subtext of the novel and its relationship to the finite nature of fossil-fuel oil.

I: *The Day of the Triffids* and the Critics

John Wyndham's novel *The Day of the Triffids* (1951) has been called many things, from science fiction author Brian Aldiss's characterization of the work as a "cosy catastrophe",[74] to Raymond Williams's brief recognition of the work's ability to inhabit two out of the three main "modes or norms" of science fiction, both the "Putropia" and "Doomsday" types (358-59).[75] Like Williams, Margaret Atwood and Fredric Jameson both make passing reference to the novel, signifying the breadth of its reach and influence, if not its literary importance.[76]

That importance has been overlooked, according to C. N. Manlove, who in 1991 wrote "[t]he concensus appears to be that it is just one more postcatastrophe novel which happened to strike a chord with its contemporary audience" (29).[77] Manlove read more philosophical complexity to the book, however, and claimed that Wyndham's novel is "a picture […] of the undermining of all value and certainty in the world, a hollowing out of normality, expressed not only through the story but in the stylistic texture of the book itself" (30). It is interesting that the novel has been so popular yet so understudied. Despite the fact that the novel has always sold well (not once out of print since initial release), has undergone many adaptations from screen to

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[74] See Brian Aldiss, *Billion Year Spree*, Shocken, New York, 1973, pg. 292-95. Print.

[75] See Williams' essay "Science Fiction", *Science Fiction Studies*, Vol. 15, No. 3, 1988, pg. 358-59. Willliams claims that "Space Archaeology" is the finest of the three forms; I will further engage with William's off-the-cuff classification system in chapter three in consideration of both Atwood and Liu.

[76] See Atwood's review of Chocky: "Chocky, The Kindly Body Snatcher", Slate.com, 2015. Also see Jameson's *Archaeologies of the Future: The Desire Called Utopia*, Verso Press, 2005. Print.

[77] See Manlove, C. N. "Everything Slipping Away: John Wyndham's The Day of the Triffids", in the *Journal of the Fantastic in the Arts*. Vol. 4, No. 1. 1991. Web.

radio to comic strip,[78] and has inspired many other artists to mimic some of its key ideas and movements,[79] it has mostly garnered only asides, brief mentions or footnotes in literary scholarship.[80]

More recently, a small number of scholars have begun to re-evaluate the novel, finding it increasingly more relevant and more interesting than it has been traditionally received. Over two decades after Manlove wrote about *The Day of the Triffids*, Terry Harpold and the late Nicole LaRose found reasons to return to Wyndham, to consider how *The Day of the Triffids* can teach us much about the contemporary turn to the zombie.[81] Harpold agrees with the characterization of the novel as a cosy catastrophe, a designation that he claims should not undermine its value: "[t]he obvious programming of the cozy is not so damaging to its literary merits as its critics pretend", he writes in defense of *Triffids* (157).[82] Harpold finds that *Triffids* sheds light on the "cadences of time that the cozy installs" as well as the "restlessness" of movement he sees generated by zombie and triffid alike (159).

Harpold's most compelling insight about *Triffids*, however, is one that is never fully explored in his work and one that has never been fully developed by other scholars in relation to the book; Harpold notes that the novel is about the "*dilemma of unsustainability*" (158). I engage directly with sustainability issues as they manifest thematically in relation to oil in my close reading of *The Day of the Triffids*, in order to advance the argument that the novel anticipated the

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[78] See Adam Stock, "The Blind Logic of Plants: Enlightenment and Evolution in John Wyndham's The Day of the Triffids", *Science Fiction Studies*, 42 (127), pp. 433-457. Web.

[79] Including a carefully imagined and stylistically faithful sequel by Simon Clark, *The Night of the Triffids*, Hodder and Stoughton, New York, 2001. Print.

[80] I would compare this treatment of the novel to the critical history of Richard Matheson's *I am Legend*, which was similarly ignored by scholars, at least until the release of the Will Smith film adaptation in 2004, at which time scholarship suddenly ballooned.

[81] Both chapters appear in the book *Generation Zombie: Essays on the Living Dead in Modern Culture* ed. Stephanie Boluk and Wylie Lenz, North Carolina: McFarland & Company Inc., 2011. Print.

[82] See Harpold's "The End Begins: John Wyndham's Zombie Cozy", *Generation Zombie*, 157.

environmental movement of the 1960s, that it can be read to understand the changing shape of the national political imaginary during the post WWII period in the UK, and that it serves as a significant example of how science fiction as a genre is uniquely equipped to respond to the Anthropocene.

Nicole LaRose is more opposed than Harpold to the characterization of *The Day of the Triffids* as a "cosy catastrophe", finding the novel "ripe with complex philosophical ideas" (158).[83] I appreciate LaRose's characterization of Bill Masen, the novel's protagonist, as an individual that could be understood to serve as a sort of "spokesperson for postwar Britain", whose "individual subjectivity can only be understood in relationship to the shared experiences and the shared historical understanding he encounters in the aftermath of disaster" (166).[84] Drawing attention to the novel's powerful allusions to the Blitz as well as its anticipation of the Cold War, LaRose characterizes the triffids by the acronym ZnZs (zombies that are not zombies), arguing that like zombies, ZnZs are metaphors of "political, social, and epistemological structures" (166).[85] These structures, LaRose argues, relate to the nature of the triffids as sources of oil and the countries that they originate in. This can be a useful way to read the novel with attention to its historical context, yet I also believe that understanding the triffids beyond metaphor is crucial to a new understanding of the novel in the literary-environmental-critical sphere.

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[83] See LaRose's "Zombies in a 'Deep, Dark Ocean of History': Danny Boyle's Infected and John Wyndham's Triffids as Metaphors of Postwar Britain", *Generation Zombie*, 165.

[84] Ibid., 166. Here LaRose provides a very useful reading of *Triffids* in relation to the Blitz and Cold War paranoia.

[85] Though I find LaRose's historical reading very useful to my own interpretation of *The Day of the Triffids*, I disagree with her labeling the triffids as metaphors, much as I disagree with the tendency of many scholars to understand zombies in the same way. I have written about this previously in *Imagining the End: Interdisciplinary Perspectives on the Apocalypse*, ed. Thomas E. Bishop and Jeremy R. Strong, Interdisciplinary Press, Oxford: 2015.

Harpold's and LaRose's work reveals the potential for further exploration of this novel through a historical-ecological lens, touching on issues surrounding sustainability, oil and their historical political and social contexts. A kindred spirit to Harpold and LaRose's work, this chapter examines the novel's approach to these issues with particular attention to the political context. Other recent sustained readings of *The Day of the Triffids* have been significant in helping me to formulate my own approach to the text, including those of David Ketterer, Graham J. Matthews and Adam Stock.

The work of David Ketterer is by far is the most comprehensive on Wyndham; Ketterer is a Wyndham and science fiction specialist,[86] and a book on Wyndham's life and works is forthcoming (2020). Ketterer has written at length about Wyndham, and generously about *The Day of the Triffids*, including its publication history. In his principle argument about the novel[87], Ketterer claims that the novel is primarily about the fear of female sexuality and that the triffids themselves should be read subtextually as "*vagina dentata*" (378)[88] He reiterated the argument several years later in the book *Future Wars* (2012),[89] where he made a similar argument but included the caveat that the triffids could also subtextually be understood to represent Nazis.

For the same reason that I approach LaRose's reading of the triffids as metaphors cautiously, I am wary of any such designating of triffids to stand in for X. Metaphorical readings of texts rely for the most part in reading to understand the conscious choices made by an author, or in guessing what those choices and meanings might be. The great utility of Jameson's theory

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[86] See David Ketterer, *New Worlds For Old: The Apocalyptic Imagination, Science Fiction, and American Literature*, Anchor Books, 1974. Ketterer's text was one of the first to address the gap in critical scholarship about sf.

[87] See David Ketterer, "John Wyndham: The Facts Of Life Sextet." *A Companion to Science Fiction*, ed. David Seed. Oxford, UK: Blackwell, 2005.

[88] Ibid., 378. Italics are Ketterer's.

[89] See David Ketterer, "John Wyndham's World War III and his Abandoned Fury of Creation Trilogy" in *Future Wars: The Anticipations and the Fears*, ed. David Seed, Liverpool: Liverpool UP, 2012, Print.

of the political unconscious in a case like this is that it can be used to understand how something like the triffid novum could be generated not only subconsciously, but as an expression of the collective national political imaginary:

> the modal approach to genre must be pursued, until, by means of radical historicization, the "essence," "spirit," "world-view, " in question is revealed to be an ideologeme, that is, a historically determinate conceptual or semic complex which can project itself variously in the form of a "value· system " or "philosophical concept, " or in the form of a protonarrative, a private or collective narrative fantasy. (102)[90]

The triffid novum, which in light of Suvin is easily understood as the essence of science fiction, seems to me akin to such an ideologeme representing the collective unconscious. The real importance of such a reading stems from understanding how an unconscious collective political drive might be more significant than some of the more abstract symbolic designations of what the triffids represent.

The potential pitfalls of such designations include readings of *Triffids* that ignore or mask the important proto-environmental aspects of the book or limit understandings about its wider significance within the genre of science fiction or in twentieth-century literature.[91] Therefore, as much as I have relied on Ketterer's writing about Wyndham, and about *The Day of the Triffids* in particular, this chapter will strike one major chord of opposition to Ketterer and several other critics that have written at length about the novel, in making the case that triffids might be more usefully understood as a manifestation of the dominant national political imaginary in the UK at

[90] Jameson, *The Political Unconscious*, 1981.

[91] For example, by becoming one of many postwar novels reimagining the Nazi threat of World War II, or just another book by a male author threatened by female sexuality. It isn't that these arguments might not be valid, but that they might be too familiar and, therefore, serve to limit approaches to the text.

the time of the novel's conception. Though undoubtedly science fiction novums are partially crafted through the creative thought of the author's, there is a hidden dimension of influence stemming from collective political desire. If anything, what makes science fiction special is its unique purview: to create new things and new experiences, or, as Darko Suvin has it, science fiction is "*the literature of cognitive estrangement*" (4).[92] That experience of cognitive estrangement that *Triffids* delivers may be diluted when human fears are anthropomorphically inserted in place of an imagined life form that Wyndham took great pains to bring to life.[93]

Unlike Ketterer, critic Graham J. Matthews resists anthropomorphized understanding of the triffids and the characters interactions with them, though perhaps to a fault.[94] Matthews identifies the limits of the characters abilities to conceptualize the triffids, particularly their intelligence. Writing about a scene in which the character Josella Playton comments on the triffids seeming to herd humans toward a kill zone, Matthews notes that Playton "ascribes human motivations to the plants" (116), and comes to the conclusion that Playton has reached the limit of human ability to understand triffids: "language is an irremediably human artefact", he writes (116).[95] Matthews here identifies two important aspects of the triffids that are important in understanding the national political imaginary: first, that there are forces beyond the individual, and second, that the flow of these forces are not always communicated in obvious ways.

The approach Matthews takes here is a useful reminder that despite the many historical or biographical codifications that can be attached to the "monsters" in fiction, within the bounds of

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[92] See Darko Suvin, *Metamorphoses of Science Fiction*, Yale, 1979, 4, Print. Italics are Suvin's.

[93] A more in-depth analysis of triffids as agential life forms appears in section 1.3 of this chapter.

[94] See Matthew's "What We Think About When We Think About Triffids: The Monstrous Vegetal in Post-war British Science Fiction", In *Plant Horror: Approaches to the Monstrous Vegetal in Fiction and Film,* ed. Dawn Keetley and Angela Tenga, 2016. Print.

[95] Ibid., 116. It is interesting that Matthews neglects directing attention to Josella's speech about triffid intelligence, as this is probably the least Anthropomorphized view of the triffids offered by the text. This speech by Josella was cut from the American edition, and I discuss it in some detail in section 1.3 of this chapter.

the created space, the life forms exist. This is important to the question of triffid agency and the place where my argument diverges fairly significantly from that of Matthews. For example, a scene in the novel during which the characters Coker and Masen discuss whether or not triffids can communicate defies Matthews claim in relation to the triffids that language is distinctly human; the very reason Coker and Masen are so disturbed in the novel, is that they realize the triffids might have a language of their own.

Matthews concludes that the limits of language and the cynicism of the characters disarm the reader enough so that they believe triffid communication might be possible, but then seems to dismiss all exhibited triffid behavior as "more akin to instinctual responses", seemingly dismissing the possibility of triffid language and agency (117).[96] Matthews' essay is extremely useful in demonstrating the limitations of human thought and language in the novel, though my own approach to the text is wary of precisely the same limitations in the critical toolkit, such as the tendency to think of the triffids as monsters, something that Matthews falls back on several times in his analysis. I will attempt to push past the limitations of what triffids call to mind, represent or signify by instead considering triffid agency and its narrative dominance in the novel.[97]

Finally, the work of Adam Stock argues that examining differing versions of *The Day of the Triffids* can reveal important information about Wyndham's knowledge of evolutionary biology as well as some of his potential source material and influences.[98] For example, Stock reveals that the likely influence of H. G. Wells on Wyndham is not limited to theme and stylistic

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[96] Matthews, "What We Think About When We Think About Triffids: The Monstrous Vegetal in Post-war British Science Fiction", 117. Web.

[97] For a discussion of the importance of an "overriding narrative logic" in establishing an effective novum, see: Suvin, *Metamorphoses*, 70.

[98] Adam Stock, "The Blind Logic of Plants: Enlightenment and Evolution in John Wyndham's *The Day of the Triffids*", Science Fiction Studies, 42 (127). pp. 433-457, 2015, Web.

technique, and that such influence helped Wyndham "engage in a sophisticated but accessible manner with contemporary concerns and social anxieties surrounding the early Cold War, the retreat of the British Empire, and the growth of the welfare state" through the material focus of the text (433).[99]

I argue that Wyndham was focused on concern and social anxiety in Britain leading up to the early Cold War period and in particular what Stock characterizes as the "retreat" of the British Empire. My chapter builds in part on these and other claims made by Stock to explore precisely how such concern and anxiety manifests in *Triffids* and question whether that subtext is analogous with the British oil policy discourse in the immediate post World War II period (from 1945-1951). Oil policy discourse of this particular time period may have a number of entanglements with Wyndham's novel. Major cuts and changes made to the manuscript meant for an American audience should be understood with this in mind, and therefore my project is indebted to Stock and Ketterer for their careful work detailing the published and extant manuscript editions of *Triffids*.

While Stock does devote significant space to explaining the publication history of the three differing versions of *The Day of the Triffids* that figure so importantly in my chapter, I explore the difference only between the two most significant published versions, the British and American editions.[100] Stock explains the difference between the very heavily abridged publication of *Triffids* in *Colliers* magazine (Jan. 1951) and the two editions published in America and Britain. He then explores the longest section excised from the American edition,

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[99] Stock, "The Blind Logic of Plants", 433. Earlier articles by David Ketterer also trace the likely influence of Wells upon Wyndham, mostly regarding his literary sf influences on the author.

[100] I consider these editions the most significant because they are the two editions still in print, and since the 1950s most readers of the novel will have had similar, and yet I would argue significantly different, experiences of Wyndham's story that can tell us a lot about the social significance of sf.

explaining that Wyndham was "politically as well as commercially savvy in his approach to editing for different audiences" (442).[101]

Following Stock, I explore these cuts in detail to reveal exactly why Wyndham was encouraged to exercise such political savvy. The answer is multi-faceted, as the numerous entanglements of the triffids with intricate national and global postwar oil politics reveals. The understanding of oil discourse lays the groundwork for the close reading, helps to develop a sense of the national political imaginary in the UK in the 1950s, and justifies the claim that Wyndham's novum was formed in part by energy unconscious.

II. The History of Oil Policy in Wyndham's Britain

Perhaps responding to the lingering exuberance of allied victory felt on both sides of the Atlantic after World War II, between 1948 and 1950 Wyndham fiendishly produced at least three markedly different versions of his famous novel *The Day of the Triffids*, along with a number of other novel drafts.[102] In the years immediately before and perhaps during the time period Wyndham was most likely working on the original manuscript of *Triffids* (1946-1948),[103] Britain had just enacted its first two major decolonization projects, the partitioning of India and the evacuation of Palestine. In both cases, the turmoil resulting from such rapid British withdrawal has led to over seven decades of hostility between the new nation states that emerged hoping to

[101] Stock, "The Blind Logic of Plants", 442.

[102] See David Ketterer, "John Wyndham's World War III and his Abandoned Fury of Creation Trilogy" in *Future Wars: The Anticipations and the Fears*, ed. David Seed, Liverpool: Liverpool UP, 2012, Pages 106-109, Print. Ketterer explains that Wyndham had an early draft of Triffids complete in early 1948. His work on two other unpublished novels, *Project for Pistols* and *Fury of Creation* [later published after Wyndham's death as *Plan for Chaos*], seems to indicate *Triffids* was to be part of a trilogy of novels (see 106-107).

[103] Ibid., 106.

claim sole territorial mastery. These two conflicts continue today, with over 100,000 lives lost in Israeli-Palestinian conflict and estimates of between 1 and 2 million lives lost in massacres, wars and skirmishes between India and Pakistan since partition.[104]

Britain's decolonization trajectory is significant here because when Wyndham would have been working on *Triffids* in its first iterations and then subsequently in what ultimately became the two primary versions of the novel still in print today, there was considerable national anxiety about what Britain's quickly shrinking empire would mean for the lifestyle of its citizens or the nation's place in the new global order. Though in the coming pages this project will focus primarily on exploring how such national anxiety is detectable in the UK oil policy of the time, postwar anxiety might have other implications for reading the identity politics of the novel as motivated by expressions of conservative fantasy: "Postwar and contemporary British anxieties about national and cultural identity with regard to immigration and multiculturalism have roots in the loss of empire and of British geopolitical clout" (Lindner xxi). [105] The cessation of hostilities and the violence visited upon Europe also helped to draw a great deal of public attention to the hidden horrors of Britain's imperial legacies, including those that predated WWII.[106]

Historian Kenneth O. Morgan characterizes the immediate postwar period as a time underwritten by a "constant angst about Britain's world role" and also notes that the "direction of

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[104] See Milton Leitenberg, "Deaths in Wars and Conflicts in the 20th Century", Cornell University Peace Studies Program Occasional Paper No. 29 (3rd edn), 2006, Web.

105 See Lindner, Ulrike (and Maren Mohring, Mark Stein and Silke Stroh). *Hybrid Cultures - Nervous States: Britain and Germany in a (Post)Colonial World*. Amsterdam: Editions Rodopi, 2010. Cross/Cultures. Pages xi-xii. Web.

[106] See Sarah Britton, "'Come and See the Empire by the All Red Route!': Anti-Imperialism and Exhibitions in Interwar Britain", *History Workshop Journal* 69.1 (2010): 68-89, Web. Britton details the growing anti-colonial movement throughout Britain, and its attempts to draw attention through exhibitions in the late 1930s to "the harsh conditions in the colonies, and the hardships endured by colonial workers", page 78.

Britain's post-imperial policy was unclear after 1945" (574).[107] Though Britain enjoyed some of the political benefits that came with victory in Europe, rationing for the general populace continued for several years, the global empire was being rapidly supplanted by the United States in a variety of different ways, and assumptions about benefits that would come from a close alliance with the United States were proving to be shaky.[108] This manifested most obviously in the economic and military growth America underwent from the late 19th century up to 1929, followed by brief decline during the Great Depression, and finally America's massive economic leap forward before, during, and immediately after World War II.[109]

Perhaps less obvious, at least in those immediate postwar years, are some of the subtleties of Britain's shifting position politically and economically in relation to a crucial 20th century commodity—oil. According to Robert Mason, major political shifts began right at the end of WWII with the UK's 1945 election and a major victory for the Labour Party "which marked a political turning point of similar significance to the New Deal realignment of the 1930s in the United States" and which led to the "nationalization of many key industries" (224).[110] The political climate then rapidly changed again by the time of the publication of *The Day of the Triffids* in 1951when the conservative party regained power (225). These were tumultuous years for a populace still recovering from the impacts of the war, the blitz, and wartime rationing of commodities. These political shifts precipitated the rise of oil in the national political imaginary.

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[107] See Kenneth O. Morgan, *Britain since 1945: The People's Peace*, 3rd ed. Oxford; New York: Oxford UP, 2001, Page 574, Print.

[108] John Darwin, *The Empire Project: The Rise and Fall of the British World-system, 1830-1970*, Cambridge, UK; New York: Cambridge UP, 2009, Page 526, Print.

[109] See Neil Smith, *American Empire: Roosevelt's Geographer and the Prelude to Globalization*, Berkeley, [Calif.]; London: U of California, California Studies in Critical Human Geography, 2003, Page 5, Print.

[110] See Robert Mason, "Transatlantic Dimensions of Electoral Strategy: Republican Party Interpretations of UK Politics", chapter 10 in: *Postwar Conservatism, A Transnational Investigation Britain, France, and the United States, 1930-1990*, Berthezène, Clarisse., and Vinel, Jean-Christian, eds. 1st ed. 2017., Springer International Publishing, 2017, doi:10.1007/978-3-319-40271-0.

Charles More claims that during the same time period, Britain had to be concerned about its oil reserves, the success of its oil companies, global oil prices, the politics of its trade relationships, and the securing of oil futures because of the shifting demands of the WWII period (76).[111] In one example of a factor driving these concerns, More explains that "the main drivers of increased consumption were fuel for the navy and aviation fuel", the latter of which ranged from 404,000 tons in 1940 to 4.7 Million tons in 1944 (76). Effie G. H. Pedaliu gives another example of how policy centered around trade relationships:

> The oil business was one area of growing Anglo-American competition because of Italy's geographical position and its potential for an impressive increase in its oil refining capacity for internal consumption [...] In May 1946, the British Government tried to ensure that oil companies with British interests would not continue to suffer in the post-war period from Mussolini's policy of discrimination against the British petroleum industry. (302)[112]

Such factors, expressed as energy unconscious, might have impacted John Wyndham's editorial approaches to the British and American versions of *The Day of the Triffids* respectively, in reflection of his knowledge of the differing worldviews and relationships to energy held by American and British readers.

Divergent Views: Postwar Oil Policy and *The Day of the Triffids* in Britain and America

My visit to the *Science Fiction Foundation Archive* at Liverpool University showed that Wyndham was a careful student of his own differing literary markets, and this chapter will help

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[111] Charles More, *Black Gold: Britain and Oil in the Twentieth Century*, Continuum, London, 2009, Ebook. See "Britain's Oil Supplies", pages 72-78.

[112] See Effie G. H. Pedaliu, chapter 13, "The Foreign Office, the Board of Trade and Anglo-Italian Relations in the Aftermath of the Second World War" in Fisher, John., et al. *The Foreign Office, Commerce and British Foreign Policy in the Twentieth Century*, 1st ed. 2016, Palgrave Macmillan UK, 2016, doi:10.1057/978-1-137-46581-8.

invite further investigation of how *Triffids* and other works by Wyndham were revised based on similar considerations. Consequently, Wyndham's intentional removal, from the American edition of the novel of segments demonstrating awareness and anxiety over the coming global shortage of oil, opens the door to considering *Triffids* an early exercise in environmentalist thought as well as anticipatory of the more contemporary branching of science fiction into cli-fi.

Exploring the implications raised in this section, the final section of the chapter will use close reading to reposition the novel as an early chronicle of humanity's awareness of the scope and nature of the Anthropocene. I support this understanding of the text through demonstrating the intertwined nature of human and triffid agency as a co-dependency, mirrored on the hinge of oil's presence in the novel.

The Different Editions

An early and heavily abridged version of the novel was serialized under the title "Revolt of the Triffids" in *Colliers* magazine in January of 1951 and became instantly popular, but according to Wyndham specialist David Ketterer, Wyndham had already completed a new draft of the book intended for publication in both America and Britain (107).[113] His new draft then underwent labour intensive edits to alter spelling and diction and make the novel more readable to an American audience, something that seems to have been important to Wyndham, his editor Frederick Pohl, and his American publisher, Doubleday.[114] Curiously, the publisher may have also asked for the novel's length to be reduced, as Wyndham made significant cuts to the manuscript totalling over 11,000 words. It is possible that Wyndham did not wholly agree that

[113] David Ketterer, "John Wyndham's World War III and his Abandoned Fury of Creation Trilogy", *Future Wars: The Anticipations and the Fears*, ed. David Seed, Liverpool: Liverpool UP, 2012, Print.
[114] Ibid., 115-116.

these cuts to the text were necessary, as none of the same cuts were made to the edition published by Michael Joseph later that same year in the UK.

Ultimately, though the *Colliers* magazine version is also interesting for its differences from the two major final versions that are still in print today,[115] my argument centers on the cuts Wyndham made to the American edition (see Figure 1 below). I have detailed what I hope is a complete list of these cuts in a table appended to this chapter.[116]

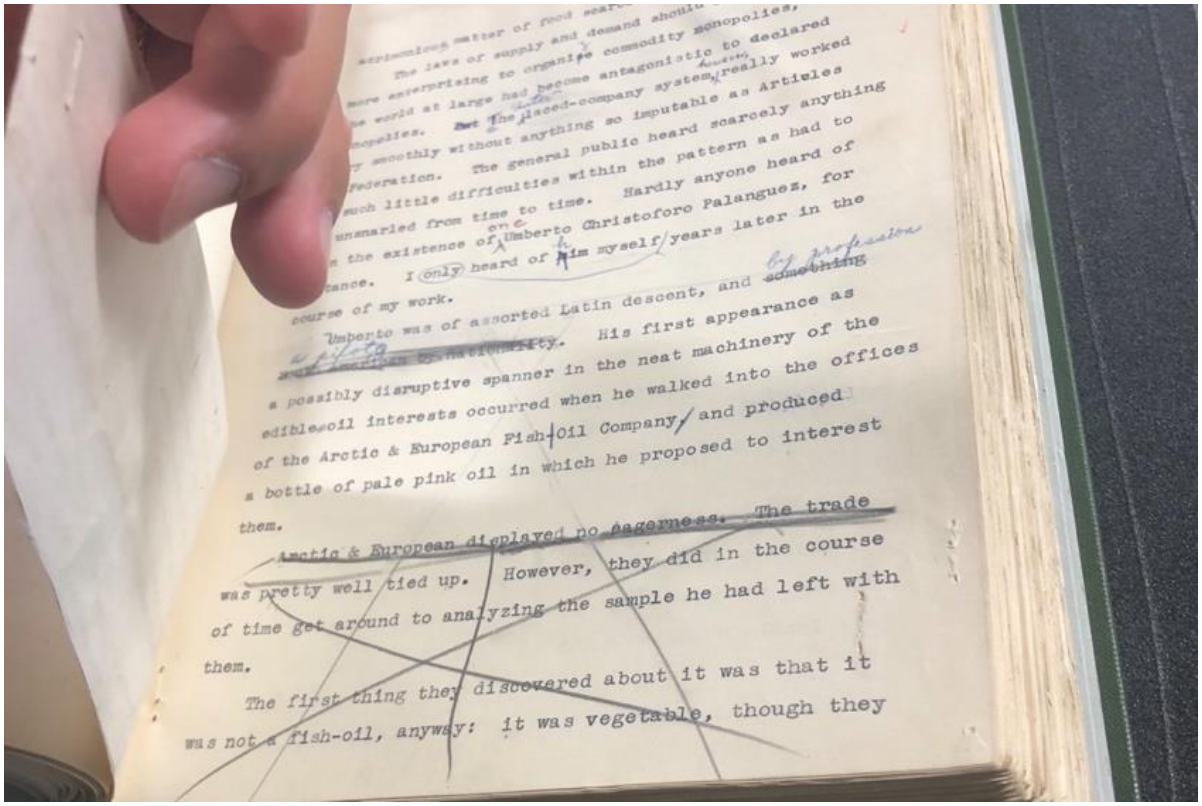

Figure 1. An example of cuts Wyndham made to the manuscript before American publication of *The Day of the Triffids* (1951). This photo was taken at the *Science Fiction Foundation Archive* at Liverpool University in 2018 and is used with the permission of *The John Wyndham Estate Trust*. © Jeremy Ross Strong.

[115] See Stock, "The Blind Logic of Plants", 437.

[116] The table briefly summarizes what I consider to be important aspects of the excised passages. See Table 1 on pages 106-109.

Several intriguing questions arise in consideration of the cuts: Why did Wyndham select the particular segments that were cut from the text and not others? What does their removal imply about American readership, British authorship and the socio-politics of the publishing industry in the post WWII period? How do all of these factors tie in with Britain's position vis-a-vis crude oil in the same time period? And most importantly, how could our growing awareness and understanding of the entanglements of the Anthropocene make the cuts and overall narrative of *The Day of the Triffids* relevant today in ways that were not relevant or at least not apparent in the past?

The Cuts to the American Edition

Which of the major passages excised for American publication but included in the British edition might be significant to my argument? There are 22 significant pieces of text ranging in length from 64 words up to 2, 270 words cut for American publication.[117] I have detailed the potential relevance of some of these cuts to the argument made in this chapter in Table 1. In most of these cases, Wyndham chose to remove an uninterrupted segment rather than simply edit for brevity, perhaps first and foremost because he felt it would not damage or disrupt the immediate context of each chapter or the fuller narrative of the novel. However, for that to be true, one must consider the logic of the cuts that were made alongside the other potential choices the author could have made.

[117] I am grateful to Paul Thompson, fan and careful reader of *The Day of the Triffids*, for first drawing my attention to the differences between the two editions, and also for carefully detailing some of the same cuts to the text on his blog: "The Reader's Guide to *The Day of the Triffids*".

For example, most of the cuts do not excise meaningless subject matter from the text or poorly written portions,[118] but rather remove distinctly interesting elements that enhance the plot, characters and thematics (including some relating to the sustainability of oil). This chapter closely examines 6 of 10 cuts that advance the argument that a subtextual anxiety about the sustainability of oil threatening the global position of the British Empire is infused into the novel, and integral to its novum. This subtext and the novum itself can in turn be understood to manifest the national political imaginary of the UK at this time.[119]

The degree to which Wyndham was aware of national oil policy and oil politics when he initially wrote the novel has been made clearer by a visit in August 2018 to Liverpool University, where I personally examined his papers and correspondence, which are held in trust in *The John Wyndham Archive*. The cuts made in preparing the American edition for press demonstrate a possible subconscious understanding of the geopolitical nature of oil on the part of the author—an understanding that might have been evolving rapidly during the years the various editions of *Triffids* were published, and that adds layers of historical depth to the novum of triffids as oil-rich life forms.[120]

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[118] The notion that the cut material is well-written, and, therefore, unlikely to have motivated the cuts is my own opinion. As further evidence, there are a number of cringe-worthy passages in the novel that the author left intact, such as this rumination on loneliness: "Something which lurked inimically all around, stretching the nerves and twanging them with alarms, never letting one forget that there was no one to help, no one to care. It showed one as an atom, adrift in vastness, and it waited all the time its chance to frighten and frighten horribly—that was what loneliness was really trying to do: and that was what one must never let it do…" – see: Wyndham, *Triffids*, 169-70 (American) and 231-232 (UK).

[119] See Table 1. My readings of this subtext focus first on triffids and their oil as novum in this section (1.2), and later include scenes written around sustainability and the use of cars and fuel oil in the text, in order to demonstrate that reading for the presence of oil as a manifestation of the political unconscious may be more instructive than a surface reading focused on the edible oil industry (1.3).

[120] Timelines I was able to confirm by the dates on letters to Wyndham's editor in the Wyndham archive make it a certainty that these passages were cut from a master draft before American publication, rather than added in later for the British edition.

Cut 1: The History of Triffid Oil

The first cut to be discussed is the largest, and understanding its contents inflects my consideration of the other cuts, as this passage highlights at great length the importance of oil in the narrative. The cut material spans 8 pages in the 1951 Michael Joseph edition that was published in the UK. What is clear is that Wyndham kept enough information from this long segment in the American version published by Doubleday in 1951—five truncated paragraphs of just over half a page—to keep the narrative smooth and support his novum.[121] Chapter 2 marks the longest unbroken exposition we get from the narrator Bill Masen, and is important in establishing key facts about his character, his view of the postwar world order, his (and the public) opinion about the dangers of military technology, and especially his knowledge about and experiences with the triffids.

The chapter in question is entitled "The Coming of the Triffids" and in both the UK and American editions, Wyndham's careful detailing of the carnivorous plants and how they may have been spread around the world via espionage-gone-wrong is maintained. The cut, however, excises all of Wyndham's careful detailing about the nature and properties of the oil, as well as the anxieties of the corporate executive for the *Arctic and European Fish-Oil Company*, the relationship between triffid oil and sustainability, and the depth of Russian involvement in the creation and control of the oil. These cuts are significant because they not only show that oil held a different position in the American and British national political imaginaries, but that Wyndham's actively tailoring the different versions of his novel may have stemmed from his tapping into a collective energy unconscious.

[121] The novum of this text being the triffids, the device used in science fiction to give the reader an experience of cognitive estrangement. See Darko Suvin, *Metamorphoses of Science Fiction*, Yale, 1979. Print.

That triffids are to be affiliated with high-quality oil is clear in either edition of the text. In the novel, Wyndham establishes some backstory about how triffids came to be commonplace life forms around the globe (hinting that they might be the result of genetic experimentation), and how they were rapidly commodified by corporations intent on harnessing their oil. The "pale pink oil" that informant and profiteer Umberto Christoforo Palanguez brings to the offices of the Arctic and European Fish Oil Company is described as making "most of their best fish-oils look like grease-box fillers" (32).[122] In the UK edition, the company sends out what little of the oil they possess for "intensive study" and "put[s] round hurried inquiries to know if Mr. Palanguez ha[s] made other approaches" (33). When Palanguez returns, he is given "flattering attention" by the managing-director of the company, who in turn tells Palanguez that he has brought to them "a very remarkable oil" and that he has never "seen anything quite like it" (33). The informant Palanguez then makes clear that a "very great deal" of the oil will "come on the market seven, maybe eight, years from now" (33).

The labours undertaken by the company to flatter Palanguez and the fact that the company is being given the opportunity to disrupt or anticipate future market conditions echoes the new strategy of economic interventionism undertaken by Britain in the wake of the changes to trade relationships made inevitable by postwar decolonization.[123] There is good reason to consider that this extended scene might have carried more weight with a UK audience, given the state of the British oil industry during the time period that Wyndham was working on the original and then subsequent drafts of *Triffids*. Securing sources of oil for revenue was not only a

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[122] See *The Day of the Triffids*, Michael Joseph, 1951, page 32 or *The Day of the Triffids*, Doubleday Modern Library Paperback Edition, 2003, page 23. Please note, in the American edition fish oil is not hyphenated.

[123] Interventionism is defined by the *Dictionary of Energy* as "a direct process of involvement by the government in the economy or a sector of the economy, as by acquiring property rights and undertaking productive activities". See "Interventionism" from the *Dictionary of Energy*. Elsevier Science & Technology, Second Edition 2015 (2014), http://search.credoreference.com/content/entry/este/interventionism/0. Web.

corporate endeavour, but also a large part of the national enterprise that was understood to be in precarious danger following the recent turmoil in the wake of decolonization.

According to Simon C. Smith in his book *Britain's Revival and Fall in the Gulf*, "the post-war expansion of oil revenues […] witnessed a more interventionist stance by the British, a policy which was facilitated by the transfer of responsibility for the Gulf States from the former imperial authorities in India to the Foreign Office in 1948" (3).[124] Britain not only had to adjust its strategy for how to engage with resource rich states under its control or influence, but also faced intensive market competition from other powerful countries to secure and sell postwar oil, mainly from the United States. [125] Britain also faced the threat of nations already known to hold large supplies of oil, such as Russia, encroaching on some of the same regions of the world where it held interest.[126]

The enhanced focus on Russia in the portions of the text that appear only in the Michael Joseph UK edition, are worthy of consideration in light of the geopolitical concerns of the day. It is certainly the case that tensions were more widely felt on both sides of the Atlantic after Winston Churchill's famous speech in Missouri on March 5th, 1946, during which he characterized the division between east and west through use of the phrase "Iron Curtain".[127] It is also clear that John Wyndham wrote *The Day of the Triffids* sometime very close to what some historians agree marks a more official onset of the Cold War, when Harry Truman delivered his

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[124] Simon C. Smith, *Britain's Revival and Fall in the Gulf*, Routledge, 2004, Page 3, Ebook.

[125] Charles More, *Black Gold*, pages 106-110.

[126] For further information about Russia's oil reserves and system of economic isolation, see: Thane Gustafson, *Wheel of Fortune*, Harvard University Press, 2012, EBSCO*host*, page 148. Also, for examples of the types of fears held in Britain relating either to "Russian Attack" or confrontation in the middle east, see: Simon C. Smith, *Britain's Revival and Fall in the Gulf*, Routledge, 2004, Page 18-19, Ebook.

[127] Curiously, much earlier in his career, Churchill was involved in early support for the company APOC (formerly Burmah Oil Company) when he helped convince the British government to invest heavily in its success (see More, *Black Gold*, 14). APOC, which later becomes AIOC, is of some significant focus near the end of this section.

"Truman Doctrine" to Congress in March 1947,[128] solidifying American policy towards the Soviet Union based on containment and determent through aggression and force of arms.[129]

At first it seems odd that Wyndham or his publisher would cut a large passage featuring Russia as villain from a novel that is about to be published during a period of high anti-communist sentiment in America, when such a passage would likely have been highly interesting to most readers. However, a close examination of another segment of the conversation excised from the text reveals subtleties that Wyndham must have been attuned to, and these thinly veiled meanings might have motivated his editing practice. The first example comes when Palanguez is being coy about which entity holds the plant seeds capable of producing the incredible oil:

> 'I think,' Umberto told him, 'I think that I might be able to supply you with seeds of this plant in, maybe, six months time. If you were to plant then you could begin production of oil in five years—or it might be six for full yield.'
>
> 'Just nicely in time, in fact,' observed the managing-director.
>
> Umberto nodded.
>
> 'The other way would be simpler,' remarked the managing-director.
>
> 'If it were possible at all.' Umberto agreed. 'But unfortunately your competitors are not approachable—or suppressible.'
>
> He made the statement with a confidence which caused the managing-director to study him thoughtfully for some moments.

[128] For a discussion of the evolution of the Triffids manuscript including fairly precise dates of the initial manuscript (late 1946 to February 1948), see: David Ketterer, "The Genesis of the Triffids", The New York Review of Science Fiction, March (2004), pages 11-13, Web.

[129] The Truman doctrine as policy leading to increased tension with the Soviet Union is discussed at length in the book *Origins of the Cold War: An International History* by Melvyn P. Leffler and David S. Painter, Taylor & Francis, 1994, Ebook. On page 34 the authors trace the Berlin Crisis to a rise of tensions in 1947.

'I see,' he said at last. 'I wonder—er—you don't happen to be a Soviet citizen, Mr. Palanguez?' (34)[130]

The conversation is interesting in its meta-subtext, as Palanguez characterizes the competitor as "not approachable" and the managing-director is able to assume from that information that Palanguez is implying the competitor is located in the Soviet Union, beyond the Iron Curtain, and that he is engaging in espionage. Certainly, the notion of the Iron Curtain was so successful as a metaphor precisely because it conveyed simply and efficiently that most of Eastern Europe had been sealed away behind Soviet economic, social and military boundaries. However, it is in Palanguez informing the managing-director that the competitor is not "suppressible", that a possible answer to why Wyndham chose to cut this passage potentially lies.

It might be that Wyndham realized that such a depiction of communist forces as unstoppable might not go over well with his American audience, given that at that time (about 1950), the second Red Scare in America was in full swing, the Chinese Civil War had just ended in victory for Chinese Communists led by Mao Zedong, and the Korean War was underway. There is some textual evidence beyond the cuts to suggest that Wyndham possessed enough business savvy to have his characters express positive views of America.

For example, in the same chapter, and coming before the cuts, Bill Masen opines that: "[a]t least the United States Government took the suggestion seriously enough to deny emphatically that it controlled any satellites designed to conduct biological warfare on human beings" (31). Of course, America's denial here is not equivalent to innocence, but juxtaposed against it is the fact that "other, and major, powers did not" deny they had dangerous space

[130] Wyndham, *Triffids* (UK version), page 34.

weaponry (31).[131] Coming just before the Palanguez episode, it does not seem wild conjecture to suppose Bill Masen (and Wyndham) has Russia in mind as one of those powers. Wyndham also uses Coker, a character that seems to express many of the author's more controversial philosophical ideas at a safe remove from the more practical Bill Masen, to suggest admiration for America and its abilities: "'it must be like this everywhere. Europe, Asia, America—think of America smitten like this! But they must be. If they weren't, they'd have been over here, helping out and getting the place straight'" (176). There is more evidence beyond *Triffids* to suggest Wyndham was conscious of his potential American audience, as discussed convincingly at length by David Ketterer in relation to a novel unpublished in Wyndham's lifetime, *Plan for Chaos*.[132]

Though I argue that Wyndham was tapping into a collective energy unconscious in creating the triffid novum, and in removing the passages under discussion, it is also likely that Wyndham was consciously aware to a degree of the different political orientation to both oil and Russia between his two audiences.[133] There is also always the possibility that Wyndham had concerns about his American editor Frederick Pohl's politics, or that Pohl had concerns about Wyndham's.[134] I think it more likely, however, that Wyndham implicitly and subconsciously understood that the larger arc of this section of the chapter being devoted to achieving supremacy in oil markets over Russia, while a legitimate fear for Britain, would likely not make sense to his

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[131] Space weaponry and affiliated policy is one of the main subjects of Chapter 3 in this dissertation.

[132] See: Ketterer, *Future Wars*, 106-107.

[133] My study of Wyndham's scrapbook at the Wyndham archive in Liverpool shows that he was a careful collector of news stories about politics, science, and futurism.

[134] Frederick Pohl, himself a famous American science fiction writer, is known to have been a member of the communist party and also served in the military during World War II. See Wikipedia's Frederick Pohl biography here: https://en.wikipedia.org/wiki/Frederik_Pohl. There is always the chance that Pohl was involved in influencing Wyndham to cut certain sections of the novel. I am still reviewing copies I made of letters between the two men but have so far not been able to find satisfying evidence either way.

American readership. After all, while American oil companies were dominating the postwar global oil market without much resistance, British oil companies like the AIOC (Anglo-Persian Oil Company) faced massive uncertainty and resistance from 1945 through to the publication of *Triffids* in 1951— particularly in Iran—and only reached some semblance of stability in 1954, after The United States and the UK were together successful in instigating a coup to prop up Mohammad Reza Pahlavi to rule as the last Shah of Iran until the 1979 revolution.[135]

In fact, one of the most tumultuous pre-Iran coup moments for the AIOC came in 1950 when Wyndham was in the midst of finalizing his American *Triffids* draft. According to Charles More, this was the year that the AIOC draft agreement for oil profit sharing with Iran was rejected despite the intervention of the British government (95).[136] The Iranian government rejected the proposed arrangements due to the precedent set by arrangements with Venezuela—another curious potential connection to *Triffids*, as the UK edition makes it clear that Palanguez "is something South American by nationality" (32).[137] Though the novel does not provide enough background or context to confirm Palanguez's nationality, reasonable inductive reasoning positions Venezuela as one likely nation of origin for the character.

Charles More presents Venezuela as a key country in the history of oil politics, noting that the nation represents "the competing influences on oil companies, the limits on their powers and the difficulty of locating precisely who was responsible for corrupt practices" (38).[138] Palanguez is the very embodiment of these ideas in the text of *Triffids*, as he is a "possibly disruptive spanner in the neat machinery of the edible-oil interests" (32),[139] and even threatens

[135] See More, *Black Gold*, 105.
[136] More, *Black Gold*, 95.
[137] Wyndham, *Triffids*, UK edition, 32.
[138] More, *Black Gold*, 38.
[139] Wyndham, *Triffids*, 32.

the managing director: "What will you say in a few years when these Russians are selling their oil all over the world—and your company is finished?'" (36).[140] This threat might hit almost too close to home for the UK readership of the day, but would be borderline laughable for the American one.[141] It then makes sense for Wyndham to have left this section intact for the Michael Joseph edition, given that his audience would have been more sharply attuned to the significance of a British corporation winning out over foreign interests in the oil industry, particularly those of Russia.

A question remains whether Wyndham intentionally cut this long segment due to differences in American and British policy or not, and whether this is the reason why Russia is positioned as the oil market competitor when Britain's major oil companies had more obvious competition from the United States, France and the Netherlands than they did from Russia. The answer likely lies in the trouble British oil interests faced in Iran, a country where Britain's first major cold war anxieties about the Soviet Union were manifested as early as 1944 but certainly came to a head during the crises of 1946, when the Soviet Union refused to remove its troops from occupied Iran by the agreed upon date.[142] Though America was heavily involved politically in negotiating the crises on the international stage via the UN, it was the UK and the Soviet Union that had actually invaded neutral Iran during World War II to secure oil.[143]

Britain's new policy of interventionism would be threatened by the continued presence of the Soviet Union, and as scholar Süleyman Erkan points out, "[...] the developments in Iran

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[140] Ibid., 36.

[141] In *Black Gold*, More points out that in the immediate postwar period, five out of the "seven sisters" (the biggest postwar oil companies in the world) were American companies.

[142] See Erkan Süleyman, "The Invasion of Iran by the Allies During World War II", *Codrul Cosminului* 16.2 (2010): 109-32, Page 123, Web.

[143] Ibid., 131.

resulted from a hidden Britain-USSR rivalry" (119).[144] Further to this, the United States had committed the bulk of its resources to entrenching its power in the Asia-Pacific and Western Europe, particularly Germany.[145] In *Triffids*, after Palanguez and the executive dance around the topic of where the oil originates, Masen's narration interrupts to deliver a much more obvious mixture of fear and fascination about what he terms "the other sixth of the world—that part which one could not visit with such facility as the rest" (34).[146]

In this section Masen narrows the rather broad earlier implication of Palanguez perhaps being a "soviet citizen", to imply that Russia specifically is the nation both creating triffids and with well-laid plans to exploit their oil:

> Indeed, permits to visit the Union of Soviet Socialist Republics were almost unobtainable, and the movements of those who did achieve them were strictly circumscribed. It had deliberately organized itself into a land of mystery. Little of what went on behind the veiling secrecy which was almost pathological in the region was known to the rest of the world. What was, was usually suspect. Yet, behind the curious propaganda which distributed the laughable while concealing all likely to be of the least importance, achievements undoubtedly went on in many fields. One was biology. Russia, who shared with the rest of the world the problem of increasing food supplies, was known to have been intensively concerned with attempts to reclaim desert, steppe, and the northern tundra. In the days when information was still exchanged she had reported some successes. Later, however, a cleavage of methods and views had caused biology

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[144] Ibid., 119. Erkan also points out that this rivalry was not new, and is traceable to the discovery of petroleum in Iran in the early 20th century and was only interrupted due to The Bolshevik Revolution in Russia (see page 110).

[145] For further details about where America's primary attentions were directed from 1945-1950, see Roger Buckley, "Postwar: Asia-Pacific, 1945—1950" in *The United States in the Asia-Pacific since 1945*, New York: Cambridge UP, 2002, Pages 7 – 48.

[146] Wyndham, Triffids, 34.

> there, under a man called Lysenko, to take a different course. It to, then succumbed to the endemic secrecy. The lines it had taken were unknown, and thought to be unsound—but it was anybody's guess whether very successful, very silly, or very queer things were happening there—if not all three at once. (34-35) [147]

The way Masen characterizes Russia as guilty of "endemic secrecy" and undertaking either "unsound", "silly", or "queer" experiments belies both the UK's desire to see beyond the Iron Curtain and also a fear of what was taking place there, and is hypocritical given Britain's documented history of state sponsored espionage.[148] Adam Stock has drawn attention to a section from the same *Triffids* passage to claim that the focus on biology and agrobiologist Trofim Lysenko can explain much about the influences that H. G. Wells and his knowledge of evolutionary theory had on Wyndham.[149] Stock argues that Wyndham mimics his literary idol here, an argument that does not discount the subtextual political anxieties about oil that are built into *Triffids* for the reader to interpret.

One such possibility of tracing these political anxieties based on the triffids affiliation with oil would be to interpret the statement "achievements undoubtedly went on in many fields" (23)[150] as a reference to achievements in industries like petroleum. There is precedent throughout the cold war years of nations demonstrating or acting on their envy of Russia's natural resources. For example, according to Charles More, during World War II, Hitler "justified his invasion partly by reference to Russia's oil wealth. […] Most countries in the world, then and now, do not

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[147] Ibid., 34-35.

[148] For an interesting discussion of the history of espionage between Britain and Russia, see Robert Johnson's "A Plain Tale of Pundits, Players and Professionals: The Historiography of The Great Game", in *Intelligence Studies in Britain and the US: Historiography since 1945*, Moran, Christopher R., and Christopher J. Murphy Eds. Edinburgh University Press, 2013, Pages 183-201, Web.

[149] See Stock, "The Blind Logic of Plants", pages 440-441.

[150] See above offset quotation. Wyndham, *Triffids*, page 23.

have their own oil supplies. And most countries in the world, then and now, sell other products to obtain oil" (87).[151] It seems likely that Britain would be at least wary if not covetous of Russia's natural resource wealth, oil in particular.

Britain had geostrategic reasons to be concerned about Russia. Despite owning some of the largest oil deposits in the world, Russia still persisted in attempting to leverage and destabilize Iranian regional politics for control of its oil fields in direct opposition to Britain's own plans.[152] Russia's interference in Iran might partly be explained because the Russian oil sector did not possess the technology to extract its own oil quickly or efficiently enough to keep up with the production pace of the west. That is however, until American oil company Haliburton advanced the new technology of hydraulic fracturing in 1948 and 1949, a technology that Russia was immediately interested in acquiring. From that point on, it was clear that Russia was also seeking new ways to maximize production from its oil rich land:

> The first Russian experiments with hydraulic fracturing were conducted in the 1950s. But as so frequently happened in that system, a good idea went under-developed. The Soviet military had first call on all materials and equipment, and the oil industry was never able to obtain pumps powerful enough to crack the reservoir rock. (192)[153]

Though containing loaded anti-communist language, the above passage indicates Russia's hydraulic fracturing was ultimately not very successful in the early 1950s. Though while Wyndham was writing and revising *Triffids*, that was not yet clear, and the mystery of Russian

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[151] See More, *Black Gold*.

[152] See Süleyman, "The Invasion of Iran by the Allies During World War II", *Codrul Cosminului* 16.2 (2010): 109-32, Pages 120-121.

[153] See Thane Gustafson, *Wheel of Fortune*, Harvard University Press, 2012, EBSCO*host*, page 192, Ebook.

oil technology would likely have been on the minds of those connected to or conscious of the industry and Britain's position.

Ultimately this largest cut to the text of the American edition represents the problem of the postwar UK position in relation to oil as one of looming sustainability crises, a problem whose affiliated anxieties likely led to Wyndham's subconscious editing practice on the American manuscript. The strength of the British Empire had historically been based (amongst other factors) on its rich abundance of finite resources such as coal and access through cutting edge industrial technology and infrastructure to precious metals; at least certainly Britain's ability to maintain its established dominance throughout and because of The Industrial Revolution was based on these factors.

Yet, even as Britain's supply of those same resources dwindled in the twentieth century, tumultuous changes within nations meant that after World War II and the beginning of decolonization, the UK position of power on the world stage was more precarious even in its increased range of influence. As a nation of densely populated and exceedingly well-developed islands, any threat to the UK's ability to maintain control over resources primarily located in other geographical areas, such as oil, raised the spectre of an inevitable crash. Such a crash threatened the promise of liberties already available to Americans, but not yet realized in the postwar recovery period for many citizens in the UK, such as the liberty of movement associated with the automobile.[154]

[154] For a discussion of how quickly the American automobile industry recovered from WWII rationing, see: Sarah Frohardt-Lane, "Promoting a Culture of Driving: Rationing, Car Sharing, and Propaganda in World War II", *Journal of American Studies* 46.2 (2012): 337-55, Web. On page 355 the author explains that unlimited automobile use was "linked to the joys of being an American" and that advertising campaigns were encouraging Americans to drive for pleasure less than four months after the end of the war. In section 1.3 I detail some of the evidence supporting the fact that UK fuel rationing was kept in place longer.

Wyndham's largest cut to *Triffids* as outlined above forces careful consideration of the geopolitics of the differences in oil production between Britain and America in the postwar period. More importantly, the analysis of the subtext surrounding Wyndham's triffid novum has shown that the author may have tapped into energy unconscious on two fronts. These competing national political imaginaries may have influenced significant textual changes between the American and UK editions of *The Day of the Triffids*. In the close reading of the novel that follows in section III, I will examine the relevance of other cuts by exploring the spectre of the oil sustainability crises as subtext that operates through the automobile and the agency of the triffids and the characters. Focus on these factors in my close reading reveals the implications of the cut material overall to reading the novel through a contemporary ecological lens in the age of the Anthropocene, and how reading the novel and 1950s oil policy together help outline the shape of the UK's national political imaginary at that time.

III. Energy Unconscious, Intra-relation, and Assemblage in *The Day of the Triffids*

The exploration of agency that guides this section relates directly to the human characters in *The Day of the Triffids*, and ultimately to overturning a humanist notion that they participate in actions motivated by *individual* philosophies and experience or motivated by *shared* social ideals as they respectively pertain to obtaining resources and to issues of sustainability.[155] I consider this to be a rather unconventional reading because the novel focuses on a main protagonist

[155] Here I use the term humanist in the understanding that modern society is still primarily informed by biased constructions of what it means to be human that are philosophical holdovers from earlier periods, or what Rosi Braidotti calls "hierarchical" understandings of a narrow group of privileged people. See Rosi Braidotti, "Posthuman Critical Theory", In *Critical Posthumanism and Planetary Futures*, Debashish Banerji, Makarand R. Paranjape, Eds. 2016, p. 13.

consciously choosing to move between and engage with a number of groups that form in postapocalyptic England. My reading argues that energy unconscious is the more potent force in propelling the protagonist and defining the various groups. For example, many instances within the novel depict characters such as Bill Masen subconsciously negotiating through necessary adaptations of the human relationship to fossil fuels in passages highlighting the finite nature of oil and the increasing difficulty of obtaining it. I believe many of these passages are primarily driven by a collective energy unconscious that is easier to discern when set against the history of UK oil policy outlined in the previous section.

I will outline here three examples of groups in *The Day of the Triffids* that emerge in attempts to reform society including groups that express in turn technocratic, socialist, and conservative Christian political ideals.[156] The first major group, led by Michael Beadley, advances the desire for a polygamous social co-operative, based on technical skills and shared labour, albeit with a Darwinist and also sexist philosophical undergirding. The second group, led by Wilfred Coker, are clearly socialist in nature, and lead a revolution to force the sighted technocrats to help the blind survive in a system where work and resources are shared. This system collapses when illness rapidly spreads among the blind, and the sighted break free to save themselves. The third major group, led by Miss Durrant, centers their social organization on religious principles, though not much else. This community quickly proves, at least to Coker and Bill Masen, to be unlikely to survive in the long term, and they quickly abandon it.

[156] For an interesting discussion of how *The Day of the Triffids* actually traces six separate social systems, see: Phil Gochenour, ""Different Conditions Set Different Standards": The Ecology of Ethics in John Wyndham's *The Day of the Triffids*", *The New York Review of Science Fiction*, Issue 274, June 2011, Volume 23, No. 10, see page 22.

In the groups formed by Beadley, Coker, or Durrant, exercising collective agency based on shared social ideals is met with varying degrees of failure and success that invite readers to reflect on the sustainability of human communities in our own present and future. This literal reading of agency within the text focuses on the more obvious conscious choices that Wyndham has made in constructing the narrative and is not without value in highlighting Wyndham's views of the political spectrum of the day, notwithstanding the rather sexist characterizations of women in the text. Reading for how agency is expressed through the triffids and also through their interactions with the characters reveals a surprising subtextual energy unconscious connected to UK oil policy that resists traditional readings of the novel.[157] The expressions of agency by the individuals and groups in the novel are outwardly and obviously humanist—however—they also comparatively invite understanding the triffids as agential life forms, and therefore the engagement between them and the human characters could be considered in light of critical posthumanist theory.

Intra-relation and Assemblage

It is in seeking conduits of mediation between human and triffid agency that my reading of *Triffids* highlights the entangled presence of oil in the subtext by engaging with recent ideas in new materialist and posthumanist philosophy. These critical approaches help me to trouble the more traditional humanist readings of the novel while simultaneously tracing its entanglement with oil and oil policy. In using the term "entanglement" for example, I draw on Karen Barad's now quite well-known definition:

[157] What I call the national political imaginary, and what Darko Suvin might call "historical semantics", *Metamorphoses*, 64.

> To be entangled is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence. Existence is not an individual affair. Individuals do not preexist their interactions; rather, individuals emerge through and as part of their entangled intra-relating. Which is not to say that emergence happens once and for all, as an event or as a process that takes place according to some external measure of space and of time, but rather that time and space, like matter and meaning, come into existence, are iteratively reconfigured through each intra-action […] (ix)[158]

Understanding the conflict between triffids and humans in the text as intra-relating primarily via shared entanglements with oil reveals the depth of oil's infusion into global culture and how entangled with oil human life has become or has always been. When I use the term entanglement in this chapter, I understand it to imply an enmeshing that precedes or was integral to the development of any agential form and is therefore not reversible because it implies a certain lack of independence from material entities that at first seem separate. In other words, entanglement may be a problematic term to borrow from the world of quantum physics in order to close read literature, as disentanglement is not really possible in the quantum sense, and it strikes me that much literary scholarship seeks to disentangle text.

For example, Julian Wolfreys characterizes traditional notions of literary criticism as a form of "dismemberment", and asks: "Is this not what we do each time when we perform an act of so-called 'close reading'?" (ix).[159] The value of Barad's work for me then, is in revealing both

[158] See Karen Barad, *Meeting The Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, Duke Univesity Press, London, 2007, Ix, Print.

[159] See Julian Wolfreys, *Readings: Acts of Close Reading in Literary Theory*, Edinburgh University Press, Edinburgh, 2000, Ix, Print.

the philosophical possibilities quantum theory offers (and thereby avoiding the violent forms of reading Wolfreys alludes to, resisting the urge to dismember), while also recognizing that "we need to bring our best social and political theories to bear in reassessing how we understand social phenomena, including the material practices" (24).[160]

Jane Bennett's reconfiguration of Deleuze and Guattari's notion of the assemblage is another useful alternative to reading the triffids and their relationship to the human characters in the text metaphorically. Bennett's description of assemblages as "ad-hoc groupings of diverse elements […] vibrant materials of all sorts" that are "able to function despite the persistent presence of energies that confound them from within" (24),[161] helps me in at least one case to understand the complex interactions between triffids, humans and oil. All three of these agents have what Bennett calls "vital force" alone, but together, if only temporarily, exude or are responsible for "an agency *of* the assemblage" (23-24).

If the implications of Barad's philosophy of matter are applied to *The Day of the Triffids*, I think they call for a reimagining of the novel not as a battle between separate and distinct species for planetary domination (humans vs. triffids), but as an ongoing process of matter intra-relating to itself in new ways through its agential emergences to achieve material equilibrium. Such a reimagining of the novel, straying from some of the more common readings for social metaphor, could invite new perspectives on how we consider, and interact with, our non-human, and even non-living worldly associates. Oil is also positioned through such a reading as that which when distributed in more natural balance can help to lubricate a less violent and disruptive intra-relating between significant agential forces such as the humans and the triffids.

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[160] Barad, *Meeting The Universe Halfway*, 24.

[161] See Jane Bennett, *Vibrant Matter*, Duke University Press, Durham, 2010, Page 24, Print.

I argue for an understanding of the triffids as they are presented in the text as a manifestation of the national political imaginary about oil in the UK. Energy unconscious grants the triffids their agency, bringing to life in the text the importance of oil to human movements. I understand the term *agency* to mean simply that an individual or collective force has the "ability or capacity to act or exert power" and also that the word implies "active working or operation" (OED).[162] Some of the details relating to the human confrontations with the triffids in the novel have been sidelined in criticism by assumptions that the triffids themselves are not actually triffids, but can be read as stand-ins for some other force: hence LaRose's triffids as ZnZ's, or Ketterer's triffids as either Vagina Dentata or as Nazis. These understandings of triffids, though producing original readings of the novel, run contrary to Darko Suvin's main contentions about the presence and function of a novum in a given text, and how the narrative is shaped around that device. As Suvin writes, science fiction is "*distinguished by the narrative dominance or hegemony of a fictional "novum" (novelty, innovation) validated by cognitive logic*" (63).[163] Further to this, as I identified in the introduction, Suvin expands his definition to include the "various dimensions of the novum", including the "relationships", "settings", "agents", or "relations", which can always be tied to a given text's "historical semantics" (64).

Everything from Bill Masen's career development as a triffid biologist, to the blinding of most of the world's population is in the service of supporting the cognitive logic of the novel. For example, Bill's background in biology is carefully traced as far back as high school and his career success tied to the global emergence of triffids (28),[164] and this helps to propel the logic

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[162] See definition of "agency", n. *OED Online*, Oxford University Press, June 2018, Web.

[163] Suvin, *Metamorphoses*, 63. Italics are Suvin's. Further to this, as I identified in the introduction, Suvin expands his definition to include the "various dimensions of the novum", including "relationships", "settings", "agents", or "relations", which can always be tied to a given text's "historical semantics" (64).

[164] Wyndham, *Triffids*, UK Edition, 28.

not only of Bill's survival, but also of his importance as the primary human "agent" that does battle with the triffids in the text. Similarly, the epidemic of blindness that occurs in the beginning of the novel serves to establish the hegemony of the triffids as not only plausible, but likely, a fact that the character Walter Lucknor captures succinctly when he says to Bill: "[t]ake away our vision, and the superiority is gone. Worse than that—our position becomes inferior to theirs because they are adapted to a sightless existence, and we are not" (52).

The above serve as obvious examples of how Wyndham establishes the triffids as the novum of the text. There are however, several more subtle ways in which the triffids also represent Suvin's idea of the novum as an "agent" or a manifestation of "relations basically new and unknown in the author's environment" (64).[165] Suvin uses the term relation in defining the novum. I see as potential for identifying intra-relation between human and environmental agents in the novel that perhaps masks itself as confrontation—a confrontation both driven by and made possible by one common lynch-pin—oil.

The value of the triffids to human society is very clear in the text, as they are farmed "on a large scale in order to extract valuable oils and juices, and to press highly nutritious oil-cake for stock feeding" (49).[166] The triffids are also described (by Masen as narrator) as having "moved into the realm of big business overnight" (49), a statement—that reflects through emphasis on triffid movement—Bill's recognition of the agential power of the triffids and mirrors the predominant use of oil by large corporations. The triffids as agential beings also represent the bringing of "materiality to centre focus" (6),[167] and not just their own materiality, but through

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[165] Suvin, Metamorphoses, 63.

[166] Wyndham, *Triffids* (UK Version), 49.

[167] Bronwyn Davies, "Ethics and the new materialism: a brief genealogy of the 'post' philosophies in the social sciences", Discourse: Studies in the Cultural Politics of Education, pages 1-15, Web. Davies is explaining Helen Cixous: "Through writing the body, Cixous brings materiality to centre focus, not just the materiality of one' s own

mirroring, that of humans as beings deeply entangled with oil and its detritus of machinery at a key time marking the beginning of what some scholars term "The Great Acceleration".[168] Returning to an older novel such as *Triffids* to close read for oil entanglements is a necessary change from more traditional reading practices, because as Karen Barad notes, "conceptions of materiality, social practice, nature, and discourse must change to accommodate their mutual involvement" (25).[169] Reading for energy unconscious therefore becomes a new social practice that identifies oil not just as the subject in the text, but also as an agent in the production of the text.

Energy Unconscious

My reading of the intra-relation, or mutual involvement between triffids and humans in the text also takes up a call raised several times in the work of Imre Szeman, for a reimagining of how we know oil and the importance of that endeavor to the global political future and human survival. As Szeman writes, the important project is in "making oil part of our knowing—making it a key component of our investigations on whatever topic", because the stakes include remaining stuck to an inflexible view of oil as "a material resource squeezed into a social form that pre-exists it, rather than the other way around" and not as that which "gives shape to the social life that it fuels" (146).[170]

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body but of the other, and of the world of which the embodied being is part. It is through writing that she accesses the body**'** s materiality **–** its agency" (6).

[168] See Gerard Delanty and Aurea Mota, "Governing the Anthropocene", *European Journal of Social Theory* 20.1 (2017): 9-38, Web.

[169] See Barad, *Meeting The Universe Halfway*, 25, Print.

[170] See Imre Szeman, "How to Know about Oil: Energy Epistemologies and Political Futures", *Journal of Canadian Studies/Revue D'études Canadiennes* 47.3 (2013): 145-68, Page 146, Web.

Szeman's call is in essence, an inspiration to the spirit of this chapter's closing focus on the entangled nature of oil, as well as to its middle section focused on the concrete historical oil politics of mid-century Britain. When taking up Szeman's call to read for oil in my close reading of Wyndham, I discover it to have always already been there, in both ideologically informing the creation of the novel, and also permeating its content. As the Petrocultures research group writes in their publication *After Oil*, "[o]il is not only something you put in your car. It is the foundation of our political identity and institutions, and it profoundly shapes our society and our environment" (29).[171] Building on the philosophy of both Barad and Szeman, I see both triffids and humans as mirrored entities shaped and defined by their relationships (intra-relations) with oil, even while they embody and consume that which gives them shape.

The mirroring between triffids and humans is further enhanced by a narrative of consumption in the novel; while the humans consume triffids at a remove or two by "tapping them for juice" (50),[172] the triffids in turn consume humans directly, pulling off "shreds from a decomposing body" and injesting them (48). In this mirrored relationship, the triffids always seem more efficient, more successful and in short, more capable of adaptation for survival in a world of finite resources. In another segment cut from the American edition,[173] the character Josella Playton remarks on the triffids position as a rival species:

> […]They don't bother about their individuals, and the individuals don't bother about themselves. Separately they have something which looks a great deal like intelligence;

[171] See *After Oil*, Petrocultures Research Group, University of Alberta, 2016, Print.
[172] Wyndham, *Triffids*, 50.
[173] This is cut 2 of 6 that I examine in this chapter.

> collectively it looks a great deal more like it. They sort of work together for a purpose the way that ants or bees do […] (271)[174]

According to Josella, the triffids do not engage in the excesses of individualism that humans do, which might also be the key to the purpose that Josella refers to. The purpose that triffids work towards is one of the most curious aspects of Wyndham's novel that has gone underexplored. What is that purpose? If one reads the detailed passages about triffids entrapping humans and testing their defenses, the behaviour of the triffids begins to resemble battle tactics; the logical reading of triffids engaging in sudden all-out warfare might be that triffids desire to eliminate human beings from the earth.[175] Certainly, that is the mandate-in-reverse of the humans, captured best by the thoughts of the lead protagonist Bill Masen in the final lines of the novel:

> […] there is still a lot of work and research to be done before the day when we, or our children, or their children, will cross the narrow straits on a great crusade to drive the triffids back and back with ceaseless destruction until we have wiped out the last one of them from the face of the land that they have usurped. (272)

What on a surface reading of the text seems like outright warfare between two completely separate and rigidly defined agents in the novel (the humans and the triffids), is revealed through their intra-relation to be the subtextual trace of the national political imaginary in Wyndham's postwar UK.

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[174] Wyndham, *Triffids*, UK edition, 271.

[175] For examples from the UK Version of triffid behaviour that resembles battle tactics, see page 206, where Masen and Coker witness a triffid ambush a man. When Coker demonstrates disbelief, Masen says "there's a kind of conspiracy not to believe things about triffids" (207), implying that most people can't fathom them as intelligent creatures. Also see page 265-266, where the triffids, after methodically testing the fences around Shirning for weaknesses by sacrificing individual triffids, finally break through by piling accumulative weight against the fence to break in. Josella's speech about the intelligence of the triffids, which was cut from the American version (probably to ensure Josella did not come across as too independent and intelligent for the American audience), follows fairly closely on this incident. The triffid seeding process is also described as "bombardment" (55). Finally, see page 51 where Masen admits the triffids might be "rattling out secret messages to one another", reminiscent of the cryptography employed by major powers during World War II.

The triffids and the humans both rely on oil to wage warfare, and a further mirroring effect is apparent in the novel through how each species engages with oil as a natural resource. A distortion (or crack) in this mirroring becomes apparent if we understand that triffids have evolved to produce and use oil sustainably, while human beings have not (at least not yet).[176] The human agents in *The Day of the Triffids* need to burn oil to move, and become aware of how unsustainable their use of this resource is. The focus on oil is primarily manifested through energy unconscious in the use of automobiles such as cars and lorries in the text, but also in certain characters knowledge of the role of oil in maintaining supremacy over the triffids. This is the point in this chapter where the large oil related cut discussed earlier in section II becomes so crucial, as it inflects on the subsequent cuts and how they serve to enhance the relationship between finite resources and sustainability in the UK edition of the novel.

When examined together as a whole, the cuts show that the novel anticipates peak oil and the increase in environmental awareness (if only subconsciously), and this contributes to building my case that science fiction itself has long been entangled with interrogating the Anthropocene. Josella's characterization of the triffids invites seeing them as a distinctly separate rival species, alien to humans in their ability to cooperate, and sharing a sort of distributed intelligence that is a major threat to human survival precisely because of the individualism that prevents humanity from being as effective. Josella's view at face value seems to imply that triffids are simply a monstrosity to be destroyed (much as humans will exterminate ants and bees when they find them in or near their homes).

[176] Bill's colleague Walter Lucknor notes how much more ecologically efficient triffids are as a species: "They can get their nourishment direct from the soil, or from insects and bits of raw meat. They don't have to go through all the complicated business of growing things, distributing them, and usually cooking them as well" (52-53, UK Version).

However, close reading reveals a unique connection between humanity and the triffids in oil, the pervasiveness of which links the two life forms materially through intra-relation, and perhaps figuratively as near doubles of one another revealed in its reflective surface. In the material sense, triffids and humans benefit through the strengths of the other and in turn are subject through intra-relation to any consequent weaknesses. This is a process through which each agent continually reconstitutes itself.

For example, the strength of human development brings about the large-scale cultivation of triffids, whose increased numbers are at first beneficial to humans, while the success of the triffids through their more sustainable methods of using oil challenges human adaptability. As Barad notes, such a process of intra-relation goes beyond the individual because "the manifold of entangled relations is reconfigured […and…] consequentiality, responsibility, and accountability take on entirely new valences. There are no singular causes. And there are no individual agents of change" (393-394).[177] In following this idea, Josella's amazement at the cooperative nature of triffids, bees and ants opens a potential avenue for the characters in the novel to later briefly embrace the intra-relation already taking place, rather than resist it through attempting to defeat the alien threat. In the novel humanity now has access to the agential potential of the triffids through contact with them, just as the triffids have had all along through intra-relation with their human counterparts. The above understanding informs my reading of the key scene at the end of the novel that relates to Josella's short but important speech about individuals and collectives, and that invites reading the human-triffid connection without using reductionist metaphors and instead through notions of intra-relation and assemblage.[178]

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[177] See Barad, *Meeting The Universe Halfway*, 393-94.

[178] Again, not the same "gear assemblages" that Barad refers to in her book, but the notion as presented by Deleuze and Guattari and refined by Jane Bennett in *Vibrant Matter*.

The Automobile and Mobility in Post-WWII Britain

Triffid agency and its relationship to oil coupled with the heavy redaction of the oil-focused passage discussed above, calls for a close reading of human agency and its link to oil and the automobile in the novel. As Bronwyn Davies writes, in her discussion of Barad, "discursive/material entanglements are not just with other humans, but with animals, and with organic and inorganic matter […] we cannot assume that humans are separate from other beings and the other matter of which the world is made up" (4-5).[179] Even though humans created automobiles, their material entanglements with them have only become exponentially more pronounced since the WWII period, and I read the subtext around the use of the automobile in *Triffids* as a major component of energy unconscious.

While the numerous other cuts made for the American edition do not all dwell as obviously on oil as the extended Palanguez segment, cuts featuring driving and the automobile take on a position of significance in the text that is enhanced in light of the Palanguez cut. For example, in Chapter 9, in a well-written segment in which Bill reflects on Westminster Abbey and its ability to "preserve within it the monuments to those whose work was now all destroyed" (168),[180] he seems to connect the car he is travelling in to that famous tomb. Bill drives away from the Abbey feeling "the fear of being alone" as well as "horror" and the sense that he is "naked" (169). He has to "make himself" drive up Victoria Street, while "the sound of the car alarm[s]" him with its "echoes" (169). At this moment, Bill has the urge to abandon the car as though it were responsible for his disquieting feelings: "My impulse was to leave it and sneak

[179] Davies, "Ethics and the new materialism", 4-5.

[180] See Wyndham, *Triffids* (UK Version), page 168. This is cut 3 of 6 to be discussed.

silently on foot, seeking safety in cunning, like a beast in the jungle. It needed all my willpower to keep myself steady and hold to my plan" (169). Here, it is as though Masen recognizes the car is linked with the feelings of loneliness and danger the post-apocalyptic city raises from him, and it is the sound of the car's echoes (the sound of burning oil) that makes Masen wish to regress to a more primitive form, free from inheriting the responsibility for humanity's hollow legacy of plundering the earth for profit. This is how energy unconscious infuses the subtext of the novel.

Masen's fear of his automobile comes at one of his most vulnerable moments in the novel, when he is separated from Josella and other characters. Two other passages, however (both also cut from the American version), demonstrate that on the whole Bill's fantasy of running away into the jungle is precluded by the presence of the triffids and the problem that human beings now rely on the remnants of the technology they created to survive, and in particular on dwindling supplies of oil.[181] The first passage comes in Chapter 10, and is interesting for expressing more or less the polar opposite of Bill's fear of his car, perhaps an expression of the contradictions inherent in the human relationship with finite energy. A section of about three pages of text from 190-193 traces how all of the survivors came to Tynsham manor, separating most of the survivors into two camps or schools of thought.

One camp, Michael Beadley's group, the technocrats mentioned earlier in this chapter, is affiliated with science and the university and is primarily composed of sighted men who are the "drivers for a dozen vehicles" that are used to transport London evacuees to Tynsham (190).[182] The other group is primarily female, mostly blind, and are clearly associated with religion

[181] There are several passages in both versions of the text that express anxiety over the ability to obtain oil, and they are greatly enhanced by ideas that exist primarily in material cut from the American edition. I explain some of these passages towards the end of the chapter.

[182] This is cut 4 of 6 to be discussed.

through Miss Durrant's mention of a "miracle" and the "Christian faith" (191). It could be understood, given Bill's more obvious affiliation with Beadley's party in the novel, that his earlier fear of his car is emblematic of fears of the loss of progress and technology, perhaps even fears of a return to feudalism or barbarism. So despite the connection between Bill's anxiety and oil through the hollow echo of his car, he, Coker and Josella are part of the human element in *The Day of the Triffids* that will continue to use oil (in many different ways) as long as possible to maintain a slight advantage over the triffids.

In this sense, humans, cars and oil make up one of the assemblages in the novel, which together becomes capable of temporary but powerful feats of agency. Durrant's camp on the other hand, is clearly affiliated with an ignorance to press this advantage, as demonstrated by three separate passages where Coker berates one of Durrant's sighted members for being unable to start an engine (all were cut from the American edition).[183] Coker accuses the unnamed character of "dumb futility" for not being able to start the engine attached to the generator that would put the lights on at Tynsham (195). In the debate that follows, Coker claims "the engine just happened to be a symbol" (195), though the fact that he and Bill leave Tynsham relatively quickly the next day, travelling in "two lorries" (205), demonstrates that dumb futility could also equate to a loss of mobility, or perhaps agency that Coker associates with fuel-based machines.[184] The Beadley group also left Tynsham soon after arriving, in "lorries still loaded" with supplies, leaving Durrant's group to "sink or swim by their principles", and correlating the engine clearly through assemblage with agency (191-192).

[183] See pages 194-196, 196-197 and 197-198. This is cut 5 of 8.

[184] Others have interpreted Coker's speech in this section of the novel as misogynistic or sexist, which I agree it is. I also find this passage expressive of energy unconscious through its conveying the fear of losing the ability to manipulate energy through Coker's anger and desperation.

Oil driven engines are not only connected with mobility in the text, but also with protection, against both the blindness-causing satellite weapons and the triffids. Another interesting cut made for American publication is a segment in which members of a group of survivors that Coker and Bill meet are saved from blindness because while "on their way to spend a two weeks holiday in Cornwall", they get into an accident with a "double-decker bus" (213-214).[185] The accident leaves eleven survivors, which for various reasons dwindles to three – but two of them are the couple that had been travelling for pleasure to Cornwall, which ironically associates a car accident with protection from blindness. Due to the accident, the couple are miraculously unharmed by the satellite weapons.

This is not dissimilar to Bill's own miraculous protection through the unlikely and distinctly ironic device of being temporarily blinded and therefore avoiding a more permanent blinding.[186] The same group are described as cautious, "out of their vehicles only in built-up areas where there was little likelihood of prowling triffids", showing that despite the recent trauma of the car accident, they rely on their vehicles for protection against the triffids (217). There may be a relationship in the text between the automobile as protective vessel and class privilege, as the sighted characters conveyed safely or protected by vehicles in the text, like the couple headed for a Cornwall vacation, are mostly members of the established middle class. Bill and Josella, as a prominent biologist and best-selling author respectively, are included in this class category and are both protected at distinct moments from triffids by their vehicles. These moments showcase

[185] This is cut 5 of 6.

[186] Bill's particular situation, and all of chapter one for that matter are closely associated with the apocalyptic tradition, with the blindness and healing conveying religious overtones of Bill's special status as a Christ-like savior character.

the pronounced intra-relation between the triffids as agents and the far more temporary human-oil-car assemblages.

After leaving Shirning on his journey hoping to reunite with Josella or Michael Beadley's group in the chapter "…And Further On", Bill recounts an incident of triffid attack that is entangled with the temporary protection afforded him by the remnants of the automotive culture developed in the first half of the twentieth century. This is also one of the passages entirely missing from the American edition of the novel. The passage begins with Bill travelling by "small, cross-country roads" reflecting on the higher number of triffids present in these locations than present near the "main roads", and on the fact that triffids "tended to avoid a hard surface" due to "discomfort in their limb-like roots" (208).[187] Bill remarks that he is beginning to feel triffids might not be "entirely indifferent" to humans, a statement that is immediately revealed to be understatement when Bill explains how a triffid "slashed at [him] from the hedgerow as [he] passed" in his car (209).

Despite the triffid's lack of sight, and Bill describing the attack as "inexpert in its aim at a moving vehicle", the incident feels almost as though it is an assassination attempt, with the triffid leaving "its print in little dots of poison across the windscreen" (209).[188] Bill reflects after his escape that he would from then on drive "with the nearside window closed", and also begins to wonder "how big a part the triffids might have been playing in the disappearance of the inhabitants from" nearby villages (209).

[187] This is cut 6 of 6.

[188] Bill is of course, the worst enemy of the triffids in the text, as he has special biological knowledge of the plants and is also increasingly aware of their intelligence and ability to communicate. He has built up some immunity to triffid poison, having been exposed at least three times to near fatal stings throughout the novel.

When he enters the next town, Bill "[drives] slowly", seeing bodies lying around the village in locations that lead him to the conclusion that "triffids only ambushed in places where there was soft earth for them to dig their roots into while they waited" and that the only safe places were where homes opened "straight into the street" or "paved areas" (209). He further realizes that blind or isolated humans in the smaller villages are in the defensive position of a siege:

> Now and then another would be driven out by hunger. A few might be lucky enough to get back, but most would lose themselves and wander on until they dropped, or came within range of a triffid. Those who were left might, perhaps, guess what was happening. Where there was a garden they might have heard the swish of the sting, and known that they faced the alternatives of starvation in the house or the same fate that had overtaken the others who had left it. (210)

The mobility Bill enjoys due to the car and the roads allows him to gather this information for what will increasingly begin to resemble preparations for a coming war between triffids and humans. The protective role of cars in the text is echoed by a story Josella recounts later in the text after her reunion with Bill; the car takes on a new importance in Josella's tale, offering not only mobility and protection, but utility as an offensive weapon.

Josella explains to Bill that when she first began travelling to Shirning from London, she survived by sleeping in her car, which shows that both main characters are protected by cars in the text (249). Josella recounts that on arriving at Shirning she discovers the triffids have trapped her friends Dennis and Mary Brent and a friend, Joyce Taylor, in the house, in a siege situation similar to what Bill has already witnessed. Josella leaves the safety of the car, only to be warned back by Dennis. It is here that the car becomes a weapon Josella turns on her enemies: "[t]he

triffids stirred and one of them began to move towards me, so I nipped back into the car for safety. When it kept on coming, I started up the car, and deliberately ran it down" (249). It is Dennis that reveals the true resource of value here in battling the triffids is not the car itself, but the fuel upon which the car depends, when he says to Josella that "if you have a can of petrol to spare, throw some of it their way, and follow it up with a bit of burning rag [...] That ought to shift 'em" (249). The limited nature of the fuel in the book recalls Bennett's notion in *Vibrant Matter* that assemblages have a "finite life span" (24).[189] His advice for dispatching triffids is telling, in that it begins with the qualifier "if", both continuing sustainability anxieties expressed earlier in the text by Coker and Bill, and anticipating future problems related to diminishing supplies of oil.

As presented in section II of this chapter, World War II was a conflict that hinged on a steady supply of oil for fuel. This had a serious effect on the use of automobiles for work and pleasure during the war. Charles More notes that as "military use increased, there was a continued squeeze on civilian consumption. Petrol both for private and for commercial vehicle use was subject to rationing from the start" (75-76).[190] There was even some discussion of the abolition of basic private motoring rations as early as 1940 (76).[191] As *The Day of the Triffids* was written entirely after the war though, a question arises: would citizens of the UK not directly aware of the postwar geopolitics of Russian competition for Iranian oil really pay any mind to oil as a scarce commodity?

According to More's oil history research they likely would, as he notes that petrol rationing was not discontinued until 1950 in the UK and the government phased out the rationing

[189] See Bennett, *Vibrant Matter*, 24.
[190] More, *Black Gold*, 75-76.
[191] Ibid., 76.

and continued to restrict sales (115), meaning conditions were not even favourable for car ownership until the year Wyndham was finalizing the two versions of *Triffids* discussed in this chapter, and as More notes, not ideal for the common motorist until the mid 1950s (112). More also details the "big increase in government spending on new roads", which did not begin until the late 1950s (112). Both of these factors may indicate that the heavy focus on driving, cars and lorries in the novel is itself partially an element of fantasy, given the relative difficulty of obtaining and using petrol in the more immediate postwar period. But Wyndham's placing Bill in a vehicle in almost every chapter, and almost entirely in a vehicle for two chapters ("And Further On" and "Journey in Hope"), is not done out of ignorance of the unsustainable nature of such a lifestyle. There are many indications in the text that Bill and other characters worry about the finite nature of oil and the collapse of the assemblage that gives them the ability to combat the triffids.

Though at Tynsham Masen and the others are able to temporarily outwit the siege tactics of the triffids with an electrified fence, there is growing recognition that their survival depends increasingly on supplies of oil:

> I believe that system would have been completely effective if we could have kept it in action all the time—or even most of the time. But against that there was the fuel consumption. Petrol was one of the most valuable of our stores. Food of some kind we could always hope to grow, but when petrol and diesel oil were no longer available, much more than our mere convenience would be gone with them. There would be no more expeditions, and consequently no more replenishments of supplies. The primitive life would start in earnest. So, from motives of conservation, the barrier wire was only

> charged for some minutes two or three times a day. It caused the triffids to recoil a few yards, and thereby stopped them building up pressure against the fence. (267)[192]

This long passage appears in both editions but increases in relevance to my reading for energy unconscious when read against another passage from the automobile related cuts discussed previously. At Tynsham, Bill recognizes that the "convenience" oil provides masks a much more serious dependence of humanity on oil. Bill's frustration is perhaps exacerbated by his detailed knowledge that unrestrained human greed for oil is what made the triffids such a threat in the first place. In the same section cut from the American edition in which a triffid attempts to kill Bill as he is driving, he thinks about the increasing numbers of triffids in direct relation to the "many nurseries besides our own Company's plantations" that raised triffids for "private buyers" (210-211).[193]

Reading these segments together shows that Bill is reflecting on the inherent long-term folly of capitalism and the tenuous grasp humanity holds on the progress of civilization, and also connecting these ideas to the sustainability of oil use. Bill is beginning to consciously adopt a more advanced comprehension of the magnitude of the Anthropocene that I believe is important in understanding his final agential act in the novel as one completed by a new assemblage formed by continual subconscious intra-relation with triffids throughout the novel.

The Novum as the National Political Imaginary in Transition

Earlier in the novel, Bill seems unaware of the significance of oil to his comfort and survival even while discomfited at what a lack of electricity might mean for his personal hygiene:

[192] Wyndham, *Triffids*, 267.

[193] This passage is also from cut 6 of 6.

> When I awoke I could hear Josella already moving around in the kitchen. My watch said nearly seven o'clock. By the time I had shaved uncomfortably in cold water and dressed myself, there was a smell of toast and coffee drifting through the apartment. I found her holding a pan over the oilstove. She had an air of self-possession which was hard to associate with the frightened figure of the night before. Her manner was practical too. (107)

Here Bill's uncomfortable shave is juxtaposed against his comfort at stepping into a scene reminiscent of traditional gender roles, during which he condescendingly evaluates Josella for her domestic "manner". This moment is surely the kind of textual evidence Brian Aldiss has in mind when he characterizes Wyndham's novel as an example of the "cozy catastrophe", and surely the gender attitudes of the day have their own embarrassing place in the national political imaginary of the UK at this time. However, I believe that Josella's cooking the breakfast over an oil stove complicates Aldiss's view slightly in light of what this chapter has presented. If we reflect back on this scene in light of everything Masen later learns about how slippery the foundations of human social relations are in relying on oil, then his view of Josella is revealed to be conditional, at least for a contemporary readership that can understand the role of fossil fuel energy in perpetuating social inequalities, including sexism.[194] As the text progresses, so does Bill's recognition of the serious problems a lack of oil will cause for long-term survival.

[194] Both Coker's long rants at one of Durrants female supporters (194-195) and Josella's speech about triffid intelligence (271-272) complicate reading the novel as simply sexist, in that they show the novel both engages with socialization and gendering and also presents Josella as at least equal to Bill Masen in intelligence and understanding of the triffids. It is interesting that both of those segments were cut for the American edition of the text, perhaps telling of the different evolving ideas about gender in the UK and America in the postwar years.

Bill first sees that seeking out new supplies is taxing on time and effort that could best be spent elsewhere,[195] and understands that oil is now one of their most important resources:

> Once more it became my task to scrounge and forage. This time I had to work on a more elaborate scale to include not merely food, but petrol for the lighting system, hens that were laying, two cows that had recently calved (and still survived though their ribs were sticking out), medical necessities for Mary, and a surprising list of sundries. (247-248)

The time spent searching out supplies of oil is not the only problem faced by the group, as Bill begins to understand that the triffid siege will continually exhaust their fuel supply and foresees that the inevitable deterioration of the roads will prevent them from getting more. In other words, the precarious position of the group is best understood through the lens of the contemporary reader as a sustainability problem. Bill's concerns in the novel in some ways predict the coming transition that must take place in the national political imaginary in this regard. The triffids as novum of the novel represent the oil policy component within the national political imaginary that Masen, representing the citizen, must come to terms with. Perhaps just as the general populace of the UK in the postwar decade wasn't ready to consider an eventual global oil shortage right when rationing ended, Masen is hesitant to change his view of the triffids after being thrice stung.

In Chapter 16, "Contact", Bill ruminates on the danger posed by the triffids, despite having erected a fence all around Shirning. The triffids are:

> […] patiently waiting. I could see hundreds of them in a dark green hedge beyond the fence. There must be research—some natural enemy, some poison, a debalancer of some

[195] At the beginning of chapter 17, Bill and Susan go on a run for coal and it takes them the whole day. Obtaining entire tankers of oil proves to be a more efficient survival strategy in the novel. Wyndham, *Triffids*, UK Version, page 291.

> kind, something must be found to deal with them; there must be relief from other work for that—and soon. (288)

Bill's thoughts above show his awareness of the importance of social hierarchies in allowing specialization to develop, and then immediately he connects fuel scarcity with the threat that they won't have enough time to engage in the necessary research: "Time was on the triffids' side. They had only to go on waiting while we used up our resources. First the fuel, then no more wire to mend the fences. And they or their descendants would still be waiting there when the wire rusted through" (288).

The idea that "time" is "on the triffids side" relates to the advantage that triffids enjoy over humans, having their use of oil sustainably integrated into their own biology and possessing a more unified vibrant force as a collective that has the longevity that the human-oil-automobile assemblage does not.[196] The recognition that oil supply is what is sustaining the community is clear when Bill thinks about the future difficulty of getting an oil tanker onto the property,[197] and then realizes that the infrastructure humans have created for transporting oil is too fragile. The surrounding countryside is "reverting to marshland", and the "roads [are] rapidly becoming worse with the erosion by rain and streams, and the roots that [break] up the surfaces" (277). Bill slowly reaches a moment of horrified comprehension about the dire chances of the Shirning group's long-term survival and realizes that Coker had been right.

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[196] The novel seems to prove several times over, first through the device of the politics of the blind vs. sighted characters and then through subsequent disagreements of the various human groups, that individualism could be a major hurdle to human survival.

[197] Wyndham, *Triffids*, UK Version, 277. "The time in which one would still be able to get an oil-tanker back to the house was already becoming measurable. One day one of them would fail to make its way along the lane, and very likely block it for good. A half-track would continue to run over ground that was dry enough, but as time went on it would be increasingly difficult to find a route open enough even for that".

Earlier speeches by Coker in the text touching on the subject of sustainability (especially regarding oil) were initially rejected by Bill,[198] who told Coker that "[i]t's not as urgent as all that" and that they could "live on capital for a long while yet" (204). Bill's fantasy here is a microcosm of the fantasy of life in the capitalist system, being that of a system that continually provides. According to Fredric Jameson in *The Political Unconscious* however, capitalism should be stressed for its "destructive effects [...being...] both irreversible and fatal to the older social forms" (216). Clearly, in *Triffids,* Bill was mistaken, and Coker's warnings have become more relevant. Bill even admits to Josella that he is "haunted by Coker" (289), and she in turn forgives Coker for his mistake in forcing the sighted to care for groups of blind in the beginning of the novel (286). This contradiction between Coker's socialist views and Bill's capitalist ideals is partly what connects the novel itself to the national political imaginary. As Jameson writes, "contradiction, structural hierarchy, or uneven development of a number of distinct narrative systems [...] allows us to grasp the text as a socially symbolic act, as the ideological—but formal and immanent—response to a historical dilemma" (125).[199] The real problem in *Triffids* then, turns out not to be the triffids at all, but the historical dilemma of sustainability that they identify through energy unconscious.

This marks a turning point of sorts in the novel for Bill, and I'd argue for the reader, who will recognize that the triffids themselves are not the true enemy, nor is Torrence, the man that

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[198] For example, Coker makes the following speech to the group he and Masen collect on their journey, which I also interpret as a continuation of his many conversations with Bill on the topic: "There won't always be those stores. The way I see it, we've been given a flying start in a new kind of world. We're endowed with a capital of enough of everything to begin with, but that isn't going to last for ever. We couldn't eat up all the stuff that's there for the taking, not in generations—if it would keep. But it isn't going to keep. A lot of it is going to go bad pretty rapidly. And not only food. Everything is going, more slowly, but quite surely, to drop to pieces. If we want fresh stuff to eat next year we shall have to grow it ourselves, and it may seem a long way off now, but there's going to come a time when we shall have to grow everything ourselves. They'll come a time, too, when all the tractors are worn out or rusted, and there's no more petrol to run them, anyway—when we'll come right down to nature and bless horses—if we've got 'em." (Ibid., 225-226).

[199] Jameson, *The Political Unconscious*, 125.

comes to Shirning intent on exercising authoritarian control over Bill and his friends. The real problem is instead that the strongest form of agency available to the human survivors in the novel is one based on an assemblage that can no longer be sustained. New assemblages will be required for survival, and they will only emerge through new configurations of intra-relation between humans, materials (or clusters), and other agents.

The ending of the novel mirrors the long focus on the wonders of triffid oil that are outlined in the beginning of the novel (discussed in section II), in that it focuses in reverse on the misuses of fossil fuels by humans and the limitations faced by a society grown so dependent upon them. The Shirning survivors first resort to using oil as a weapon against the triffids and also sabotage their own supply to disable their human adversaries. As this chapter has shown that *Triffids* itself is partly generated from the postwar national political imaginary, it is fitting that it is in the language of warfare that Bill describes the battle against the triffids, depicting a deadly use of oil reminiscent of some of the most horrible battle tactics of World War II:

> A tour of the boundaries every few days with a flame-thrower could have kept the numbers down effectively, but it would have taken a lot of time and soon have run us out of fuel. A flame-thrower's consumption is high, and the stocks held for it in the arms depots were not large. Once we finished it, our valuable flame-throwers would become little better than junk, for I knew neither the formula for an efficient fuel nor the method of producing it. (264)

The above passage shows that Bill is aware that the reliance on oil is a weakness, and his final action is a gesture towards energy transition that recalls Josella's speech about working together "like ants or bees" (271).

This final significant action sees Bill engage in an act of sabotage, not against the triffids, but against the threatening character Torrence and his crew. The fact that Masen must again be distracted by human conflict from his desire to learn more about and, therefore, defeat the triffids, is again evidence that human competition for resources puts them all at a disadvantage to the triffids. However, because Bill sabotages both the military vehicle and the fuel tank on the Shirning property—again, the plot centers around mobility and fuel— by using honey to spoil the fuel,[200] the text could be making an indirect subconscious statement about the new collective Bill plans to be a part of on the Isle of Wight. Josella's compelling speech about what makes triffids intelligent has her compare the triffids to ants or bees, but Bill takes things a step further not by working together with other people, but by forging, however temporarily, a new alliance with bee and triffid both. Using the bee honey to spoil Torrence's fuel tanks and instead of fighting the triffids, letting them remain surrounding Shirning is completely opposite to Bill's behaviour throughout the novel to this point. This makes Bill's action at the end of the novel a very good example of what Bennett calls "action that crosses the human-nonhuman divide" (24),[201] and also the moment in the text that best captures how Barad's notions of intra-relation can culminate in discernible intra-action:

> Since individually determinate entities do not exist, measurements do not entail an interaction between separate entities; rather, determinate entities emerge from their intra-action. (128)[202]

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[200] The passage reads: "I caught up a bundle of blankets and clothes and a parcel of food that I had laid ready, and hurried with them across the yard to the shed where we kept the half-track. With a hose from the tanker which held our main petrol supply I filled the half-track's tanks to overflowing. Then I turned my attention to Torrence's strange vehicle. With the help of a hand-dynamo torch I managed to locate the filler-cap, and poured a quart or more of honey into the tank. The rest of the large can of honey I disposed of into the tanker itself" (*Triffids* 300).

[201] See Bennett, *Vibrant Matter*, 24.

[202] Barad, *Meeting The Universe Halfway*, 128.

I would argue that Bill Masen is best defined in this way as a contributor to an assemblage, whose individual agency is an illusion best expressed in this moment of emergence from his ongoing and changing intra-relations, with the triffids, with oil, and with bee honey.

Conclusion

In order to fully appreciate how profound an effect the triffids may have had on the minds of readers and filmgoers in the UK, consider that in a poll conducted in 2011, triffids were number fifteen on the list of "Top 20 Scariest Movie Monsters",[203] while in the United States, a similar poll conducted in 2012 had triffids listed at number forty-nine.[204] Perhaps the more complete UK version of *The Day of the Triffids* contributed in some small way to connecting the triffids more roundly with the dangers of unsustainable living driven by western capitalism, itself sustained primarily by oil monopolies founded in the early twentieth century but entrenched at the end of World War II. Or perhaps UK readers were more sensitive to a narrative set in familiar surroundings made to seem increasingly isolated in the wake of the empire's moves to decolonize. Either way, more awareness of the differences between the two major editions of John Wyndham's *The Day of the Triffids* could help to reposition the novel as a more relevant and historically important piece of twentieth century literature in light of new understandings of the multi-dimensional and entangled nature of the Anthropocene.

I hope to have shown in this chapter that Wyndham's novum, supported in part by collective energy unconscious, is an artifact of the UK's national political imaginary in the postwar years, best defined by the historical ideological posture of the nation in relation to oil.

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[203] "Scariest Movie Monster Revealed", *PR Newswire Europe Including UK Disclose* (2011): PR Newswire Europe Including UK Disclose, Feb 24, 2011, Web.

[204] Matt Barone, "The 50 Scariest Monsters In Movie History", Complex.com, Oct. 12th, 2012, Web.

The cuts to the American edition therefore serve as absent evidence of that which is itself an absence as energy unconscious conveyed through subtext. This information might usefully contribute to studies of how literature can help in understanding the social influence of postwar oil policy in the UK and America respectively, while the content of the excised material itself matters to discerning the shape of the characters, the plot, and the novel's potential position as a proto-environmental text and early literary chronicle of the Anthropocene.

In my reading of *The Day of the Triffids*, I turned particular attention to the energy and resource concerns of the novel in order to highlight how the novum may be have been shaped by postwar UK oil policy, and particularly its expression in energy unconscious. Making this argument included exploring how those concerns manifest literally in the narrative through the harvesting of triffids for oil and the novel's reversal of the concepts of consumer and consumed. The argument also involved reading the novel's subtext and Wyndham's editorial practices with energy unconscious in mind. Section I of the chapter explored critical engagements by scholars with the novel that are relevant to either oil or sustainability and how they informed my own original interpretation of the novel as a proto-environmental text.

Section II presented an overview of UK oil policy during the years immediately preceding the publication of the novel, in order to lay the groundwork for an argument that this policy orientation of the nation was the primary ideological influence upon the triffid novum. Section II also grappled with how cuts between the American and UK editions of the novel reflect on the difference in postwar oil policy (and therefore resource-centered ideology) between the two nations. The significance of those cuts in regards to the novel's geopolitical and energy focus were then explored in order to contextualize my close reading of the novel's oil-sustainability narrative, and my argument for understanding the triffid novum as a manifestation

of energy unconscious in the text, itself a particular form of the political unconscious, and a product of petromodernity.

Finally, section III of the chapter demonstrated that understanding the novum as a literary artifact of national ideology is in keeping with recent scholarship engaging the concept of energy unconscious, and therefore also with some of Jameson's claims in *The Political Unconscious.* The subtext of the interactions between the human characters and the triffids was therefore read for the trace of energy-centric ideology. In order to reveal this subtext in the novel, my close reading practice engaged with both Karen Barad's theory of intra-relation and Jane Bennett's adapted notion of the assemblage. These theories together revealed that triffid interactions with human characters hinged on fuel oil despite the fact that triffid oil is of a different type, and that human agency had and has become dependent upon automotive culture. The two theories together helped the chapter reveal that the novum is in part a product of collective national political will.

Reading the novel in this way has allowed me to claim it as a document useful in understanding the Anthropocene, if not to more audaciously position the novel firmly as Anthropocene fiction, advancing the claim I made in the introduction that science fiction was always already its genre. I believe that this chapter serves as a substantial re-assessment of the novel; *The Day of the Triffids* is not nearly the cosy catastrophe one might mistake it for, but instead a detailed commentary on the dangers of humanity's ability to manipulate the natural environment as well as on any assumptions that it will always possess the power to do so. This chapter also proved that reading the book with awareness of its historical context is an opportunity to understand how the national political imaginary in the UK immediately following

WWII was informed by concern over recapturing and sustaining a sense of both individual and collective agency.

Table 1: Wyndham's cuts to *The Day of The Triffids* prior to American publication

Material that appears in the Michael Joseph edition of *The Day of the Triffids* (1951) and that was cut for the American Doubleday publication (1951). Cuts more directly relevant to my chapter research are highlighted. The summary notes are in their original form from my research.

Segment cut (chronological order)	Page Range UK Version	Summary of what is cut
1	Chapter 1: pages 18-20	A doctor Bill meets in the hospital commits suicide.
2	Chapter 2: page 28	Bill's father is characterized through alignment with capitalism, elitism and classism.
3	Chapter 2: pages 32-40	Triffid oil; Lysenko; geopolitics; corporate and government espionage; sustainability.
4	Chapter 4: pages 75-77	Josella's enslavement to a violent blind man; Josella's intelligence and sense of morality.
5	Chapter 6: pages 109-110	Josella and Bill collaborate as equals; leave safety of car and city and use natural landscape for shelter.

6	Chapter 6: pages 123-124	Josella and Bill reflect on the end of the world, extinction, the dinosaurs, the inevitability of species decline, the dynamic nature of life, and adaptability.
7	Chapter 8: pages 144-145	Bill is imprisoned, decides to hold off on planning escape.
8	Chapter 8: pages 147-148	Bill has a crisis of conscience, reflects on his social obligations to the blind.
9	Chapter 9: pages 168-173	Bill thinks about the staying power of the monuments and natural features of London; the sound of the car is frightening; Bill's desire to become an animal; department store; cat; man with cheese; Bill threatens an old blind woman for information; plight of the blind clear in encounter with sick man.
10	Chapter 10: pages 190-193	The division of survivors at Tynsham based on: religious views, philosophy, gender, association with progress vs. tradition, and mobility (lorries and cars vs. seclusion and isolation).
11, 12, 13	Chapter 10: pages 194-196, 196-197 and 197-198	Coker berates and debates with an unnamed girl the equal faculties of men and women, sharp social critique of gendering, importance of technology, dangers of individualism, education, being "civilized", leadership.

14	Chapter 11: pages 201-202	Coker's concern over sustainability and rebuilding society.
15	Chapter 11: pages 208-211	Triffids weakness for concrete; cars as important for protection; triffid intelligence; unsustainability of urban environments; collectivity of triffids vs. individualism of humans; corporate greed and competing triffid farms as partial explanation for triffid success.
16	Chapter 12: pages 213-215	A group that survives due to car accident with a double decker bus; fear of cities; fear of humans like "locusts"; fear of scarcity of resources and food.
17	Chapter 12: pages 221-222	Coker rescues a survivor, an "unbelievable old lady" that can cook (interesting when read against his speech in chapter 10).
18	Chapter 12: pages 226-227	Coker again on: Sustainability, futurity, education.
19	Chapter 14: page 243	The ambition of Josella's friends to restore Shirning as a working farm (curious that this very short paragraph was cut at all).
20	Chapter 15: pages 271-273	Josella ruminates on triffid intelligence, individualism vs. collectivity, triffids compared to ants and bees, the mysteries of genetics, the sadness of losing certain aspects

		of the human world. Bill mentions the dangers of complacency and the inability to look ahead.
21	Chapter 15: page 274	Bill questions whether a comet led to the Blindness, and seems to blame superstition, tradition and the flaws of human language and logic.
22	Chapter 15: pages 276-277	Bill and Josella discuss how lucky they are to have survived and found happiness.

Chapter 2

The Bio-Cultural Novum: The *MaddAddam* Trilogy and Bioethics Policy in Canada

Introduction

As in *The Day of the Triffids*, entanglements between the central novum of Margaret Atwood's *MaddAddam* trilogy of novels,[205] the development of environmental thought, and policy discourse allow for unique perspectives about the current consequences we face as well as the future challenges to come in the Anthropocene. While my study of *The Day of the Triffids* acknowledges that humans and triffids seemingly manipulate one another and the earth's differing forms of fuel supply for their respective advantages, Atwood's trilogy reminds the reader that biological life is not distinct from an inanimate material world but is its most complex, animate, and agential expression.

The focus in Atwood's trilogy on the entanglements between different beings and their environments is the reason that this chapter focuses on biotechnologies. I identify convergences between the concerns expressed through character and exposition in Atwood's fiction and similar concerns expressed in Canadian genetic and virology policies and their surrounding discourses. There is a clear difference between Wyndham's and Atwood's relationship with his and her respective novum. As argued in the previous chapter, Wyndham's triffids seem to be only subconscious manifestations of early environmental thinking, while this chapter recognizes that

[205] Including *Oryx and Crake* (2003), *The Year of the Flood* (2009) and *MaddAddam* (2013).

Atwood's Crakers were created with an intentionally environmental ethos. After all, as Crake reveals to Jimmy in *Oryx and Crake*, the Crakers eat "nothing but leaves and grass", are "perfectly adjusted to their habitat" and "recycl[e] their own excrement" (305). Notably however, by revealing the unsustainability of human behaviour, the Crakers as novum make Atwood's environmental politics and cynicism about social change painfully obvious. This has understandably led to some fairly bleak readings of the trilogy. For example, as Stacy Alaimo points out in her book *Bodily Natures*: "*Oryx and Crake* [...] does not [...] offer an alternative paradigm to counter or quell the march toward genetic "progress"" (148). A surface reading of the entire trilogy supports this claim, as the near total destruction of global human society as we know it is more or less complete before Jimmy's narrative in *Oryx and Crake* begins, with *The Year of the Flood* filling in most of the pre-apocalyptic story, and *MaddAddam* confirming the inevitability of the human drive towards destructiveness.

Following Jameson's claim that art is an inherently political act, it makes sense to look beyond the politics of the characters into the national political imaginary that informed Atwood's art. This Canadian imaginary can be traced through the political unconscious in the play between the novum and the characters. The political unconscious operates differently here, because that which is repressed into the subtext is not environmental thinking (as in *Triffids*), but a posthumanist ethos, including its more radical environmental sensibilities that have arisen to challenge the stability of our notions of identity. As Alaimo notes, identity has typically been centered around "Humanism, capitalist individualism, transcendent religions, and utilitarian conceptions of nature [which have] labored to deny the rather biophysical, yet also commonsensical realization that we are permeable, emergent beings" (156).[206] The posthumanist

[206] See Alaimo, *Bodily Natures*, 156.

philosophy underpinning the *MaddAddam* trilogy serves as a more developed response than *Triffids* to what Jameson terms the "historical dilemma" of capitalism.[207] The subtext is ultimately revealed in the chapter by reading the Craker novum dialogically for its connections to Canadian bioethics policy and also by developing an understanding of the posthumanist forces that shape the character of Toby.

The literature review in section I is engaged primarily with environmental, bioethics-related, or eco-feminist readings of the books to help situate my own argument more narrowly within the very large overall critical response to the book. Here I follow the definition of eco-feminism as set out in Routledge's *International Encyclopedia of Environmental Ethics*: "The link between women and nature also ranges from an elemental association [...] to the view that women and the natural environment have both been treated badly by male-dominated socio-economic systems: capitalism, science, technology and militarism" (Routledge).[208] As these concepts are certainly relatable to the narrative of the trilogy, it isn't a big surprise to find that the trilogy as a whole has primarily been received as a work of ecofeminism. However, though many of these readings highlight the overall ecofeminist thematics of the books, the fact that a national bioethics anxiety operates from the subtext remains underexplored (a manifestation of the Canadian national political imaginary). It doesn't seem odd that Margaret Atwood's own active and very public political position as a feminist would help to drive feminist criticism of her work, though a question about author-function from Foucault is natural here: does Atwood's name seem always "to be present, marking off the edges of the text, revealing, or at least characterizing, its mode of being"?[209] I follow the logic that it does, and so Section I therefore

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[207] Jameson, *The Political Unconscious*, 125.

[208] "Eco-Feminism", *International Encyclopedia of Environmental Politics*, Routledge, 2002.

[209] Michel Foucault, "What is an Author?", in *The Foucault Reader*, edited by Paul Rabinow, New York, 1984.

explains why my chapter will ultimately close read for a posthumanist subtext that reveals Canadian bioethics policy of the late 1990s to be foundational to the creation of the Craker novum. The first section also turns briefly to theory by Alexander G. Weheliye to understand complications with reading Atwood's work the way that I do, because despite the posthumanist subtext, many of her book's environmental critiques are delivered from an entrenched position of privilege made possible by colonialism, capitalism, and humanism. Finally, the critical review positions my reading as unique by identifying the chapter as the first study with a sustained emphasis on how Canadian bioethics policy may have informed Atwood's work.

Section II concerns itself with the *Assisted Human Reproduction Act*[210] and the *Canadian Environmental Protection Act*,[211] and argues that the process of these policies becoming law influenced the formation of the Crakers as the novum of the *MaddAddam* trilogy. First, through exploring Ursula K. Heise's concept of deterritorialization, my reading challenges the stability of America as setting in the novels, by proposing that the political subtext is identifiably Canadian. Atwood's trilogy represents a social critique about the commercialization of biological materials and processes that my chapter argues is written from a satirical position. This satirical position represents through character identifications (and via Atwood's author-function) a Canadian critique against American led biomedical practices. And as the context surrounding the novum straddles the line where Canadian genetic policy diverges from that of the highly corporatized US policy, I will refer to work by Gilles Paquet, Timothy A. Caulfield, Shirley K. Senoff, and others in order to highlight the differences. Caulfield, in addition to specializing in this area as an

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[210] A Canadian law (enacted in 2004 and in force from 2007) governing research methods and ethics surrounding human reproduction, for example prohibiting the creation of hybrids and chimeras and seeking to regulate the "integrity of the human genome" (Ch. 2, sec. 2, Line 12).

[211] Enacted in 1999, and specifically Part 6 "Animate Products of Biotechnology" (Part 6, pages 104-115).

academic, believes that art has a powerful role to play in the conversation about bioethics: "Biotechnology has permeated the landscape of popular culture […] Rarely a day goes by without at least one headline about biotechnology […] it is the profoundly controversial nature of the field that makes it so unique, at least from the perspective of social policy" (xiii).[212] For Caulfield, art "serves as a medium of reflection on the societal implications of the research" (xiv).[213] This sentiment resonates with my argument that science fiction can act as mediator between the collective political unconscious and the political awareness of individual readers, making it a transgressive and potentially transformative political genre. Focus on the dialogical resonance between the two acts and the biotechnologies in Atwood's trilogy (the ubiquity of gene-splicing and the pacifying BlyssPluss pill), helps to illuminate the bio-cultural dimensions of the Anthropocene and also contributes to challenging current understandings of the Anthropocene as a primarily geological epoch.

In section III, I explore how the human characters interactions with the Crakers show that the Anthropocene is lived as a multivalenced experience, not only by human beings, but also through their distributed and shared embodiment within enmeshed networks. I also argue that Atwood's *MaddAddam* trilogy as a whole presents a new posthumanist philosophy for life in the Anthropocene through three stages of character interactions with the Craker novum. Readers are first presented with a static ultra-violent and destructive humanist masculinity in *Oryx and Crake* (2003), and then through Toby's eco-feminist alliances invited to embrace entangled relationships with other creatures and a careful ecology of objects and environments in *The Year of The Flood* (2009), finally to understand a posthumanist ethics in *MaddAddam* (2013).

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[212] See *Imagining Science: Art, Science and Social Change*, Sean and Timothy Caulfield, eds., the University of Alberta Press, 2008, page xiii, print.

[213] Ibid., page xiv.

Theoretical work by Rosi Braidotti, Donna Haraway, and Stacy Alaimo helps to guide my reading of the posthumanist subtext in the novels.

I argue that Toby emerges as newly empowered through her ability to embrace entanglements as opposed to resisting them.[214] Portions of this general argument are not wholly original, and I am indebted to work by Lucy Rowland.[215] However, there is some nuance to distinguish my argument, namely that the novum of the entire trilogy, the Crakers, is a manifestation of the political unconscious, drawn from Canadian policy and serving as a satirical warning mechanism. This chapter advances the argument begun in chapter one that the novum is an ideological artifact in science fiction revealing that human activities in the Anthropocene are completely unsustainable, but also offers counterbalance in the close study of the character of Toby. I have chosen to focus this chapter primarily on *The Year of The Flood* and Toby because Toby models the sustainable living practices and ethical posthumanist thinking required to survive life in the Anthropocene. Toby, who in addition to embracing her entanglements with the world around her, also absorbs the narrative purpose of Jimmy as steward (and prophet) to the Crakers, and becomes a tangible model for the posthuman era, while the Crakers retain their speculative and satirical value as the penultimate bioethics novum.[216] Ultimately, I read the trilogy as a subversive work of ecological political satire drawing from the collective well of the

[214] In this case, I do not have the Crakers in mind as the key representatives of this new posthumanist philosophy, but rather the characters that renegotiate their place in the world through their experience of it, such as Toby.

[215] See the next section for more details about Rowland's article.

[216] A similar science fiction novum, operating with the narrative dominance Darko Suvin claims necessary but also being a distinct object of satire, appears in the form of the "apparat" in the novel *Super Sad True Love Story* by Gary Shteyngart. This novum, like the Crakers, is what the entire world of the fiction is built around while also feeling at times like an impossibly stubborn joke. The apparat is more or less the future equivalent of the cell phone, which through augmented reality has more or less completely invaded every corner of its users lives and decision making processes.

Canadian national political imaginary and directed particularly at American-led bio-cultural practices.[217]

I. Criticism, Bioethics, and The *MaddAddam* Trilogy

> […] upon landing old Taciturn planted vines, no doubt Noah's plants, and that – seasons gone by, grape harvests done, wine tapped – he got drunk on joy; or brewed beer and did the same with that. These fermented drinks saved this remainder of humanity from the bad waters; the artificial paradise of biotechnology emerged from this hellish deluge.[218]
>
> – Michel Serres, *Biogea* (2012)

Margaret Atwood is one of Canada's most renowned authors. Her extensive body of literary work has generated much critical engagement, and the *MaddAddam* trilogy is no exception. In particular, scholars have attuned themselves to the clear bioethics focus of the books, which I believe to be the obvious central theme of the narrative. Several scholars have also begun to interrogate the link between bioethics and the environment, especially in essays about *Oryx and Crake* or *The Year of The Flood*. For example, Andrew Belyea argues that Oryx and Crake represents an "emerging genre", which he chooses to name "evolutionary fiction", a fiction that "explores, among other things, how better understanding our evolutionary past can inform our environmental present. It also asks what our […] redefinition of the term "human"

[217] This chapter shares in common with *The Day of the Triffids* then, the theme of national distrust of outside superpowers and their dominance in scientific arenas (namely they share distrust of the American military establishment (perhaps most share those feelings) while *The Day of the Triffids* also singles out Russia).

[218] Michel Serres, *Biogea*, University of Minnesota Press, 2012 (1992), Ebook.

might mean in environmental terms" (184-85).[219] Building partly on Belyea's question this chapter sets out to analyze, through close study of Toby, one proposed model of a realistically ethical 21st century posthuman citizen.[220] Belyea does not directly explore an answer, because his work is concerned with other pursuits such as defining the boundaries of his proposed newly emergent sub-genre and engaging with the Crakers more literally as a serious interruption to the notion of what human means and how that definition might change in the future.

My own argument comes closest to one advanced by Lucy Rowland. Rowland pursues an answer to what ecofeminism contributes to the question of what human means in the Anthropocene, beginning a conversation about Toby's role in *MaddAddam* that I add to with my own reading close reading of *The Year of The Flood*. She claims "there has been no sustained work evaluating the ecofeminist implications of the texts over the whole trajectory of the trilogy" (46), adding that her aim is to "open up critical analysis to promote a consideration of the trilogy's implications as a set of closely interwoven ecofeminist experiments" (47).[221] This chapter aims to extend this consideration and explore some of Rowland's main claims in relation to bioethics policy.

Rowland argues that *MaddAddam*, of the three novels, "offers the most effective and directed use of ecofeminist principles in presenting potential solutions to the societal, cultural, and environmental issues depicted in the first two texts" (47).[222] Her analysis of Toby in the

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[219] Andrew Belyea, "Is 'Eco' enough?: Margaret Atwood's *Oryx and Crake*, Wayland Drew's *The Erthring Cycle*, and Evolutionary Fiction", In *Words for a Small Planet: Ecocritical Views*. Eds. Nanette Norris, Andrew Belyea, and Annie Merrill, Ingram, Lexington, 2013, 184-185, Web.

[220] I will elaborate more on how posthumanist theory allows for a more intricate reading of Toby's character in the second section of this chapter in critical engagement with the ideas of Braidotti, Haraway and Alaimo.

[221] Lucy Rowland, "Speculative Solutions: The Development of Environmental and Ecofeminist Discourse in Margaret Atwood's *MaddAddam*", *Studies in Canadian Literature/Etudes en Littérature Canadienne* 40.2 (2015), see pages 46-47, Web.

[222] Ibid., 47.

novel has partially inspired my focus on Toby in *The Year of The Flood*. I further develop the idea that Toby's very grounded, physical, if not outright "dirty" experiences of the world, serve as intentional counterweight to the science fictional aspects of the Crakers, themselves most associated with the reader's cognitive estrangement as the novum of the trilogy. Of Toby, Rowland gives one long explanation that contains key ideas I engage with more fully in my close reading in the final section of this chapter:

> Here Atwood uses Toby's voice both to establish a heterarchical worldview, one that recognizes the "enormous power" of the non-human being (*MaddAddam* 223), and to drive forward an anti-Romantic consideration of the surrounding non-human "natural" environment. Toby's internal monologue here resists the tendency of environmental ecomimetic writing to recreate the "ethereal" (Morton 34) external surroundings, instead internalizing her observations and using them to shape her thought processes. These ideas can be incorporated productively into new ecofeminist discourse, for they aid the breaking down of patriarchal epistemologies in both eschewing dualism between nature and humanity and idealizing a true nature that needs objective, rather than subjective, aesthetic representation. (60-61)[223]

Rowland's observation about the worldview established by and through Toby, raises questions about what pitting that worldview against the cynical patriarchal worldview represented by Crake and his creation (and the corruption of it) leaves us with in the end; in other words what kind of worldview is ultimately negotiated in the text?

Atwood scholar J. Brooks Bouson best articulates the cynical and numerous concerns of the first two novels of Atwood's trilogy, though she does not fully explore the positive

[223] Ibid., 60-61.

alternatives that Atwood offers, particularly in *The Year of The Flood*. Bouson writes that in *Oryx and Crake* Atwood seeks to "[investigate] the division between the humanities and the sciences through the stories of her two male characters, Jimmy and Crake, who are presented as paired opposites" (140),[224] finding ultimately that the book is a warning against the "slippery slope she sees us going down in our contemporary culture of science" (153).[225] On the whole, I agree with Bouson's reading of *Oryx and Crake* as a satirical warning about the dangers of bioengineering, but see this as only the first stage in the wider narrative and message that Atwood has constructed. Now that the trilogy is complete, the narrative has become more nuanced, involving the presentation of a more complex alternative middle philosophy through Toby, one that acknowledges that humanity is likely to continue on a destructive path but can learn to negotiate the dangers that lie ahead by reconnecting with the natural world and by embracing the utility of the humanities in helping to question the ethics of unregulated scientific advance.

In her approach to *The Year of The Flood*, Bouson acknowledges that Atwood devotes significant space within the bounds of the novel to "feminist […] humanist and posthumanist concerns", and that the novel is both symptomatic of and gestures towards healing from trauma (10).[226] Bouson claims that Atwood believes in "the transformative – and ethical – potential of imaginative literature, and indeed, *Year*, like *Oryx*, is a feminist, anti-corporate and radically ecological work in which Atwood […] wishes to prod her readers to meaningful political thought

[224] J. B. Bouson, ""It's Game Over Forever": Atwood's Satiric Vision of a Bioengineered Posthuman Future in Oryx and Crake", *The Journal of Commonwealth Literature* 39.3 (2004), Web.

[225] Ibid., 153.

[226] J. B. Bouson, "'We're using Up the Earth: It's almost Gone': A Return to the Post-Apocalyptic Future in Margaret Atwood's the Year of the Flood", *Journal of Commonwealth Literature* 46.1 (2011): page 10, Web.

and action" (23).[227] How the text does its prodding is worth further exploration however, as is explaining what meaningful political thought and action might look like, and what kind it might be—social, environmental, bioethical? That is of Bouson's purpose, but the implications are significant enough to warrant attention to further developing how Atwood's now complete trilogy prods the reader to meaningful political thought and action through the recognition that seemingly separate political concerns are in fact deeply entangled.

In my own close reading of *The Year of The Flood* that follows in section III, I will explain how Toby must both battle the bioengineered pigoons as well as earn their respect, how the Crakers both disturb and impress her, and how she reaffirms her own personal social and physical power by choosing to grow past the trauma of her history with Blanco without sacrificing her future with Zeb. These lessons from the text of *The Year of The Flood,* relying on complementary elements within *Oryx and Crake* and *MaddAddam* are not found through Toby embracing the eco-religion of the God's Gardeners, as Bouson seems to intimate (that the only solution to environmental catastrophe might be to make a religion out of environmentalism),[228] but rather through Toby's communion with Pilar's bees and the pigoons, and her quest for her father's gun.

The bees, pigoons, and the gun are sustained elements of the plots of both *The Year of The Flood* and *MaddAddam.* I explore how the bees and pigoons might be symbolic of the power of anti-capitalist collectives, and the gun perhaps symbolic of both technologies and individualism. Toby's ability to form a posthumanist relationship with the bees serves as a realistic ethical and political metaphor for sustainable living in the Anthropocene and as

[227] Ibid., 23.
[228] Ibid., 17.

counterweight to the novum of the much less realistic Crakers, which I read as an exaggerated expression of anxiety about the inadequacies of national bioethics policy. The views outlined in my chapter also share commonalities with those of Richard Alan Northover, who writes that Toby represents a positive alternative to the negativity expressed in the first novel. Northover claims that "hurt dominates the narrative in *Oryx and Crake* and hope seems absent (the narrative alternating between Jimmy's painful past and tortured present), [yet] hope manifests throughout *The year of the flood* in both Ren and Toby's alternating narratives" (87).[229]

My claim that the Crakers are a purposefully unrealistic device is supported by another reading of Atwood's first two novels in the trilogy, in which science fiction scholar Gerry Canavan claims:

> The Crakers […] should be understood as a hyperbolic version of the fantasy that we might turn back the clock and begin history anew, this time avoiding the mistake of so-called ''civilization'' that has brought down so much pain, misery, and death upon nearly everyone it touches through its awful past, miserable present, and terrible future alike. The Crakers are manifestly not an actual plan to save the world—Crake's plan employs unethical methods and impossible genomics towards a plainly ridiculous purpose. (152)[230]

In identifying the farcical nature of the Crakers, Canavan also identifies the value of Atwood's taking her dark humour to such extremes, drawing parallels between her work and that of Jonathan Swift. He claims that the books "seek to open up new space for imagining a post-capitalist future through a satirical, science-fictional staging of capitalism's final, catastrophic

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[229] Richard Alan Northover, "Ecological Apocalypse in Margaret Atwood's MaddAddam Trilogy", *Studia Neophilologica: A Journal of Germanic and Romance Languages and Literature* 88.1 (2016): Page 87, Web. Please note the uncapitalized words in the title of Atwood's novel in the quote from Northover appear in the original article.

[230] Gerry Canavan, "Hope, But Not for Us: Ecological Science Fiction and the End of the World in Margaret Atwood's Oryx and Crake and The Year of the Flood", *Lit: Literature Interpretation Theory* 23.2 (2012), Web.

breakdown—and the subsequent emergence of other kinds of lives, after the end of history" (139).[231] Though Canavan does not explore *The Year of The Flood* in as great detail as he does *Oryx and Crake*,[232] his claim that "*Oryx and Crake* and *The Year of the Flood* [assert] through allegory the urgent necessity of radically changing our social relations and anti-ecological lifestyles" is resonant with my own reading (155).[233] Canavan also claims that notions of futurity move *Oryx and Crake* and *The Year of the Flood* forward and the books represent a "reopening of possibility" rather than its closing down (156).[234]

The major difference between the readings outlined above and my own, is that my work identifies important historical policy context that operates as an expression of the national political imaginary in Atwood's work. In order to understand the significance of Toby's interactions with the Crakers differently in section III, I first place emphasis on exploring how I believe the Craker novum was formed against the historical political landscape of Canadian bioethics policy in section II. I do not claim that the science fiction novum—when approached through what I consider to be a form of new historicist reading[235]—*could always* tell us something of value about how the national political climate might influence the author during particular time periods. I do claim that the novum *might sometimes* reveal interesting connections

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[231] Ibid., 139.

[232] Mentioning Toby once only in a footnote, for example.

[233] Ibid., 155.

[234] Ibid., 156.

[235] I most closely align this project critically with New Historicism as a theoretical movement, as defined by Bloomsbury Dictionary of English Literature: "A theoretical movement which developed in America in the 1980s, partly as a reaction against the ahistorical approaches of New Criticism and the unselfconscious historicism of earlier critics. New historicism draws upon Marxist criticism in its emphasis upon political and social context and rejection of individual aspiration and universalism, but at the same time it insists that historical context can never be recovered objectively. New historicists do not assume that literature reflects reality and that these `reflections' enable the reader to recover without distortion the past presented in the texts. Rather, they look for an interplay between text and society, which can never be presented neutrally. Moreover, readers must be aware of their *own* historical context: we read texts from the perspective of our own age and can never perfectly re-create history". *The Encyclopedia of Literary and Cultural Theory*, "New Historicism." 2011, pp. 746–753. Web.

to the relevant national policy discourse during particular time periods. As this dissertation highlights, it is useful to explore science fiction texts in which the novums seem not only to reflect the concerns of national policy discourses, but in which the novums seem to have been subconsciously generated in response to them. Exploring such subconscious political influences on fiction can then help to balance reading practice that tends to privilege an author's known political views.

The lack of scholarship dedicated to the racial politics of the novel is worth noting here, especially given the predominance of feminist readings, which mostly seem to lack the intersectionality common to many contemporary feminist critiques. Though this chapter of the project is specifically concerned with the Craker novum's links to genetic policy, part of understanding the posthumanist ethics developed through Toby's interactions with the Crakers involves understanding that before she discovers that alliances with non-humans will give her strength, she begins to understand her plight as a woman through dialogue with another female character. In *The Year of The Flood*, one of the first characters Toby forms a meaningful alliance with is Rebecca. Rebecca is a woman of colour, and clearly indicates to Toby that one of the main antagonists of the trilogy, Blanco, would probably come after Toby next based on her being white. Rebecca claims that Blanco won't come after her (Rebecca), because he sees her as lower on the social hierarchy, perceiving her as "too black and ugly" (35). Toby's response is interesting, as she tells Rebecca she is "not ugly", and then exoticizes her, making note of her "brown skin and her red hair and her Egyptian nose", qualifying her as "*in fact* beautiful in a substantial way" (35 italics are my own).

Questions might be posed about Atwood's inherent bias here, as a character like Rebecca resonates with Alexander Weheliye's notion of the "racialized assemblage", as one of the "major

political, cultural, social, and economic spaces of exception, although not the only one, within modern western humanity" (2-3).[236] Weheliye's theorization of an assemblage shares some theoretical overlap with my own approach to the reading of Toby in section III, and has inspired it to a degree. However, it is important to note that while Weheliye is dedicated to revealing how ongoing sets of political relations continue to enact the "barring of nonwhite subjects from the category of the human as it is performed in the modern west" (3), I am instead focused primarily on how Toby's trajectory towards posthuman ethics seeks to equalize the categories of the male and female under the concept of being human.

It very well might be that Atwood's trilogy has a blind spot for the position of the racialized subject, and for that matter for the position of the queer subject, in the western-centric category of the human. Though the purpose of the chapter is not to explore those specific facets of the trilogy, additional research based around these topics could reveal that the Crakers as novum is more complexly informed by a political unconscious driven by other policy dialogues in Canada, such as those surrounding the rights of minorities, Indigenous groups and LGBTQ communities. I also take seriously in my own close reading of Toby's character, Weheliye's claim that "[r]acializing assemblages represent, among other things, the visual modalities in which dehumanization is practiced and lived" and that they can "augment and reframe bare life and biopolitics discourse, because they focus on the nexus of differentiation, hierarchy, and the human" (6).[237] Toby's experience could therefore be read through this lens, if perhaps, her relationship with Rebecca in the text could be understood as a representation of the author's intersectional feminist leanings, or as a feminist alliance with the racialized assemblage that

[236] Alexander G. Weheliye, *Habeus Viscus: Racializing Assemblages, Biopolitics, and Black Feminist Theories of The Human*, Duke University Press, 2014, Ebook.
[237] Ibid., 6.

Rebecca could represent. Rebecca is after all, the character that brings Toby into contact with the God's Gardeners.

II. Tracing the Bio-cultural Turn in 1990s Canadian Policy

"What is required in order to design meaningful science and technology policy is nothing less than a reframing of the basic questions, for science and technology policy cannot evolve unless a new social contract is forged among the stakeholders".[238]

– Gilles Paquet, *Crippling Epistemologies and Governance Failures* (2003)

Policy and the Novum in Atwood's MaddAddam Trilogy

The purpose of this section is to argue that as the novum of Margaret Atwood's *MaddAddam* trilogy, the Crakers should be considered in light of having been developed during a time period of heavy debate within Canada about policies surrounding the enactment of both the *Assisted Human Reproduction Act* (a law prohibiting the use of human stem cells for cloning and many other research purposes, hereafter *AHRA*) and the *Canadian Environmental Protection Act (a law protecting human life and the environment from dangerous toxic agents, hereafter CEPA)*. I explore how Atwood's trilogy is connected to these two acts via some degree of

[238] Gilles Paquet, *Crippling Epistemologies and Governance Failures: A Plea For Experimentation*, University of Ottawa Press, 2009, 197, Print.

scientific realism and read selective story elements against the dominant discourse surrounding Canadian bioethics policy at this time. Before exploring these two Canadian policy orientations, it is first necessary to return briefly to Darko Suvin's concept of the novum to clarify why this chapter will focus primarily on the Crakers as novum, and not on the other bioengineered creatures or on the pandemic inducing BlyssPluss pill.

It might be possible to argue that individual novums drive the logic of each novel in the *MaddAddam* trilogy, yet I claim the Crakers best fit Suvin's description of the device when the trilogy is approached as a total narrative. Suvin describes the novum as "hegemonic, that is, so central and significant that it determines the whole narrative logic", and then details several notable clauses to help readers or critics validate a given novum (70).[239] For example, the novum shares a relationship to the narrative consequences of a given text, more precisely as that which "intensifies and radicalizes that movement across the boundary of a semantic field (defined by the author's cultural norm) which always constitutes the fictional event" (70).[240] If the semantic field is taken to be that of the interlocking realities of bioethics policy discourse related to the *AHRA* and *CEPA*, then the Crakers, as the bioengineered figures named for their scientist creator, are that radicalizing force that constitute the entire reality and purpose of the fiction. This claim will be important when I discuss Atwood and the Canadian policy debates that were happening during the years she was writing the trilogy, including confronting questions about what precisely a given author's cultural norm is and how measurable it might be.

The *MaddAddam* trilogy is concerned with the conditions that would allow for the creation of the Crakers, as well as detailing the conditions required for them to survive or

[239] Suvin, *Metamorphoses of Science Fiction*, 70.
[240] Ibid., 70.

flourish. The books detail how the human characters interact with the Crakers, particularly Jimmy in *Oryx and Crake* and Toby in *MaddAddam* (I will explain in the final section of the chapter why I think the middle novel, *The Year of The Flood*, does not devote as much time to this aspect of world building). Another defining feature of the novum according to Suvin is that the "alternate reality logically necessitated by and proceeding from the narrative kernel of the novum can only function in the oscillating feedback with the author's reality […] because some of its focal relationships are—an analogy to that empirical reality" (75).[241] Those focal relationships include Jimmy's status as a failed storyteller and prophet to the Crakers in *Oryx and Crake*, and Toby's more successful attempt to take on this role in *MaddAddam*. Here, Suvin's theory of the novum and Jameson's concept of the political unconscious come into close resonance with one another.

Where Suvin understands science fiction as "a symbolic system centered on a novum which is to be cognitively validated within the narrative reality of the tale and its interaction with reader expectations" (80),[242] in *The Political Unconscious* Jameson notes that the "*ideology of form"*, is the "determinate contradiction of the specific messages emitted by the varied sign systems which coexist in a given artistic process as well as in its general social formation" (84).[243] Both critics point to the idea that the very text itself is in effect an expression of ideology; Jameson is focused on how the individual text expresses "the dynamics of sign systems of several distinct modes of production" (84),[244] while Suvin is focused on how a text is "a creation

[241] Ibid., 75.
[242] Ibid., 80.
[243] Fredric Jameson, *The Political Unconscious*, 84.
[244] Ibid., 84.

of historical cognition and ethics as form" (80).[245] Both Marxist critics have influenced this project in understanding the novum as an ideological artifact.

The novum of *The Year of The Flood* (when that book is read as a standalone novel), might seem to be the BlyssPluss pill that brings about "the waterless flood" (6),[246] since the flood takes on a hegemonic narrative dominance in the lives of the God's Gardeners sect. Yet pills for enhancing one's sex life and slowing or reversing aging are not new ideas, and a super destructive plague is an even older idea.[247] BlyssPluss works as a means to an end for reducing the population of the earth to make room for the true novum, the Crakers. The pandemic also serves as narratively convenient by placing central characters such as Toby in positions where they are forced or obligated to interact with the Crakers. Another iteration of this dissertation chapter might have focused solely on the possible policy influences of the rapid formation of the *Public Health Agency of Canada* in response to the SARS[248] outbreak on the importance of BlyssPluss in *The Year of The Flood*, if it were not for the fact that BlyssPluss is more realistic and narratively convenient than the Crakers. Atwood has hyperbolized the depths of corporate control over biological materials through the creation of entities such as Rejoov, HelthWyzer and CorpSECorps; BlyssPluss seems to me an extension of this thinly veiled satire about the dangers of poorly regulated pharmaceutical and genetic companies.

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[245] Darko Suvin, *Metamorphoses of Science Fiction*, 80.

[246] Atwood, *The Year of The Flood,* 6.

[247] Dating back as early as Mary Shelley's *The Last Man* (1826) as a science fiction and apocalyptic trope and having been reproduced countlessly in novels, films and television for decades.

[248] *Severe Accute Respiratory Syndrome*, a high mortality respiratory virus that cost 774 lives (43 in Canada) had a major impact on the Canadian medical system in 2002-2003. The current global pandemic, thought to have been caused by a coronavirus of similar origin and structure to SARS, has at the time of this writing claimed more than 3000 lives in Canada. I feel it likely that future work on policy and science fiction might return to this time period (2020), which is likely to influence the shape of future science fiction.

For example, companies such as *Gene by Gene* (based in Houston) and *Genentech* (based in San Francisco) now offer controversial services to the general paying public. While *Gene by Gene* offers private DNA testing of a wide variety (from ancestry to screenings for genes likely to cause future illness),[249] *Genentech* partnered with pharmaceutical giant *The Roche Group* in 2009 and now offers a wide array of high-risk experimental treatments for serious illnesses.[250] These controversial corporations have been accused of at best a lack of transparency and at worst wilful negligence. More to the point, these companies are setting the standards in the wider North American market leading to pressure to allow Canadian genetics companies like *LifeLabs* the opportunity to compete, or American companies such as *23andMe* the opportunity to satisfy consumer demand. This is already happening, despite the alarming lack of rigorous genetic privacy laws to protect the data of Canadians.[251] One need only to follow the rapid development and conflicted ethics of genetic and cloning companies to see that Atwood's depiction of analogous ethically suspect corporations in her trilogy, such as HelthWyzer and Rejoov, rings true.

As BlyssPluss and the corporations themselves do not qualify for consideration as the novum in Atwood's trilogy, then the creation of hybrid creatures by the scientists might next be considered. Though animal hybrids such as the pigoon, rakunk, wolvog and liobam are early stages in the same class of gene-splicing initiative undertaken by Crake, the Crakers represent

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[249] *Gene by Gene* owns *Family Tree DNA*, and has been involved in at least one attempted lawsuit related to potential unauthorized activity with genetic information. See Cyrus Farivar, "Lawsuit alleges unauthorized publication of personal genetics data", Arstechnica.com, May 14th, 2014, Web, https://arstechnica.com/tech-policy/2014/05/lawsuit-alleges-unauthorized-publication-of-personal-genetics-data/.

[250] Melody Peterson, "Drugmakers pay $67 million to settle claims they exaggerated cancer drug's effectiveness", L.A. Times, June 7th, 2016, Web. http://www.latimes.com/business/la-fi-genentech-tarceva-settlement-20160607-snap-story.html

[251] See Abby Lippman, "Why genetic self-test kits should not be allowed into Canada", The Globe and Mail, Oct. 16th 2014, Web.

the ultimate culmination of chimera-making efforts in the trilogy. The common appearance of the other hybrid animals, even in Jimmy's memories of his adolescence, serves as a world-building tool through which Atwood is able to make her novum progressively more plausible within the narrative. In a real-world connection to the chimera-making endeavours in the novel, several experiments to implant human tissues into hogs have indeed taken place, making the pigoons less fictional by the year, which at least one news agency has related directly to Atwood's trilogy.[252] The Crakers then, are the only imagined aspect of the text that retain a relatively unreal aspect, but are made more believable by association with the other elements.

It is important to establish the logic of the Crakers as the novum of the trilogy, cognitively validated by both BlyssPluss and the other hybrid or genetically modified animals, because these imagined elements (gene altering pharmaceuticals and the creation of hybrid life forms) have their roots firmly in social reality. Moreover, they are in direct dialogue with key elements and language from both the *AHRA* and the *CEPA.* Both policies seek to hinder the types of unrestrained scientific undertakings depicted in the *MaddAddam* trilogy, putting the Crakers as novum in dialogue, albeit indirectly, with the national bioethical discourse that was an immediate precursor to Atwood's work and was subject to ongoing debate as she wrote each subsequent novel in the trilogy.

A complication in connecting the novels with Canadian bioethics policy is admittedly the fact that they are primarily set in the United States. Though there is no clear consensus about the setting of the trilogy and many critics seem to avoid mentioning it altogether, I see a consistency throughout the novels pointing to the east coast of the US as the primary setting. Though the

[252] See Ariel Schwartz, "A freaky prediction about pigs in a popular sci-fi trilogy is starting to come true", June 7th, 2016, BusinessInsider, Web, http://www.businessinsider.com/margaret-atwoods-pigoons-are-starting-to-become-reality-2016-6.

setting of the trilogy is described fairly vaguely, I think there are enough indications that most of the main events take place in the vicinity of Boston, Maryland, and at some points New York. Jimmy's Red Sox baseball cap is one of the first clues in *Oryx and Crake* (4), while "New New York" is mentioned in the novel twice (63 and 341). Maryland is also named twice in *Oryx and Crake* as the site of the Happicuppa head office and subsequent protests (181 and 256). New York is also referenced once in *The Year of The Flood* (428), and six times in *MaddAddam* (180-186).

Perhaps more interesting than what is mentioned throughout the trilogy, however, is what is not mentioned and barely referred to: Canada. Though Zeb does clearly make a journey north into Canada,[253] the most direct reference to Canada in the entire trilogy is Zeb thinking that he might be able to "Truck-A-Pillar" as far as Calgary, before continuing on the bullet train back to the eastern coast of the United States (180). Despite this evidence that the focus of the trilogy is the US, Atwood's writing may contain an ideological undercurrent motivated by Canadian policy that resonates with Jameson's idea of the "determinate contradiction" within the process of creating art (84).[254] In addition to Marxist literary theory, globalization theory can also help explain how Canadian national politics are expressed in an American setting.

For example, exploring the concept of deterritorialization as outlined by Ursula K. Heise in her book *Sense of Place and Sense of Planet*, shows that Atwood's setting of The United States can still make sense, given that bio-cultural practice as a general corporate endeavour cannot be anchored to one geographical location. Heise explains that "the increasing connectedness of societies around the globe entails the emergence of new forms of culture that

[253] See the section "The Crakers as Artifact of the National Political Imaginary", on page 146 of this chapter.
[254] Frederic Jameson, *The Political Unconscious*, 84.

are no longer anchored in place, in a process that many theorists have referred to as deterritorialization" (10). One of these new forms of culture is undoubtedly the bio-cultural shift that has taken place all around the globe in the time since the discovery of advances in genetics, from the publication of the discovery of DNA, to the present-day development of the controversial practice of gene editing. The scientists at the center of this gene culture may be beholden more to the corporations that they work for, many of them multi-national, than to their respective nations.

Atwood's choice of setting the trilogy on the east coast of the United States allows global readers to connect the bio-cultural theme with a sense of global influence, something that might be less impactful using a Canadian setting.[255] However, I believe the choice to set the trilogy in America might instead be driven by Atwood's subconscious desire to deliver a satirical critique of American bioethics, itself evidence of the national political imaginary at work. In other words, while I agree with Heise that modern culture represents the "weakening of the ties between culture and place" (21), the national political imaginary is still discernible through the dialogical reading strategy I undertake throughout this project. The novum in this case then, is a politicized projection, drawing from the warnings inherent in tone and language of Canadian policy to show that given the wrong conditions, irresponsible policy decisions could be disastrous.

Atwood's trilogy is set in the United States where the privatization of the medical industry and the commodification of the biological can be critiqued from a safe distance, from a perspective of Canadian difference. This Canadian difference is laced perhaps with a sense of moral, if not cultural superiority, or at the very least polite distaste about the rampant genetic

[255] New York has consistently polled at or near the top in most studies of the world's most globalized, influential, or powerful cities. For example, see: Joel Kotkin, "The World's Most Influential Cities", *Forbes,* Aug. 14th, 2014. See also: Global Power City Index 2019, *Institute for Urban Strategies,* The Mori memorial Foundation, http://mori-m-foundation.or.jp/english/ius2/gpci2/index.shtml.

commodification depicted in the trilogy. Atwood's trilogy is an extrapolation of the trajectory of American biomedical research, which according to Benjamin J. Hurlbut, underwent "rapid expansion" after WWII (3).[256] In the decade leading up to the publication of *Oryx and Crake*, as opposed to the sudden stalling of IVF in Canada due to the deliberations of the *Royal Commission on New Reproductive Technologies* between 1989 and 1993, the practice of in vitro fertilization (IVF) in the United States was much more widespread and on the rise: "During the 1980s, IVF-assisted reproduction became an increasingly common practice in the United States, with the total number of children conceived in vitro rising from dozens in the early 1980s to hundreds of thousands by the 1990s" (6).[257]

Despite political concerns in the United States about the potential ethical implications of stem-cell research during both the Clinton and Bush administrations, "Assisted reproductive technology (ART) became a lucrative and largely unregulated private sector enterprise, and IVF became a consumer good available to the would-be parents who could afford its high price tag" (6).[258] While American policy orientation relating to biomedical research on stem cells during this time period suffered from a sort of seesaw effect, increasing political caution about the same types of research led to the eventual enactment of the *AHRA* in Canada. The difference between American and Canadian policy outlined above may be an important indication that national public sentiments about bioethics in Canada might be, at least during this time, more conservative.

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[256] See Benjamin J. Hurlbut, *Experiments in Democracy: Human Embryo Research and the Politics of Bioethics*, Columbia University Press, 2019, page 3.

[257] Ibid., 6.

[258] Ibid., 6.

These sentiments are mostly subtextual and expressed throughout the novels in a variety of different ways, through the implications of the characters actions and dialogue, the setting, symbolism, and other aspects. The Craker novum however, serves as the nexus for opening the dialogical context with Canadian bio-cultural policy and reveals the contours of the national political imaginary in the years immediately before and during the publications of the novels.

Bio-cultural Policy in Canada Since the 1990s

As a nation, Canada has an uneasy historical relationship with its own past failures to articulate and successfully co-ordinate its science policy, so perhaps it is no wonder that bioethics policy occupies a large place in the Canadian political imaginary. As Stephen Bocking pointed out in a 2002 article, the "federal government is the biggest player in Canadian science, supporting academic, health and industrial research across the country" (6).[259] Despite this, as Bocking further explains, the federal government is "closely integrated with research activities outside government" (6),[260] and the lines of "distinction" between the private and the public pursuit of scientific research in Canada have become increasingly blurred (7).[261] This demonstrates that leading up to and including the publication year of *Oryx and Crake* (2003), Canadian science policy was increasingly beginning to resemble that of American, perhaps explaining the ease with which bio-cultural practices relating to genetics and pharmaceuticals could be deterritorialized from the Canadian national context.

[259] See Stephen Bocking, "Agendas, Interests and Authority: Science and Politics in Canada", *Journal of Canadian Studies*, vol. 37, no. 3, University of Toronto Press, Oct. 2002, Web.

[260] Ibid., 6.

[261] Ibid., 7.

Gilles Paquet, writing with John de la Mothe, argues that to understand the history of Canadian science policy is to understand the history of a nation for which "top-down government planning is painfully utopian, given that ours is a world laced with uncertainty and complexity" (188).[262] Paquet finds the history of Canadian science policy initiatives frustrating for their inability to negotiate between "forces of the market" and the drive for academic "relevance" and "excellence" (188).[263] Paquet's frustration plays off his understanding that Canada differs from other countries in terms of investments in the post-secondary education system from the private sector, which he notes in Canada "remains a fraction of what it is in the United States" (50). This frustration seems related to a history of missed economic opportunities, though as Bocking notes, "the consequences of viewing science in economic terms have been especially evident in controversies over biotechnology" within Canada (12).[264] The consequences of the commercialization of science seem to be precisely what the MaddAddam trilogy is concerned with revealing through extrapolation.

Given Paquet's argument *contra* Atwood's expressed politics, it is interesting to return to the choice to set the trilogy in the United States as opposed to Canada. The setting makes sense given that due to privatization, the structure of financial investment in scientific research in the US favours experimentation, while the influence of lobbyists over an already confusing collection of senate oversight committees, invites corruption and interference. In this sense, a Canadian setting wouldn't allow the cognitive validation a successful novum related to runaway

[262] Gilles Paquet, *Crippling Epistemologies and Governance Failures: A Plea For Experimentation*, University of Ottawa Press, 2009, 188, Print.

[263] Ibid., 188.

[264] Stephen Bocking, "Agendas, Interests and Authority: Science and Politics in Canada", 12.

genetic commodification requires.[265] Moreover, Canada is undoubtedly, as Paquet points out, "a middle-power country" (196), and in comparison, the US as a superpower is a more convincing setting from which the BlyssPluss pandemic might presumably begin.

The state of science policy leading up to the 1990s in Canada is marred, according to Paquet, by a lack of private funding for the post-secondary education system (xii).[266] Revealing a distinctly conservative and capitalist mindset, Paquet also laments the state of the social sciences as suffering under the "crippling perspectives" of "Marxism, structuralism, postmodernism" and other movements in theory (xii). Paquet notes that Canada underwent "unsuccessful attempts at coordination" in the 1970s and 1980s, and that by the 1990s had still failed to successfully coordinate its science policy. Paquet's book helps to both lay the groundwork for the situation surrounding Canada's difficulty negotiating its bioethics policy while simultaneously proving that there are significant political forces within Canada with the desire to see science research increasingly privatized. Uncoordinated, underfunded, and publicly scrutinized science policy is therefore a main driver of the national political imaginary that informs Atwood's satirical Craker novum; the novum is then simultaneously critical of American bioethics policy while also serving as a warning about Canada's increasing drive towards privatization.

In an article about biobanks[267] written for Genome Canada, discussing Canadian public perceptions of the practice in light of Canada's consent laws, Timothy Caulfield and Bartha Maria Knoppers identify a degree of distrust of commercialization amongst the Canadian populace:

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[265] See Suvin, *Metamorphoses*: "Thus, if the novum is the necessary condition of SF [...] the validation of the novelty by scientifically methodical cognition into which the reader is inexorably led is the sufficient condition for SF" (65-66).

[266] Gilles Paquet, *Crippling Epistemologies*, xii.

[267] Private facilities that store genetic materials. Examples include Mayo Clinic Biobank, UKBiobank, Alberta Cancer Research Biobank and many others.

> Given the long-term nature of many types of biobanking initiatives (especially large scale population studies), understanding and responding to public perceptions will be essential. Also, it should not be forgotten that even one consent scandal can have a profound impact on public trust and biobank policy (Seale, et al., 2005). In addition, it has been shown that there are specific activities that can have a particularly profound adverse impact on public trust, such as the commercialization process. The involvement of the private sector in biobanking activities may impact the acceptability of various consent approaches. Certain scientific activities – rightly or not – may also trigger public trust issues…(6)[268]

With Canadian attitudes towards biotechnology so likely to be distrustful, and with major differences between public sentiment and that of policy makers on how such technology should be applied and regulated, the divergence between the Canadian perspective and that of the United States starts to become apparent.

For example, in confronting the burgeoning industry of direct to consumer genetic testing, Caulfield identifies significant difference between consumer attitudes in the United States and Canada towards private firms offering such options to consumers. Americans possess significantly more "willingness to pay for tests" while Canadians are more sharply divided on the subject, a gap of roughly 20-30% in opinion between Americans and Canadians surveyed (23).[269]

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[268] Timothy Caulfield and Bartha Maria Knoppers, *Consent, Privacy & Research Biobanks*, Ottawa, Ont. Genome Canada, 2010, Policy Brief (GenomeCanada (Firm)), No. 1., Web, page 6.

[269] Timothy Caulfield, "Direct-to-Consumer Testing: If Consumers Are Not Anxious, Why Are Policymakers?" Human Genetics, vol. 130, no. 1, 2011, Page 23. The full excerpt might be useful here: "survey research has found that the general public is interested in genetic testing technologies—if not overwhelmingly so. A recent survey of Americans found a willingness to pay for tests, even if the results did not have immediate clinical value (70–88%, depending on the exact scenario presented, indicated a willingness to get tested) (Neumann et al. 2010). A similar study of the Canadian public found a more moderate level of interest—perhaps because Canadians believe the public system should pay for these kinds of services. But a slight majority of the surveyed population (51%) stated a willingness to pay for testing for serious and unpreventable diseases (Ries et al. 2010)".

The hesitance demonstrated by many Canadians was less related to distrust of the safety of gene technology itself and more to efforts to secure gene patents, or to privacy concerns about the use of genetic material. For example, in 2018 a story broke claiming that personal genetic test kit company *23andMe* made available the DNA data of its 5 million customers to drug maker *GlaxoSmith Kline* in return for a $300 million-dollar investment.[270] Many users of the service complained online with several threatening legal action. These types of corporate arrangements that discount the rights of individual consumers are precisely what seem to worry the Canadian public. The pursuit of gene patents is at times viewed in Canada as "morally reprehensible and illogical", with the patents becoming "emblems of ownership wielded by a biotech industry more concerned about profit than improving health" (977).[271]

There is also the counter-argument that without the ability to patent genes, "innovation would diminish, and knowledge translation would grind to a halt. No genetic tests, no money for research, and no new therapies" (977).[272] But Caulfield stakes out a middle ground, claiming that "as is so often the case when policy debates become polarized, the outermost positions have become disconnected from what the available evidence actually says" (977).[273] Caulfield's research demonstrates that bioethics has in recent Canadian history occupied a large proportion of science policy discussions, and that public attention to this has been notable. Atwood's trilogy aligns, through the Craker novum, with that component of the Canadian national consciousness that is sceptical and hesitant about the trajectory of genetic research. The national political

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[270] See "Privacy concerns after 23andMe shares genetic data with major drugmaker", CTV NEWS staff, Friday, July 27th, 2018, https://www.ctvnews.ca/health/privacy-concerns-after-23andme-shares-genetic-data-with-major-drugmaker-1.4030480.

[271] Timothy Caulfield, "Reflections on the Gene Patent War: the Myriad Battle, Sputnik and beyond", *Clinical Chemistry*, vol. 57, no. 7, 2011, page 977, web.

[272] Ibid., 977.

[273] Ibid., 977.

imaginary becomes apparent not by examining the history of policy alone, or by close reading the fiction in separation, but by dialogically understanding the relationship between the two.

Another reason that Atwood might have chosen to set her trilogy in the United States is that unlike in Canada, in the US gene patents are permitted with government approval, further supporting the contextual logic of the Craker novum. Caulfield expresses frustration with the fact that gene patents are prohibited in Canada (a practice he sees as potentially beneficial to medicine), while other patents are legally stalled in the United States. However, he recognizes as well that "there is evidence that other forces—such as commercialization pressure— can have an adverse impact, including promoting secrecy, the withholding of data […] to say nothing of the influence that links with industry can have on the integrity of research" (978).[274]

The *MaddAddam* trilogy explores just how far off the rails some of these adverse impacts could take genetic research. Taking the promoting of secrecy as one example, in *The Year of The Flood*, a pastiche of hiding the truth is built into the plot as blanket commentary on the moral degradation of society, from the disturbing nod to the questionable practices of the fast food industry through Toby's work at SecretBurgers, to the many references to corporate dishonesty and espionage, such as when Amanda remembers an early encounter with Jimmy:

> Jimmy had seen these pigs: their nickname was pigoon, like pig balloon, because they were so big. The double-organ methods were proprietary secrets, he said: extra valuable. "Aren't you worried some foreign Corps will kidnap your dad and squeeze the secrets out of his brain?" I said. That was happening more often: they kept it out of the news, but there was gossip at HelthWyzer. Sometimes they got

[274] Ibid., 978.

the kidnapped scientists back, sometimes they didn't. The security was getting tighter and tighter. (221)[275]

Nothing in Amanda's recollection here is unrealistic. The bioengineered pigoons and corporate espionage have analogues to real world events. Ultimately the two sequel novels, through returning sustained attention to such commonplace genetic secrecy, make Crake's hidden Paradice Project more believable as novum. The anti-corporate nature of the national political imaginary is not only discernible through the thematic links traced above however, but also in more direct links between the Craker novum and the *AHRA*.

Because the *AHRA* was introduced and passed in 2004, and only came into force in 2007, a fair question might be how is it that Margaret Atwood's *Oryx and Crake* (2003) could be in any way influenced by it or the discourses surrounding it? The answer is related directly to the speed and process at which laws come into being; laws often require years of debate and policy development as well as sustained public attention eventually leading to their enactment by parliament. In many ways, the *AHRA* is an indirect result of former Prime Minister Brian Mulroney's founding of the *Royal Commission on New Reproductive Technologies* in 1989 (para. 1).[276] The commission, comprised of "members from the fields of medicine, law, religion and sociology",[277] consulted with 40,000 Canadians,[278] and composed a final report in 1993 (para. 2).[279] Entitled *Proceed with Care,* the Report contained 293 recommendations, ranging from a

[275] Atwood, *The Year of The Flood*, page 221.

[276] See Laura Neilson Bonikowsky, "Royal Commission On New Reproductive Technologies", *The Canadian Encyclopedia*, Toronto: Historica Canada, 2012, para. 1, web.

[277] Ibid., para. 3.

[278] See "Assisted Human Reproduction Canada" under "History", Wikipedia, https://en.wikipedia.org/wiki/Assisted_Human_Reproduction_Canada#History.

[279] Bonikowsky, *Royal Commission On New Reproductive Technologies*, 2012, para. 2.

recommendation to regulate human cloning to a recommendation to ban the combining of human and animal DNA (para. 5).[280]

These recommendations also included calling for parliament to change "the Criminal Code to prohibit certain practices related to the use of reproductive technologies and establishing a national regulatory and licensing agency" which ultimately became the *Assisted Human Reproduction Agency of Canada (AHRAC later shortened to AHRC)*.[281] All in all, "[four attempts were] made to pass legislation governing reproductive technologies. It was not until March 2004 that Bill C-13, the *Assisted Human Reproduction Act*, became law" (para. 5).[282] Problems arose as early as 2010 when the Supreme Court of Canada "Struck Down much of the law [the agency] was supposed to enforce" and the *AHRC* was shut down in 2012 (para.3)[283] This history positions the first novel, *Oryx and Crake* (2003) as one that was conceived of, written, and published during the period between the call for the bill and its eventual enactment, not to mention eerily prescient in its cynicism about government competence in bioethical stewardship. At the time of the enactment, Caulfield claimed:

> A few months ago, the Canadian government enacted the Assisted Human Reproduction Act. The new law, which is likely to come into force in the near future, creates a useful regulatory scheme that will oversee all clinical and research activities involving human reproductive material. However, the law also criminally prohibits certain activities, including research cloning. As in many

[280] Bonikowsky, *Royal Commission On New Reproductive Technologies*, 2012, para. 5.

[281] Ibid., para. 5.

[282] Ibid., para. 5.

[283] See tom Blackwell, "Government shutters agency that oversees Canada's fertility and assisted reproduction industry", The National Post, March 30, 2012, para. 3, web. https://nationalpost.com/news/government-shutters-agency-that-oversees-canadas-fertility-and-assisted-reproduction-industry.

> countries, research cloning—also known as therapeutic or non-reproductive human cloning—has been a focus of public debate. (124)[284]

Though Atwood's trilogy concerns itself more with the creation of chimera beings than with cloning,[285] Caulfield's reaction to the enactment reveals the difficulty of regulatory bodies in striking an appropriate balance between ethical control and the ability of scientists to engage in experimentation. The concern seems to primarily be with the limits imposed on scientists, and particularly their "scientific freedom", citing the US as example, where such freedoms are protected under the American Bill of Rights and noting that this new law "may breach the Canadian Charter of Rights and Freedoms" (124).[286] In this desire to see less regulation, Caulfield is perhaps sympathetic to Paquet's views on the difference between Canadian and US biomedical policy.

Atwood, on the other hand, stakes a bold claim through her satire that no government process could provide sufficient failsafes in the face of biomedical advancement. In *The Year of The Flood*, the sermons of Adam One and the hymns periodically positioned throughout the narrative identify a wide range of follies connected with contemporary society. In the hymn "The Earth Forgives", man "writes his abstract laws on stone" (426),[287] while in a sermon by Adam One, the creation of a new species of cybernetic bee is described as an "abomination" (278).[288] These show in turn the failure of the process of law and the clear lack of ethical controls. Such calling out of human laws as abstract resonates, though inversely with Caulfield's response to the

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[284] Timothy Caulfield, "Scientific Freedom and Research Cloning: Can a Ban Be Justified?" *The Lancet*, vol. 364, no. 9429, 2004, pp. 124–126, Web.

[285] The creation of such hybrid creatures is one of the specific scientific activities banned by the *AHRA*.

[286] Ibid., 124.

[287] Atwood, *The Year of The Flood*, 426.

[288] Ibid., 278.

Assisted Human Reproduction Act, in which he claims that certain aspects of the law were not carefully thought through: "The mere fact that an area of research appears to offend a particular social convention or world view is, in general, not enough to justify government interference with that research activity" (125).[289] In other words, to Caulfield the danger is that important biomedical advancements could be halted in development, while to Atwood, all biomedical research runs the risk of breaking its imposed restraints.

On Menippean Satire and the Slippery Slope Concern

As demonstrated, the long period of policy development for the *AHRA* was a significant force in shaping the novum of the *MaddAddam* trilogy. However, while Atwood's Crakers are probably a subconscious response to the development of Canadian bioethics policy, their role in the text is to operate as intentionally satirical critique of the rampant biomedical experimentation in the US. Satire is a very effective choice for Atwood to make as her primary mode of critiquing US practices like gene-splicing, organ farming, pharmaceutical manipulation, and cloning that were (and are) still very much in flux.[290] As a satirical construction, the Crakers as novum are necessary to move readers imaginations beyond the immediate, practical and more mundane uses science has for genetic material. For example, many Canadians do not disagree in principle with certain cloning practices: "despite the Canadian Government's decision to ban research cloning, all the evidence indicates that the public supports the activity. A 2002 poll found that six in ten

[289] Timothy Caulfield, "Scientific Freedom and Research Cloning: Can a Ban Be Justified?" *The Lancet*, vol. 364, no. 9429, 2004, pp. 124–126, web.

[290] For a great background discussion of how some contemporary authors have made interesting uses of satirical tactics without their work necessarily falling into the tropes of the genre, see: Kathryn Hume, "Diffused Satire in Contemporary American Fiction", *Modern Philology*, vol. 105, no. 2, 2007, pp. 300–325. Hume identifies *Oryx and Crake* as a novel that is hard to outright call a satire, but certainly has satirical tendencies. She also discusses how satire can be considered a mode as well as a genre, page 303.

Canadians approve of the creation of cloned human embryos for collecting stem cells (125)."[291] This level of comfort with the limited cloning practices relating to embryos speaks more to the informed nature of the polled Canadians, who are aware that the cloning in question takes place at the cellular level only and is tightly regulated by the *AHRA*. But Atwood's trilogy proposes what might happen in a different context, where privatization and lack of clear regulatory guidelines create the perfect conditions for things to go wrong. That context is how American capitalist hegemony could lead to a dystopian future, a homogenized North American setting where American biocultural practices and corporatization have seemingly obliterated national boundaries. This is why Atwood's satire comfortably balloons throughout the narrative, lacking any self-reflexive nationalism to temper its exuberance.

Satire is the perfect mode through which to engage interest in serious issues such as genetic policy, precisely because it does not have to be taken seriously or literally but can be. The satirical mode allows for presenting serious and recognizable problems at the same time as ridiculous or even inappropriate context. Perhaps this is why the serious tone expressed in parts of all three novels revolves around the often violent, possessive or deceptive relationships between human characters. These relationships validate the world of the fiction with recognizable social authenticity. The Crakers become more believable because the manipulative motivations of their human creators seem authentic,[292] and the comic relief of many of their encounters with Jimmy and Toby counter-balance the horrific things that happen to other characters, such as the murder and cannibalizing of Oates in *The Year of The Flood* (386),[293] or

[291] Timothy Caulfield, "Scientific Freedom and Research Cloning: Can a Ban Be Justified?",125.
[292] The Crakers are in fact, manipulated or lied to by the human characters frequently, especially by Jimmy.
[293] Atwood, *The Year of The Flood*, 386.

the murder-suicide committed by Crake in *Oryx and Crake* (329).[294] There may also be a demographic that reads potential realism into beings like the Crakers, as the ridiculous but not impossible results of unrestrained gene-splicing experiments. For these readers, the satire serves to reinforce their sense of the dangerous potential extremes of unregulated biotechnologies, what Caulfield terms a "slippery-slope concern", which "could be addressed by banning the feared activity" (125).[295]

Although this chapter focuses on approaching the trilogy primarily through science fiction theory, with attention to its central hegemonic novum, it is important to acknowledge that Atwood still applies a form of Menippean satire throughout each novel, using that mode to critique a wide array of cultural practice.[296] Menippean satire is defined as "a rebellious and satirical anti-genre, which defies rigid definitions and is related to carnivalesque narratives or subversively comic events" (para.2).[297] Because the targets of Atwood's ridicule are so numerous and she so frequently alters her style and point of view, I believe that Menippean satire suits Atwood's trilogy perfectly. As Kathryn Hume writes, "[n]o one ever said that a satire must have only one target, and the presence of many can often be explained as an assault on "human nature" or "modern values" or some such blanket concept" (314).[298] I view the entire trilogy through this lens, finding each novel instalment subsequently more carnivalesque and comical. Whether readers personally find the trilogy a humorous presentation of a dystopia, or a

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[294] Atwood, *Oryx and Crake*, 329.

[295] Timothy Caulfield, "Scientific Freedom and Research Cloning: Can a Ban Be Justified?",125.

[296] Kathryn Hume, "Diffused Satire in Contemporary American Fiction", 314.

[297] See Michael Coffey and Costas Panayotakis, "Menippean Satire", *The Oxford Classical Dictionary*, Oxford University Press, 1 Jan. 2012, http://www.oxfordreference.com/view/10.1093/acref/9780199545568.001.0001/acref-9780199545568-e-4112.

[298] Kathryn Hume, "Diffused Satire in Contemporary American Fiction", 314.

depressing future vision with moments of comic relief is not as important to me as revealing the influences of Canadian genetic policy on the formation of the Crakers as novum.

The Crakers as Artifact of the National Political Imaginary

Character identifications and the author's own public engagement with genetics issues and policy further support my argument that the Crakers as novum are shown to be a distinct projection of the national political imaginary in late 1990s and turn of the millennium Canada. For example, in the final book of the trilogy, *MaddAddam*, the character Zeb travels to the Northwest Territories in Canada. Zeb spends a significant amount of time working for a company called *Bearlift*, revealed to be a scam operating on the "good intentions of city types with disposable emotions" (59). Atwood may be critiquing the average Canadian citizen through Zeb as "well meaning" but is also critiquing a national group who fail nonetheless to effect significant influence in opposition to the social and scientific practices that come from the south. In a subversively comic scene, Atwood makes this relatively clear by satirically and symbolically having two different bears stand in for the Canadian and American nationalities respectively.

Though a compelling argument could be made that Atwood only uses Zeb's Canadian journey to present the full scope of environmental degradation in the world of the novel, I argue there is a second purpose to the long passage describing the plight of the polar bear. The complete passage is worth repeating here:

> "But here's the scammiest part. Yes, the ice had mostly melted; yes, some polar bears had starved, but the rest of them were drifting southwards, mating up with the grizzlies, from which they'd separated themselves a mere two hundred thousand years ago. So you'd get bears that were white with brown patches or

> bears that were brown with white patches, or all brown or all white, but whatever was on the outside was no predictor of temperament: the pizzlies would avoid you most of the time, like grizzlies; the grolars would attack you most of the time, like polar bears. You never knew which kind any given bear might be. What you did know was that you didn't want your 'thopter to fall out of the air over bear country." (59-60)[299]

Polar bears could arguably be read here as stand-ins for the Canadian people and the grizzlies for the American (considering that the trilogy ends with Blackbeard reciting a legend about Zeb becoming a bear). The description of the "mating up" and subsequent difficulty in distinguishing between the two types of bear might be a playful analogy for the growing homogenization of American and Canadian culture and social practice. Even the temperament of each bear can be read as analogical commentary, with grizzly disinterest representing American lack of interest in bothering with Canada, and polar bear aggression representing Canadian interest in constantly defining itself by critical attacks on American culture and manners.[300]

When Atwood has Zeb comment that "[t]hings in the north were always a little fuzzy around the edges, law-wise" (62),[301] this invites the thought experiment of bridging Zeb's sentiment with the uncertainties that plagued the development of the *AHRA*, which Caulfield has criticized as in need of "further clarification", noting that the "Government should provide details on […] how the adopted regulatory scheme relates to generally accepted Canadian values and views" (3), and also as a document from which "a coherent, comprehensive, and sustainable

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[299] Atwood, *MaddAddam*, 59-60.

[300] This is in itself possibly another aspect of the Menippean mode of satire, which seeks to attack mental attitude, and not necessarily individuals.

[301] Atwood, *MaddAddam*, 62.

legislative policy remains absent" (4).[302] All this is to suggest that Zeb is indirectly characterized as Canadian.

This is significant because Zeb's revealed connection to a young Crake in *MaddAddam* affiliates him more closely with the genetic experimentation than readers first realize on Zeb's introduction in *The Year of The Flood* – he plays chess with Crake, inadvertently and perhaps casually discusses ideas with Crake that are later incorporated into the apocalyptic plan, and even teaches Crake to code, something that directly contributes to Crake's ability to pull off his master plan. Zeb's admission of guilt in going outside the established rules of procedure also resonates in some ways with Canadian concerns over putting genetic material under the power of individuals and private companies: "How tempting was it to take that talent and hone it and polish it and pass on the keys to the kingdom – the Open Sesames, the back doors, the shortcuts? Very tempting. So that is what Zeb did" (238).[303]

Zeb is the character most closely affiliated with Canada in the text through his connection to Bearlift air,[304] and vanishes in relative mystery near the end of the final novel, as though choosing to distance himself from a bioengineered future world. Toby may also be affiliated with the Canadian identity, as she is the character in the trilogy that I argue most represents Atwood's own voice, as well as shares a romantic attachment to Zeb. At the end of *MaddAddam*, when Blackbeard recounts "The Story of Toby", his favorite ending to the story is that "others say that she went to find Zeb, and that he is in the form of a Bear, and that she too is in the form of a

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[302] Timothy Caulfield, "Symposium on Bill C-13: the Assisted Human Reproduction Act", *Health Law Review*, vol. 11, no. 1, 2002, pp. 3-4.

[303] Atwood, *MaddAddam*, 238.

[304] Stephen Bocking identifies the historical significance of planes as a part of Canadian identity, explaining that: "Aviation [...] became central to Canadian policy in the North" (273). See Stephen Bocking, "A Disciplined Geography: Aviation, Science, and the Cold War in Northern Canada", Technology and Culture, Vol. 50, no. 2, (Apr. 2009), pp. 265-290, Johns Hopkins University Press, web.

Bear, and is with him today" (390). And so, Toby vanishes from the world as well, becoming as Zeb does, a myth of the human past. Significantly, these two characters offer, at various times during *The Year of The Flood* and *MaddAddam* the most consistent satirical perspective of the other characters, particularly the Crakers, as well as the events and the setting of the books.

III. Negotiating the Bio-cultural Nightmare: Margaret Atwood's *MaddAddam* Trilogy and Making Kin

> "What the hell is it?" Said Jimmy.
>
> "Those are chickens," said Crake. "Chicken parts. Just the breasts, on this one. They've got ones that specialize in drumsticks too, twelve to a growth unit."
>
> "But there aren't any heads," said Jimmy. […]
>
> "That's the head in the middle," said the woman. "There's a mouth opening at the top, they dump the nutrients in there. No eyes or beak or anything, they don't need those."
>
> "This is horrible," said Jimmy. The thing was a nightmare.
>
> – Margaret Atwood, *Oryx and Crake* (2003)

In this final section I explain how the understanding developed earlier in this chapter that the Craker novum is a manifestation of the Canadian political imaginary helps to reveal a possible alternative reading of the trilogy. This alternative reading is based on examining how the God's Gardeners and individual characters such as Jimmy, Zeb, Pilar, and especially Toby engage in more environmentally conscious and more ethical behavior as counter-balance to the unrestrained bioethical violations enacted by Crake, the painballers, and the various corporations

in the novels. I argue that Donna Haraway's conceptualization of "making kin" is a useful way to understand the alliances characters form, especially when those alliances involve bonds with non-human creatures. Though several characters are examined, I first explore the concept of kinship through the character of Zeb, who learns to adjust his biases about blood relation and the social purpose of symbolic actions. I argue that Zeb's character is able to benefit from an even deeper, and earlier exploration of the notion of kinship that alters Toby's character in important ways in *The Year of The Flood*. I further argue that Toby is the character that most dynamically learns to embrace non-conventional kinships. Unlike the Crakers and characters such as Amanda, Ren, and Swift Fox, Toby seems the character most in tune with Haraway's call to "Make Kin, Not Babies!"[305]

I explain how Toby establishes such kinships by first outlining the complex nature of her interactions and how they can be understood using the concept of entanglement (Barad),[306] which is revealed by exploring Toby's embodiment (Maiese).[307] Toby's entanglements include the relationships she shares with members of the human community (both positive and negative), with material and physical objects (both objects created by humanity and aspects of the natural environment), with natural creatures such as the bees, and with bioengineered beings such as the pigoons. Toby's experiences of entanglement are therefore best understood by exploring her

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[305] Donna Haraway, "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin", *Environmental Humanities*, vol. 6, 2015, pp. 159-165, web.

[306] I work with the same defining features of the concept that were first outlined in chapter one.

[307] I am working with the following definition of embodiment: "Up until recently, the prevailing view in both philosophy and the sciences has been that consciousness is strictly correlated with the brain and central nervous system, and that neurophysiological facts alone provide the necessary and sufficient conditions for mental life. However, more and more thinkers have begun to challenge this brain-based conception of consciousness and to argue that consciousness is not just 'instrumentally dependent' on human bodily form and bodily activity, but also *constitutively dependent* on the body. Taken together, and taken seriously, these arguments show that consciousness is not simply something that happens within our brains, but rather something that we *do* through our living bodies and our lived, bodily engagement with the world." In Michelle Maiese, *Embodiment, Emotion, and Cognition*, Basingstoke, Hampshire; New York, NY, Palgrave Macmillan, 2011, Page 1, web.

distributed embodiment and her consciousness as enactments within a network, and not attributes she possesses as an individual. In reading the *MaddAddam* trilogy in the above ways, I am building on a call by Stacy Alaimo in *Bodily Natures*, to adopt "a posthumanist environmentalist ethics that refuses to see the delineated shape of the human as distinct from the background of nature, and instead focuses on interfaces, interchanges and transformative material/discursive practices" (142).

The *MaddAddam* trilogy offers a very wide ethical spectrum of characters, from the narcissistic and sociopathic Crake and the ultra-violent painballers, to the guileless Oryx, selfless community-oriented Pilar, and the cult-like God's Gardener's environmentalists. Many of the other characters occupy places of interesting ethical ambiguity between these two extremes. For example, despite being Crake's best friend, it isn't quite as easy to align Jimmy with Crake's ruthlessness. Jimmy takes good care of the Crakers and feels responsible for them, despite the facade of indifference he projects:

> "Oh Snowman, Oh Snowman, can we have feathers too, please?"
>
> "No," he says.
>
> "Why not, why not?" sing the two smallest ones.
>
> "Just a minute, I'll ask Crake." He holds his watch up to the sky, turns it around on his wrist, then puts it to his ear as if listening to it. They follow each motion, enthralled. "No," he says. "Crake says you can't. No feathers for you. Now piss off." (*Oryx and Crake*, 9)

Similarly, the character Ren might seem associated with moral ambiguity through her work at the Scales and Tails nightclub but is more or less pressed into the lifestyle as a survival strategy. Early in the text Ren demonstrates the goodness in her essential nature through her association

with the God's Gardeners and efforts to help save Amanda's life by bringing her to the group. Even Ren's relationship with the lecherous night club owner Mordis leads to a mildly touching moment, when after the painballers kill him for refusing to divulge the code to enter the Scales and Tails office, Ren acknowledges that "he'd saved my life" (*The Year of The Flood*, 281). Other characters, including Shackleton, Crozier, Oates, Rebecca, Adam One, Zeb, and Toby, connect in similarly interesting ways with fuzzy ethical moments in the text, and this despite their being members of an environmental cult.

Making Kin After the Apocalypse

This section of the chapter more closely analyzes Zeb and particularly Toby, as these two characters more clearly represent how identities in the trilogy are reconfigured or renegotiated against the novum, and how they learn to cast away traditional notions of the importance of familial heritage and forge new kinships that will increase their chances to live sustainably and therefore survive in the Anthropocene.

In *MaddAddam*, Zeb discovers that his likely father, The Rev, an important member of *The Church of PetrOleum*, has been embezzling funds, essentially profiting directly from environmental degradation.[308] Zeb is at once torn between his disgust at the likelihood that he is the son of The Rev, and his knowledge that this connects him by blood to Adam One. Zeb wishes that he "had thought to purloin some of the Rev's DNA — a few hairs or toenail clippings — then he could get the tests done and set his mind at rest" (189). Ultimately, based on

[308] The Church of PetrOleum in *MaddAddam* is likely directly influenced by the notion of "prosperity gospel", a sectarian religious belief amongst protestant Christians that one can increase their personal wealth through donations to the church and by following other principles, many of which are controversial to Christian theologians. See Andrew Greer, *The New York Times Book Review*, "Final Showdown", Sept. 6th, 2013, web. https://www.nytimes.com/2013/09/08/books/review/maddaddam-by-margaret-atwood.html.

his environmental and moral convictions, Zeb rejects The Rev, biological father or not, and sets him up by contacting a Church Elder and "attaching the Rev's embezzlement data and informing him that the actual cash would be found not in the Canary Islands Grand Cayman bank account, where it actually was, but in the form of stocks, in a metal box buried under Trudy's rock garden" (183). The Rev is arrested when the authorities find the corpse of Adam One's dead mother Fenella, and Zeb steals the money from the Grand Cayman account.

Zeb is hopeful that his mother Trudy may have "had it off with a dark stranger in the garden toolshed" (188), because this would mean that The Rev is not his father, but later in the narrative, he becomes worried that this would also mean the blood connection he and Adam One had assumed they shared would become invalid. When Zeb first asks Pilar to test his DNA against the Reverend's, he worries: "Only problem was that if Pilar ran the DNA comparison and the Rev wasn't his dad, then Adam wouldn't be his brother. Adam would be no relation to him at all. No blood relation" (318). At this point in the narrative of *MaddAddam*, Zeb hasn't yet realized that adopting an alternative understanding of kinship is more important than the negative and positive family ties that have been driving his behavior. In Donna Haraway's essay "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin", she writes that her "purpose is to make "kin" mean something other/more than entities tied by ancestry or genealogy" and that "all earthlings are kin in the deepest sense [...] kin is an assembling sort of word" (161-62). I think that this is the understanding of how he is connected to Adam One, the Crakers, the pigoons, and Toby that Zeb develops throughout the final novel in the trilogy.

Before Zeb's epiphany about true connection however, he says something to Adam One that he admits to Toby "I wish I'd never said." [...] "I said he wasn't really my brother, not genetically. He was no relation to me" (334). This creates a rift between the two brothers in the

story. Zeb's understanding of the importance of assembling kinships is also limited when it comes to romance. In *MaddAddam,* Zeb refuses to go through the tree branch ceremony with Lucerne, calling it a "meaningless empty symbol" (332). Later in the novel however, it is clear that Zeb has learned to understand that his connections to others are not defined by blood relation or made meaningless by symbol. When Adam One is tragically stabbed in the painballer attack near the end of the book, Zeb, crying, carries him back to the encampment: "I've got you, best buddy. You're gonna be ok" (363). The Craker responsible for recording history, Blackbeard, asks Toby what a "Bestbuddy" is, and Toby says that "Bestbuddy [is] another name for *brother*", effectively obliterating the earlier distinction that Zeb tried to make between the two concepts (363).

After this point in the narrative, Zeb mourns for Adam, and "as next of kin had the choice of tree" for his burial (374). Soon after this, as recorded by Blackbeard, Toby and Zeb jump over the fire, and give each other green tree branches, effectively solidifying their commitment to one another in an environmentally symbolic ceremony. This ceremony resembles traditional marriage, but seems at face value to be based upon the principal of gender equality, as evidenced in the difference between the equal exchange of branches as opposed to the symbols of gender hierarchy normally evident in the typical marriage ceremony (such as the "giving away" of the bride). This shows that *MaddAddam*, which is arguably Zeb's novel, traces his shifting beliefs as he learns to forge new understandings of kinship. Toby, as Zeb's lover in the final book, has a lot to do with the changes that happen to Zeb's character.

For example, Zeb is at first skeptical of Toby's desire to commune with Pilar in *MaddAddam*: "first you talk to bees, now you want to talk to dead people?" (219) Not only does Zeb have trouble understanding why Toby would like to go, he sees the mission as potentially

dangerous. Toby however, by making trouble, is attempting to confront the current crisis instead of stay hiding in the woods, and is in a sense acting out what Donna Haraway calls "staying with the trouble", by "learning to be truly present [...] as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings" (1).[309] When he grudgingly agrees to accompany Toby on her vision quest, Zeb is skeptical both of the intelligence of the pigoons, and ultimately of the purpose of protecting the Crakers. However, after spending more time with Toby, Zeb begins to change his thinking, remarking once that the pigoons are "[c]lever buggers" because they "know about cover", and admiring their foresight and thoughtfulness in collecting food for the Crakers (340). At the end of the novel, when Zeb sees smoke in the distance while on a scouting run, he takes it upon himself to lead an expedition to investigate, and makes it clear to the Crakers that if the people there are "not good, then he would not let them come near [the Crakers], and hurt [them], but would clear them away. Despite the fact that Zeb has begun to fully embrace his kinship not only with Toby, but the pigoons, and finally the Crakers as well, he never returns from this mission.

The Crakers provide readers with an experience of cognitive estrangement, and before that experience is delivered through Zeb's encounters with them in *MaddAddam*, it is first through Jimmy in *Oryx and Crake* and then through Toby in both *The Year of The Flood*. For example, In *Oryx and Crake*, one of the reader's first complete images is described through Jimmy's narrative in the following way:

> After a few moments of hesitation the children squat down in a half-circle, boys and girls together. A couple of the younger ones are still munching on their breakfasts, the green juice running down their chins. It's discouraging how

[309] Donna Haraway, *Staying With The Trouble: Making Kin in the Cthulucene*, Duke University Press, page 1, 2016.

> grubby everyone gets without mirrors. Still, they're amazingly attractive, these children—each one naked, each one perfect, each one a different skin colour—chocolate, rose, tea, butter, cream, honey—but each with green eyes. Crake's aesthetic. (8)

The experience of cognitive estrangement here is delivered by first giving the reader a familiar idea in the previous paragraphs of the novel, that of an elder surrounded by curious children. Atwood also makes the children strangely comforting; all of the children in turn are affiliated with colours and flavours described in a sensually soothing rhythm, all referring to elements of the natural world, "chocolate, rose, tea, butter, cream, honey" (8). However, the short description is bookended by a resonant visual that doesn't fit—the green juice running down the chin played against the unnaturally green eyes recalls an alien presence.[310] It is also distinctly unnerving that Jimmy is surrounded by naked children, and subsequently that he lies to them. Readers are likely to be unsettled by all of these things, causing them to feel both a sense of familiarity about the imagined world but also its qualities of absolute unfamiliarity, or strangeness.[311] So the reader is introduced to the trilogy's novum of the Crakers as artificially created beings through the technique of cognitive estrangement only six pages in.

Toby's experiences of the Crakers are equally profound in producing cognitive dissonance for the reader. Consider her first encounter with them from a distance in *The Year of The Flood*, after having survived for a significant period of time alone on the AnooYoo Spa rooftop. On Mole Day, part of the God's Gardeners St. Euell's Week observances, during a

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[310] At once a more innocent version of the sinister children from John Wyndham's *The Midwich Cuckoos*, and perhaps also recalling the imagery of Stephen King's bizarre short story "The Lawnmower Man".

[311] In many ways, cognitive estrangement in science fiction is like the uncanny, and uses bodies or beings as the foci quite often. The difference I think, is that cognitive estrangement requires its interplay with the novum, while the uncanny obeys no such ties and certainly doesn't limit its presence to sf.

Gibbous moon (half there/not there),[312] Toby hears the Crakers before seeing them (164). The experience is strange enough (even given the context of the novel's events) that Toby marks the experience in her diary as "Hallucination?" (164), before making the following entry:

> It was after the daily thunderstorm. She was up on the roof, checking the rain barrel connections: the flow from the single tap she's kept open downstairs was blocked. She found the problem — drowned mouse clogging the intake — and was turning to go back down the stairs when she heard an odd sound. It was like singing, but not any singing she'd ever heard before.
>
> […] at the far end of the field a strange procession appeared. It seemed to consist entirely of naked people, though one man walking at the front had clothes on, and some sort of red hat, and — could it be? — sunglasses. Behind him there were men and women and children, every known skin colour; as she focused, she could see that several of the naked people had blue abdomens.
>
> That was why she's decided it must have been a hallucination: the blueness. And the crystalline, otherworldly singing. (164)

Readers might access cognitive estrangement here through an appeal to the senses that begins with the soothing and familiar quiet following a thunderstorm but then transitions to the "odd" singing, not like any "she'd ever heard before" (164). Toby then gets the destabilizing visual to accompany the odd singing, a strange looking group of naked people with glowing blue

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[312] This is in fact, equal parts satirical joke and intentionally symbolic, as St. Euell's Week draws attention to the life of celebrity naturalist Euell Gibbons (perhaps a play on words with Gibbous moon), famous for promoting a very "wild" form of diet similar to what the Crakers (and Toby in her desperation) might eat. He published a book for example, entitled *Stalking the Blue-Eyed Scallop* (1964). See the Wikipedia entry for Gibbons life here: https://en.wikipedia.org/wiki/Euell_Gibbons#Literary_career_and_celebrity.
It is with more serious intent that Atwood likely chose Mole Day as the occasion, that being the unofficial holiday celebrated around the world by chemists to celebrate their discipline—a discipline that brought about the waterless flood in the novel.

abdomens following a strange man into the woods. Toby decides that she did indeed hallucinate, and that the people she saw looked "so healthy" and "couldn't possibly be real" (164). At the end of *The Year of The Flood*, it is significant that Jimmy and Toby, who first brought the reader into contact with Atwood's Craker novum in each novel, are together as the Crakers approach the camp in the woods. They hear the sound of "many people singing" (431), perhaps reminding the reader (who will recall Toby's first encounter) that the Crakers are not people in the traditional sense. Here, Atwood uses the novum to present the surviving characters, and primarily Toby—who literally has the last word in the novel, "Quiet"—as the only real counterpoint to the quiet and unreal Crakers.

The Year of The Flood takes place concurrent to *Oryx and Crake*, meaning that Jimmy's insulated journey,[313] one filled with the mindless pursuits of hollow fantasy in his obsession with video games, pornography and hyper real internet channels could be seen as the opposite to Toby's very physical and more geographically involved one. Jimmy's journey is primarily an internal and at times philosophical one that moves him from the security of the elite world he inhabits to recognizing its true hollowness. This character arc leaves him feeling empty and wasted by the end of the first novel: "Once in awhile he considered killing himself – it seemed mandatory – but somehow he didn't have the required energy" (344). Conversely, Toby begins her own journey at first with little hope that any of her friends have survived, afraid of "the dark encircling wall of trees and vines and fronds and shrubby undergrowth", certain that it is "from there that any danger might come" (5). Though Toby does not contemplate suicide as Jimmy does, she moves from seeming emptiness to something resembling spiritual fulfillment by the

[313] Jimmy spends much of the novel trapped inside government compounds such as *HealthWyzer* and *Martha Graham*.

end of *The Year of The Flood*, calling upon the spirits of the animals, including man-made hybrid animals for salvation and thereby making kin with them —"Dear Leopard, dear Wolf, dear Liobam" (415) — while Jimmy's journey is the opposite.

Toby, initially distrustful of the God's Gardeners sect, undergoes a spiritual awakening throughout *The Year of The Flood* (culminating in her myth-making disappearance following Zeb's at the end of *MaddAddam*). Yet through the philosophical approach of critical posthumanism, her awakening is best read as a political and social refashioning of the traditional humanist subject through environmental embodiment into the posthumanist model required to move forward in the ethical minefield that biotechnology has laid before us. Rosi Braidotti defines posthumanist critical theory as "ever mindful of the fact that, the 'human' is not a neutral term but rather a hierarchical one that indexes access to privileges and entitlements, linked to both the humanist tradition and anthropocentric 'exceptionalism'" (13).[314] Toby's transitional journey from humanist to posthumanist subject details the aspects of her experience that recall the hierarchical nature of the human experience, particularly the experience of a woman in a position of subjugation. Toby is best read as the character that accomplishes this transition, achieved through her ability to recognize and also accept three important ways that she is entangled with the material practices and exploitive nature of capitalism.

The first stage in Toby's journey is to enter the world of the wider human community by living amongst the masses. This is at once how readers are given their first sustained depictions in *The Year of The Flood* of what life in the pleeblands is like for the average person. This is also what sets the initial conditions for Toby's character arc towards embracing a posthumanist

[314] Rosi Braidotti, "Posthuman Critical Theory", In *Critical Posthumanism and Planetary Futures*, Debashish Banerji, Makarand R. Paranjape, Eds., 2016, p. 13.

philosophy, and by extension leads to her making kin with the surviving God's Gardener's, Crakers, pigoons, bees and Zeb. Once Toby is no longer afforded the protection of her parents, she goes into hiding in the most impoverished pleeb, Willow Acres, also known as the Sewage Lagoon (30). It is here that she encounters the lower bounds of human depravity and realizes that this is the status quo. Existence in the Sewage Lagoon is a threefold experience of embodiment for Toby, as she experiences: capitalism through participation in the SecretBurgers operation; ecological exploitation in living close to Slink and Rarity; and through dressing up as a furzooter; and the brutal side of the patriarchical social structure through Blanco's control over her body (a patriarchal social structure that once made her safe in her father's home, when she was still naive) (35-37). Each of the three stages that Toby goes through are negative experiences of embodiment.

First, SecretBurgers is the ultimate expression of capitalism gone wrong, and reveals it to be a cannibalistic mode of production. There are rumours that the CorpSeCorps uses the burger chain as a "corpse disposal" entity and that "[d]uring the glory days of SecretBurgers, there were very few bodies found in secret lots" (33). During her time at SecretBurgers, Toby is aware that she is implicated in the simultaneous consumption and nourishment of her community, but as she admits in the novel, once with the Gardener's, Toby "suppresse[s] the memory of eating these burgers" (33). The incident is part of the nightmare created by the moral decline of a society that has lost touch with morality.

Secondly, Toby rents a tiny room one floor above "an endangered-species luxury couture operation called Slink", a company engaged in industry that sends its fumes "up the ventilation system" into Toby's room (31). Her cubicle stinks "of chemicals and rancid fat" and she sometimes hears "roaring and bleating" from below (31). These smells and sounds are the

sensory experiences of animal exploitation, which are rounded out with Toby experiencing violence as touch and sexual assault while dressed as a furzooter: "in the first week she suffered three attacks by fetishists who knocked her over, twisted the big head […] and rubbed their pelvises against her fur" (31).

Thirdly, becoming Blanco's "girlfriend"[315] is how she learns through experience that in a patriarchal society the exercise of generation upon generation of banked social power imbalance has an extremely violent edge. Immediately establishing his relationship with Toby as one based on a power dynamic privileging the white male businessman, Blanco "heave[s] himself out of his swivel chair" and tells Toby self-importantly that he is "promoting her" (37). The threat to Toby's life in the event of non-obedience is clear, as Blanco tells her that he will snap her "like a twig" if she doesn't co-operate with his sadistic sexual demands, or if she tries to escape (37). It is clear that the two of them are never in anything resembling a traditional relationship because Blanco does not want Toby "to feel pleasure […] only submission" (38). Toby also begins to show the physical markers of an embodied experience of the patriarchy and to feel its exploitive force: "she had her own bruises now […] she'd be used up soon" (38). Fortunately, two weeks into a tortured existence as Blanco's "one-and-only" that "felt like years", Toby is given the opportunity to escape when the God's Gardeners arrive to protest SecretBurgers (38-39).

To be clear, Toby does not embrace her first embodied experiences of life in the Sewage Lagoon, though once she escapes from Blanco (who threatens to murder her) and goes into hiding with the God's Gardeners on the Eden Valley Rooftop, she has two transcendent experiences of kinship that seem that much more significant in importance when set against what

[315] These are scare quotes and not quotation marks, because as the text makes clear, "Toby [feels] she [i]s on the way to her own execution" when Blanco summons her to his office.

came before. First, and almost immediately upon reaching the sanctuary, Toby is greeted with the hugs of children and warmed by the sight of Rebecca, and soon experiences the feeling as though "a large, benevolent hand had reached down and picked her up, and was holding her safe" (43). The feeling hits her on an emotional level to the point where she cries, overcome with sensations she doesn't fully understand, but which clearly indicate that an experience of community acceptance is also possible. This first positive experience is facilitated not only by the human members of the God's Gardeners, but also by several non-human agents. For example, the novel clearly relates these feelings to sights that have just come before Toby's eyes, including "plants and flowers of many kinds she'd never seen before" as well as "vivid butterflies", and also, as though felt through the air on her skin, "the vibration of bees" (43). Toby's feeling through the smell of the flowers, the colors of the butterflies, and the vibration of the bees, is an example of her embodied experience of kinship and community, and just as welcoming as the hugs of the human members of the God's Gardeners.

The second experience of community that seems to change Toby is when Blanco and his two thugs attack on the rooftop, intending violent revenge for Toby's escape. It is noteworthy that most of the characters that go on the offensive to protect the commune are female; these characters include Rebecca, Amanda and Toby, each fulfilling their part in defending the commune. The success of the group in battling the attackers also relies, but doesn't depend, on Zeb's help, and demonstrates his suitability as an equal partner for Toby, rather than as a cliché of male bravado. While Rebecca and Amanda both succeed in sending a respective thug off the balcony, Toby (who has taken over Pilar's role as Eve Six and beekeeper) thwarts Blanco's attack by pushing over three beehives. The bees go "for him like arrows" (255). At first Toby is numbed by the incident. Only after, when it is determined that she must be removed temporarily

from the rooftop garden for safety, does Toby feel the pain of what it means to be removed from community. If community can be experienced as the positive sensations Toby had on arriving, it can also feel as it does to her when she must leave it, like "a wrenching, a severing, a skin peeling off" (257).

As demonstrated above, Toby experiences embodiment in both negative and positive ways that extend beyond the fact of her presence in the community, which are significant in her evolving as a character to embrace alternative forms of making kin later in the trilogy. Before leaving the rooftop garden however, Toby is still enmeshed within the traditional understanding of a community as "the people as a group" or as "people who live in the same place, usually sharing a common cultural or ethnic identity" (OED).[316] Before Toby matures into a character that recognizes her entangled status within her own environment, she first must confront the ways in which the limitations of her identity as concept tie her to traditional gender roles and familial hierarchies.

Toby begins to open herself up to embodied experience in the sometimes violent and dirty pleeblands as well as in the occasional serenity and beauty of the dystopian ruins that Atwood has crafted through this trilogy. For her, the transition beyond her relying on human communities such as the God's Gardeners and seeking alternate alliances begins in confronting the regret and sorrow her parents ruined lives have cast over her mind,[317] which she encounters when she interacts with certain physical aspects of the world around her. For example, it is the act of lifting not one, but three patio stones to recover her father's buried Ruger that forces her to

[316] From the definition of "community, n." *OED Online*, Oxford University Press, June 2017, www.oed.com/view/Entry/37337. Accessed 1 January 2018.

[317] Toby's mother falls ill and dies, the text making it clear that the CorpSeCorps and the ""HelthWyzer Hi-Potency VitalVite supplements" she took daily are probably responsible (Atwood, *The Year of The Flood*, page 25).

admonish herself: “Don’t cry […] Just cut open the plastic, grab the rifle and the ammunition, and get out of here” (305). Her emotions are brought to the fore not by the memory of her mother’s death or her father’s suicide as she approaches the house, but instead through the physical act of digging up the rifle, which becomes an exhumation complete with the uncovering of the grave marker (the patio stones), the unsealing of the tomb (the bag) and contact with the deceased (her Father’s rifle). The rifle is an object infused with the emotional entanglement of her father’s selfishly individualistic final act of suicide, itself a response, perhaps of stubborn final dignity, to the death of Toby’s mother. Toby’s quest for the rifle represents the second stage of her journey of entanglement because it is an object through which she can extend her emotions, or even arguably through which she can capture and channel her father’s masculinity.

The rifle is ultimately symbolic then, of Toby distributing her agency to the rifle, or through its association with her father, drawing the remnants of his destructive masculinity from it. The Crakers in contrast to Toby, are described as having no need for inheritance or physical objects of any kind: “there was no territoriality […] as there would never be anything for these people to inherit, there would be no family trees […] they would never have to create houses or tools or weapons” (305). Despite (or perhaps *due to)* her time as a member of the Gardner’s, Toby is still a daughter living in the shadow of her father’s failed masculinity. When she unburies the Ruger from its grave – perhaps she is trying to either redeem her father’s masculinity in some way, or to absorb it into her own energy.[318] Toby spends a great deal of the remainder of the narrative of *The Year of the Flood* with the rifle close at hand, or between her and the external threats she faces.

[318] Interestingly enough, Toby does something similar in adopting Jimmy’s storytelling role in *MaddAddam*.

Toby has started on a journey that will ultimately lead her from her past as a victim of an exploitive system of hierarchies under capitalism, to discovering the possibilities of the post-capitalist future. The presence of the Crakers in the text highlights the importance of Toby's journey towards posthumanist empowerment and is made possible through the forging of kinships. This contradiction inherent in the Crakers resonates very well with Fredric Jameson's *The Political Unconscious* (1981), in which he claims that "to read literary or cultural texts as symbolic acts must necessarily grasp them as resolutions of determinate contradictions" (66). In this case, the determinate contradiction is that the Crakers are the bioengineering product of rampant and unchecked capitalism, even while they are likely also a subconscious expression of the political desire to impose limits on such bioengineering. There is also the potential to read the Crakers as the beings that Crake intended to replace humanity, which to a certain degree could make them literally posthuman (in the sense of coming after humans). In this case the presence of the fictional posthuman entities in the text draw attention to Toby's entanglements, and the degree to which they reflect critical posthumanist philosophical ideas. Unlike Zeb or Jimmy, Toby is the only character in the novels that is able to successfully navigate the logical impossibility of the contradiction posed by the Crakers as novum.

Toby enmeshes herself in the midst of the human community and recognizes through embodiment a potential place for herself in the world – finding the patriarchal and unethical world violent and dangerous and yet not without a sense of hope. She returns to the site of the burial of her father's masculine power and feels an embodiment of that power through possession and use of his rifle. Stronger both in her sense of community and self-reliance, what is left for Toby to learn? Toby must make one final movement to accept the full extent of her

entanglements with non-human communities in *The Year of The flood*—she must eliminate the notion that to be human is to be more significant than another form of life.

When a bee delivers a bad omen to Toby about the pigoons that are surrounding her enclave (319), she decides she must take action. The pigoons, hybrid pigs with extra human organs and high levels of human neocortex tissues, are harassing Toby because she shot one of their ranks—and as Toby observes, they seem to "want to witness her dismay" (320). Because she is on the verge of starvation, having been trapped in the spa by the pigoons, Toby determines to go out into the field to scavenge from the pigoon carcass for sustenance (as she can see the buzzards doing). When Toby is in the midst of the field, she smells, sees and feels nature's sensory attractions: "All around her, is a sweet scent–the tall clover's in bloom, the Queen Anne's lace, the lavender and marjoram and lemon balm […] the field hums with pollinators: bumblebees, shining wasps, iridescent beetles. The sound is lulling. Stay here. Sink down. Go to sleep" (327). Toby recalls in this moment that Adam One once warned her that nature is a "potent hallucinogenic […] for the untrained soul" (327). She passes the test by not giving in to the temptation to lie down in the grass, while still appreciating the beauty of it as a resting place, proving her soul to have sufficient training, perhaps, to face the dead pigoon, itself also part of the process of renewal, the death that gives life.

When Toby comes to the body of the dead pigoon boar, she sees that there are ferns scattered on top of and beside the body of the pigoon, and that there are "also flowers" (328). In this moment, Toby wonders if the pigoons could "have been having a funeral?" (328). This is an important step, where Toby lets go of the tendency to assume human exclusivity over emotions like grief and the capacity for ceremony. Finally, she overcomes her gag reflex and collects maggots from the boar, letting go of any prideful investment in human dignity that might impede

her from this action. By showing that she can eat maggots to survive, a realistic if not appetizing idea, Toby is demonstrating that she understands the connection between the dead pigoon, the maggots, and her living self as a reciprocal cycle.

By sharing the maggots Toby first embraces the important making of kinship in the new world, perhaps becoming something akin to what Donna Haraway calls a "compost-ist" (161). Toby can be a buzzard when the conditions require it, or a bee, or a pigoon. The Crakers, who have been genetically engineered to survive on herbs and grasses, might not be limited in either their minds or bodies by burdens of connection to the human community in the same way that Toby previously was, but many of their best features make them vulnerable to human attack. Perhaps with her new understanding of the complexities of human entanglements within capitalism it is fitting then that Toby takes over the stewardship role from Jimmy in *MaddAddam*, in order to teach Crake's created beings how to be sure they don't become too human.

Before taking over the role of teacher to the Crakers in *MaddAddam*, Toby is able to draw upon her experience of embodiment to form alliances with several non-human beings in the latter half of *The Year of The Flood* and in *MaddAddam*. The alliance with the pigoons in *MaddAddam* plays a crucial role in the plot, and Toby also embraces her relationship to the bees, which is only one of ways in which she ensures future sustenance and protection for the group. In fact, Toby believes she has made a "no-bees deal" with the pigoons in *MaddAddam*, showing that she has embraced the kinship made possible by recognizing her entanglement with her non-human community members (276). Toby's alliances recall Haraway's "hot compost piles", where "we become-with each other or not at all" (4).[319] Toby's relationship to the bees resonates

[319] Donna Haraway, *Staying With The Trouble: Making Kin in the Cthulucene, Duke University Press,* 2016.

with Bill Masen's brief alliance with the bees in *The Day Of The Triffids*. However, while Bill forges an inadvertent alliance with the bees by merely using honey to escape from Torrence and his men at the end of the novel, Pilar teaches Toby how to ally with the bees, and Toby listens. When Toby realizes that she must leave the bees after the Blanco attack on the rooftop in *The Year of The Flood*, she speaks to them, opening the lines of communication. This is when she experiences her communion with the bees:

> "Bees," she said out loud. "I have news." Did the bees pause in mid-air, were they listening? Several came to investigate her; they lit on her face, exploring her emotions through the chemicals on her skin. She hoped they'd forgiven her for tipping their hives. (257)

Having learned to understand the necessity of community and that unconventional kinships are possible outside of the narrower definition of community based on human groups, Toby is able to become the teacher to the Crakers that Jimmy could not be. She brings to Blackbeard the gift of language at the end of *MaddAddam*, beginning his education, and leaves never to return, as Zeb did, perhaps because being together in Blackbeard's mythology with Zeb for generations to come might be the closest thing to Utopia that Toby could ever hope for.

Ultimately, Toby's "hybridity" in the text is played off well against that of the Crakers: while Toby's complexity is revealed through numerous entanglements with her environment, the Crakers prove to be more obviously complex, and actually share the genetic material from a variety of different animals. More to the point, as the earlier sections of this chapter made clear, the Crakers are also a complex ideological artifact revealing the political anxieties surrounding bioethics policy in Canada in the 1990s. As Sherryl Vint indicates, exploring the real-world implications of science fiction elements is an important endeavor:

> In a biocultural age, understanding the speculative discourses of biopolitics is imperative, and sf is in a privileged position to help us think through its anxieties and contradictions: the complicated parenting of IVF and other assistive reproductive technologies, including ideas of 'designer babies'[…]. (162)[320]

Understanding both Zeb and Toby's experiences of attempting to form kinships in the post-apocalyptic environment as being fraught with dangers and also significantly messy makes sense in light of the Craker novum's connection to the national political imaginary surrounding bioethics policy in 1990s Canada. Reading the Crakers as a manifestation of that anxiety allows for understanding how the trilogy offers, through certain characters, an ecofeminist and posthumanist political philosophy to counter unrestrained corporatization and commodification of genetic material. The trilogy also uses the mode of satire to critique these same practices.

The Crakers as novum are presented in a satirical mode throughout the trilogy and represent the dangers of bioengineering when there are no clear limitations to what can and should be done with the human genome. From the blaspheming running joke about a spirit named fuck to the frequent descriptions of the sexual rituals of the Crakers and the interbreeding of humans and Crakers that takes place at the end of *MaddAddam*, this particular novum further connects to Canadian bioethics policy by serving as the manifestation of exactly that which was not allowed under Canadian law leading up to the publication of *Oryx and Crake*. It will remain the case however, that science fiction will continue to connect with or respond to policy, as Atwood's trilogy does through its central novum, and that identifying when this is the case could

[320] See Sherryl Vint, "Introduction: Science Fiction and Biopolitics", *Science Fiction Film and Television*, vol. 4, no. 2, Liverpool University Press, Oct. 2011, pp. 161–72, web.

reveal much about the internal workings of the fiction and open up alternative avenues through which to debate or engage with given policies.

Conclusion

The second chapter has demonstrated that Margaret Atwood's *MaddAddam* trilogy is a work of ecofeminist satire that expresses the environmental importance of moving away from relationships relying primarily on sexual reproduction, and instead adopting unconventional kinships. Examining the character interactions with corporations, bioengineered creatures, and the environment has helped the chapter contribute to scholarship emphasizing the bio-cultural dimensions of life in the Anthropocene. I also hope to have shown in the chapter, through the application of critical posthumanist theory and ecofeminist theory, that a more ethical and sustainable approach to life in the Anthropocene involves challenging the various assumptions about human privilege over, and separation from, other forms of life.

In keeping with this project's broader main goal to argue that the national political imaginary has a major influence on the novum, the chapter has also argued that the Crakers can be read as a cultural artifact linked to 1990s Canadian bioethics policy, and specifically to the *Assisted Human Reproduction Act*, and the *Canadian Environmental Protection Act*. Work by Stephen Bocking, Benjamin J. Hurlbut, Timothy Caulfield, and Gilles Paquet helped to reveal the uncertain nature of the direction of Canadian bioethics policy during this time period, as well as the ethical tensions these policies may have generated for the public.

The chapter also helped advance understanding of the theoretical overlap between work by Fredric Jameson and work by Darko Suvin relevant to science fiction studies. Specifically, the chapter built on work by Jameson claiming that texts themselves are ideological artifacts, and on

work by Suvin identifying the novum as the strongest ideological device within them. While this chapter's focus on the politically symbolic bioengineered Crakers resonates with Jameson's linking of ideology to modes of production, its focus on national bioethics subtext connects with Suvin's tethering the novum to historical cognition and ethics.

The chapter also explored the difference between the conscious decisions that authors make and the subconscious forces that might influence them. In investigating this gap, the chapter revealed the possibility that Margaret Atwood may have consciously chosen to explore the apocalyptic future primarily in a US setting as a component of Canadian political satire about US led corporatization, or alternatively (by drawing on theory by Heise), that Atwood's trilogy is possibly set in a deterritorialized future extrapolated based on the increasing statelessness of privatized control over genetic materials and research. Though the Crakers are likely mindfully constructed as a warning about the dangers of unrestrained bioengineering that is generally applicable to the global development of such technology, the chapter has given reason for further investigation of the possibility that they are a subconscious manifestation of a decade of policy debate specific to the national political imaginary within Canada at this time. The chapter explored the interplay between the human characters and the Craker novum using ecofeminist theory and critical posthumanist philosophy by Braidotti, Alaimo, and Haraway to reveal this.

Chapter 3

The Socio-Political Novum: the *Remembrance of Earth's Past* Trilogy and Space Policy in China

Introduction

This chapter extends the sustained focus on how science fiction novums can often be traced to particular national social policy discourses, and explores how the extra-terrestrial contact novum in Cixin Liu's *Remembrance of Earth's Past* trilogy (also known as the *Three-Body* trilogy) helps the novels successfully challenge the western-centric notion of the humanist subject and express the significance of China's non-western political imaginary in environmental terms.

The significance of Liu's non-western environmental subtext lies in its anti-dystopianism, its carefully calculated scales of extrapolation, and most especially in its equalizing the global geopolitical positions of the world's most powerful nations.[321] To reveal this subtext, the chapter first demonstrates that Liu's novum is inextricably tied to particular policy discourses in China. To demonstrate the connection, the chapter explores two separate realms of policy: space-policy and environmental policy respectively.

The chapter traces how the novum of Liu's trilogy is deeply entangled with both national and provincial policies: with the macro concerns of China's militarization of space and

[321] Liu's trilogy advanced China's sf onto the world's stage, and like many other globally recognized accomplishments, the success of his novels is a source of national pride. There is a long tradition of Chinese sf being entangled with nationalism. For example, Nathaniel Isaacson notes that China hosting a World Expo (which it did in 2011), was the culmination of a "fantasy that was born in late Qing SF". See: Nathaniel Isaacson, *Celestial Empire: The Emergence of Chinese Science Fiction*, Wesleyan University Press, 2017, page 159.

associated technologies on the one hand, and with the micro concerns of provincial Chinese environmental policies such as deforestation on the other. More specifically, I explore how these particular policies gained widespread attention and were being debated by scientists, intellectuals and environmentalists throughout China in the immediate period leading up to the publication of Liu's trilogy. Liu and his work have become integral to an ongoing public conversation within China and also in the global community, about the potential benefits and perils of extra-terrestrial contact. This chapter is about the socio-politics of the power of nations to create and to destroy in the Anthropocene, and about China's place at the geopolitical forefront of the tightrope walk that powerful nations are engaging in on behalf of humanity – with or without a quorum of global human consensus.

Section I of the chapter makes a slight break from one of the organizational principles that guide the first two chapters. Instead of engaging in a conventional review of criticism, I explore the history of Chinese science fiction in order to develop a stronger understanding of how it might differ from the tradition of science fiction in the west. This approach is important because, of the three chapters, this is the only chapter that studies translated texts. This isn't to say section I is not concerned with criticism relevant to *The Remembrance of Earth's Past* trilogy, but at the time of this writing, criticism in English that considers the whole trilogy is sparse.[322] Instead, I place a stronger emphasis on engaging with criticism about Chinese literature and Chinese Science fiction, in order to better lay a foundation for understanding Liu's work within its national policy context. Section I also explores the history of the extra-terrestrial contact novum and explains how, despite its commonalities with western versions of the same

[322] The final book in the series, *Death's End*, though originally published in Chinese in 2010, was not translated and published in English until 2016.

novum, several important differences make Liu's novum distinct in the tradition of science fiction.

Before addressing the intricacies of how specific policies inform my close reading of the trilogy, I return to some of the foundational questions of genre that guide this project as a contribution to science fiction studies more generally. As the previous chapters have demonstrated, the work of Darko Suvin is key in defining the features unique to science fiction, and expanding to include study of works outside of the Western literary canon contributes to further understanding of the novum. In this context, the work of Andrew Milner is also important, particularly for its powerful rebuff of some of Suvin's claims about science fiction and cognition, and for his focus on the importance of reading for historical and geographical significance.

In addition to considering some of Milner's interventions into Suvin's work, the chapter also explores some of Milner's constructive ideas about environmentalism. The chapter also returns to theory by Ursula K. Heise first explored in chapter two, in particular her ideas about cosmopolitanism and imagination, and how they prove to be informative for understanding the global significance of science fiction. I also engage with Eric C. Otto's claims about the overlap between non-fiction and science fiction, as they help guide the focus of my close reading on how the novum of the trilogy serves as a conduit to the political ideology of Chinese space policy. Finally, I return to Jameson's theory of the political unconscious and consider whether the paradigm of economic difference separating the Chinese national political context from that of the UK and Canada problematizes this project's overall argument.

Section II explores the brief history of Chinese space policy from the 1990s to the present, to explain the dialogical nature of the relationship between policy discourse and artistic

cultural production and its more precise bearing on the novum of the *Three-Body* trilogy. Moving from space policy to the environmental policy of the same time period, I attempt to demonstrate the connection between the two arenas of public discourse in China. I accomplish this by attempting to answer the question of why Liu engages with Rachel Carson's foundational environmental text *Silent Spring* (1962) for a significant segment of *The Three Body Problem* (2014). I also propose an answer as to why deforestation is the issue that Liu chose to focus on to explore his novum at the micro and macro scale.

As in the previous two chapters, Section III close reads the subtext that operates between the novum and the characters. I begin with a focus on *The Three Body Problem* as the novel that best exemplifies the contention of the thesis of this project that dialoguing policy with science fiction is socially constructive in an environmental sense. I examine the scene in which the inheritor of a large oil-based fortune, Mike Evans, ironically ruminates about the rapid destruction of Chinese forests, in order to explain how understanding Chinese environmental policy leads to a more constructive reading of the novel's socio-political themes. Exploring those themes, through both the obvious and the subtextual, reveals interesting connections with the previous two chapters. These connections include the pernicious but subtle presence of oil as a driving force behind cultural production (*Triffids*), the importance of human and non-human alliances (*MaddAddam*), and the symbolic use of the insect as an Anthropocene signifier in all three texts.

Ultimately, this chapter shows that useful, powerful and interesting dialogical connections are revealed through close reading science fiction texts alongside national policy discourses. The chapter accomplishes this by arguing that Liu is able to use a well-worn science fiction novum (extra-terrestrial contact) to craft one of the most profoundly original visions of

humanity's potential future. The chapter also argues that the subtext that is revealed by interplay between the Trisolaran novum and the human characters expresses a collective political unconscious concern in China over the socio-political power struggle for land and resources that is taking place between the United States and China. Towards the end of the chapter, my attention returns one final time to the theoretical and philosophical value that critical posthumanist constructions might play in connecting more recent science fiction to the realm of policy, with a reconsideration of the opportunities and limits offered by Rosi Braidotti's vision of the posthuman condition in light of Liu's trilogy.

I. Cixin Liu and Chinese Science Fiction

> For the sake of brevity, I have abridged the diversity of today's sf […] from the tremendous activity in Japan, to the unknown goings-on in China. (308)
>
> —Brian Aldiss[323]

The History of The First Contact Novum in the Euro-American Context

Chapters one and three demonstrated that examining science fiction alongside policy reveals that the national political imaginary has a degree of subconscious influence on writers. It is important for the purposes of this project to separate this subconscious influence from the more obvious public engagement of authors. Cixin Liu has engaged in a number of such interesting public moments. Han Song claims that Cixin Liu "believe[s] that China should

[323] See Brian Aldiss, *Billion Year Spree: The True History of Science Fiction*, Schocken Books, New York, 1974, page 308, print.

shoulder more responsibility for solving the problems faced by human beings in a changing world (315)."[324] Song also connects Liu's politics directly with the notion of extraterrestrial contact: "Liu even suggested adding research into alien affairs policy to the country's Twelfth Five-Year Plan for Economic and Social Development, adopted during the annual parliamentary session in 2011" (18).[325] In reproducing Liu's call to take the potential existence of other intelligent civilizations seriously, Song shows that Liu is an author with an awareness of policy and a clear concern about how it is implemented:

> "The suggestion might seem farfetched, but an alien spaceship might hover right over us any time soon," Liu argued. "At that time, everything we are worried about, including housing prices, food prices, medical treatment, and education, will take a back seat. As a strong country with a long history, China is playing an increasingly important role in international affairs; for this reason, China should take up its corresponding responsibilities in interstellar affairs between beings on earth and other planets." (18)[326]

Though some might have trouble taking seriously the suggestion that a country consider extraterrestrial contact in shaping its economic and social policy, Liu's call is far from the first time that such petitions have been advanced. Scientists in the United States, Russia, Canada, and other countries have made similar public statements before. Liu's recognition that China is increasingly becoming more important in international (and inter-stellar) affairs is significant given that one of the particular aims of this chapter is to explore the success of Liu's trilogy in

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[324] See Han Song, "Chinese Science Fiction: A Response to Modernization", *Science-Fiction Studies*, vol. 40, 2013, page 18, web.

[325] Ibid., 18.

[326] Ibid., 18.

decentering the European Humanist subject, and to subsequently explore what role the novum and environmental policy play in helping realize that aim.

Before exploring how Liu's version of the extra-terrestrial contact novum helps to challenge the western-centric humanist subject, a brief history of the presence of this novum in twentieth century science fiction is warranted. The idea of intelligent beings existing beyond the bounds of the earth is certainly not a twentieth century concept and is very likely to have existed even before the period of classical antiquity. In theological scholar David Wilkinson's words, "[t]his means that the philosophical consideration of the possibility of other worlds is at least 2,500 years old" (18).[327] For example, in the thirteenth century, religious scholars such as Thomas Aquinas were considering some of the same questions that drive Cixin Liu's trilogy forward: what kind of effect would contact with an intelligent species from another planet have on humanity? Or, what would knowledge of intelligent life elsewhere in the cosmos mean for practitioners of religion?[328]

Such ideas led thinkers like Nicholaus Copernicus, whose *de revolutionibus orbium coelestium* was published in 1543, to begin a slow paradigm shift away from the Ptolemaic theory positioning earth at the center of the universe.[329] The plurality of worlds debate had an excellent foundation in wider social discourse by the time that Galileo, Kepler and Newton contributed their own well-known astrological discoveries throughout the following century. According to David Wilkinson:

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[327] See David Wilkinson, "Speculating about a Plurality of Worlds: The Historical Context of Science, Religion, and SETI", *Science, Religion, and the Search for Extraterrestrial Intelligence*, Oxford University Press, 2013, chapter 3, page 18.

[328] See Marie George, "Thomas Aquinas on Intelligent Extra-Terrestrial Life", *Thomist*, vol. 65, no. 2, 2001, pp. 239–258, web.

[329] Slow because according to Owen Gingerich, the Copernican Revolution didn't begin until the 1700s. See: Gingerich, Owen, *The Book Nobody Read: Chasing the Revolutions of Nicolaus Copernicus,* Penguin Books, 2005, print.

> […] prior to the Copernican revolution, human beings considered themselves to be the center of everything. The Universe as described by Aristotle and Ptolemy had the Earth as its center and everything orbiting around in beautiful (but increasingly complex) circles. Men and women were the masters of it all. But the dethronement of human beings opened up the space for belief in ETI. (24)

This "dethronement" of human beings in science led to a wider intellectual interest in the subject generally, and philosophers began more frequently to grapple with the question of extraterrestrial life. According to Andreas Losch, despite his reputation as a very methodical and grounded thinker, one of those philosophers was Immanuel Kant. Kant was "firmly convinced of the existence of inhabitants of other worlds, so these heavens were inhabited for him" (261).[330] Kant is only one of a much larger number of influential thinkers that shared their thoughts about the potential for other intelligent life to exist in the universe.[331]

The influence of these earlier thinkers had a major impact on western thinking generally. For example, by the mid-nineteenth century "most other scientists, philosophers and religious individuals in Britain […] endorsed the view that the universe contained numerous other worlds populated by intelligent inhabitants" (584).[332] However, commensurate with the capacities of telescope technology at the time, there was a limited scope to popular ideas about where these worlds might be found. By the end of the nineteenth century for example, most of the focus on the possibility of extraterrestrial life was directed closer to home—at Mars. David Lamb points

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[330] See Andreas Losch, "Kant's Wager. Kant's Strong Belief in Extra-Terrestrial Life, the History of This Question and Its Challenge for Theology Today", Vol. 15, no. 4, 2016, pp. 261–270, web.

[331] See Wilkinson "Speculating about a Plurality of Worlds: The Historical Context of Science, Religion, and SETI", chapter 3.

[332] See Laura J. Snyder (citing M. J. Crowe, 1999), "'Lord Only of the Ruffians and Fiends'? William Whewell and the Plurality of Worlds Debate", *Studies in History and Philosophy of Science*, vol. 38, no. 3, Sept. 2007, pp. 584–592, web.

out that using early telescopes, nineteenth century astronomers were speculating about shapes that "resembled continents, polar caps and seas" (11).[333] Most famously, Italian astronomer Giovanni Schiaparelli discovered, in 1877, "a complicated network of dark lines, which were interpreted as canals" (11).[334] The long discourse in science and religion about the plurality of worlds, coupled with tantalizing new potential observations about neighbouring planets, laid the groundwork for these ideas to enter the realm of literature.

By the time one of the early examples, H. G. Wells' well-known *The War of the Worlds* was first serialized in 1897, a number of other pieces had circulated in English that dealt with the theme of extra-terrestrial contact. However, *The War of the Worlds* is still considered the first significantly impactful text engaging with the theme, and has certainly maintained its relevance within the genre.[335] According to Lamb, subsequent widely distributed and wildly popular novels in the *Barsoom* series (from 1912-1948)[336] published by Edgar Rice Burroughs inspired several generations of science fiction writers to think in interplanetary terms and also "encouraged expectations of Martian life" throughout the first half of the twentieth century (11).[337] A closer inspection of this time period shows that Burroughs was writing across two distinct but important periods (that experienced some overlap) when a great deal of extra-terrestrial contact narratives were published in the western world, particularly in America.

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[333] See David Lamb, *The Search for Extra Terrestrial Intelligence: A Philosophical Inquiry*. Routledge, 2001, Page 11. Print. Interestingly, the debate about the canals on Mars raged according to Lamb, for about 30 years (see page 11); it is interesting that debates about water on Mars have recently returned to public attention, due to several recent discoveries by NASA that Mars does indeed show evidence of water, and that Mars might once have had flowing water.

[334] Ibid., 11.

[335] See Peter J. Beck, *The War of the Worlds: From H. G. Wells to Orson Welles, Jeff Wayne, Steven Spielberg and Beyond*, Bloomsbury Academic, 2016, page 13, print.

[336] It is interesting that the *Barsoom* series uses both sustainability and resource management as major themes. Burroughs was like Wyndham in his ability to see forward towards ways in which humanity might be challenged in the future.

[337] Lamb, *The Search for Extra Terrestrial Intelligence: A Philosophical Inquiry*, 11.

The first was the pulp fiction era, which according to Gary Westfahl, was defined by "works that appeared in the science fiction magazines of the 1920s, 1930s and 1940s" and characterized by its typical readership as much as by its content (87). [338] These readers of the pulps were "young Anglo males, brighter than their peers, particularly fascinated by science, and socially inept loners" (87).[339] The second period is more precisely defined by critics, as the "Golden Age of Science Fiction," from the years 1938 to 1946.[340] According to Rob Latham, this Golden Age is characterized by its authors' "celebration of scientific know-how and commitment to linear storytelling" (116-117).[341] In comparison to the pulp era of Wellsian copycats, there were not nearly as many tales of extra-terrestrial contact, invasion, or discovery written during this period, but standouts include Murray Leinster's novelette *First Contact* (1945), which may have served as a major influence on Liu, as well as Ray Bradbury's *Martian Chronicles*, which were first published sporadically throughout the 1940s before being collected together in 1950. E. E. Smith's *Triplanetary* (1934) also shares much in common with the warring intergalactic species narrative and ambitious scale of Liu's trilogy. More likely to have influenced Liu, however, are a plethora of first contact novels published post-WWII. Many of these novels would have been inaccessible in China during the 1950s and 1960s, due to China's strict control: "translation, as well as all other aspects of artistic, literary, and intellectual life, had to be institutionalized under one central command" (120).[342]

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[338] See Gary Westfahl, "Teaching Pulp Science Fiction", in *Teaching Science Fiction Edited by Andy Sawyer and Peter Wright,* Palgrave Macmillan, 2011, page 87, web.

[339] Ibid., 87.

[340] One notable disagreement comes from author Robert Silverberg, who claims that the 1950s was really the golden age of science fiction. See "Science Fiction in the Fifties: The Real Golden Age". Retrieved from: http://sciencefiction.loa.org/why_silverberg.php, June 29th, 2018, web.

[341] See Rob Latham, "Teaching the New Wave", in *Teaching Science Fiction Edited by Andy Sawyer and Peter Wright.* Palgrave Macmillan, 2011, pages 116-117, web.

[342] See Qi Shouhua, *Western Literature in China and the Translation of a Nation*, Palgrave Macmillan, 2012, page 120, doi:10.1057/9781137011947.

If Robert Silverberg is correct, the 1950s was the true Golden Age of science fiction,[343] and a number of very influential texts about first contact emerged during this time, including works by Robert A. Heinlein, Arthur C. Clarke, Stanislav Lem, Ivan Yefremov, James Blish, and Kurt Vonnegut Jr.[344] The production of extra-terrestrial contact novels up to this point, and science fiction more generally, was dominated by white male authors of European descent. Though women were able to publish science fiction throughout the 1950s, they struggled to be taken seriously in the male dominated community of writers, and the statistical percentage of female writers of science fiction was clearly lower.[345] As William Bainbridge points out, some women resorted to writing under a pseudonym, or achieved better readership through the gender ambiguity of their name (for example C. L. Moore or Andre Norton).[346] This changed in the late 1960s with the influence of second wave feminism, when female authors such as Ursula K. LeGuin, James Tiptree Jr., and Joanna Russ, all of whom had been quietly writing excellent science fiction for an entire decade, finally began to receive overdue accolades and attention for their work.

This era is known in science fiction studies as *New Wave science fiction,* and even though aliens and interplanetary tales were falling out of favour due to a renewed desire for individual and earth focused science fiction,[347] the extra-terrestrial contact novum became a valuable tool

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[343] See Robert Silverberg, "Science Fiction in the Fifties: The Real Golden Age", retrieved from: http://sciencefiction.loa.org/why_silverberg.php, June 29th, 2018, web.

[344] Lem's novel *Solaris* (1961) and Yefremov's novel *Andromeda* (1957) were not originally written in English but were translated and enjoyed a wide popularity in the English-speaking science fiction community, much as Cixin Liu's *Three-Body* trilogy does today.

[345] See William Bainbridge, "Women in Science Fiction", *Sex Roles*, vol. 8, no. 10, 1982, page 1082, web.

[346] Ibid., 1082. Bainbridge points out that Andre Norton was the only female writer of sf to make it onto a 1966 Analog poll of the best science fiction authors. This could have been explained by the tendency of a gender ambiguous name like "Andre" eliminating the ability of predominantly male readership to discriminate.

[347] See Brian Aldiss, *Billion Year Spree: The True History of Science Fiction*, Schocken Books, New York, 1974, print. Aldiss notes that New Wave sf was distinguished in part by "A new mood of hedonism […] The British Empire had dissolved; the Romans were becoming Italians" (297).

through which some female authors were able to critique issues of gender, sexism and sexuality. Responding to Ursula K. LeGuin's *The Left Hand of Darkness* (1969), science fiction Author and critic Brian Aldiss wrote in 1974:

> I concur with Harlan Ellison; much of the best writing in science fiction today is being done by women […] What has made the difference is the disappearance of the Philistine-male-chauvinist-pig attitude, pretty well dissipated by the revolutions of the mid-sixties; and the slow fade of the Gernsbackian notion that sf is all hardware. Science fiction, in other words, has come back to a much more central position in the world of art. (306)[348]

Though Aldiss's comment about the disappearance of destructive patriarchal attitudes might be naïve, the point he was making at the time about the power of science fiction to help shape attitudes friendlier to social diversification rings true.

New Wave writers like LeGuin paved the way for subsequent generations of postcolonial and postmodern authors to write imaginative iterations of the first contact novum that have nonetheless been connected by critics to issues grounded in social and cultural significance, such as Octavia Butler's Xenogenesis trilogy (1987-1989), which is often cited in relation to critical race interventions of science fiction texts. John Lennard claims that:

> Arguably, at least, all SF that encounters alien life is in some measure concerned with human race relations. By mapping intra-human relations onto inter-species relations in an SF narrative, both typically fearful human reactions to whatever is

[348] Aldiss, *Billion Year Spree*, 306.

different and general or individual assumptions about our own and others' rights are interrogatively foregrounded. (10)[349]

Many other first contact-related novels and short stories that have been written from the 1980s to the present day have made little impact beyond their communities of readership. This is less to do with how interesting and unique these narratives may or may not be, and more likely the result of three important factors. First, the inward turn of science fiction spurred by advances in computer and digital technologies (and more recently by bio and nano technologies), pulled many readers away from the long redundant first contact novum. An example of this inward turn in science fiction would be William Gibson's *Neuromancer* (1984). Second, the market saturation of the concept of extra-terrestrial contact after the publication of Carl Sagan's widely popular novel *Contact* (1985) was near total. The third and final reason is the heavy predominance in popular culture of very visual and memorable films in the preceding decades that dealt explicitly with the concept, such as Ridley Scott's *Alien* (1979), Steven Spielberg's films *Close Encounters of The Third Kind* (1977) and *E.T.* (1982), and more recently Denis Villeneuve's *Arrival* (2016), amongst many others.

The extra-terrestrial contact novum in science fiction, despite having been challenged out of its male dominated pulp-era roots during and after the new wave, has remained more distinctly attached to an Anglo-European worldview. Even with powerful contributions to the extra-terrestrial contact novum from the vast stacks of Russian science fiction, which Darko Suvin details to great lengths, only Yefremov's *Andromeda* became a real presence in the global science fiction canon. Unlike Cixin Liu's *Three-Body* trilogy, *Andromeda* concerns itself less

[349] See John Lennard, *Octavia Butler: Xenogenesis*, Humanities-Ebooks, LLP, 2007, ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/umanitoba/detail.action?docID=3306062, web.

with the unknowable nature of the alien other and its power to unseat global hierarchies, and more with exploring what Suvin calls "disalienated man and new ethical relationships" through a "strong Anthropocentric bent" (266-67).[350] The entrance of authors such as LeGuin and Butler into science fiction have provided necessary interrogations into a relatively homologous white male genre tradition, yet those much needed disruptions of the status quo have risen from within the western world and English language tradition (or, as in the case of Japanese science fiction, been heavily influenced by it). Liu's *Three-Body* trilogy has the potential to mark a turning point in the history of science fiction, one where a powerful redirection for the genre originates from China.

The History of The First Contact Novum in China

Compared to other non-western science fiction literary traditions, Chinese science fiction was virtually unknown to the western public during the twentieth century and is only now in the midst of its emergence into English. Brian Aldiss wrote, in his well-known treatise on the genre *Billion Year Spree* (1973):

> From Czechoslovakia we have the marvellous stories of Joseph Nesvadba. From Poland, the ingenious fantasies of Slavomir Mrozek, author of *The Ugupu Bird*, as well as that weighty and wise novel of Stanislav Lem's *Solaris* […] From the Soviet Union, Yefremov's *Andromeda* and many other stories. From India, Lee Tung's extraordinary surrealist fantasia on overpopulation, *The Wind Obeys Lama Toru*. From Norway, Axel Jensen's touching *Epp*, a study of the old and failed.

[350] See Suvin, *Metamorphoses*, 266-67. Suvin also points out several times how closely associated Russian science fiction (and *Andromeda*) is with the genre of utopianism.

> From Sweden, Harry Martinson's dramatic poem *Aniara*, made into a fantastic opera. And so on, from the tremendous activity in Japan to the unknown goings-on in China. (307-308)

Chinese science fiction was a mystery to the western world throughout the twentieth century mostly due to the strict political controls of the CCP, but that doesn't mean that genre examples didn't exist. First there are the more obvious social implications of the denunciation of scholars throughout the 1950s that discouraged individual creativity.[351] More significantly perhaps was the gulf of distrust of the west that developed during the Korean and Vietnam wars that would persist for decades.[352]

Some scholars are now beginning to shed light on the status and development of Chinese science fiction before, during, and after, the Cultural Revolution. In his recent book *Celestial Empire: The Emergence of Chinese Science Fiction* (2017), Nathaniel Isaacson notes that Chinese science fiction is "a previously neglected subset of the SF tradition" and that various scholars disagree substantially about when the genre began to appear in China, with some scholars arguing as late as "the post-Mao" period of the late 1970s (2). Yet Isaacson's own work shows very clearly that Chinese Science Fiction was a concrete genre category in China even before it was so named in the west, that it arose in response to the perceived military advantages offered by western science (307), and that it thrived in the early decades of the twentieth century due to "the transnational traffic of ideas, cultural trends, and material culture engendered by the expansion of European Colonialism" (17).[353]

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[351] See Qi Shouhua, *Western Literature in China and the Translation of a Nation*, Palgrave Macmillan, 2012, page 120, doi:10.1057/9781137011947.

[352] Ibid., 121-122.

[353] Here Isaacson is citing Tani Barlow's concept of "colonial modernity" (see Tani Barlow, *Formations of Colonial Modernity in East Asia*. Durham, NC: Duke University Press, 1997.)

Unlike with western science fiction, which both Fredric Jameson and Darko Suvin have argued emerged with a very close affinity to the tradition of utopianism, Chinese science fiction was at first, according to Isaacson, "far from utopian", featuring instead many tales where one race or group visits great violence on another through their technological superiority (101). The attitude of many early science fiction authors in China can be linked to a "colonial logic", and is best captured in a text such as *Tales of the Moon Colony* (1904-1905), which according to Isaacson, essentially operates on the logic that "people from the moon will colonize Earth, people from Mercury will colonize the moon, and so on. The colonial subject will continue to be a colonial subject, and knowledge of the world will continue to be produced by an alien civilization" (102).

The development of the extra-terrestrial contact novum in the history of Chinese science fiction has its roots in imagining more negative outcomes from interactions with scientifically advanced external threats than its western analogue. For example, while the colonization is inevitable in *Tales of the Moon Colony* (Isaacson 102), in H. G. Wells *The War of The Worlds*, the people of earth are miraculously saved by the intolerance of the Martians to earth's pathogens. In general, the difference in the tone taken in respect to the extra-terrestrial contact novum between Euro-American authors and Chinese authors is likely reflective of the arc of imperial modernity

This negative response to western colonial advantage expressed through science fiction was not always a hallmark of Chinese science fiction, however. Perceived colonial superiority in military technology gave rise to literary fantasies of China developing new technologies to overpower the west, such as in the novel *The New Era* (1908).[354] This novel depicts "a newly

[354] See Wu Yan, et al., "A Very Brief History of Chinese Science Fiction", *Chinese Literature*

risen China" that has "amended the calendar, changing from the Western calendar to an imperial Chinese calendar" (46).[355] According to Wu Yan and Yao Jianbin, the change to the calendar:

> Infuriat[es] the countries of the West. As a result, China is encircled and a massive war breaks out. In order to preserve self-rule and self-determination for the Chinese people, the Chinese navy engages in three fierce naval battles in three different maritime theaters, ultimately bringing about the defeat of their opponents through the use of Chinese-developed weapons, and making China a great global power. (46)[356]

These types of early military fantasies, combined with later views about the inevitability of colonialism, are long-term pieces of the socio-political fabric that serves as backdrop to Cixin Liu's *Remembrance of Earth's Past trilogy*.

Yan and Jianbin note yet other examples of Chinese science fiction that showcase a more distinct focus on the possibilities for exploration of the solar system and the cosmos, but point out that the genre went through a period of transition between 1949 and the beginning of the Cultural Revolution that was marked by "vivid, scientific and technological advances [that] went hand-in-hand with social progress, and there were heavy implications that all of this was part and parcel of steady progress toward communism" (48).[357] During this time however, there were very few works of science fiction produced that were directed towards adult readers, and "with the beginning of the Cultural Revolution in 1966, the creation of science fiction in China […]

Today, vol. 7, no. 1, 2018, pp. 44–53, web.

[355] See Wu Yan, et al., "A Very Brief History of Chinese Science Fiction", *Chinese Literature Today*, vol. 7, no. 1, 2018, pp. 44–53, Web.

[356] Ibid., 46.

[357] Ibid., 48.

ground to a halt" (49).[358] It wasn't until the late 1970s that adult Chinese science fiction began to flourish once again, and at that time, the fiction was concerned with narratives about wresting control of science from capitalists for the benefit of humanity, emphasizing the "social conscience of the scientists", and reflecting in some way upon "the atrocities of the Cultural Revolution" (49).[359]

All of the themes outlined above are present in Cixin Liu's trilogy, and taken together are a representation of the multifaceted nature of the political unconscious. Just as western science fiction seemed to undergo a long period that predominantly saw the production of soft science fiction before a heavy wave of post-WWII hard science fiction developed in the 1950s (perhaps in response or in tandem with new scientific discoveries in atomic physics), so too was China's production of science fiction dominated first by soft science fiction before a strong camp of hard science fiction writers started to emerge in the early 1980s (49-50).[360] But the Chinese public reacted in a fickle way to science fiction, and according to Yan and Jianbin, the genre entered another slump when "newspapers started publishing articles that pointed out scientific errors in science fiction and accused it of spreading junk science" (50).[361] So on the one hand, there were cultural forces demanding scientific accuracy, while on the other, there was opposition to too much investment in advances seemingly driven by capitalism. Han Song marks this as, "Chinese sf writers [being] in a rather contradictory situation", due to the fact that according to cultural tradition, "[s]cience, technology, and modernization are not characteristic of Chinese culture.

[358] Ibid., 49.
[359] Ibid., 49. The same theme of capitalist control over science is also present in the *MaddAddam* trilogy.
[360] Ibid., 49-50.
[361] Ibid., 50.

They are like alien entities. If we buy into them, we turn ourselves into monsters, and that is the only way we can get along with Western notions of progress" (20).[362]

It wasn't until the 1990s that Chinese science fiction entered its own revival period, marked by a similar kind of identity-focused experimentation to that which made the western New Wave so successful. Though there were a number of important innovators, none made a bigger splash in the global science fiction market than Cixin Liu. It can't be understated how big an impact Liu has had on attracting Chinese readers, and Chinese officials, to the intrinsic social and political values of science fiction. Despite this fact, the appreciation for the socio-political value of science fiction in China still faces challenges:

> There are still many problems faced by Chinese sf writers [...] sf writing in China is still a marginal activity [...] perceived as inconsequential because it is unable to solve real-life problems. And the government can step in if it seems that the genre has gone too far conceptually. For example, the General Administration of Radio, Film, and Television issued an order early this year to ban time-travel narratives in TV dramas, claiming that they showed lack of respect for Chinese history and would mislead young people. (21)[363]

Nevertheless, the global popularity and critical success of the *Remembrance of Earth's Past* trilogy have attracted both general fandom and critical attention within China to Liu's work.

In some respects, *The Three-Body Problem* is as important a transitional moment in the history of science fiction as *The Left Hand of Darkness* was in 1969. While LeGuin's book demonstrated that great science fiction could raise compelling questions about human

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[362] See: Han Song, "Chinese Science Fiction: A Response to Modernization." *Science-Fiction Studies*, vol. 40, 2013, p.20. Web.

[363] Ibid., 21.

understandings of gender, it was also recognized as most beautifully written. LeGuin became the first female science fiction author to win the coveted Hugo award in 1970, arguably doing more in the process to wrest the genre from its male dominated past than any novel since. Like LeGuin's novel, Cixin Liu's novel *The Three Body Problem* created a new precedent for the genre when it earned a Hugo award (in 2015). Instead of breaking down gender barriers, Liu's novel has broken socio-cultural divides in becoming the only non-western novel, the only translated novel, and the only novel from a non-core country to win the Hugo award.[364] It is also "the first work of science fiction from China to win an international prize" (52).[365] It is important to note that almost every Hugo prize awarded has been to an American author, with several British and two Canadian writers granted the prize throughout the years, making the addition of a Chinese author to the ranks an exceptional occurrence in the history of science fiction. Perhaps much as the Copernican revolution dethroned the position of the "human" at the centre of the universe, Cixin Liu's *Three-Body* trilogy makes a significant contribution to dethroning the western humanist subject from the science fiction genre through careful use of its novum to equalize the socio-political playing field between the west and the east.

II. Space and Environmental Socio-politics in Post-millennial China

[364] I use the concept "core country" a bit sardonically, taking it from the *World Systems Theory* of global social analysis that by nature of its creation in the west, operates based on western understandings of merit. See Immanuel Wallerstein, *The Modern World-System: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*, New York: Academic Press, 1976, pp. 229-233, print.

[365] Wu Yan, et al., "A Very Brief History of Chinese Science Fiction", *Chinese Literature Today*, vol. 7, no. 1, 2018, page 52, web.

> Like most genres of literary expression, science fiction in China was subject to instrumentalist impulses and had to serve practical goals. At its birth, it became a tool of propaganda for the Chinese who dreamed of a strong China free of colonial depredations. Thus, science fiction works from the end of the Qing dynasty and the early Republican years almost always presented a future in which China was strong, prosperous, and advanced, a nation that the world respected rather than subjugated. (636)
>
> — Cixin Liu[366]

The Three-Body Problem, Cosmopolitanism, and Non-Fiction

The Three-Body Problem and the *Remembrance of Earth's Past* trilogy of which it is a part, share some interesting thematic resonances with Ursula K. Heise's call in her book *Sense of Place and Sense of Planet* (2008) for "the urgency of developing an ideal of "eco-cosmopolitanism," or environmental world citizenship" (10). I believe that Cixin Liu does develop, through his novum and his characters, a form of Heise's "alternative to nationally based forms of identity", presenting subjects such as Mike Evans, Ye Wenjie, Luo Ji, and Cheng Xin that are subsequently deterritorialized and not "anchored in place" (quite literally in the case of Cheng Xin) (10).[367] I read the deterritorialization experienced by the characters in *The Three-Body Problem* in terms borrowed from Heise, as "imposed from outside" and "accompanied by experiences of loss, deprivation [and] disenfranchisement", impositions normally resisted by environmentalists (10). In a longer passage from Heise, the unpleasant realities of

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[366] Cixin Liu, "The Worst of All Possible Universes and the Best of all Possible Earths: *Three-Body* and Chinese Science Fiction", in *Invisible Planets: An Anthology of Contemporary Chinese Science Fiction*, ed. Ken Liu, Tor Books (2016), page 363, print.

[367] Heise, *Sense of Place and Sense of Planet*, 10.

deterritorialization seem almost to become necessary stages in developing a sense of the planet as a whole:

> Yet deterritorialization also implies possibilities for new cultural encounters and a broadening of horizons that environmentalists as well as other politically progressive movements have welcomed, sometimes without fully acknowledging the entanglements of such cultural enfolding with globalization processes that they otherwise reject. 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 socioenvironmental 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's quote above is relevant to my analysis of Liu's trilogy, which is concerned throughout the first two books with the development of a planetary system of stewardship for the human race, and with the ultimate form of a new cultural encounter with the Trisolarans, an encounter that offers both the potential progressive movement Heise identifies, but also the potential for ultimate loss.

In addition to reading the first contact novum in the trilogy through Heise's lens of deterritorialization, I also reflect on the "sense of place" established in China through examination of the proto-environmentalist narratives of the characters as they interact with their local environment, government and culture. Seeing China both as place through the specific forested terrain explored to find the Red Coast base site, and seeing certain geopolitical organizations such as the UN from the Chinese perspective allow for an exploration of what

Heise calls "new possibilities for ecological awareness" that "inhere in cultural forms that are increasingly detached from their anchorings in particular geographies" (13). I also embrace Heise's exploration of the utility of risk perceptions and how they are "shaped by already existing cultural tropes and narrative templates" (13), as informative to my reading of the unique approach Liu takes to the first contact novum as a deeply fraught circumstance,[368] one that requires an understanding of Chinese cultural tropes regarding gender expectations to understand for example why Ye Wenjie takes the risk she does in sending a signal into deep space. Ultimately, the remainder of the chapter addresses Heise's call to practice eco-cosmopolitan awareness by "acknowledgement" of what Heise calls "varieties of environmentalism" (citing Ramachandra Guha and Juan Martínez Alier),[369] exploring China's "divergent motivations or efforts for the protection of nature" (59).[370]

While Heise's book guides my methodological approach in examining Chinese science fiction through oscillating local and planetary ecological lenses, Eric C. Otto's investigation of the ecological overlaps between non-fiction and science fiction helped to model how this chapter explores useful dialogical connections between policy discourse and science fiction. My project shares a kinship with Otto's work for its investigation of "points of intersection between the literary strategies of science fiction and those of more conventional environmentalist discourse" (4).[371] Also useful to my project is Otto's recognition of the ways in which "environmental science fiction sometimes theorizes [the] criticisms of dominant Western ideology […] creating

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[368] Especially in the novel *The Dark Forest*, which extrapolates on a very nihilistic and frightening view of the Universe that echoes Stephen Hawking's warnings about the dangers of attempting to contact other civilizations.

[369] Heise cites: Guha, Ramachandra, and Juan Martinez-Alier. *Varieties of Environmentalism: Essays North and South*. London: Earthscan, 1997. Print.

[370] Heise, *Sense of Place and Sense of Planet*, 59.

[371] See Eric C. Otto, *Green Speculations: Science Fiction and Transformative Environmentalism*, Ohio State University Press, 2012. Page 4. Print.

transformative environmentalism in addition to reflecting it" (5).[372] A difference between Otto's work and my own is that while Otto's project employs theory to advance environmental politics, my work advances a theory about the iterative process between art and policy. Otto's work is more distinctly environmental, while my own has primarily socio-cultural aims.

For example, Otto is committed to tracing the overall shape of intersections between environmentalist thought and science fiction to show that science fiction "offers valuable representations of and critical commentary on environmental issues"[373] and that science fiction "reflects more deeply on ideological structures that without accident require us to forget about nonhuman nature and our uncontestable embeddedness in it" in order to "chip away at the foundations of these structures" as a matter of environmental and social ethics (17-18).[374] In order to accomplish this aim, Otto utilizes, as many science fiction theorists do, Darko Suvin's concept of the novum. However, in examining Marge Piercy's *Woman on the Edge of Time*, Otto looks to how the novum "provokes environmentalist, and feminist, reflection on the possibilities of reproductive technologies" (54).[375] I don't necessarily disagree that the novum is capable of provoking these responses in readers—but my project is concerned less with how the novum effects readers and more with how the novum is developed by authors subconsciously in dialogue with policy.

Otto also asks several questions about the novum that go unanswered in his book, such as: "we are encouraged to assess the novum and consider its origins or conditions of existence.

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[372] Ibid., 5. In the introduction to this project, I claim *Three-Body* to qualify as an example of environmental science fiction, especially the first volume of the trilogy, *The Three Body Problem*.

[373] Ibid., 17. This point I more or less take for granted as a obvious feature of sf – though I am glad that Otto's project seeks to elaborate on this claim through multiple case studies.

[374] Ibid., 18.

[375] Ibid., 54.

What is it? Why is it there? How did it come to be? (8)." These are also questions that drive my work forward, particularly the third. Otto claims that "works of environmental utopian and dystopian science fiction […] employ cognitive estrangement prominently toward an environmentalist end", though this claim leaves open the question of whether or not less obvious, or proto-environmental science fiction texts do the same (9). Otto also points to several interesting cases whereby non-fictional texts are capable of utilizing in part, the technique of cognitive estrangement. His most compelling example from my perspective is Rachel Carson's *Silent Spring*, which he points out makes a "science-fiction-like effort to estrange" in the opening chapter's "A Fable for Tomorrow" (8).

As I transition now into policy, I will show not that policy uses the technique of cognitive estrangement—it very well might in some instances—but rather that the development of the novum as a device of cognitive estrangement happens in dialogical relation with policy. It may not always be the case, but when this dialogical development happens in relation to the policies of resource economies (Wyndham), bioethics (Atwood) and satellite installation sites (Liu), the result is that science fiction texts can be shaped in subtle ways by these concerns.

Looking Outward and then Inward: A Tale of Two Policies

Cixin Liu's construction of his version of the first contact novum can be understood in context of the immediate historical conditions in China during the time period that the trilogy was composed. Understanding the trilogy in this way is similar to how I argued earlier that John Wyndham's *The Day of the Triffids* and Margaret Atwood's *MaddAddam* trilogy benefit from such historical understandings of post-WWII UK and millennial North America. Just as looking closely at policy orientations in the UK towards oil and policy orientations towards

biotechnologies in Canada allowed for more dynamic readings of those texts, so too will an examination of two areas of policy in China: space policy's broad influence on the novum and environmental policy's more narrow influence.

The difference in scale between these two areas of policy might seem vast but is actually a reflection of how the novum of the trilogy forces a confrontation with scale itself. The ability of societies to successfully imagine and respond to the scale of human impacts upon the planet is one of the challenges that thinking ecologically requires in the Anthropocene age, and the development of ecological thought is one of the forces that help shape the novum of *The Remembrance of Earth's Past* trilogy. The conditions leading to the overall shape of the novum as a first contact device are an example of what Suvin calls "historical forces" (69).[376] These forces are primarily represented by Chinese space policy in the years 1993 – 2007, particularly surrounding China's efforts to construct FAST (the Five-Hundred-Meter Aperture Spherical Radio Telescope), and the nation's ambitious policy orientation towards the development of space technologies such as rockets and satellites, and the militarization of space more generally. Close readings of the novels that compose the trilogy will demonstrate that the first contact novum as Liu presents it is closely tied to both space and environmental policy discourse in China between 1993 and 2007.

The hard science fiction novum of the trilogy is motivated by discourse in the policy arena of the hard sciences of physics and astronomy.[377] In their 2016 article in the journal *Radio*

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[376] Suvin, *Metamorphoses*, 69.

[377] See a good working definition here: Gary Westfahl, "Hard Science Fiction", in *Blackwell Companions to Literature and Culture: A Companion to Science Fiction*, David Seed, ed., Wiley 2005, page 187, web. Westfahl states that "In its very name, science fiction announces a special concern for, and a special connection to, science" (187-200). In a fuller explanation: "Approaching the task of defining "hard science fiction," one might begin by calling it a form of science fiction that displays an especially heightened concern for, and an especially heightened connection to, science. Precisely how one might characterize works in that category, predictably, is a matter of ongoing debate. Undoubtedly, certain features in a text would seemingly qualify it as hard science fiction: thorough

Science, Nan et al. note that the FAST project was "a Chinese mega-science project to build the largest single dish radio telescope in the world" (2),[378] and that the ambitious aims of the project include "surveying the neutral hydrogen in the Milky Way and other galaxies, detecting faint pulsars, looking for the first shining stars, hearing the possible signals from other civilizations, etc." (2).[379] From conception to completion of construction, the FAST project was anything but its namesake. First proposed by "astronomers from 10 countries including China at the General Assembly of the International Union of Radio Science (URSI) in 1993" (2),[380] FAST did not become operational until over two decades later, in September 2016.[381]

A number of sub-initiatives were undertaken by FAST committee members in the years leading up to 2006, when the project was officially granted funding by the NDRC, a state government agency in China responsible for planning control over the Chinese economy (Li 3).[382] The initiatives, designed to test the feasibility of the project overall, meant that more "than one hundred scientists and engineers from 20 institutions" were involved in testing "critical technologies" and engaging in complex site surveying that included investigating potential "climate, engineering environment, social environment, and radio interference" factors in Guizhuo province (Li 6).[383]

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explanations of scientific facts and/or lengthy expository passages providing evidence of a scientific thought process at work" (187).

[378] See: Li, Di, and Zhichen Pan, "The Five-Hundred-Meter Aperture Spherical Radio Telescope Project", *Radio Science*, vol. 51, no. 7, 2016, page 2, web. The co-authors are: Rendong Nan; Di Li; Chengjin Jin; Qiming Wang; Lichun Zhu; Wenbai Zhu; Haiyan Zhang; Youling Yue; and Lei Qian.

[379] See: Li, Di, and Zhichen Pan, "The Five-Hundred-Meter Aperture Spherical Radio Telescope Project", *Radio Science*, vol. 51, no. 7, 2016, page 2. Web.

[380] See Rebecca Morelle, "China's colossal radio telescope begins testing", *BBC News*, September 25, 2016, Retrieved 3rd August 2018, https://www.bbc.com/news/science-environment-37453933, web.

[381] Ibid.

[382] See Li, et. al. "The Five-Hundred-Meter Aperture Spherical Radio Telescope Project", page 3.

[383] Ibid., 6.

In a direct connection with the FAST report, in *The Three Body Problem*, the character Ye Wenjie, the person responsible for sending the initial contact signal into deep space, engages in the same type of survey mission:

> Half a year after her return to Tsinghua, Ye took on an important task: the design of a large radio astronomy observatory. She and the task force traveled around the country to find the best site for the observatory. The initial considerations were purely technical. Unlike traditional astronomy, radio astronomy didn't have as many demands on atmospheric quality, but required minimal electromagnetic interference. They travelled to many places and finally picked a place with the cleanest electromagnetic environment: a remote, hilly area in the Northwest. (303)

The activities of FAST may function as Liu's inspiration for Ye Wenjie's radio telescope location hunting, and the policy discourse in the scientific community between 1993 and 2006 likely had an impact on Liu's writing. Significantly, both in reality and in the novel, the search for an appropriate radio telescope site involves the relocation of a large number of villagers, and might have ties to China's human rights abuses against the Uighur population (Cixin Liu has been directly challenged about the Chinese government treatment of Uighurs in interviews).[384]

Later in the same chapter the task force leader tells Ye Wenjie that the radio telescope site they have scouted "isn't going to work", due to the "human environment" being "poor" (presumably the villagers will make trouble for the scientists) (308).[385] This conversation recalls how the scientists investigating the FAST project site, will have to rigorously test the "social environment" (see above), and sheds light on what that rather vague language actually references

[384] For an example, see Jiayang Fan's "Liu Cixin's War of The Worlds", *The New Yorker*, June 17th, 2019, https://www.newyorker.com/magazine/2019/06/24/liu-cixins-war-of-the-worlds, web.

[385] Liu, *The Three Body Problem*, 308.

as a geophysical location. In *The Three Body Problem*, the "remote, hilly area in the Northwest" echoes the "remoteness and sparse population" of the actual FAST site that was chosen in Guizhou province for construction.

Ye Wenjie is scouting for the possible telescope site in the "Northwest", an area in what was known in late 1970s and early 1980s China as the "Great Green Wall", a proposed afforestation project to "reverse the massive erosion and desertification" taking place in the region (Smil 227).[386] This contributes to the likelihood that environmental policy history had a discernible impact on Liu's writing. The more peripheral relevance is the degree to which FAST-affiliated scientists and policymakers captured the attention of the scientific community in China, were supported and funded by a state agency, and sought to engage directly in the international effort to answer the question of whether humanity is alone in the universe. FAST scientists have speculated on the potential for the telescope to help in discovering "whether intelligent life is unique to Earth", and they also claim as one of the project's goals, making "possible a SETI survey that significantly supersed[es] the volume of existing surveys" (Li 27-28).[387] These ambitious aims in the creation of FAST echo China's aggressive drive to excel in state-directed space activity, both scientific and military (Liu 44).[388] Yet military activity has greater bearing on my argument about Liu's Trilogy, in particular on the military space operations that are the subject of much of *The Dark Forest*.

Space Policy in China

[386] See Vaclav Smil, "Deforestation in China," *Ambio*, vol. 12, no. 5, 1983, page 227, web.

[387] See Li, et. al. "The Five-Hundred-Meter Aperture Spherical Radio Telescope Project", pages 27-28.

[388] See Melinda Liu, "Time to Shoot For the Moon: Space Travel: Beijing's Leaders Hope a Manned Launch by 2010 Will Symbolize Chinese Technological Mastery", *Newsweek*, 2002, page 44, web.

Liu may have been influenced by the policy discourse about FAST in China when he was writing *The Three Body Problem*, yet similar discourse in China during the 1990s about space policy might have informed his evolving approach to the first contact novum in *The Dark Forest*. Dean Cheng claims that in the 1990s, "China's space program benefited from renewed investment and high-level support" (63).[389] Cheng also points out that "Space has consistently been part of the People's Liberation Army's (PLA) thinking about future conflict" (55),[390] citing a 2004 speech by Hu Jintao, general secretary of the Chinese Communist Party, that "clearly charge[d] the PLA with undertaking military space missions" (61).[391]

Gregory Kulacki of the Union of Concerned Scientists explained that while American interest in the question of China's space intentions is very high, it has also been motivated mostly by conjecture, with a lack of information leading to speculation (3).[392] While the bulk of Kulacki's report seeks to reduce the anxieties of American policymakers by showing that China's military policy regarding space does not include any aggressive first strike satellite plans or technologies, Kulacki draws attention several times to the ambitious and strategic nature of plans to improve satellite technologies, and to use enhanced knowledge of the movement patterns and coverage of American satellites to hide military assets on the ground from western satellites (5-6). Kulacki finds that "problems—translation errors, failures to assess the credibility and authority of the Chinese authors, and misinterpretations of the contents of the sources being examined—are found in many of the reports and analyses written about China's space policy"

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[389] See Dean Cheng, "China's Military Role in Space", *Strategic Studies Quarterly*, vol. 6, no. 1, 2012, page 63, web.

[390] Ibid., 55.

[391] Ibid., 61.

[392] See Gregory Kulacki, "An Authoritative Source on China's Military Space Strategy", *Union of Concerned Scientists*, March 2014, page 3, retrieved from: *www.ucsusa.org/chinaasat*, August 4th, 2018.

(3), leading some American politicians and think tanks to hypothesize that China is planning some sort of "space Pearl Harbor" (6).

Although a Chinese military textbook from 2003 presents no evidence that this is the case, the situation might be evolving rapidly, given that China conducted a satellite destruction test in 2007, firing an "interceptor launched on a ballistic missile" to destroy one of its own weather satellites (Kulacki 8).[393] Kulacki ultimately seems to imply that although China is not actively planning to attack U.S. satellites currently, it is developing space related contingencies in the event such a conflict should occur: "China puts significant emphasis on protecting its missile forces from satellite surveillance, but its focus has been on camouflage, concealment, and deception rather than attacking satellites" (9). Dean Cheng, however, shows that the changes in Chinese space and satellite policy have been both rapid and aggressive.

Cheng points out that the policy relating to basic response had been re-written between 2001 and 2006: "the goal is not only to destroy the enemy's key points but also to precisely control the course and intensity of a conflict. It also entails disrupting the enemy's system, not just his weapons or forces" (62).[394] The above all indicate the rapidly evolving, and also well-publicized nature of China's space policy in the years immediately preceding the Chinese publication of *The Three Body Problem* (2006) and *The Dark Forest* (2008). According to Wu Yan, Liu's writing "emphasizes the relationship between science and society", and the publication of the *Three Body* trilogy in particular led to "reflection and discussion throughout society about […] future development, and the governance of the country" (49).[395] In light of

[393] Ibid., 8.

[394] Dean Cheng, "China's Military Role in Space", *62.*

[395] Wu Yan, et al., "A Very Brief History of Chinese Science Fiction", *Chinese Literature Today*, vol. 7, no. 1, 2018, page 49, web.

Liu's interest in addressing these topics, I examine how these concerns are addressed at the level of governmental discourse in China.

The sources that I engage with above are not Chinese sources, but American, and demonstrate that a major concern of American foreign policy hawks has been the development of first strike space technologies in China, and possible responses to them. The sources also demonstrate that Chinese space policy was oriented toward exploring the potential of such technologies in the years leading up to 2007, perhaps just not with the aggression assumed by the American government.

Space policy writers in China have also shown awareness of problems of trust relating to military space endeavours. Chinese scholar Xiaodan Wu explains that China "has actively advocated for a treaty prohibiting the deployment of weapons in outer space ever since the 1980s at the Conference on Disarmament" (4).[396] Despite China's efforts to engage with the international community in law-oriented space discourse, the author acknowledges that the "long-lasting and widespread military involvement and the silence of China regarding its military strategy and purpose in outer space have led to a lack of transparency concerning its military aspirations" (7).[397] In essence, because military space technologies are a rapidly advancing field that have yet to undergo rigorous international regulation, the problem between the American government and the Chinese government when it comes to space policy is one of trust, and this is reflected in the language surrounding China's space policy, whether that writing comes from the American or Chinese policy spheres. The potential influence of such discourse on Liu's first contact novum is apparent in *The Dark Forest*; while real-world issues of military activity in

[396] See: Wu, Xiaodan, "China's Space Law: Rushing to the Finish Line of Its Marathon", *Space Policy*, 2018, page 4. Web.

[397] Ibid., 7.

space seem primarily to revolve around Chinese-American relations, Liu's novel has magnified and deflected those concerns in the dynamic that develops in the novel between humanity and the Trisolarans.

The central premise of *The Dark Forest* is an extension of the notion raised in *The Three Body Problem* that extra-terrestrial contact would fundamentally alter the fabric of social life, and the trajectory of technological development on earth. The second novel in the trilogy, *The Dark Forest* explores how different human groups would prepare for the impending arrival of an intelligent alien species. Three potential scenarios are developed, including the religious deification of the incoming Trisolarans, plans to escape from the Trisolarans to ensure the survival of humanity, and preparation for all-out war against the Trisolarans. The third scenario of war drives government activity and also Luo Ji's hidden plans as a Wallfacer throughout the book.[398]

The language and scenarios in the novel relating to potential military conflict are synonymous with Chinese space policy discourse in the years predating the publication of the novel. For example, a passage presented as a press report details the efforts of the Planetary Defense Council to prepare for taking first strike action *in The Dark Forest*:

> The AP reports that at 6:30 P.M. EST on the twenty-ninth, the US National Missile Defense System successfully completed the test destruction of a lower-dimensional unfolded sophon in near-Earth orbit. This is the third test of an NMD intercept since targets were shifted to outer space. The latest target was the reflective film discarded from the International Space Station last October. A

[398] The Wallfacers are secretly selected individuals, chosen to design plans to defeat the alien invaders. They must never reveal or speak of their true plans to anyone, due to the danger of the Trisolaran invaders discovering the plans through their superior technology.

> Planetary Defense Council spokesman said that the warhead-equipped interceptor successfully destroyed the three-thousand-square-meter target. This means that well before the sophon's three-dimensional unfolding reaches sufficient area, and before it presents a reflective surface that is a threat to human targets on the ground, the NMD system will be able to destroy it […]. (33)

This passage, in highlighting the action as a "test destruction", recalls China's "test" destruction of one of its own defunct weather satellites in 2007, an action that Gregory Kulacki claimed might not have been fully aggressive, but that was also "the least ambiguous indication that attacks on satellites may at least be a part of contemporary Chinese military thinking or contingency planning, if not a central part of Chinese strategy" (8).[399] In another overlap with space policy in China, the above passage reflects the tendency of Liu to craft many of the policy-related segments of the second novel of the trilogy as press releases, news broadcasts or government statements, demonstrating further connections to real-world policy delivery. Most of these expressions through media in the novel relate to the imminent arrival of the Trisolaran space fleet. The above example is one of many, and a number of other aspects of *The Dark Forest* are reminiscent of PLA posturing regarding space policy in China leading up to the publication of the novel.

The Wallfacer initiative for example, in involving many false agents and deep-fake plans, is reminiscent of the overall compartmentalized development of Chinese space policy more generally. The organizational history of China's space industry, as described by Xiaodan Wu, suggests such compartmentalization:

[399] Gregory Kulacki, "An Authoritative Source on China's Military Space Strategy", *Union of Concerned Scientists*, March 2014, page 8, retrieved from: *www.ucsusa.org/chinaasat*, August 4th, 2018.

> China's space industry extends to government and military organs from different sectors and involves research and production units from enterprises and universities. These actors have formed a complex structure and relationship during the last 60 years in strategy formulation, policy adoption, decision-making, and activities organization with no clear external borders and efficient coordination mechanisms. (3)[400]

The confusing lack of clear "coordination mechanisms" seems directly relevant to how the Wallfacer program works, as described by UN Secretary General Say in *The Dark Forest*. Say claims that the Wallfacer program was created in keeping with a philosophy that: "a number of other strategic plans should proceed in parallel to the mainstream defense program, and […] these plans should be secret, not transparent to the enemy" (100). The Secretary General also notes that the Wallfacer program seeks to "formulate and direct strategic plans", but to do so in a compartmentalized fashion, with each Wallfacer keeping a set of secret plans hidden to be released at the appropriate time in the future war against the Trisolarans (100).

The novel might be a reflection of the tendency of Liu and other science fiction authors to use policy as the mediator through which to give the novum historical cognitive validity. Here exploring military strategy surrounding the novum of first contact between humanity and the Trisolarans and the question of how it is formulated in the novel, involves validating the logic through the most relevant real world analog that Liu had to work from: Chinese space policy and the discourse of distrust that surrounds it. I have shown that American policy writers are well aware that the American government is perhaps unnecessarily paranoid about China's space ambitions, but Chinese writers and officials are equally aware of how barriers of language and

[400] See Wu, Xiaodan, "China's Space Law: Rushing to the Finish Line of Its Marathon", page 3.

culture, not to mention actionable geopolitical disagreements, can lead to distrust, particularly after the unwelcome international attention paid to its space policy after the 2007 satellite missile destruction test.

According to Kulacki, the test led "China's political leaders" to feel "surprised and flustered in its wake", and the leadership waited "several days to release an official statement" (9).[401] When the statement was released, Chinese officials placed emphasis on the test's scientific and experimental nature, and any reference to military utility was carefully avoided (9).[402] Whether motivated by its own desire for military superiority or by American military deception, China's space activity in the early 2000s did involve some attempts to engage in "deception" and "distributing false information and leaking false intelligence reports" that the Wallfacer project also engaged in (6).[403]

The novel establishes the great difficulty of a lasting trust developing between two species that are separated by so much distance and are so culturally distinct. Chinese space policy writing shows that the real-world distrust between China and America was beginning to heighten in the early 2000s and that the hegemony of American satellites and challenge of China to America in this theatre plays a large role in a wider socio-cultural divide. In fact, the space satellite itself is a telling and important piece of technology that I argue could be interrelated with Liu's creation of the sophon in the trilogy.

The sophon first appeared in *The Three Body Problem* and was designed as military technology to solve the issue of *physical* distance between the two civilizations, and its presence throughout the trilogy has many analogues to advantages that America holds over China due to

[401] See Kulacki, "An Authoritative Source on China's Military Space Strategy", page 9.
[402] Ibid., 9.
[403] Ibid., 6.

advanced satellite technology. The sophon is a proton that operates on the principles of quantum entanglement, endowed with "wisdom" and the "smallest artificial intelligence" that the Trisolarans are capable of producing (374).[404] The sophon is the size of a sub-atomic particle, capable of destroying human experiments in particle physics by infiltrating them, and by doing so preventing human scientists from finding "the secrets hidden deep in the structure of matter" (380).[405] The Trisolarans, by sending two sophons into earth orbit and leaving two on Trisolaris, are able to "monitor the earth in real time" and to "communicate in real time with the alienated forces within earth civilization" (382).

This component of Liu's first contact novum can be read as mediated through discourse about China's efforts to catch up to or match the satellite technology of America. In a reading of a Chinese military textbook, Gregory Kulacki identifies, that China's satellite aims specifically are "part of a larger pattern of interest in U.S. space capabilities that appears in Chinese military publications since the 1970s" (4).[406] Much as satellites become the sticking point of a large proportion of distrust between the American and Chinese governments, including the Americans levelling accusations that China shot laser beams at its satellites in 2006 (10),[407] the sophons in *The Dark Forest* become the focal point of much human anxiety about the Trisolarans, as the following passage from the novel showcases:

> The physician at 301 Military Hospital in charge of the treatment of academician Jia Weilin confirmed that Jia's death was due to a haematological malignancy, also known as leukemia, the proximate cause of death being organ failure and loss

[404] Liu, *The Three Body Problem*, 374.
[405] Ibid., 378-380. The quotation appears on page 380.
[406] Kulacki, "An Authoritative Source on China's Military Space Strategy", page 4.
[407] Ibid., 10.

> of blood in the advanced stage of the disease. No abnormalities were present. Jia Weilin, a noted expert in superconductivity who made major contributions in the field of room-temperature superconductors, died on the tenth. Stories claiming that Jia died in a sophon strike are pure rumour. (33)

The passage also serves as a further example of how Liu expresses first-contact anxiety through the same medium, news reports, that such anxieties seem to manifest in relation to Chinese space policy.

China's space policy, particularly regarding satellite technology, had at least an indirect bearing on the presence of the sophon in Cixin Liu's novels. The sophon is the major device through which real-time communication with an extra-terrestrial civilization is made possible in the books; it is not a separate or different novum, but rather one of the defining features of Liu's version of the first contact novum and one of the aspects that make that novum unique. Understanding the socio-political realism of the sophon/satellite connection helps further the cognitive validation of the first contact novum overall, though it is admittedly an indirect connection between the novum and space policy. A more direct connection to the first contact novum is readily apparent in further exploring the way in which Liu entangled China's environmental concerns with the construction of FAST through interconnected arenas of policy in *The Three Body Problem*.

Environmental Policy in China

In asking "What Happens If China Makes First Contact?", Ross Andersen identifies a connection between Liu and the scientists that helped build and oversee the FAST telescope: "In years past,

the academy's engineers sent Liu illustrated updates on the dish's construction, along with notes saying how he'd inspired their work" (44).[408] Liu's inspiration of the scientists working on FAST and the fact that "the government's aerospace agency sometimes asks him to consult on science missions" is an important marker of the potential dialogical relationship between science fiction and policy (Ross 44). Government bodies in Canada have also consulted science fiction authors such as Margaret Atwood and Robert J. Sawyer, while American scientist and author David Brin has been deeply engaged at NASA, even serving on the advisory board.[409]

We should understand the instances of scientists reaching out to Liu as dialogical interactions potentially motivated by novae expressed in Liu's various works of science fiction. By its very nature, science fiction as a product of human language is dialogical—all writing is. The difference between science fiction and other modes of writing is that the novum device, operating as it does on oscillations between cognition and estrangement, requires a cognitive base before developing an effective device of estrangement in opposition. Policy is one of the most important mediums through which such a dialogue is generated. In the case of Liu's trilogy, the cognitive base is the science of astronomy as it is enacted in the public space, which is selectively mediated through government policy to Liu, and expressed in the text of the novel when it is offset against the estrangement of his extrapolations of the outcomes of the science. Mediated back to scientists through expression in art, the whole process will repeat and self-reinforce.

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[408] See Ross Andersen, "What Happens If China Makes First Contact? As America has turned away from searching for extraterrestrial intelligence, China has built the world's largest radio dish for precisely that purpose", *The Atlantic*, 2017, Vol.320 (5), p.44 (9), web.

[409] See "David Brin", Wikipedia: https://en.wikipedia.org/wiki/David_Brin#cite_note-12, accessed August 6th, 2018.

This is simply a more complex way of arguing that the various cultural forces that coalesce in the policy arena drive Liu's first contact novum. A similar review article to Andersen's about Liu's *Three-Body* trilogy describes how Liu's first novel helped inspire China's new FAST SETI dish.[410] The concept of a large radio dish like this, that could potentially be used to communicate with extra-terrestrials, relates directly with important portions detailing a similar installation in *The Three-Body Problem.* I contend that the novel was developed partly in dialogue with the development of the FAST telescope science and mediated through China's government and media from 1993 up to the first publication of *The Three Body Problem* in 2006.

This project has already developed evidence that the historical socio-public environments, or the national political imaginaries of the UK and Canada, influenced both Wyndham and Atwood, having a direct bearing on the creation of each novum. My research capacities for this project have been somewhat limited in the case of Liu to articles and writings in English, or to translations of peripheral documents of interest that are currently available, so the argument about the development of FAST's influence on Liu's novum is more reliant on an extension of policy linkages observed in the first two chapters. However, my close reading of *The Three Body Problem* demonstrates strong textual support for my theory of dialogical connection. In examining the influence of environmental policy on Liu's writing, more concrete links can be demonstrated between his novum's relation to basic matters of environment inside and outside China during the same years that space policy was concerned with the FAST project and satellite technology.

[410] See Stubby The Rocket, Tor.com, "Cixin Liu's The Three-Body Trilogy Helped Inspire China's New SETI Radio Dish", Nov. 2017, accessed August 3, 2018, web.

As William P. Alford and Benjamin L. Liebman argue, air quality in China was a serious problem entering the 1990s, with the "concentration of airborne particulates […] two to five times the maximum level deemed acceptable by the World Health Organization" in many urban settings (703-04).[411] At the time of this writing, the issue of China's air quality is even now receiving renewed attention in western media, as during the Covid-19 pandemic, massive industrial shutdowns have led to China having cleaner air than it has since the end of WWII. However, contrary to misconceptions in the west that China cares little for environmental issues, China's lawmakers sought to address these issues by revising air pollution laws first in 1995 and then in 2000 (704).[412] The process faced enormous challenges because of "the growing politicization of environmental matters, and the challenges that the Chinese state face[d] as it attempt[ed] both to represent popular interest in more transparent governmental institutions and also to deepen its engagement in the international community" (705).[413]

Environmental policy in China during the 1990s may have been one of the most contentious public policy issues of the time. The problem with enacting real environmental policy change, was a disconnect between the powers of the National People's Congress (NPC) and the Chinese Communist Party (CCP). While the NPC meet formally "only once a year", the CCP is the "ultimate arbiter of power in China" and is able to influence the NPC through "a variety of mechanisms, including most notably the Party Central Committee's role in defining the overall legislative agenda, and vetting key pieces of legislation" (706-07).[414] The potential for corruption by party interests is built into the structure of the lawmaking institution itself. Despite

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[411] William P. Alford and Benjamin L. Liebman, "Clean Air, Clear Processes? The Struggle over Air Pollution Law in the People's Republic of China", *Hastings Law Journal*, vol. 52, 2001, pages 703–704.

[412] Ibid., 704.

[413] Ibid., 705.

[414] Ibid., 706–707.

the struggles of the NPC to achieve significant changes to environmental law in China in the 1990s, there was some success with revisions to the 1987 Air Pollution Prevention and Control Law (APPCL)[415] that came about the same years that China's FAST project was searching for an appropriate site for construction.

The efforts to bring in legislation to reduce and prevent acid rain were at the forefront of the proposed revisions in 1995, but "the effort encountered significant opposition within high government circles" (728).[416] Even though draft regulations existed as early as 1996, "the State Council did not approve them until 1998" (728).[417] If Cixin Liu was aware of government environmental policy in the 1990s,[418] which I argue he must have been, he would have been attuned to the larger policy shift towards environmental conservation in China, as identified by Alford and Liebman:

> Other policy statements and national regulations further illustrate that principles suggested in ENRPC's draft of the 1995 APPCL have been winning more widespread acceptance. Total loading received a boost in July 1996 from Jiang Zemin's speech on that topic. The government's much-publicized effort to clean up the enormously polluted Huai River included the promulgation of targeted regulations containing provisions regarding total loading, while China's 1996 Law on Coal (which is chiefly concerned with production and marketing) provides at

[415] Ibid., 727.

[416] William P. Alford and Benjamin L. Liebman, "Clean Air, Clear Processes? The Struggle over Air Pollution Law in the People's Republic of China", 703–704.

[417] Ibid., 728.

[418] At the least, there is no doubt that he was well versed by the time he completed *The Three Body Problem* in 2006, given the predominance of related issues in segments about Ye Wenjie and Mike Evans.

> article 35 that the state "shall encourage... coal washing" and at article 36 that it "shall develop and disseminate clean coal technology. (731-32)[419]

Liu was not only aware of the growing environmental drive in China during the years leading up to writing his trilogy—as much of the general public must have been—but likely maintained a close eye on the realm of environmental policy, as demonstrated by another crucial moment laying bare the subtle environmental narrative at the heart of *The Three Body Problem*:

> The fall of each small tree didn't make much sound, and there was no loud buzzing from chain saws, but the almost-familiar scene made Ye's chest tighten. Someone called out to her—that production team leader, now the village chief. He recognized Ye. When she asked him why they were cutting down the forest, he said, "This forest isn't protected by law."
>
> "How can that be? The Forestry Law has just been promulgated."
>
> "But who ever gave Bethune permission to plant trees here? A foreigner coming here to plant trees without approval would not be protected by any law."
>
> "You can't think that way […]. (309)

This passage demonstrates that Liu was likely closely following environmental policy during the mid to late 1990s, and likely before that.

As Alford and Liebman point out, China "engaged in a broad range of environmental lawmaking since it emerged from the Cultural Revolution and began to transform its economy in 1978 (710)." They identify the first generation of environmental laws, including the Environmental Protection Law (1979), the Marine Environmental Protection Law (1982), the

[419] Ibid., 731-732. Total loading in this case refers to attempts to combat water pollution by introducing limits to the maximum total load of pollutants acceptable in designated water systems such as the Huai River, in keeping with standards developed in the United States.

Water Pollution Prevention and Control Law and the Forestry Law (1984), and the Grasslands Law (1985) (710).[420] Taken together, these laws demonstrate the ramping up at the national level of significant environmental legislation in the decades before the original serialized publication of *The Three Body Problem* in China (2006).

Ye Wenjie pointing out that the Forestry Law had just been "promulgated" helps to date the Mike Evans forestry segment of the text precisely to 1998, when after fourteen long years of stagnation, the forestry bill in China was finally enacted into law.[421] The character responsible for using a radio telescope to send a signal to another star, Ye Wenjie, is the same character that feels her "chest tighten" when faced with the deforestation of sapling trees, and the same character that feels a sense of indignation on behalf of the threatened "foreigner", perhaps thinking of the inevitable arrival of the Trisolarans. There is a coalescing around Ye Wenjie of the historical dimensions that shape the novum in the text, and those historical dimensions stem from Chinese space and environmental policy respectively.

III. Re-locating Science Fiction: Cixin Liu's *Remembrance of Earth's Past* Trilogy

> SF is a selective tradition, continuously reinvented in the present, through which the boundaries of the genre are continuously policed, challenged and disrupted, and the cultural identity of the SF community continuously established, preserved and transformed. It is thus essentially and necessarily a site of contestation. (39-40)

[420] Ibid., 710.

[421] This date for Ye Wenjie's meeting with Mike Evans is further supported by the mention of the U.S. refusal to sign the Kyoto protocol, which also occurred in 1998.

—Andrew Milner[422]

Examining the character of Ye Wenjie and her relevance to the novum of the trilogy will help to address the final question of this chapter: how does Liu's trilogy decenter the primacy of the western subject in humanist discourse? Ye Wenjie is a force for equalizing binary tendencies in Westrocentric humanist discourse: the tendency to privilege the male gender, and the tendency to feature whiteness as an idealized racial identity. Because Ye Wenjie is directly responsible for sending the signal from the Red Coast base in *The Three Body Problem* and establishing contact with the Trisolarans, she is symbolically significant to Liu's version of the first contact novum. First, Ye Wenjie subverts a common trope in American first-contact science fiction that places male characters (normally authority figures) in the closest contact with extra-terrestrial beings, whether that contact is peaceful or combative.[423]

For example, in Isaac Asimov's novel *The Gods Themselves*, which is conceptually a fascinating novel about an energy exchange between universes, the main three human beings that interact with the intelligence from the neighboring universe are all male. When the book switches to its second part, it is told from the perspective of the aliens in the other universe, where genders have three divisions: the masculine rationals, the feminine emotionals, and the masculine parentals. The novel clearly associates masculinity with both science and authority through the characters of Hallam, Lamont and Bronowski, and despite highlighting the value of the emotional experience in personal development, limits the feminine to this realm. Many of Asimov's novels and short stories are so gendered, as are some of the most significant works by

[422] Andrew Milner, *Locating Science Fiction*, Liverpool University Press, Liverpool (2012), pages 39-40, web.

[423] Despite enormous progress in diversity made through the period of new age science fiction up to the present day, the genre of sf as a whole still reflects upon the socio-cultural hegemony of the patriarchal worldview.

Robert A. Heinlein, Philip K. Dick, and John Wyndham. Even science fiction masterpieces such as Walter Miller Jr.'s *A Canticle for Leibowitz* and Frank Herbert's *Dune* have been rightly criticized on this point.

Notable exceptions in male-authored American science fiction would be Carl Sagan's novel *Contact* (1985) and Ted Chiang's novella *The Story of Your Life* (1998). Both have been adapted into films that feature strong central female characters in Eleanor Arroway (played in *Contact* (1997) by Jodie Foster), and Louise Banks (played in the film *Arrival* (2016) by Amy Adams). In *Contact*, while Ellie does serve in the primary role in the narrative through establishing the existence of an extra-terrestrial intelligence and then serving as the main representative for humanity through her eventual selection as the only human passenger to travel through a wormhole, the narrative is still traditionally humanist, in the Euro-American sense of the word.

Ellie does to a certain extent challenge the institution of Christian patriarchy in the novel, and so the book does resonate with one of the features Rosi Braidotti argues defines ecological posthumanism by raising "issues of power and entitlement in the age of globalization" (48-49),[424] however, much of this challenge to male authority seems diluted by the overall analogy of filial piety Sagan seems to have chosen. For example, the only form the extra-terrestrials seem able to choose at the end of the story is that of Ellie's father, re-asserting a chastising patriarchal presence that Ellie had spent most of the novel (and film) combating in David Drumlin; now humanity is symbolically feminized and infantilized by the too-far superior extra-terrestrial presence.[425] Unlike *The Three Body Problem*, *Contact* seems blind to the alternative worldview

[424] See Rosi Braidotti, *The Posthuman*, 48-49.

[425] It is also important to note that the character of Eleanor Arroway is based on SETI scientist Dr. Jill Tartar, whom Sagan spent a significant amount of time with when he was doing research for his film script (which later became

that would be possible through ethnic, national or cultural difference, choosing to highlight the fraught conflicts between scientific and religious thinking without treading outside the Euro-American worldview (*Arrival* shares the same flaw). As a character, Ye Wenjie is more challenging to the classical Euro-American humanist model of thinking, and in fact sets in motion its ultimate demise.[426]

In *The Three Body Problem*, Ye Wenjie actively resists the attempts of male authority figures to control her. After being framed by Bai Mulin for composing an environmentalist letter, and later imprisoned, Ye Wenjie is able to use her training in science and physics to send a secret signal out into space. Her efforts to contact a superior intelligence are at once a punishment for the immoral behavior of human kind, including: the murder of her father during the Cultural Revolution; the sexist way the scientists and military personnel treat her; and also her horror at the level of damage humanity is inflicting on the natural environment. In the novel, Rachel Carson's *Silent Spring* features prominently in motivating Ye Wenjie to take action and offers the most concrete connection to environmental policy in the trilogy.

When Ye Wenjie meets Bai Mulin, a talented newspaper reporter, their introduction comes in the midst of their work on an inner Mongolian deforestation project. Ye participates in

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the novel…and then a film). See Macrina Cooper-White, "Meet The Real-Life Astronomer Who Inspired Jodi Foster's Character In 'Contact'", *The Huffington Post Online*, 05/31/2015"https://www.huffingtonpost.ca/entry/jill-tarter-search-for-life_n_7444946, accessed August 5th, 2018.

[426] My reading of the trilogy is informed by the views of both Peter Berard and Amanda DeMarco, who in reviews of the trilogy ultimately find it flawed due to gender essentialism (Berard) and misogyny (DeMarco). Ultimately however, I can't fully agree with either of these two assessments of the writing, due to how forcefully Ye Wenjie challenges the primacy of male authority, embodies the cultural, scientific, and ecological spirit of the books, and fails to embody traditionally "feminine" personality traits as Berard sees them ("compassion" is one that he notes is a weakness in *Death's End*'s Cheng Xin. (See: Peter Berard, "The Dark Forest and Its Discontents: Cixin Liu's "Death's End", Los Angeles Review of Books, May 19th, 2018. https://lareviewofbooks.org/article/the-dark-forest-and-its-discontents-cixin-lius-deaths-end/#!. Accessed August 5th 2018. See also: 2. Amanda Demarco "Cixin Liu, China, and the Future of Science Fiction", The Paris Review, September 10th, 2018. https://www.theparisreview.org/blog/2018/09/10/cixin-liu-china-and-the-future-of-science-fiction/. Accessed September 12th, 2018.).

the deforestation, and Liu chronicles the destruction at length: "under their chainsaws, vast seas of forests turned into barren ridges and denuded hills" (24). The introduction to Bai Mulin is telling. Though he is a selfish character for later betraying Ye Wenjie in order to achieve his political aims, he speaks the same environmental truth that later motivates Ye Wenjie to establish contact with extra-terrestrials. He is also one of the characters in the story that helps Ye Wenjie realize that the human species is inherently flawed by greed on both individual and societal levels. When Ye and Bai first meet, Bai speaks to Ma Gang, another chainsaw operator in Ye's presence:

> […] Bai asked him, "Do you know how old this tree was?"
>
> "You can count the rings." Ma pointed to the stump.
>
> "I did. More than three hundred and thirty years. Do you remember how long it took you to saw through it?"
>
> "No more than ten minutes. Let me tell you, I'm the fastest chain saw operator in the company. Whichever squad I'm with, the red flag for model workers follows me." Ma Gang's excitement was typical of most people Bai paid attention to. To be featured in the *Great Production News* would be a considerable honor.
>
> "More than three hundred years! A dozen generations. When this tree was but a shrub, it was still the Ming dynasty. During all these years, can you imagine how many storms it had weathered, how many events it had witnessed? But in a few minutes you cut it down. You really felt nothing?"
>
> "What do you want me to feel?" Ma Gang gave a blank look. "It's just a tree […]". (25)

Bai Mulin expresses the frustration that many environmentalists feel when faced with both large-scale national state greed and individual ignorance or apathy, both of which Ma Gang seems to embody.

Ma Gang seems to represent the average CCP nationalist, because he is described as "typical of most people" and approaches his deforesting work with zeal, stating "I'm the fastest chain saw operator in the company" and "the red flag for workers follows me" (25). Ma Gang seems to have been influenced to a great extent by state environmental propaganda. In a 2016 article entitled "The New Nature of Things? Canada's Conservative Government and the Design of the New Environmental Subject," with Canada as their focus, Jonathan Peyton and Aaron Franks show that governments are capable of manipulating their populace through complex strategies to become complicit in state exploitation of natural resources:

> [...] which we understand as the management of difference, the articulation of consent and the pursuit of certainty in relation to the environment and new extractive economies in Canada. Simply put, we see a reorientation of the relationship between civil society and the natural environment significant enough to warrant sustained analysis. The intended environmental subject is individualized, entrepreneurial and, above all, accepting of the inherent extractive potential of Canadian resources." (455)

These ideas resonate with Ma Gang's willingness to deforest for Chinese state industry, while brushing aside environmental concerns: "It's just a tree" (25).[427] Peyton and Franks further elaborate that in Canada, "the Conservative government of Stephen Harper [...] has pursued a totalizing strategy to reconfigure a desired Canadian environmental subject receptive to and

[427] Cixin Liu, *The Three Body Problem*, 25.

ultimately complicit in these measures" (455).[428] In a similar sense, Ma Gang can be read as an example of a desired Chinese environmental subject, agreeable to CCP policy in a way that Mai Bulin, who expresses his frustration, is not. Ye Wenjie begins to adopt the same sentiments of frustration Bai Mulin expresses after first meeting him, setting herself up as an enemy of the state.

Ye Wenjie eventually sees an order of magnitude beyond Bai Mulin in her understanding that the small effort of environmentalist subterfuge they later conspire to engage in to alter Chinese deforestation policy is futile. Motivated by that understanding, Ye Wenjie engages in the ultimate action to unseat human complacency about the environment by sending the signal from Red Coast base. Before Ye takes this action in the novel however, succumbing to her despair in humanity, she is exposed to the writing of Rachel Carson, significant for how it impacts her by confirming the inevitability that human activity will degrade the environment beyond repair. As the chief actor in bringing the novum to fruition in the text, the forces that shape Ye Wenjie's personality in the text mirror the historical forces and conditions that give the trilogy's novum its cognitive validity. Bai gives Ye his copy of *Silent Spring*, noting that it was published "in 1962 and was very influential in the West", before explaining that it is only circulated "for internal reference" by communist party elite and that he is "responsible for translating the part that has to do with forests" (26-27). He explains that he wants to send information to the leadership in Beijing to inform them about the irresponsible behavior of the construction corps involved in the clear cutting and leaves the book with Ye Wenjie (27).

[428] See Jonathan Peyton and Aaron Franks, "The New Nature of Things? Canada's Conservative Government and the Design of the New Environmental Subject," *Antipode*, vol. 48, no. 2, Mar. 2016, pp. 453–73, doi:10.1111/anti.12179.

Silent Spring is one of the only major western interventions into the narrative in the early part of *The Three Body Problem,* and Ye Wenjie uses it to mount her first major challenge to a male directed corporate and government assault on nature. It seems significant that Liu has chosen Carson as an inspirational force in Ye Wenjie's life, given that Carson was an important protofeminist thinker,[429] an influence on deep ecologists, and was perniciously ostracized by the public for being a closet communist (including by some with political influence).[430] Ye is at first captured by "Carson's deep concern", whose perspective "shook Ye to the core" and leads her to question "how many other acts of humankind that had seemed normal or even righteous were, in reality, evil?" (27).

Ultimately, *Silent Spring,* which serves as an outside influence that could change China socially from within (by offering a western protofeminist perspective), leads Ye Wenjie to decide that a similar impact is the only thing that will alter the destructive course of human civilization. Therefore, when Ye sends the signal, she must then protect her secret by taking an action that is both deeply personal and also divorced from normal conceptions of morality. Ye murders the two men that have been both passively and aggressively involved in repressing her due to her gender. She cuts through the rope holding up both the base engineer Yang Weining, her husband, and Lei Zhicheng, the base commissar when they come to investigate the satellite "malfunction" that Ye manufactures through sabotage (285-287).

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[429] See for example Patirica H. Hynes, "Silent Spring: A Feminist Perspective", *Environmental Impact Assessment Review*, vol. 9, no. 1, 1989, pages 4-5, web. Hynes notes that: "Carson wrote as a scientific insider, exploding assumptions about the relationship between technology and nature. At midcentury in America, not many women could claim this perspective. In the era in which Carson was born, all but a few fortunate and very determined women were effectively barred from entering the scientific professions by a collusive combination of cultural, social, academic, and professional biases against them. Science, and the particular development of environmental science, suffered for it."

[430] See Mark Stoll, "The Personal Attacks on Rachel Carson As A Woman Scientist", *Environment and Society Portal, http://www.environmentandsociety.org/exhibitions/rachel-carsons-silent-spring/personal-attacks-rachel-carson-woman-scientist.*

It is clear when Ye takes this action, that she is partially motivated by the knowledge that like Bai Mulin, Lei Zhicheng is planning to use her intelligence and ability for his own personal gain: "I immediately knew what Lei was after. He wanted to become the first man to discover extraterrestrial intelligence. It was a really great opportunity to get his name into the history textbooks" (285).[431] Because Lei is a "typical political cadre of the time" and according to Ye Wenjie "[sees] everything through an ideological lens" (284), the text is clear in setting him up as a clear opponent of the "capitalist West" that he disdains (156). I do not read Ye's action in killing the men as the primary means by which the text decenters the Western male subject, but rather the idea of the male subject as a primary authority on science altogether. Instead, through Ye Wenjie, *The Three Body Problem* makes a significant statement about the connection between environmental degradation and masculine aggression that begins in the arena of deforestation policy and is an important force in shaping Liu's version of the first contact novum. I read Ye Wenjie's actions, however extreme, as a decentering of the male subject as the primarily link between humanity and an alien other.

It might seem as though Ye Wenjie is in alliance with the Western world through her connection with Mike Evans and eventual acceptance of the role of commander-in-chief of the Earth-Trisolaris Organization (314). However, as pointed out earlier, Mike Evans represents one of the characters that are deterritorialized in the novel, representing something akin to Heise's notion of "divergent motivations or efforts for the protection of nature" (59).[432] His environmental activism and advocating for pan-species communism are in reaction to the damages wrought by his father's oil company: "My father is a billionaire. He is the president of

[431] Cixin Liu, *The Three Body Problem*, 285.
[432] Heise, *Sense of Place and Sense of Planet*, 59.

an international oil company, but he will not give me any more funding, and I don't want to use his money anymore (305)."[433] Evans then proceeds to tell a story about how one of his father's oil tankers spilled into the Atlantic ocean, describing the resulting damage to the ocean and sea birds as "hellish", and the suffering of the birds in great detail (306). But when Mike's father tries first to "avoid responsibility and minimize damage to his company", then later explains to Mike that human society could not exist "without oil" and that he should be thankful for his Ferrari and his private jet, it becomes clear that Mike's father is meant to be affiliated with the Western capitalist model of production that Mike reacts against, perhaps by trying to offset his father's environmental degradations by planting trees in China (306).

Ye Wenjie finds Mike's philosophy of Pan-species communism untenable however, calling it an "impractical ideal" (307).[434] Later, when she meets Evans again, he is still engaged in his losing battle of afforestation, an issue that solidifies the environmental connection between the two characters by recalling the environmental issue that first attracted Ye Wenjie's attention. Many of the concerns raised by Mike Evans are also raised in Rachel Carson's *Silent Spring*, but none more prominently than his focus on the impact of human activity on birds, a subject central to Carson's book, and a warning that provides her evocative title.

During this second meeting, Mike places the blame for environmental degradation on "wealthy countries", which he argues, "protect their own environments, but then shift the heavy polluting industries to the poorer nations" (310).[435] His sharpest criticism is for his home country of The United States, which he notes, "just refused to sign the Kyoto Protocol" (310).[436] The

[433] Cixin Liu, *The Three Body Problem*, 305.
[434] Ibid., 307.
[435] Ibid., 310.
[436] Ibid., 310.

historical forces that not only lead Ye Wenjie to establish first contact with the Trisolarans, but also into an alliance with Mike Evans, are partially the rising sentiments of ecological awareness that are set in sharp relief to how firmly they are in philosophical opposition to the economic precepts that guide Western capitalism. Like the space policy discourse, the environmental policy influences come from the national political imaginary and are deeply integral to shaping the unique nature of the novum in the trilogy.

By centering his narrative on these characters and their role in establishing first contact, Liu has also decentered the Western humanist subject from playing a role in arguably the greatest discovery of human civilization. Ye Wenjie claims that Western capitalism has resulted in a flawed world order, and that "Human civilization is no longer capable of improving by its own strength" (311). Although later in the novel the PLA forms an alliance with America in order to defeat Evans and obtain his data, it seems that perhaps Evans' own understanding of communism assumes that the Republic of China's version of communism is already corrupted in its attempt to compete in a capitalist world system, because "the entire human race is the same" (310). Evans' version of pan-species communism is deterritorialized just like his connection to America, which is why he seeks a kindred philosophical spirit in Ye Wenjie when he asks her to "let us be comrades" (312).

Though examining the novum as a device that reveals the environmental political subtext involved primarily engaging with the first two novels, it is useful in closing to examine the final image of the entire trilogy. After a rollercoaster ride through the millennia that is essentially an extreme extrapolation of the results of contact between humanity and Trisolaris, *Death's End* (2010) leads the characters Cheng Xin, Guan Yifan, and Sophon to inhabit a microscopic mini universe in order to survive. When they discover that the only way to ensure the main Universe

goes through the process of the big crunch required for its eventual resetting big bang, they are forced to leave the mini universe.

Cheng Xin and Sophon, the feminine characters at the end of the novel, tell Guan Yifan that they are going to engage in a "women's project" (599), and proceed to encase the entire sum of human and Trisolaran knowledge into a small metal box, and also to create a five kilogram "miniature ecological system" (601). By excluding Guan Yifan from this process, this final act on behalf of both Trisolaran and Human civilizations brings full circle the subversion of the Western humanist subject begun by Ye Wenjie's co-opting the power of the western white male to destroy civilization.

Here, Cheng Xin and Sophon, who are associated symbolically with Chinese and Japanese culture respectively, engage in the act of playing God by leaving a new universe endowed with pure knowledge and with pure nature, both detached forever from all of the cultural forces involved in their creation. This closing scene demonstrates that Cixin Liu's trilogy is a successful interruption to the tradition of Western science fiction because it grants China (via character associations) the same power as Western nations to create and to destroy in the Anthropocene. It seems a positive that Liu chooses to end on creation and not destruction.

Reading these novels as mediations in scale from their extrapolation beyond the boundaries of the Anthropocene (in the case of *Death's End*), to the close focus on China's fraught relationship to the environmental movement in the 1990s (in the case of *The Three Body Problem*), also raises questions about China's environmental responsibilities as its position in the global geopolitical power structure continues to grow. After the three remaining survivors leave earth to explore the vast and dangerous Universe, the image that ends the trilogy is of knowledge fading "into the darkness so, in this one-cubic-kilometer universe, only the little sun inside the

ecological sphere gave off any light" (602).[437] Inside the sphere, warmed by the sun, is a small fish, which "leapt out of a watery sphere and entered another, where it effortlessly swam between the green algae" (602). The last segments of *Death's End*, and especially this final image, serve as a fitting reversal of the massive scales of matter and energy that Liu explores throughout the trilogy. They also fit with another analogy that Liu introduces and sustains throughout the entire trilogy, that of human beings under impending extraterrestrial invasion occupying a similar position to that of insects in the human world.

Insects as a Common Symbol for the Collective Political Unconscious

Liu raises the idea that human beings would be as insects to the Trisolarans early in *The Three Body Problem*, but it is in the first demonstration to humanity of the power of the sophon near the end of the novel that the analogy is made most obvious. In the Battle Command Center, representatives from the now unified world powers gather to discuss the new reality that human communications and activities will no longer be free from the watchful gaze of the more advanced Trisolarans. It is at this moment that the Trisolarans use sophon technology to place a message into the visual field of all of humanity: "You're bugs!" (383).

> Liu transitions between the first and second novels by beginning *The Dark Forest* with an extended sequence of an ant crawling over the grave of Yang Dong, Ye Wenjie's daughter. As the ant moves across the gravestone, so too does a spider. The insect pair serves to reflect the new level of scale to be explored in the book – humans and Trisolarans are both represented as insects to the greater intelligences that exist in the

[437] Liu, *Death's End*, 602.

Universe.[438] The new intervention in scale may also reflect Francis Bacon's inductive methodology, which had a profound influence upon the development of the scientific method itself. The central analogy used by Bacon in attempting to describe his method is to the world of insects. As outlined by Laura Snyder, Bacon insisted that an epistemologist should:

> take a 'middle path' between the role of the ant, which merely collects empirical facts, and the spider, which merely spins thoughts out of his own rationality. In a famous Aphorism from the Novum organum, Bacon claimed that the scientist should be instead like the bee, which gathers pollen and then creates something new, the honey, from both what was external (facts) and his inner nature (ideas). (588)[439]

In all three cases, investigating the novum has involved recourse to the world of the insect; such scaled down analogies ground our connections to nature and may be used intentionally by science fiction authors to enhance the cognitive validity of the novums that their writing hinges upon. The triffids are compared in Josella's speech to the collective efficiency of ants and bees to show the weakness inherent in individually focused capitalist social organization, while Pilar's relationship with the bees is designed to offer posthumanist kinship and non-capitalist alternative alliances for the marginalized. Yet the insects in the *Three Body* trilogy offer the potential for mediation between the realms of the external world of facts and the

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[438] I read the ant and spider this way, because their relationship seems an intentionally close proximation of the problems contacting an extraterrestrial society across the vast expanses of space would entail (and that *The Dark Forest* engages with). The ant and spider "felt each other's presence but did not communicate" (15), with the implied violence that would result from such communication perhaps obvious given that the chapter then immediately transitions to Mike Evans engaged in communication with Trisolaris.

[439] See Laura J. Snyder, "'Lord Only of the Ruffians and Fiends'? William Whewell and the Plurality of Worlds Debate", *Studies in History and Philosophy of Science*, vol. 38, no. 3, Sept. 2007, pp. 588, web.

internal world of ideas. This is really the highest aim of the novum in science fiction—to advance the capacities for human intelligence without neglecting the importance of the political environments that allow people, and therefore minds, to flourish. Ecological thinking, based as it is in biological study of organisms and the interaction in their environments, shares with the novum this attention to a careful balance of forces.

Conclusion

This chapter has shown, by examining the minutia of the construction of the novum, the likely influences of space and environmental policy on Cixin Liu's *Three Body* Trilogy. The chapter also analyzed the tension between this novum and the characters to reveal a distinct environmentally focused subtext. Identifying such subtext invites the question of whether other work by Cixin Liu or other Chinese science fiction authors might be politically subversive or contain environmental messaging. Section I explored some of the distinguishing factors involved in the historical production of Chinese science fiction, and despite the historical prevalence of the extra-terrestrial contact novum in the history of science fiction, proved that the influence of Chinese political ideology gives this novum a unique shape. The chapter shows that further genre research on the novum as a conduit to national policy and politics will be useful. Recognition of the influence of ideology on the novum also allowed my close reading to reveal the environmental subtext that serves as undercurrent to the entire trilogy.

The chapter also uncovered several important theoretical ideas that might serve as interventions or revisions to how Darko Suvin's theory of the novum is applied in future studies of science fiction. In particular, the chapter demonstrated that Andrew Milner's criticism of

Suvin privileging cognition over historical and geographical considerations is a valid concern in science fiction scholarship, especially in the elitist project of selectively defining science fiction based on European-centric values. This begs the question: what could further study of the importance of the historical or the geographical to the novum reveal about how science fiction is classified? What texts, authors, and national state policies could be explored or compared?

In section II, this chapter explored the degree to which Chinese space policy from the 1990s to the present influenced the construction of the Trisolaran novum. By outlining the political tensions in China surrounding the development of the FAST radio telescope and Chinese satellite technology, as well as the author's well-known interactions with the Chinese science community, the chapter revealed that the Chinese national political imaginary had a large impact on the shaping of the novum. Assuming some dialogical movement however, further study could be done on the degree to which an author like Liu might in turn influence policy.

Section III showed that once the socio-politics behind the novum are made clear, the character interactions in that context leverage the environmental subtext into view. My reading of the critical posthumanist subtext surrounding Ye Wenjie also revealed that the trilogy poses a particular challenge to the humanist historical foundations of science fiction. Taken together, these readings demonstrate that the novum in science fiction remains the most important textual artifact to examine to unlock critical interpretations relevant to national environmental political ideologies. The chapter has also shown that subtext is important in how the novums of science fiction novels express the national political imaginary to readers, and that further research into the overlap between the political unconscious and the novum can be done.

Project Conclusion

"We live in an era in which the speculative and the material are so entwined that neither can be understood in isolation" (161).

– Sherryl Vint[440]

This dissertation project sought to address a perceived gap in interdisciplinarity between policy studies and literary studies, by asking what reading science fiction novels alongside national state policy documents might reveal. More specifically, I was curious to understand whether Darko Suvin's concept of a literary device unique to science fiction, the novum, could be linked in meaningful ways to the political discourses within nations during specific time periods. I theorized that national state policy is the primary force motivating the creation of the novum and set out to test the theory. In order to do so, and motivated by theoretical precedents set by Fredric Jameson, Arjun Appadurai, Lisa Cooke and others, I proposed the usefulness of the concept *national political imaginary* in defining the social force likely to have shaped the novum in those periods.

I am interested in the question of whether understanding each novum in relation to particular national state policies will impact future close readings of other science fiction novels. Is there a subtext surrounding each novum that demonstrates the subtleties of the development of environmental thought in the Anthropocene? Will exploring this subtext change the way the characters and their interactions with their environments can be understood? I propose that

[440] See Sherryl Vint, "Introduction: Science Fiction and Biopolitics", *Science Fiction Film and Television*, vol. 4, no. 2, Liverpool University Press, Oct. 2011, pp. 161–72, web.

exploring the relationships between each fiction's extrapolated future and each nation's social reality might reveal the entangled nature of life in the Anthropocene.

My research has demonstrated that dialogically reading literature with national state policy yields environmentally relevant context, even in cases when the popularity of those texts might have waned, or when scholarship has demonstrated a particular topical focus, as with John Wyndham's *The Day of The Triffids*. By first contextualizing Wyndham's novel in light of UK postwar oil policy, the chapter was able to apply the notion of energy unconscious (Yaeger, Szeman), as well as the concepts of the assemblage (Bennett) and intra-relation (Barad) to show how the characters and their interactions can still be instructive in understanding many current Anthropocene moments.

The dialogical readings undertaken throughout the project show that the national political imaginary can still be detected in texts in which bio-cultural practices are seemingly deterritorialized from national contexts (Heise). In exploring Margaret Atwood's *MaddAddam* trilogy for its potential satirical critique of American capitalist approaches to bioethics for example, my chapter showed the national political imaginary of Canada in the late 1990s was heavily influenced by a conflicted national bioethics policy discourse. Understanding the complicated nature of this discourse helped to shed new light on the conflicted tone of Atwood's trilogy. My research also found that ideas of alternative kinship (Haraway) and posthumanist environmental ethics (Braidotti) present in the *MaddAddam* trilogy reveal the importance of the concept of entanglement in the Anthropocene epoch.

Finally, this project has shown that dialogical reading can help identify the environmental significance of national state policy that might not always be readily apparent, as well as key socio-economic and regional differences motivating the environmental policies of

nations. For example, exploring the subtext surrounding the location of the Red Coast base in Cixin Liu's *The Three Body Problem* connected concerns over deforestation directly to Chinese space policy, while my examination of characters such as Ye Wenjie revealed China's power to disrupt narratives of Western hegemony and assumptions that capitalism will produce better environmental strategies.

In focusing on re-examining the role of the novum in science fiction, this project has contributed to movements in recent scholarship to explore the formal influences of culture, politics, and geography on texts, such as Andrew Milner's *Locating Science Fiction* (2012). The chapters have revealed that the novum of each text reflects in discernible ways the national political imaginary of nations during particular cultural moments. For example, chapter one demonstrated that the triffid novum in Wyndham's *The Day of The Triffids* was formulated against a backdrop of geo-political anxiety in the late 1940s UK about oil supply and fuel rationing. Chapter two traced clear links between the Craker novum of the *MaddAddam* trilogy, and the Canadian bio-cultural discourse in the late 1990s and early 2000s leading to the establishment of Bill C-13, the *AHRA.* Finally, chapter three proposed that the Trisolaran extraterrestrial contact novum is in part driven by the socio-political power exerted by China in relation to deforestation and space policy in the 1980s and 2010s respectively. Taken together these chapter findings demonstrate the novum is a clear conduit between imagined and material worlds, and a site of manifestation in science fiction for the political unconscious.

Due to the common tendency of science fiction texts to make use of the technique of extrapolation, the current trajectory of individual nations and of globalized society is often imagined in various future states. This project has shown that science fiction is a critical tool for understanding the wide variety of possible futures in the Anthropocene, and that the novum can

specifically be a clear starting point from which to begin explorations of the possible ideological positions of nations in particular historical moments. The project has also discovered that comparing and contrasting national state policy reveals an evolution in environmental awareness over time among science fiction authors, as well as differing attitudes towards the subject. For example, Wydham's concerns over sustainability were argued to be primarily subconscious, while Atwood's concerns about the path bioengineering is likely to put humanity on were argued to be conscious. The deeply cynical nature of Atwood's environmental concerns (not delivered without a sense of humour) were also shown to stand in sharp contrast to Liu's cornucopian visions of the power of technology to manipulate nature.

New historicist reading practices such as those this project is guided by, help ground science fiction concepts in material political discourse and show that fictional and factual texts connect through national political imaginaries. To me, this makes undertaking close reading in conjunction with the study of historical or contemporary policy a meaningful approach to literary studies. The project considers the subtext in operation around each novum in the fiction for its social and environmental immediacy. For example, my study of Chinese national state space policy relating to the construction of the FAST radio telescope was demonstrably connected to the regional politics of deforestation, which led to a more nuanced exploration of the search for the Red Coast base site in my close reading of *The Three Body Problem*. The success of applying the guiding principles of new historicism alongside close reading practice has helped me to produce original readings of the works of three widely read science fiction authors.

In order to generate useful insights from the unconventional bracketing of literary and policy studies, it was first necessary in each of the three chapters to explore the history of the national policies that I identified as significant in Britain, Canada, and China during the time

periods that the books were composed. After exploring some of the important aspects of each author's circumstances or potential influences, I then proceeded to engage in close readings devoted to understanding how the historical conditions in each of the nations informed each author's creation of a particular novum. My research demonstrated that these novums serve as crucial backbones to each of these science fiction stories; the triffids, the Crakers, and the Trisolarans in turn, are the devices carefully couched in a subtext through which the spectre of national policy can be detected.

The fact that the novum in all three texts can be linked in this way to policy, could offer other scholars a precedent for examining the novum in similar ways. The project also advances the value of interdisciplinary research by creating contact zones between the study of policy and the study of literature. It might even be the case that such a study might invite policy scholars to consider whether incorporating study of science fiction texts could help in some way predict the future direction particular national policy might take in relation to specific topics, or help to highlight how individuals might respond to future policy shifts.

My work has also invited closer scrutiny of Darko Suvin's theory about estrangement and cognition by exploring what exactly the implications of the "historical semantics" of the novum are.[441] As the chapters each show, those implications not only include the fact that novums might frequently connect to policies and the ideologies that drive them, but also the idea that the novum can show us just what exactly might have been "new" in each author's national political environment. My work also invites science fiction scholars to consider how the novum can uncover subversive ecological ideas in the fiction, perhaps in the policy, and certainly for how it might inform the national political imaginaries of the countries in question.

[441] Darko Suvin, *Metamorphoses*, 64.

Each chapter of the project also explored specific national policies that connect to concerns important to better understanding the Anthropocene. For example, exploring the geo-political historical context of oil in 1950s Britain involved understanding the government's policy of applying political pressure on oil rich states to establish beneficial trade and corporate hegemonies, as well as understanding regional tensions with Russia, and finally understanding the lasting impact of oil rationing on the UK populace. My close reading of *The Day of the Triffids,* demonstrated the triffids and the human characters reliance on the agential nature of oil for freedom and security. It is by juxtaposing the policy with the science fiction that I was able to argue that the national political imaginary of the UK in this time period was one motivated by clear tensions about oil: the difficulty and danger of obtaining it on the one hand, versus the ease of movement and safety it represented on the other. In this way the chapter contributes in spirit to Frederick Buell's call to "ask what we start finding when we cease living in oil as if it were our oxygen and look back on its histories – material, technological, social, and cultural" (275).[442] Overall, the chapter contributes to scholarship about the Anthropocene by demonstrating that concern about sustainability, a forerunner to more complex environmentalist thought, was already starting to inform the national political imaginary of the UK in the immediate postwar period.

In researching bio-cultural policy in Canada in the decade straddling the millennium, and using this knowledge to inform my close reading of Margaret Atwood's *MaddAddam* trilogy, my second chapter revealed that the Canadian political imaginary has been in part informed by knowledge about how changes wrought to the living biosphere are themselves a matter of

[442] See Fredrick Buell, "A Short History of Oil Cultures: Or, the Marriage of Catastrophe and Exuberance", *Journal of American Studies*, vol. 46, no. 2, Cambridge University Press, May 2012, pp. 273–93, web.

ecology. By focusing on bioethics in Canadian policy, and connecting them to Atwood's novum, I also demonstrated that the Canadian political imaginary of the 1990s defined itself in part against American approaches to bioethics. In my close reading, particularly of *The Year of The Flood* and *MaddAddam*, I also explored how characters like Toby formed complex alliances with non-human agents, as a form of alternative kinship (Haraway). I was then able to highlight differences and draw parallels between the alliances formed by Toby, and character's co-operative philosophies and entangled actions in *The Day of the Triffids*, particularly those of Bill Masen and Josella Playton. Comparing the two books in this way highlighted again the environmental subtext that coalesces around the novums in the books chosen for this project.

Where chapter one turned primarily to recent work in energy theory to understand the novum of *The Day of the Triffids*, I relied on eco-feminist theory and posthumanist theory to understand Atwood's books as sweeping critiques about the increasingly commodified world. I believe that chapter two also contributed in drawing attention to how the *AHRA* contributed significantly to the millennial Canadian political imaginary. I hope that this chapter makes a significant contribution in identifying how human-directed changes to the biology of living things is one of the harder to measure, and harder to regulate, aspects of life in the Anthropocene.

Addressing the socio-political in Cixin Liu's *Remembrance of Earth's Past* trilogy involved developing an understanding of regional variations in China of willingness to adhere to the *Environmental Protection Law*, as well as the socio-political intricacies of China's space policy initiatives. As Liu's novel trilogy was studied in translation for this project, it was also necessary to digress into the history of science fiction in China, as research on the subject in the English language is still sparse. Doing so allowed a close reading of the novels that highlighted

Liu's situating of Chinese characters at the center of the narrative in ways that displace the Euro-American subject.

I demonstrated in the chapter that these characters, particularly Mike Evans and Ye Wenjie, are clearly connected through the novum of the trilogy to environmental policy. By comparing my findings from my study of the policy to that of my close readings of Cixin Liu's novels, the Chinese political imaginary is shown as informed by China's rising global power, but also its sense of environmental responsibility. Perhaps most significantly, this project identifies the importance of considering the non-western national political imaginary in global environmental studies. The comparisons drawn between the national political imaginaries of all three nations demonstrate that study of the novum can be useful even when spanning long periods of time, and even when crossing large divides between socio-economic systems.

Future work in science fiction studies might consider the possible significance of national state policy on the formation of the novum specifically, in light of this project. The project has contributed to understanding of the degree to which John Wyndham's editorial practice might have been shaped by his geo-political knowledge and has also revealed that opportunities exist for more biographical research into the political writings, affiliations, or even government involvement of authors. I believe that given the importance of the novum as a literary device unique to science fiction (Suvin), the implications for genre theory are also significant. The fact that certain properties of the novum overlap with some principles of Fredric Jameson's theory of the political unconscious or Arjun Appadurai's notion of ideoscapes implies that the novum is a suitable point of entry into discussions of the ideological foundations of texts. Future work might also be done in exploring the pedagogical value of studying science fiction and policy simultaneously.

The opportunities are also present for more general considerations of how the historical discourses of national state policy have influenced science fiction authors more broadly, even in cases where policy has not had a clear impact on the formation of the novum specifically. Though this project has focused on the influence of national state policy on science fiction novums, I also believe that studying the influence of global policy on the novums of more recent texts would also be fruitful. There is a diverse global canon of science fiction with the potential for texts to be re-examined, or studied for the first time, in an interdisciplinary way, through a combination of traditional close reading practice and historical research into national state policy.

The project also points to the need for cross-cultural comparison in the study of science fiction, that allows for difference not only in the original languages of texts, but of socio-economic systems. Including study of Cixin Liu's trilogy in this project proved to be invaluable in identifying the possible Westrocentric limitations inherent to the study of English language literature. Though in comparative literature studies of science fiction across linguistic boundaries is not uncommon, the practice of occasionally including translated works in English literature survey projects has the potential to make research more dynamic.

This project also set out to use the findings from the research into policy and the ecocritical readings of the novels to answer some broad questions about life in the Anthropocene. These questions include how individuals, nations, and the global community can know, relate to, and address the Anthropocene. Throughout the three chapters, I have tried to advance some potential answers to some of these questions that I believe will help spread some awareness of the multi-faceted shape of the Anthropocene. My research findings indicate that the Anthropocene is best recognized and understood when smaller matters of scale are shown to be

connected to larger ones. For example, knowing the Anthropocene is when individuals can see that anxiety over securing oil in 1950s Britain, fear of corporate control of genetic material in 1990s Canada, or despair over deforestation in China are all entangled components making up the Anthropocene and important driving forces in determining willingness or entropy about taking action.

When it comes to finding alternative opportunities to relate to the Anthropocene, I have demonstrated that reading literature provides them. More to the point, each chapter builds on my overall argument about Darko Suvin's concept of the novum and shows that the novum is potentially one of most important ways that science fiction authors reveal to readers what their own lived experiences of the Anthropocene might have been, and therefore provide an indirect, but powerful way for readers to relate to component parts of what make up the enormous scale of the Anthropocene.

Finally, the project acknowledges that addressing the Anthropocene is not an easy undertaking, demonstrating the complexities of the challenges that humanity has faced, faces, and will face in the future. This project has also taught me that though each individual understanding their own small part in shaping the Anthropocene is a small first step to positive environmental change, that needs to expand to the reimagining of relationships and society, the forging of unconventional kinships, and the development of scales of concern that reach beyond individual lifespans.

I hope that this project's contribution to interdisciplinary environmental study, close readings revealing historical political nuance, and explorations of Darko Suvin's concept of the novum all offer useful contributions to scholars, now, or in the uncertain future.

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