ABSTRACT

Title of Document: SPECULATIVE SURVIVAL: AN ECOFEMINIST ANALYSIS OF CANADIAN WOMEN'S SCIENCE FICTION

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This dissertation explores the central Canadian theme of survival in recent science fiction by women, taking up the questions of nature, community, and ecological disaster. I argue that while midcentury science fiction coalesced around fears of nuclear fallout, contemporary Canadian women science fiction writers, such as Atwood, Gotlieb, Vonarburg, and Hopkinson, imagine survival amid the specter of environmental apocalypse. My dissertation focuses upon survival not from the perspective of conventional masculine adventurers, but from that of women and non-human nature, oft figured as feminine, who have conventionally been the objects of colonization and experimentation by the scientists and explorers. Within the work of Canadian women science fiction writers I identify maternalist politics, ecofeminist ethics of care, and post-colonial female protagonists. In addition, I argue that these

authors posit the possibility of ecofeminist science, derived from Indigenous scientific literacies, and re-embedded in apocalyptic future landscapes.

This study extends an analysis of the central Canadian theme of survival to include science fiction. Despite substantial analysis of U.S. and British science fiction, little scholarly attention has been paid to the deployment of the genre by Canadian writers. Such attention is overdue because, as Douglas Iverson asserted in 2002, “the rapid development of Canadian SF over the past few decades is one of the most exciting developments within Canadian literature” (xxvii). I would also argue that Canadian texts, in turn, contribute some of the most exciting developments within the genre of science fiction. The works analyzed in this dissertation span the 1980s to the 2000s, the earliest being Élisabeth Vonarburg’s *Le Silence de la Cité* (1981) and the most recent Phyllis Gotlieb’s *Birthstones* (2007).

SPECULATIVE SURVIVAL: AN ECOFEMINIST ANALYSIS OF CANADIAN WOMEN'S SCIENCE FICTION

By

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Dedication

For Barrett, Callum, and Dougal,

for my mother, Jo Mayor,

and for my advisor, Jane Donawerth.

Thank you for believing in this project and in me.

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I am very grateful to so many people who have supported me in my academic work, and the writing of this dissertation.

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Introduction: Survival and Canadian Science Fiction

This dissertation explores the central Canadian theme of survival in recent science fiction by women, taking up the questions of nature, community, and ecological disaster. I argue that while midcentury science fiction coalesced around fears of nuclear fallout, contemporary Canadian women science fiction writers, such as Atwood, Gotlieb, Vonarburg, and Hopkinson, imagine survival amid the specter of environmental apocalypse. My dissertation focuses upon survival not from the perspective of conventional masculine adventurers, but from the viewpoint of women and non-human nature, who have conventionally been the objects of colonization and experimentation by scientists and explorers. Within the work of Canadian women science fiction writers I identify maternalist politics, ecofeminist ethics of care, and post-colonial female protagonists. In addition, I argue that they posit the possibility of ecofeminist science, derived from Indigenous scientific literacies, and re-embedded in apocalyptic future landscapes.

Four major conceptual areas that inform this dissertation are ecofeminism, science fiction theory, feminist narrative theory, and postcolonial theory. Ecofeminism, a term first coined in 1974 by French theorist Françoise d'Eaubonne in *Le Féminisme ou la Mort*, is a diverse movement that is best characterized as a philosophy and methodology linking environmental and feminist concerns to challenge what ecofeminists argue is the interrelated domination of both. Science fiction theory is the critical study of the genre of science fiction and provides a framework for the analysis of these texts. My own study is in conversation with that

of other science fiction scholars, and informed by theories and expectations of the genre, including the analysis of Canadian science fiction and feminist science fiction criticism, in particular. Feminist narrative theory, focusing on aspects of the narrative, such as character and plot, and the gendered expectations and implications that accompany them, also inform my analysis; for example, I interpret Vonarburg's female travelers as alternative heroes who rewrite and even queer the archetypical quest romance. Finally, postcolonial theory is also a rich and important area of critical theory that informs my work. Postcolonial literary theory critiques the colonial exploitation of people and land and the continued influence of the experiences of colonialism, including the influences upon culture and literature. Ecofeminism, feminist narrative theory, and postcolonialism all pose challenges to patriarchal and colonial discourses of power and control, and through their challenges to hegemonic power and analyses of the domination of people and land, ecofeminism and postcolonialism are especially in conversation with each other.

The Genre of Science Fiction and Environmentalism

After World War II it becomes possible to see a wide-spread injection of environmental preoccupations within science fiction in general. Despite the long history of the modern Western environmental movement (which can be traced back to the nineteenth century and thinkers such as John Muir and Henry David Thoreau), it is during this historical moment that the impact of nuclear weapons and human patterns of consumption became increasingly clear. Thus, science fiction and utopian

and dystopian literature take up the questions of human society's values and their impact upon the ecology and the planet.[1]

In this post-war era, environmental science fiction abounds, gaining impetus in the 1960s and continuing as a growing body of science fiction today. For example, the English science fiction writer James Graham "J. G." Ballard (1930 – 2009) published *The Drowned World* in 1962 and *The Burning World* in 1964, and the American Harry Harrison published *Make Room! Make Room!* in 1966, a novel that depicts food and resource scarcity and overpopulation. The popularity of environmental themes continued into the 1970s, when Harrison's novel became an award-winning film and cult classic, *Soylent Green* (1973), starring Charlton Heston, and Ernest Callenbach published *Ecotopia: The Notebooks and Reports of William Weston* (1975), to give just a couple of examples.

The proliferation of dystopias has accelerated in recent decades. Rather than utopian images of potential harmony with nature, suggested, for example, in the utopia within Marge Piercy's *Woman on the Edge of Time* in 1976 (which poses both a dystopian and utopian future), we are increasingly offered glimpses into an imperiled future, where current practices have led to environmental crises on a catastrophic scale. For example, Ursula K. Le Guin's 1991 short story "Newton's Sleep" imagines the devastation of the earth to the extent that a group of elite families

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[1] An intriguing U.S. example is B.F. Skinner's *Walden Two,* 1948. This influential novel is named after early environmentalist Thoreau's *Walden*, a series of essays about an individual man's retreat and immersion into nature. Skinner's *Walden Two* is concerned with establishing a self-governing and self-sufficient community.

leave the planet altogether; in 1994 U.S. science fiction writer Allan Folsom published the best seller, *The Day After Tomorrow,* in which the world experiences melting ice caps, flooding, and freezing weather; and U.S. writer Kim Stanley Robinson's recent science fiction novels—*Forty Signs of Rain* (2004), *Fifty Degrees Below* (2005), and *Sixty Days and Counting* (2007)—are set in the U.S. capital amid rising sea levels and the consequences of climate change. These are just a few examples of the robust body of texts within science fiction that focus on the environment and climate change. Several classic works are captured in Kim Stanley Robinson's 1994 anthology *Future Primitive: The New Ecotopias,* and in 2007 a new term was coined—"cli fi" (from climate science fiction).[2]

The contemporary concerns about real climate change and environmental apocalypse naturally fuel the centrality of such themes in science fiction, just as real life fears of nuclear war or excitement about space travel have informed it in the past. However, Eric Otto and Patrick D. Murphy argue that science fiction and environmental nonfiction share not only thematic concerns, but also literary strategies. Key to each, observe Murphy and Otto, are estrangement, extrapolation, and wonder. Otto outlines how the strategies of cognitive estrangement and novum (first documented by Darko Suvin's analyses of science fiction) are common to environmental texts, citing the example of Rachel Carson's quintessential environmental treatise, *Silent Spring* (1962):

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[2] The term "Cli-Fi" is first attributed to blogger Dan Bloom (see Brian Merchant), and was subsequently adopted by Margaret Atwood, who used it in a tweet in 2011.

> Into a pastoral Anytown, USA, Carson introduces "a strange blight," the result of "Some evil spell" that kills everything in its path […] Carson ultimately connects the anomalous calamity, the *novum*, of her imagined town to everyday procedure in real towns across the country. Making the connection obvious she writes, "No witchcraft, no enemy action had silenced the rebirth of new life in this stricken world. The people had done it to themselves" (3). To paraphrase science fiction scholarship on cognitive estrangement, in "A Fable for Tomorrow" the familiar state of affairs in the small-town American story is narratively interrupted to expose the danger of an otherwise unnoticed custom: the indiscriminate, seemingly obligatory use of insecticides. (8-9)

In addition to cognitive dissonance, extrapolation is also a tool of environmental literature and science fiction, alike. Otto asserts that "Extrapolation is one of environmentalism's favored critical strategies. Connecting the present *now* to a possible *then*, [the conservationist Fairfield] —Osborn studied the practices of his contemporary society and projected these strategies into the future. Carson did the same, as did the Club of Rome in its 1972 report *The Limits to Growth*, an influential scientific effort to model the long-term consequences of population and economic growth" (11). Indeed, the extrapolation of current practices and impact upon the environment is standard procedure in environmental studies, with projections for various aspects of pollution and climate change, ranging from the carbon dioxide concentration in the atmosphere (a pivotal point for scientists, the U.N., and other groups was 400 parts per million) to sea-level rise predicted by the National Oceanic and Atmospheric Administration and many other international organizations. Finally,

in terms of common strategies between environmental literature and science fiction, Murphy and Otto claim that both rely upon a sense of wonder at the natural world—be it a transformative personal experience with nature or the wonder inspired by fantastic landscapes and alien species of another world.

Eric Otto's insistence on wonder as key to environmental and science fiction texts leads us back to feminist teachings about difference. Says Otto:

> Environmental philosopher Kathleen Dean Moore believes that for us to experience wonder at the sight of crabs or geological features, to find in them strength or reawakening surprise, we must be receptive to the stories they tell, and thus be willing to listen and perceive without human egotism or possessiveness. Wonder thus leads to what might be called an *ethics of ecological difference*, analogous to feminist philosopher Luce Irigaray's "ethics of sexual difference," in which wonder is the quality that "beholds what it sees always as if for the first time, never taking hold of the other as its object. It does not try to seize, possess, or reduce this object, but leaves it subjective, still free." (12)

This observation is actually somewhat ironic within the tradition of science fiction literature, given its long trajectory of objectifying particularly women, natives, and the land. In fact, I would argue that until feminist interventions into the genre—especially in the 1970s—science fiction heroes were very much involved in seizing, possessing, and reducing the objects within their texts, including women, non-human

nature, and Othered[3] humans or aliens, which is why an eco*feminist* analysis is so necessary.

Women and Nature

In conventional science fiction, women, like the environment, have been objects to be possessed or conquered. The exploration narratives of much early science fiction, for example, follow the pattern of colonial voyages of discovery, revolving around masculine explorers who survive amidst the harsh elements, or among aggressive natives. Frequently the pursuits of conventional science fiction protagonists for geographical mastery or scientific knowledge—for they are often explorers or scientists—are overlaid with sexual connotations. Nature needed to be explored, charted, or dissected and understood, and was invariably portrayed as

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[3] Difference and otherness within science fiction has historically been dominated and objectified, as it has within society. Feminist philosophies have often centered on difference and how to maintain difference without objectifying otherness (for example Irigaray and Gilligan, as well as standpoint feminists such as Collins and D. Smith). Feminist science fiction writers have created images of societies based upon difference or the erasure or exclusion of difference. Some feminist science fiction writers have even attempted to "solve" the problems of patriarchal objectification by creating all-female societies (such as Wittig's *Les Guérillères*), or by erasing differences between sexes and gender roles (for example Piercy's *Woman on the Edge of Time*), or by creating characters who are hermaphrodites (as in Le Guin's *Left Hand of Darkness*).

feminine.

In 1972, Sherry Ortner suggested that “woman is being identified with, or symbolically associated with, nature, as opposed to man, who is identified with culture,” and women are viewed as “closer” to nature and having a “more direct connection” (12). In 2000, Stacy Alaimo noted “Feminism has long struggled with the historical tenacious entanglements of ‘woman’ and ‘nature.’ Mother earth, earth mothers, natural women, wild women, fertile fields, barren grounds, virgin lands, raped earths, ‘a woman in the shape of a monster/ a monster in the shape of a woman,’ the repulsively breeding aliens of horror films – these creatures portray nature as female and woman as not exactly human” (2).

Ecofeminists, in particular, argue that patriarchal societies conceptualize the land as women and women as nature, and that this construction and conflation is part of what facilitates the devaluation of both. According to Karen Warren, “Ecofeminism is the position that there are important connections between how one treats women, people of color, and the underclass on the one hand and how one treats the nonhuman natural environment on the other” (*Ecofeminism* xi). Ecofeminist Val Plumwood also argues against all hierarchies of oppression, including those that place men above women and humans above nature, which she sees as inherently connected through hierarchical thinking. “What makes ecofeminism distinct,” Plumwood asserts, “is its insistence that nonhuman nature and naturism (i.e., the unjustified domination of nature) are feminist issues” (*Feminism* 4). Plumwood emphasizes inter-species connections and dependencies, as well as the connections between forms of domination. In particular, in the case of colonialism one can clearly see how the

domination of land and people have gone hand in hand. So, while some ecofeminists argue for conceptual links between women and nature, others point to material connections between their domination, and others still to the differential impact of the environment upon different groups of people. For example, the environment is particularly important to women, some materialist ecofeminists have argued, because the effects of its exploitation and destruction have gendered consequences. Karen Warren, one of the most prominent ecofeminists, demonstrates how women and children are most seriously affected by poverty, how women-headed households are poorer, and how disasters caused by deforestation, desertification, soil erosion, and other environmental deterioration affect to a greater degree lives of women, children, and the elderly.

It bears noting that some ecofeminists have argued for intrinsic rather than socio-cultural connections. This has been an important division within ecofeminism. Ecofeminist theorist Victoria Davion has even argued that the essentialist strands within the movement cannot be called ecofeminist at all, but are rather, "Ecofeminine" (22). Davion argues against women having an innately privileged point of view or special connection to nature in the following way:

> If this special understanding is the result of oppression, we should expect it to be skewed. Even if it is not skewed, we must ask whether there are other ways to get it. This is a crucial question because if there is no other way to get it, we risk saying that women's oppression is necessary to create the opportunity to gain knowledge needed to solve the ecological crisis—clearly an untenable *feminist* position. Once again, such crucial questions concerning sex and

> gender are left vague, and, problematically, women's roles under patriarchy are glorified. (23)

Thus Davion argues that essentialist ecofeminists, who celebrate what they see as an intrinsic connection to nature, essentialize gender differences in a way that is antithetical to feminist thought.

Indeed, the majority of ecofeminist thinkers, like Plumwood, are engaged in challenging hierarchies of domination and would find an approach that privileges women over men to reinscribe hierarchical thinking and thus be at odds with ecofeminism. Susan Buckingham, in "Ecofeminism in the Twenty-First Century," argues:

> [E]ssentialism is often used as a tool to mobilize a group around a perceived characteristic that sets it apart, and, certainly, cultural ecofeminism (prioritizing essentialist arguments) did so. Its strength was to demonstrate the possibility of a way of thinking and being which reversed the normal hierarchy in which men stood at the peak; however, little academic environmental thinking is currently framed in this way. (147)

The ecofeminist analysis I provide in this dissertation is based upon constructivist analyses of philosophical and material links between women and non-human nature, and between violence against nature and that against women, and presumes no inherent connections that would transcend cultural conditions.

Feminist Environmental Science Fiction

In the twentieth century "a strong and vociferous wave of feminist utopias that grew out of the women's liberation movement in the 1970s and intensified in the

1980s and 1990s [and] feminist dystopias and s[cience] f[iction] narratives, [along with] ecological concerns, nourished by a growing concern about alternative energy sources, rejuvenated utopian literature" (Mohr 25). The two movements of feminism and environmentalism have been intertwined for many reasons, including the intersectional challenge to hierarchies of domination that is part of ecofeminist philosophy. Ecofeminist Greta Gaard has claimed, "no attempt to liberate women (or any other oppressed group) will be successful without an equal attempt to liberate nature" (qtd. in Otto 74-75). Often, too, the fact that women do the majority of work caring for the next generation leads them to care about the future environment. The role of care-giver also leads women to experience closely the devastating effects of pollution upon children, such as childhood asthma, as well as experiencing the effects of the environment upon their own reproductive health, ability to conceive, and chance of having children without birth defects.

As science fiction critic Lisa Yaszek has noted, such "maternalist politics" inform the concerns of women science fiction writers like Canadian Judith Merril, after the atomic bombing of Hiroshima and Nagasaki, in 1945 ("Stories"). Though fears of the bomb have subsided since the end of the Cold War, concerns about radiation and pollution continue, fueled by environmental devastations and nuclear accidents, like the nuclear plant disaster in Fukushima, caused by an earthquake and tsunami in 2011. In addition, there are less spectacular problems affecting women, children, and reproductive health due to slowly increasing toxicity of the environment and food. According to Dr. Bruce E. Johansen, who has published extensively on environmental issues, specifically as they relate to American Indians, the Québec

Health Center recorded a concentration of 1,052 parts per billion (ppb) of PCBs in Arctic women's milk fat (483). The significance of this figure can be understood if we note that the United States Environmental Protection Agency safety standard for edible poultry is 3 ppb, and fish, 2 ppb, and at 50 ppb soil is often considered to be hazardous waste (483).

As science fiction critic Dunja Mohr notes, environmental concerns are repeatedly articulated by feminist science fiction writers, in an era of global pollution, and have intensified since the 1980s (25). Examples of environmental feminist science fiction of influence in this period include Sally Miller Gearhart's *The Wanderground* (1979), in which women flee from the cities that the men inhabit and create peaceful, separatist communities for themselves in the hills, where they live in harmony with nature. In 1987, *Dawn,* the first in U.S. writer Octavia Butler's collection, *Lilith's Brood,* was published. It imagines an earth almost entirely destroyed by humans, who have also almost destroyed themselves. The few human survivors are kept aboard an alien ship while the interplanetary visitors work to restore the world to make it inhabitable once more, and to retrain humans so they can live there without their technology. U.S. science fiction writer Judith Moffett's *The Ragged World* (1991) has echoes of *Dawn,* for it similarly requires aliens' environmental intervention on behalf of the planet. In *The Ragged World,* after the humans fail to make progress towards cleaning up their world, the aliens take drastic measures and even sterilize humans to halt the environmental destruction. British writer Nicola Griffith published her Nebula award-winning environmental science fiction novel *Slow River* in 1995. Science fiction critic Susan Bernardo writes of

Griffith's protagonist, Lore, and Octavia Butler's Lauren, from *Parable of the Sower* (1993): "Each woman recreates society and learns from those in her group, non-human animals and the broader natural environment as she tries to shape a more positive world" (59).

The works by Canadian women writers analyzed in this study span the 1980s to the 2000s, the earliest being Élisabeth Vonarburg's *Le Silence de la Cité* (1981) and the most recent Phyllis Gotlieb's *Birthstones* (2007). My analysis of Canadian women's science fiction uses an ecofeminist framework to reveal and analyze the intersections of racism, sexism, and social inequalities as related forms of domination, both of women and nature. While critic Dunja Mohr and others have observed that "many feminist utopias take a strong ecological stance" (25), an ecofeminist analysis of these texts reveals that the relationship is not so casual and that the patriarchal and hierarchical paradigms critiqued by (eco)feminists are the same structures that oppress and exploit both women and nature.

Canadian Literature and Survival

In 1972, when Margaret Atwood published her thematic guide to Canadian Literature, she noted the number of animal stories and dead animals in stories, and claimed that the main preoccupation in Canadian literature is "hanging on, staying alive." This central theme has a variety of iterations, from the physical endurance of settlers in a harsh environment, to the religious, literary, and linguistic survival of Canadian culture. As Atwood explains:

> The central symbol for Canada—and this is based on numerous instances of its occurrence in both English and French Canadian literature—is undoubtedly

> Survival, la Survivance. […] it is a multi-faceted and adaptable idea. For early explorers and settlers, it meant bare survival in the face of "hostile" elements and/or natives: carving out a place and a way of keeping alive. But the word can also suggest survival of a crisis or disaster, like a hurricane or a wreck, and many Canadian poems have this kind of survival as a theme; what you might call "grim" survival as opposed to "bare" survival. For French Canada after the English took over it became cultural survival, hanging on as a people, retaining a religion and a language under an alien government. And in English Canada now while the Americans are taking over it is acquiring a similar meaning. (32)

Thus Atwood's analysis itself is part of the project of survival she describes, for she attempts to provide a sense of Canadian national literary characteristics, particularly in the face of literary influences from England, America, and France.

Furthermore, she argues for the psychic and cultural necessity of one's own national literature as part of personal as well as cultural survival:

> What a lost person needs is a map of the territory, with his own position marked on it so he can see where he is in relation to everything else. Literature is not only a mirror; it is also a map, a geography of the mind. Our literature is one such map, if we can learn to read it as *our* literature, as the product of who we are and where we have been. We need such a map desperately, we need to know about here, because here is where we live. For the members of a country or a culture, shared knowledge of their place, their here, is not a luxury but a necessity. Without that knowledge we will not survive. (18-19)

In addition, the importance of cultural survival resonates at the linguistic level for the French-speaking minority in Canada. Élisabeth Vonarburg writes science fiction in French, and about Québécois character, and insists that "cultural survival is a big, big part of an individual survival, as it is one of the main structural principle[s] of any society. Unmoor the society culturally and the individual, adrift, often unravels" (E-Mail to the author).

In her literary guide, Atwood astutely articulates several national themes that are reflected in this study, including the centrality of nature to Canadian Literature; however, what is most striking as one (re-)reads *Survival* in 2013 is the complete and conspicuous absence of science fiction from her discussion of the national literature. At the time of the publication of *Survival*, this omission meant the neglect of a sizable body of work, for science fiction was indeed being written in Canada, and had been since the nineteenth century.[4] Today the failure to acknowledge science fiction as a component of Canadian literature would be a glaring oversight because, while science fiction may originally have been identified as a genre within British and American literature, Canada has become an important producer of science fiction texts. In fact, Canadian science fiction has drawn international attention since the 1980s, when William Gibson published *Neuromancer* (1984), a seminal novel in the subgenre of cyberpunk, and Atwood herself published her first science fiction novel, *The*

[4] James De Mille's novel *A Strange Manuscript* is a pioneering work of Canadian science fiction that was published in 1888.

Handmaid's Tale (1985), to international accolades.[5] This was also precisely the time when feminist and environmental influences were intensifying and shaping the genre, according to Mohr.

This dissertation addresses the gap in Atwood's earlier survey of Canadian literature and extends an analysis of the central Canadian theme of survival to include science fiction. Despite substantial analysis of U.S. and British science fiction, little scholarly attention has been paid to the deployment of the genre by Canadian writers. Such attention is overdue because, as Douglas Iverson asserted in 2002, "the rapid development of Canadian SF over the past few decades is one of the most exciting developments within Canadian literature" (xxvii). I would also argue that Canadian texts, in turn, contribute some of the most exciting developments within the genre of science fiction.

Canadian Science Fiction

The theme of survival that Atwood identified as central to other genres of Canadian literature seems to recommend itself within Canadian science fiction, too. In *Canadian Science Fiction and Fantasy* (1992), critic David Ketterer, perhaps

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[5] *The Handmaid's Tale* won the Canadian Governor General's Award the year of its publication, and the inaugural British Arthur C. Clarke Award for science fiction in 1987, and it was nominated for the U.S. Nebula Award for science fiction. The novel was also nominated for international awards, including the Booker Prize for literature within the Commonwealth, and the Prometheus Award for libertarian science fiction.

influenced by Atwood's earlier text, suggests a recurring question within Canadian science fiction is "How long will we survive?" (147).[6] Indeed, the question seems especially apropos within a genre that encompasses dystopian, apocalyptic, and post-apocalyptic fiction. In turn, these sub-genres, and particularly dystopian fiction, seem fitting for the Canadian imagination, if we are to believe Margaret Atwood, who claims of Canadian literature in general that "Canadian gloom is more unrelieved than most and the death and failure toll out of proportion" and argues that "Canadians show a marked preference for the negative" (*Survival* 35).

John Robert Colombo opens his anthology of Canadian science fiction, *Other Canadas* (1979), with the question he was often asked: "Canadian science fiction and fantasy—is there any?" (1). Colombo answers, "contrary to what most people think, activity in this area has been extensive" (1). Despite Colombo's claim, David Ketterer writes in his critical essay within the same anthology that "the American domination of the science-fiction field is almost total" (331). A little over a decade later, in 1992, when Ketterer published *Canadian Science Fiction and Fantasy,* his analysis of Canadian contributions has changed. He surveys Canadian science fiction since 1839, and identifies 1984 as a watershed year. The prominence of U.S. science fiction authors in 1979, when Ketterer is writing his earlier essay, can perhaps be explained

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[6] Ketterer's study encompasses examples of Canadian science fiction from the nineteenth century to the 1990s. He poses this question within his section on international Canadian science fiction, including writers William Gibson, Robert Charles Wilson, Élisabeth Vonarburg, and Esther Rochon, and as he opens his discussion of Margaret Atwood's *The Handmaid's Tale*.

not by a lack of Canadian science fiction writers or readers, but by a lack of venues for their stories (this seems true of not only science fiction but Canadian literature in general, for example, Atwood writes about reading British, American, and French literature but seldom coming across iterations of Canadian literature either in her own reading or as part of the curriculum at school (*Survival* 18)). Perhaps most notably, there is an absence of the kind of pulp magazines that characterized U.S. science fiction of the 1920s and 1930s, and precipitated what has become known as the "Golden Age" of science fiction, beginning in the late 1930s and ending in the 1940s.[7] While U.S. science fiction was invigorated by the proliferation of pulp magazines, Ketterer notes that "the science fiction and/or weird fantasy magazine has been and still is virtually non-existent in Canada" ("Canadian Science Fiction" 327).

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[7] Asimov, Waugh, and Greenberg's anthology of "Golden Age" science fiction short stories focuses on those from the 1940s, and Asimov defined the "Golden Age" as beginning in 1937 and ending in 1950, when John W. Campbell, Jr. took over as editor of *Astounding Science Fiction* (Jones). However, John Clute and Peter Nicholls, editors of *The Encyclopedia of Science Fiction* (1979), identify the "Golden Age" as 1938 to 1946. Science fiction writer Robert Silverberg argues that the "golden age" of science fiction was really the 1950s, though he acknowledges that the historic period denoted by the phrase precedes that decade, stating that "historians of science fiction often speak of the years 1939–1942 as 'the golden age'" (n.p.), and giving yet another span of years that differs from Asimov's, and Clute and Nicholls'.

The exception to Canada's dearth of pulp fiction, as Ketterer and others have noted, was during a ban on the import of U.S. pulp publications,[8] which caused "some compensatory activity" and a handful of short-lived science fiction magazines in the early 1940s ("Canadian Science Fiction" 327). Thus it is clear that there was an audience for pulp science fiction in Canada, but one that was fed on imported U.S. publications. It is therefore not surprising that Canadian science fiction frequently incorporated dystopian plots in which the country is engulfed by the U.S. or otherwise destroyed by its proximity to its southern neighbor. Within what Ketterer saw, at the time, as limited Canadian science fiction, he noted a prevalence of "catastrophe or end-of-the-world theme" ("Canadian Science Fiction" 332) and near future political thrillers, and of the latter he asserts: "By far the most popular basis for this kind of book is Canada's anxiety and paranoia about the elephant next door — fear of being taken over completely or fear that action taken against America by her enemies will spill over into Canada" ("Canadian Science Fiction" 330-31). The threat the U.S. posed to Canada was not only a thematic concern, but at a meta-level a threat to the literature itself, as demonstrated by the brief flourishing of the Canadian pulps during the absence of U.S. publications, and their demise in the face of U.S. competition.

Though he does not initially imagine science fiction a genre fitted to the Canadian imagination, Ketterer states that "Canadian literature generally and science fiction do share one salient characteristic: a respect for the pressure of an environment

[8] A variety of magazines were banned as "luxury" items under the War Exchange Conservation Act of 1940.

which is often foregrounded" ("Canadian Science Fiction" 327). Indeed, the environment has always been part of the Canadian story—from the literature of settlement in an inhospitable northern climate to the narratives of small-town life in distinctly regional and rural Canada. In science fiction, too, the environment is central: from the exploration of new lands in early narratives of voyages, to imagining technological mastery or displacement of nature in future metropolises, to the terraforming of planets, it is often part of the plot. Yet, Ketterer argues that within science fiction the attitude towards nature is an American one:

> the basic shape and nature of the genre is, in many ways, an expression of a particularly aggressive American attitude towards nature. No doubt many of the attitudes and actions taken in the course of extending the frontier and subjugating landscapes were undesirable, but the guiding "ideal" of "conquering" the unknown is at the heart of science fiction. ("Canadian Science Fiction" 327)

Interestingly, B.F. Skinner's classic U.S. novel *Walden Two,* mentioned earlier, features a Canadian character, Alex Therien, who is a simple woodcutter, at home in nature. This would seem to reinforce Ketterer's claim that the U.S. has a more aggressive attitude to the environment, and suggests perhaps that even U.S. writers imagining a utopian relationship with the land might look to Canadians, and note a different and survival-based relationship with nature (as suggested by the simple wood cutter). In fact, while Atwood suggests that in Canadian literature the Indian is seen as a "noble savage" and "one of nature's children" (*Survival* 92), it is possible that within the U.S. imagination the Canadian is viewed in that way. What Ketterer

fails to consider, however, is that the aggressive "conquering" may not be simply a national characteristic, but one that is also intricately bound up with gender.

The application of ecofeminist analyses to Canadian science fiction is particularly compelling because, as Ketterer, Atwood, and others have argued, nature is central to Canadian literature. With an ecofeminist approach, it is possible to counter Ketterer's argument that Canadian temperament does not lend itself to science fiction because it lacks the American aggression. In fact, such lack of aggression positions Canadian science fiction well for contributing to contemporary science fiction, which often has an environmental bent—that is, an interest in caring for, rather than dominating, the environment. As a genre that looks to the future, science fiction has become a crucial site for the expression of environmental anxieties, with authors imagining the fallout from our current trajectory. In a Canadian context, therefore, I will argue that the question of survival no longer asks if an individual will survive against the elements (as in Atwood's examples of early settler narratives) but rather asks how long *we,* as a community, will survive, and how long our planet will survive.

Canadian Women Science Fiction Writers

In this dissertation I analyze the work of some of the most prominent and prolific contemporary Canadian women science fiction writers. Male Canadian science fiction writers also make important contributions to the field (for example, Lawrence E. Manning, 1899-1972, exhibits in his writing some of the first strong conservation messages in the genre as early as the 1930s), but as part of a necessary process of circumscribing the project I chose to delimit my research to women

science fiction writers for a few important reasons. First, women science fiction writers offer a counterpoint to the masculine adventuring and aggression towards nature, which critics such as Ketterer note is typical of U.S.-based approaches. Second, women science fiction writers in Canada—and sadly elsewhere, too—are most in need of critical attention. Science fiction, a genre Ketterer even characterises through its aggression to nature, has also been hostile to women, in both its treatment of female characters and its exclusion of women authors. Many historians of science fiction have ignored women's contributions to the genre. For example, Joan Donawerth has documented some of the important and prize-winning contributions of women writers to pulp magazines, even as several historians claimed women didn't write for them ("Illicit Reproduction" 20); in the same essay, Donawerth points to the misogynistic comments about women's contributions from editors. Too often the field of science fiction is understood in terms of the contributions of male authors, and popular audiences familiar with Isaac Asimov, Robert Heinlein, Arthur C. Clarke, Philip K. Dick, and other well-known writers have yet to pick up similarly important works by Ursula K. Le Guin, or Marge Piercy, for example. And, finally, by approaching Canadian science fiction through the lens of women writers, I am able to consider survival in terms beyond the individual masculine questing protagonist—particularly communal survival, and including survival of non-human nature.

I focus here upon four central women writers of Canadian science fiction: Phyllis Gotlieb, Margaret Atwood, Élisabeth Vonarburg, and Nalo Hopkinson. I chose these writers for their literary contributions to the genre, for their popularity, and for their positive critical reception. In making my selection, I also took into

consideration their personal and professional contributions to the science fiction community in Canada, as anthologists, editors, and conference organizers, for example. Finally, I also sought to represent here some of the diverse communities and movements within Canadian science fiction, including authors who are born in Canada (Gotlieb and Atwood) and immigrants (Hopkinson and Vonarburg), and incorporating Québécois as well as Anglo texts.

Of the Canadian women writers I consider within this dissertation, Phyllis Gotlieb is a well-known science fiction writer with an international reputation. Gotlieb first published in 1964 and most recently published *Birthstones* (2007), two years before her death. Even Ketterer, who asserted in 1979 that there was “no Canadian-born writer of comparative stature in the world of science fiction,” identified Phyllis Gotlieb as the “closest approximation to such as ideal” (332). At the time of his critique, Gotlieb had published only four of the fourteen novels she would write, but already a critic quite scathing of Canadian science fiction reported that “Phyllis Gotlieb, on the basis of the quality and quantity of her output and as a native-born Canadian actually living in Canada, must be considered the central figure in Canadian science fiction. Indeed, it might be argued that Ms. Gotlieb *is* Canadian science fiction” (Ketterer, “Canadian Science Fiction” 332).

Margaret Atwood, like Gotlieb, is a prolific author of international acclaim; however, she is currently best known as a mainstream fiction writer. Although most of her novels include a speculative bent, of the fourteen, only four are properly considered science fiction: *The Handmaid’s Tale* (1985), *Oryx and Crake* (2003), *The Year of the Flood* (2009), and *MaddAddam* (2013). Three of Atwood’s latest four

novels have been important works of science fiction, which might suggest her increasing alignment with the genre as a crucial medium for critical conversations. In her science fiction novels she has examined the perils of genetically modified animals and viruses, of pollution, infertility, and the subjugation of women as natural and national resources, and, generally, of the corporate domination of society.[9] Atwood's work, like that of many writers, demonstrates an integration of activism and artistic creation that offers critiques of contemporary policies—particularly as they affect women and the environment—and of the political and national climate.

Despite repeatedly and publically disclaiming the title of science fiction for her writing in numerous interviews, in 2011 Atwood published a collection of essays on science fiction and dedicated the book, *In Other Worlds,* to the acclaimed U.S. science fiction writer, Ursula K. Le Guin, a woman with whom she has debated the definition of the genre. Le Guin has even accused Atwood of shirking the title of science fiction writer in order to protect her literary credibility as a mainstream writer, arguing:

> To my mind, *The Handmaid's Tale, Oryx and Crake* and now *The Year of the Flood* all exemplify one of the things science fiction does, which is to extrapolate imaginatively from current trends and events to a near-future that's half prediction, half satire. But Margaret Atwood doesn't want any of

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[9] Many ecofeminists also connect ecological devastation, global poverty, and women's exploitation to corporate growth and capitalism: for example Vandana Shiva and Maria Mies in *Ecofeminism* (1993), and Rosemary Radford Ruether in *Integrating Ecofeminism, Globalization, and World Religions* (2005).

> her books to be called science fiction, which is "fiction in which things happen that are not possible today." This arbitrarily restrictive definition seems to be designed to protect her novels from being relegated to a genre still shunned by hidebound readers, reviewers and prize-awarders. She doesn't want the literary bigots to shove her into the literary ghetto. (qtd. in Atwood, *In Other Worlds* 5-6)

Atwood, who calls her writing speculative fiction rather than science fiction, disputes the motives Le Guin assigns. Though her last three novels have all been received as science fiction, as well as her electronic short episodic *Positron Series*, and despite *The Handmaid's Tale* being nominated for the Nebula Award and Prometheus Award, both awards for science fiction, and winning the Arthur C. Clark Award, of the authors considered here, Atwood has the least engagement with the science fiction community more broadly, through conferences or journals, for example.

Élisabeth Vonarburg, however, is one of the most significant writers of modern science fiction, and crucial to establishing the national and international prominence of Canadian science fiction. Although her own work may not be as widely known as it deserves to be (since many of her texts were not translated from French into English until recently), she has been instrumental since 1979 in founding a science fiction community in Canada through her efforts at convening conventions and editing collections of science fiction. In 2009 she was the guest of honor at the World Science Fiction Convention (WorldCon) in Montréal. Vonarburg was born in Paris, France and emigrated as an adult to Chicoutimi, Québec, in 1973. In 1981 she published her first novel *Le Silence de la Cité,* which is one of the texts considered in

this study, and received several awards, including the Grand Prix de la SF Française. Vonarburg's science fiction has also received several Canadian Aurora Awards (then "Casper Awards"), and the second novel considered here, *Les Voyageurs malgré eux* (1994), was a finalist for the U.S. Philip K. Dick Award. In the feminist science fiction journal *FemSpec's* special issue on Vonarburg, Amy Ransom writes: "A founding member of Québec's vibrant sf & f milieu, by 1998 she was already being referred to as 'la Grande dame de la SFQ'" (9).

I turn, finally, to Nalo Hopkinson, a Caribbean Canadian writer. Like, Vonarburg, Hopkinson is an immigrant. She was born in Jamaica, and spent part of her childhood in Guyana and Trinidad before her family moved to Canada in 1977, when she was sixteen years old. During a period of illness, Hopkinson did not write, and became homeless. After two years of homelessness, in 2011 she was hired as an Associate Professor in Creative Writing at the University of California, Riverside, and moved to the United States to take the position. In science fiction, a genre of masculine and colonial traditions, she finds alternatives by importing the fabulist storytelling and mystic realism of the Caribbean. In addition to her novels, she has edited three anthologies, including co-editing a postcolonial anthology of science fiction called *So Long Been Dreaming* (2004). In her critical and creative writing, often set in liminal spaces, she focuses on women, particularly women of color, and their communities, and incorporates Caribbean folklore, and language.

Mapping the Study

In Chapter 1 I focus particularly upon environmental and feminist questions of survival through the lens of motherhood—which has been a central concern for

environmentalists, feminists, and women science fiction writers[10] alike. I read two powerful dystopias by Gotlieb and Atwood who mobilize maternalist politics against environmental threats, in a way that is akin to the maternalist politics of the midcentury women science fiction writers who responded to nuclear threats and war (as documented by Yaszek). I argue that this maternalist politics aligns with what many feminists have described as an "Ethics of Care." I also examine how these dystopian societies are portrayed as controlling and constraining female bodies under the guise of concern about the survival of the race, for in Atwood's *The Handmaid's Tale* and in Phyllis Gotlieb's *Birthstones* the capacities to reproduce have been impacted by environmental toxins. In both of these novels, fertile women are reduced

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[10] In general, feminist science fiction has also been concerned with questions of reproduction and motherhood. Reproduction of the species is an important part of survival, and often futuristic technology and social rearrangements have been used to free characters from the pain and restrictions of childbirth and from the isolated and gendered burden of child-raising. Often the imagined alternative ways of parenting are more communal and less isolated and laborious than nineteenth- and twentieth-century motherhood. Real world developments in prenatal imaging, invitro fertilization, and reproductive science have also fueled speculations about ominous control over women's bodies and dreams of freedom, alike. However, science fiction has also been used to highlight the necessity of the freedom *to* mother, the threats to which have been dramatized in numerous dystopias, including the novels I analyze in Chapter 1, Margaret Atwood's *The Handmaid's Tale* (1985) and Phyllis Gotlieb's *Birthstones* (2007).

to their child-birthing function alone. Though there are mothers, what are lost in these novels are the maternal practices of caring and nurturing and maternalist politics, which are eliminated when women are reduced to their biological roles. Basic survival is ensured at the biological level by means of the cost of social survival of anything but a totalitarian state in which private relationships are regulated and families destroyed, or in which the cognitive function of women is impossible. In these novels, the patriarchal cultures survive, then, at cost to women, but also to the environment, the destruction of which is never addressed as the root cause. Rather than taking steps to rectify the environmental problems, the societies depicted displace their concerns onto women's bodies and attempt to control those bodies as fetal environments. At the end of these novels, the worlds remain toxic, mass infertility and birth defects continue, and few are committed to the work of mothering or caring for the environment.

Élisabeth Vonarburg's texts are important to this study because they offer science fiction protagonists who break with conventional aggressive masculine heroes who conquer and objectify land and women alike. Vonarburg instead creates as the narrators of her novels a female traveler in *Les Voyageurs malgré eux,* and a female scientist in *Le Silence de la Cité*. In line with an ecofeminist view of the interrelated treatment of women, land, and others, the land and the natives in Vonarburg's texts are less "othered." In part, this is achieved by positing female travelers who frequently occupy that position of "other" themselves—including an alien from another world and a woman who was formerly the object of scientific experimentation. In Vonarburg's novels, the environment is not a collection of

dangers to the survival of the inhabitants, as has been the case in United States settlement and frontier narratives; instead, the environment is partnered with by the inhabitants of these worlds. Though Margaret Atwood writes of survival in a hostile environment as part of a colonial legacy, Vonarburg moves beyond depictions of land and nature as hostile to find an approach that is both ecofeminist and postcolonial in its search for non-hierarchical connections and partnerships and the end of domination. In Vonarburg's novels there are "challenging" landscapes—the aftermath of nuclear war, and population-threatening viruses (in *Le Silence*), or ice storms, herds of strange creatures, and violent political unrest (in *Les Voyageurs*)—but not inherently inhospitable ones. In the interest of survival, in these texts nature is not so much a force to be battled as a force to be connected to, as Vonarburg has noted (E-mail to the author).

Recent influences in science fiction include the impetus towards the high-tech, postmodern, and disembodied worlds of cyberpunk science fiction (the emergence of which is most often linked to the writing of Canadian science fiction author William Gibson). Jenny Wolmark asserts that it was "necessary for feminists to point out the absence of gender in postmodern accounts of the decentered and fragmented subject" (17). Yet Vonarburg manages to imagine a high-tech world while refusing either the absolute Othering of alien figures, women, natives, and nature or the erasure of corporeality and difference that is frequently suggested by cyberpunk and postmodernism. Though traditional scientists and travelers were once required to be disembodied "modest" figures capable of objective knowledge, and even in postmodern iterations are fragmented but similarly disembodied, Vonarburg offers a

radical alternative: rather than objective observers, these narrators, who have only partial and conflicting knowledges, and who are connected to the people around them, are unreliable. What they can know about their world and others is multiple, contradictory, and personal, and very much related to the bodies they inhabit as they travel. The characters enact the possibility of crossing boundaries between male and female, human and alien, and human and machine (as much science fiction, and especially cyberpunk, does), but also between humans and animals. Through their messiness and contradictions, Vonarburg's protagonists show us a different, more *immodest* way to travel and to intervene in patriarchal and colonial discourses, including the genre of science fiction itself.

After establishing the possibility of ecofeminist scientists and travelers in science fiction, Chapter 3 focuses upon the possibilities for science itself. Jane Donawerth argues that "for women science fiction writers, a science that incorporates subjectivity and sees humans in partnership with nature would also emphasize relational thinking and acknowledge a responsibility to understand the complexity of the whole" (*Frankenstein's Daughters* 28), and this chapter reveals such a science in these Canadian women's novels. The texts I consider are Nalo Hopkinson's *Brown Girl in the Ring* (1998), and Margaret Atwood's *Oryx and Crake* (2003). Both depict high-capitalist industrialized futures and abusive capitalist science that is exclusionary, and tied to the exploitation of women and nature. But these sciences are resisted by the alternative practices of poor immigrant women who embrace feminist, earth-based, and Indigenous knowledges.

In traditional science fiction we can note a prevalence of practices aimed at modifying the land, animals, and even women and Others to better fit the desires of the colonizing humans—for example, terraforming (the shaping of planets' environments and biospheres) and genetically modified species. An ecofeminist response to turning the land/animal/Others into more efficient resources for human convenience and consumption is what ecologists Peter Berg and Raymond Dasmann term "bioregionalism." As ecofeminist Judith Plant explains, bioregionalism involves "becoming native" and "living within the limits and the gifts provided by a place, creating a way of life that can be passed on to future generations," including learning to live sustainably (158). Hopkinson's and Atwood's characters discussed in this chapter depict communities that learn to survive, sustainably, by adapting to the land and finding ways to teach traditions of Indigenous plant and earth-based knowledges, rather than to perpetuate capitalist and patriarchal scientific practices that do violence to women, animals, and the environment.

I use the phrase "Re-embedded Indigenous Scientific Literacies" to describe the different forms of science depicted within these novels. The phrase combines "Indigenous Scientific Literacies" used by Grace Dillon in her analyses of various science fiction texts, including Hopkinson's *Brown Girl in the Ring* (one of the two I focus upon in Chapter 3), and "Embedded Knowledges" used by Sven Ouzman to describe the knowledge of a landscape gained by people who are not Indigenous to it. "Indigenous" means different things within different disciplines. Within the humanities it means native to a place. Within Anthropology, Indigenous knowledge is posited as alternative knowledge, juxtaposed to the scientific, which is usually

privileged. Western science or Western knowledge systems can be described as operating in a variety of non-Western places to which they have been exported; however, Indigenous has connotations of native to that place, and so I preface Indigenous Scientific Literacies with "Re-embedded" to make clear their adaptation to a new environment. "Re-embedded Indigenous Scientific Literacies" describes a situation in which displaced people and immigrants apply the knowledge they learned in their Indigenous relationships to the land to a new environment.

In *Brown Girl in the Ring* and *Oryx and Crake,* those who possess and share Indigenous knowledge do so as part of alternatives to the violence and destructiveness of capitalist industrial science. These characters are non-Western and raised with plant- and earth-based practices, but, in the context of where they share them in each novel, they are immigrants, and consequently not Indigenous in the sense of native to the place where they are living. Yet they are Indigenous in the sense that they are oppositional and alternative. A second term I considered to describe the kinds of science in these novels is "traditional," but this could too easily be (mis)read as "conventional" and as part of institutionalized practices rather than radically oppositional. Re-embedding knowledges is also an important survival tool for diasporic communities, displaced peoples, immigrants, and travelers in both the real world and fictional ones.

Conclusion

Science fiction found new impetus in feminist issues during the 1970s, and in urgent ecological concerns in the last few decades. Dunjan Mohr claims that two movements—feminism and environmentalism—have "resuscitated" the genre in the

twentieth century (25). In this dissertation I examine how survival is portrayed as linked to the environment and environmental sustainability and how women's relationships to both society and to nature are re-imagined in the science fiction literature of Anglo and Quebeçois Canadian literature, particularly in the writing of Margaret Atwood, Nalo Hopkinson, Phyllis Gotleib, and Élisabeth Vonarburg. Environmental and feminist concerns are ultimately tied to a more holistic view of survival that involves not one man battling with nature, but communities and generations learning to live on the earth, or some other planet. My research contributes to knowledge of contemporary Canadian literature and women's science fiction, with a focus on how environmentalism and feminism are interwoven and mobilized in recent work. My study thus provides overdue attention to some of the most notable recent science fiction writers, insight into a corner of Canadian literature, examination of feminist concerns in science fiction, and a timely analysis of visions for sustainability or the consequences of environmental destruction.

Chapter 1: Where Have All the Mothers Gone? Survival and Reproduction in Less Domestic Dramas

I begin this chapter by positioning Canadian science fiction writers Margaret Atwood and Phyllis Gotlieb in a tradition of women science fiction writers who write about domestic life as part of maternalist engagement with threats facing society more broadly. I suggest that in their novels *The Handmaid's Tale* (1985) and *Birthstones* (2007) they respond to environmental threats in the way midcentury women's science fiction responded to the threat of nuclear war.[11] I then outline how mothering and

[11] Midcentury women's science fiction, as critic Lisa Yaszek has established, mobilized maternalist politics to demonstrate how militarism and the threat of war threatened the families it claimed to protect. In her 2008 book *Galactic Suburbia: Recovering Women's Science Fiction*, Yaszek provides a comprehensive summary of the field of women's science fiction in the post-war era, and demonstrates how the domestic foci were connected to the "technoscientific, social, and moral orders" of the post-World War II era (6). Similarly, in "Unhappy Housewife Heroines, Galactic Suburbia, and Nuclear War: A New History of Midcentury Women's Science Fiction" (2003) Yaszek argues that "housewife heroine science fiction" deserves critical attention because it links technological and nuclear threats to the destruction of the "private" realm of family life. In "Stories 'That Only a Mother' Could Write: Midcentury Peace Activism, Maternalist Politics, and Judith Merril's Early Fiction" (2004) Yaszek links the activism of the women's peace movement to the homemakers

maternalist politics align with the ecofeminist ethics of care and analyze these two texts to demonstrate how, although they center around reproduction, a loss and disruption of mothering is crucial to their dystopian nature. I will also consider how the societies in these novels fail to care about environmental issues and instead respond to the phenomenon of birth defects and infertility by attempting to control women's bodies rather than check pollution.

Both authors depict inappropriate and dangerous responses to environmental apocalypses. In each instance, rather than fix the underlying systemic cause of the problem (or cleaning up their messes), patriarchal governments attempt to control the problems of rising infertility and birth defects by regulating women's bodies and micromanaging fertility. Fears about the effects of environmental pollution are displaced and used to justify the extreme social and biological mandates of totalitarian regimes. Atwood and Gotlieb thus construct worlds that are dystopias for both the environment and for women—the environment is left to deteriorate, and its deterioration is used to perpetuate the patriarchal system. In the end patriarchal control of women's bodies increases, and people continue to destroy the world. Thus the concerns and connections of ecofeminist criticism are at the forefront of these two dystopian novels.

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in Merril's science fiction, arguing that similar maternalist politics used the rationale of protecting the family, and harnessed the "postwar glorification of domesticity and motherhood" (70) to justify their action in the public sphere "out of concern for the futures of their children" (71).

Women science fiction writers have often made motherhood, reproduction, and child-raising the focus for their narratives.[12] Though male critics derisively termed women's works "diaper stories," as science fiction writer Anne McCaffrey recounts in "Hitch Your Dragon to a Star," (1974) and dismissed them as trivial, the domestic spaces and relations were in fact a site of strategic social commentary and a

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[12] Reproduction and the social (re)arrangements that can be imagined around it are pivotal in the creation of many classic utopias and dystopias by men, too—for example, Yevgeny Zamyatin's *We* (written in 1921 and first published in 1924), and Aldous Huxley's *Brave New World* (1932). However, motherhood and mothering are particularly significant in women's science fiction because these reconfigurations have crucial consequences for women, who have historically found themselves by turn empowered and constrained by their biological and social roles as mothers, and who have often taken domestic spaces as the focus of their writing. Jane Donawerth notes that "although women writers shared with men the romanticizing of science, they offered one particular application that male writers rarely offered: the transformation of domestic spaces and duties through technology" ("Science Fiction" 138), and points to writers such as Mary Griffith, Mary E. Bradley Lane, Charlotte Perkins Gilman, Leslie Stone, and others. Many other literary critics also argue that domestic life, family, marriage and sexuality are central to women's science fiction; see, for example, Carol Kessler's introduction to *Daring to Dream: Utopian Fiction by United States Women Before 1950* (2nd edition).

way in which women writers could offer political interventions.[13] Women science fiction writers mobilized their narratives around depictions of domestic life as a way to frame discussions about threats to the next generation, the family, and their society or world more broadly. This is what science fiction critic Lisa Yaszek calls "maternalist politics." Yaszek argues that "rather than resisting the postwar glorification of domesticity and motherhood," women activists of the midcentury "invoked and revised these ideas to engage in a modern form of maternalist politics, positioning themselves as private citizens reluctantly moved to activism in the public sphere out of concerns for the futures of their children—and, by extension, the future of America[14] itself" ("Stories" 70-71). This same maternalist politics, Yaszek

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[13] In recent decades, feminist critics have worked to rehabilitate writing by women and to give texts that were dismissed as tales of "housewife heroines," more serious consideration. For example, Nancy Armstrong makes a case for the political significance of women's domestic dramas in *Desire and Domestic Fiction* (1987), and Lisa Yaszek in her analysis of domesticity in women's science fiction similarly argues that these texts engaged in political conversations of the time rather than avoided them, in *Galactic Suburbia: Recovering Women's Science Fiction* (2008), "The Women History Doesn't See: Recovering Midcentury Women's SF as a Literature of Social Critique" (2004), and "Unhappy Housewife Heroines, Galactic Suburbia, and Nuclear War: A New History of Midcentury Women's Science Fiction" (2003).

[14] Though Yaszek is writing about American mid-century science fiction by women, her analysis in "Stories 'That Only a Mother' Could Write" focuses upon

suggests, informs women's science fiction writing of the period. The works I consider here, Margaret Atwood's *The Handmaid's Tale* and Phyllis Gotlieb's *Birthstones*, follow in the vein of earlier science fiction domestic dramas and dramatize contemporary threats to survival in terms of maternity, reproduction, and family.

Apocalyptic fears of the 1950s centered on "the bomb." However, the most recent apocalyptic specter of our time, and what permeates much of the current dystopian imagination, is the destruction of the planet through environmental degradation. M. Keith Booker writes that "science fiction of the long 1950s responds in a particularly direct and obvious way to the threat of nuclear holocaust" (4), and thus, the mid-century works that Yaszek focuses upon in her studies—like much male-authored science fiction of the time[15]—was imbued with anxieties about "the

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Judith Merril who was also a foundational Canadian science fiction writer. Merril was the pen name of Judith Grossman, who was born in Boston, Massachusetts, and was a U.S. science fiction writer before she immigrated to Canada for political reasons in 1968, during the Vietnam War. Merril became central to the Canadian Science Fiction community. She founded a Canadian writers' network (Hydra North), launched the Canadian science fiction series of anthologies, *Tesseracts*, and established a collection of what has become the most extensive North American collection of science fiction at the Toronto Public Library/ University of Toronto. She became a Canadian citizen in 1976 and lived in Toronto until her death in 1997.

[15] For example, Neville Shute's *On the Beach* (1957), Robert Heinlein's *Starship Troopers* (1959), J. G. Ballard's "The Terminal Beach" (1964), and including female

bomb." However, unlike their male counterparts, women science fiction writers addressed these anxieties from the vantage part of imperiled family life. In their science fiction several decades on, Atwood and Gotlieb, as well as others, respond to mounting scientific developments and publications that point to a growing threat of an environmental holocaust rather than a nuclear one.[16] Perhaps beginning with Rachel Carson's *Silent Spring* [17] in 1962, the catastrophic impact of the deteriorating quality of the environment upon human health and the non-human world has demanded public attention. Consequently, these women science fiction writers imagine birth defects, imperiled reproduction, and distorted family life under the smog of pollution rather than "under the shadow of the mushroom cloud" ("Stories"

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science fiction writers like Helen McCloy's *The Last Day: A Novel of the Day After Tomorrow* (under the pseudonym Helen Clarkson in 1959), and Judith Merril's only novel, *Shadow on the Hearth* (1950).

[16] Nuclear and environmental holocausts are of course not mutually exclusive. The fallout from nuclear war clearly includes environmental devastation.

[17] *Silent Spring* is often identified as a watershed moment in the environmental movement. The publication suggested that prolific pesticide use (the government had hitherto been spraying DDT from the air to combat mosquitos) was leading to unintended but devastating consequences for birds and also other animals, including humans. The book made scientific data and studies of biology accessible to a general public and added impetus to a burgeoning environmental movement in the United States at the start of the 1960s. It is widely credited with bringing about a ban by the U.S.'s Environmental Protection Agency on the pesticide DDT in 1972.

71). In addition, just as mid-century writers like Judith Merril critiqued not only war but also patriarchal structures and masculinity implicated in militarism, Atwood and Gotlieb both identify the patriarchal response to imperiled reproduction as a devastating force in their texts. For these writers, attempts to control women's maternal bodies, in place of the environmental threats, are depicted as destroying the family and society, while letting the destruction of the natural world continue unfettered.

In my discussion of care and mothering, I will use the term "mothering" as it was identified by Adrienne Rich in her 1976 seminal treatise on motherhood, *Of Woman Born: Motherhood as Experience and Institution.* Rich makes an important distinction between "motherhood" and "mothering," identifying the latter as a potentially feminist and empowering practice of caring and the former as an institution of the patriarchy.[18] Rich claimed that the act of *feminist* mother*ing* holds the potential for social change. She saw feminist potential in the education and relationships mothers offer to their children and through shared identities as mothers caring about future generations. This claim seems to be borne out by the number of women engaged in social and environmental justice movements, particularly those who find themselves and their children directly affected by the negative consequences of the social and environmental issues they mobilize around. Hilda Kurtz notes that,

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[18] Rich was amongst the first to argue that motherhood is a socio-political institution serving to oppress women and maintain patriarchal order through their isolation in nuclear families, financial dependence upon husbands, and unequal division of the labor of caring for and raising children.

"far more women are involved in EJ [Environmental Justice] activism than in mainstream American environmentalism (Taylor, 1997), and women of color and working-class women comprise a majority of the membership of grassroots EJ organizations (Di Chiro, 1992)" (411). Such figures suggest that the gendered experiences of caring in these communities can be a catalyst to activism.

In this chapter I argue that feminist mothering offers the potential for positive change not only through the children's experiences, relationships, and development, as Rich emphasizes, but also through the shaping of the mothers themselves. That is to say, the practice of mothering affects women as well as children, and in these relationships and experiences it is possible to find a catalyst for political engagement and a coalition identity. The experience of mothering—rather than the institution of motherhood—has been the basis for successfully mobilizing groups of women with common desires for political change over a variety of issues.[19] Such visions of

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[19] As a political coalition identity, mothering has been repeatedly and successfully mobilized in the defense of the family, particularly children and future generations. Environmental "mothering" is one of the latest iterations of this kind of "maternalist politics." Mothers have expressed concern about rates of asthma among their children and are mobilized either locally (Rachel Stein has studied Asthma Activism in the South Bronx and West Harlem, for example) or nationally (as is the case with Moms Clean Air Force, which is a nation-wide group in the U.S., funded as a special project of the non-profit Environmental Defense Fund). Others have raised awareness about birth defects in their polluted communities (such as in Love Canal, New York where children were suffering from childhood diseases and birth defects in the late 1970s,

maternal care, and depictions of that care in women's writing are important to ecofeminism because they provide a basis and model for the "ethic of care" that is central to much ecofeminist philosophy.[20] In fact the "ethic of care" is described by

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and similarly in Three Mile Island, Pennsylvania, following the 1979 nuclear disaster that led to birth defects there). Yet others have organized around a variety of non-environmental issues, from drunk driving ("Mothers Against Drunk Driving," or MADD, for example) to handgun control (Moms Demand Action for Gun Sense in America). Like other political activist groups, mothers' efforts frequently involve poignant public displays—such as the "stroller jam" of mothers reading the names of victims of gun violence during the hearing on U.S. gun control in April 2013, or the "great latch on" outside the White House in 2012, to raise awareness of the benefits of breastfeeding and the right to breastfeed in public. Though some of the most visual and vocal groups are U.S. mothers, similar activism is centered on maternal identities in other countries, too, including Canada. The Ontario-based Motherhood Initiative for Research and Community Involvement (MIRCI) hosts scholarly and activist conferences and forums and houses *The Journal of the Motherhood Initiative* (formerly *The Journal of the Association for Research on Mothering*), Mother Outlaws, The International Mothers and Mothering Network (formerly IMN), Young Mothers and Empowerment Forum, and The Motherhood Studies Forum.

[20] See, for example, Cheney's "Eco-Feminism and Deep Ecology" (1987), and "Postmodern Environmental Ethics: Ethics as Bioregional Narrative" (1989); Warren's "Toward an Ecofeminist Ethic" (1988), and "The Power and the Promise of Ecological Feminism" (1990); Curtin's "Toward an Ecological Ethic of Care" (1991);

ecofeminist Karen Warren as precisely those practices of caring that are traditionally associated with mothering, nursing, and friendship (*Ecofeminist Philosophy* 113). An ecofeminist ethic of care is in many ways an extension of feminist tenets to environmental politics, and can be seen to be particularly influenced by the feminine ethic articulated by Adrienne Rich's "feminist mothering" (1976), and by Carol Gilligan (in opposition to masculine justice) in her seminal text *In a Different Voice* (1982).

Ecofeminist Karen Warren argues that the traits and behaviors associated with mothering are what are needed in an ecofeminist approach that would morally consider women and the environment:

> Historically, practices of care have been associated with mothering, nursing, and friendship. Taking care and caring practices seriously for morality [rather than denying the significance of caring in traditional Western philosophy and especially ethical theories] suggests "some promise of providing a gender-sensitive corrective to conventional moral theories." Since all feminist ethicists (and not just care ethicists) want to expose male-gender bias in ethical theorizing and to offer, in their place, theories or positions which are not male-gender biased, taking care seriously as a moral value promises to provide such a corrective (*Ecofeminist Philosophy* 113).

Ruether's *Gaia and God: An Ecofeminist Theology of Earth Healing* (1994); and Hessel and Ruether's *Christianity and Ecology: Seeking the Well-being of Earth and Humans,* 2000.

Thus mothering and maternalist politics are inscribed in ecofeminist discussions as part of an “ethics of care.” Not all ecofeminists have embraced this approach, however. Ecofeminist Val Plumwood has argued for a *public* ethics and *public* responsibility for nature (“Has Democracy Failed Ecology?”), a position that suggests to me that she is not against the practices of caring, but opposed to the dangers of their privatization and their relegation to the domestic sphere and women’s responsibilities. Moreover, Canadian ecofeminist theorist Sherilyn MacGregor argues explicitly against “the rooting of public ethics in private values like care” and for the need to “find different metaphors that do not implicate women so obviously” (*Beyond Mothering Earth* 225). Similarly, Lynn Stearney has argued that using the maternal archetype for the protection of the environment both conflates women and mothers and ignores the social construction of motherhood.

I would disagree with Sherilyn MacGregor and argue that all public ethics are rooted in private values and that values of caring are not themselves inherently “private” but only constructed as such. The division between public ethics and private values that MacGregor seems to maintain is also a division between feminine and masculine values and ethics. Thus the male-gender bias in ethics that Karen Warren identifies and suggests a corrective to is so prevalent and powerful as to appear natural (to MacGregor and others), so that public ethics are not masculine but “public” and the feminine values such as caring are, like so many feminine practices, constructed as private. I agree with Lynn Stearney that there are dangers in discussing maternalist politics (Yaszek) or mothering (Rich) because not all women are mothers, not all who practice mothering are women, and these practices are social and

experiential rather than essential. As I discuss mothering and maternalist politics I am referring to politics, social practices, and strategic coalitions rather than conflating women with biological identities. As we shall see, in Gotlieb's text, in particular, it is possible to identify practices of mothering performed by men as well as women.

It stands to reason that "maternalist politics," to use Yaszek's terminology, and political "mothering," to use Rich's, would be galvanized around arguably the largest specter of apocalypse for coming generations, the loss of our planet. Many women science fiction writers have imagined extreme devastation whereby humans have had to leave the planet in search of a new one—for example, the families that head into space to form a satellite society to avoid viruses, famine, and "slow-rad" deaths from radiation on Earth in Ursula K. Le Guin's "Newton's Sleep" (1994). Many also imagine the near-future and emerging consequences of environmental deterioration, such as birth defects and infertility. Futures of widespread infertility are a recurring motif in many recent works of science fiction,[21] including those by

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[21] For example, *The Children of Men* (1992), by British author P.D. James, depicts mass infertility in a dystopian England, and was adapted for a movie by the same name (2006) that received international acclaim. It is a text that popularized the theme of mass infertility further and captured popular imagination, winning numerous accolades. For example, in Great Britain the film won Best Cinematography and Best Production Design at the 60th British Academy Film Awards. In Australia it won the 2007 International Award for Cinematography from the Australian Cinematographers Society. In the United States it was nominated for three Academy Awards at the 2007 Oscars, and won the 2006 Scripter Award from the University of Southern California.

Canadian women writers, who have produced internationally renowned texts predicated upon the theme, such as *The Handmaid's Tale* by Margaret Atwood (1985), *Le Silence de la Cité* (1981) and *Chroniques du Pays des Mères* (1992) by Élisabeth Vonarburg, and *Birthstones* by Phyllis Gotlieb (2007).

In both *The Handmaid's Tale* and *Birthstones,* reproductive capacities and the future of the species are threatened by pollution, radiation, and toxic land. Like earlier women's science fiction that mapped contemporary political concerns onto the domestic drama of familial and sexual relations, these writers dramatize the violence done to the planets and environments through depicting sexual and domestic tragedies. In each, female bodies and maternal figures become conflated with the environment or non-human animals as they become natural and national (or galactic) resources. In this chapter I show how these two novels depict patriarchal interventions into the apocalyptic specter of human or Shar (Gotlieb's alien species) extinction by treating women's bodies and reproductive capacities as contested resources for survival, while failing to recognize the larger connections between the environment and those bodies, and between human—or in the case of *Birthstones,* Shar and alien—activity and the worlds they are living in. Ironically, as women are reduced to their biological potential as mothers, the political and social contributions of mothering are circumscribed at precisely the point when such maternalist politics and interventions are most needed.

International recognition included the 2006 Saturn Award for Best Science Fiction Film from the Academy of Science Fiction, Fantasy & Horror Films, as well as a nomination for the Hugo Award at the World Science Fiction Convention.

In addition to the substitution of control of women's bodies for meaningful change, the methods the state uses to control reproduction end up all but obliterating practices of mothering. In these texts, even as they center on maternity and reproduction, mothers are mostly absent figures. This is particularly important because the loss of mothering is also a loss of potential for positive maternalist politics taking place *within* the novels. That is to say that the characters are not inclined to engage with threats to the next generation and their society more broadly because, I argue, they adopt a utilitarian approach to their environments and communities rather a caring one. In these worlds motherhood has been reduced to its biological functions, and the social and political aspects have been eradicated. Thus, what is absent from these societies that makes them dystopias is what ecofeminists would call an "ethics of care," and what Rich might call "mothering," or Yaszek "maternalist politics."

The Handmaid's Tale (1985)

One of the most internationally well-known texts exploring reproduction in an age of infertility is *The Handmaid's Tale,* by Margaret Atwood. In it, Atwood creates what she herself considered her only true dystopia,[22] for it depicts the structure of an

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[22] Atwood made this assertion in her 2004 article "*The Handmaid's Tale* and *Oryx and Crake* in Context," published by the Modern Language Association. Although *The Handmaid's Tale* was at the time her only truly dystopian novel, as she defines it, in 2012 she published two short episodic novellas as part of her new Positron series,

entire society, rather than mere glimpses into it, as in her previous novels with dystopian elements. Essential to the dystopian climate of the society is the absence of an ethic of care, partly due to the disruption and elimination of mothering, ironically in a society structured around reproduction. The novel is set in the near-future society of the Republic of Gilead, a totalitarian theocratic regime that has replaced the U.S. government. The Republic is installed as an emergency measure after a staged attack—supposedly perpetrated by Islamic extremists—kills the U.S. president and most of Congress. These events are used as a pretext to suspend the constitution and a revolution begins. A right-wing fundamentalist group known as the "Sons of Jacob" take power and institutes drastic measures, such as freezing the bank accounts of "undesirables"—including all women—in order to protect the country. From there the regime begins a systematic sorting of women into categories of "Wife," "Handmaid," "Aunt," "Martha," "Econowife," and "Unwoman."

At the start of the novel, the female narrator is re-educated after a failed attempt to flee with her husband and daughter to Canada. After re-education, as a fertile woman, she is assigned to serve one of the families of the ruling class as a kind of surrogate mother (or breeder), and concubine known as a "Handmaid." The subjugation of Handmaids as breeders for the elite is justified by reference to the Old Testament as a solution to infertility,[23] and as a biological imperative owing to the

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which is set in the dystopian future community of Consilience, which, I believe, is also a dystopia proper, by the criteria she establishes for her earlier novels.

[23] In Genesis, Rachel, the second wife of Jacob, is unable to conceive, and offers her handmaid, Bilhah, to her husband so that she can conceive children for them.

state of rampant infertility caused by environmental pollution. The regime, however, also claims that women have brought this upon themselves and society by the "unnatural" practices of birth control and abortion under the previous era. Thus, the patriarchal government in Gilead is responding with extreme measures not only to the environmental and reproductive threats, but also to second wave feminism. Within the text we see snapshots of these women who are derogatorily dubbed "Women's Libbers," a group who include the narrator's mother, who in Offred's memories from her childhood, burned pornography at a protest rally (48). Thus the regime is a response and backlash against a political women's movement that fought for precisely what is repressed in Gilead—for reproductive control, bodily autonomy, and sexual freedom.

At the time of the central action of the story, the protagonist, Offred,[24] is on her third "assignment," this time to a Commander called Fred. The Handmaid's duty

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Bilhah then bears two sons. Leah, Jacob's first wife, and Rachel's sister, stops conceiving after four sons, and then, seeing Rachel's success with surrogacy through her handmaid, offers Jacob her own handmaid, Zilpah. Zilpah, like Bilhah, bears two sons (Gen. 30). The Biblical precedent is used within Gilead to sanctify the practice of using Handmaids, and the re-education center for women intended for this purpose is named the "Rachel and Leah Centre" (107).

[24] We presume her official name Offred comes from her assignment to this commander and indicates she is "of Fred." Other Handmaids in the novel have similar names, such as Ofwarren and Ofglen. J. Brooks Bouson notes that "her name, as

is to become pregnant and produce a child for the Commander and his Wife.[25] To this end, there is a ritual sexual practice, known as the "Ceremony," during which the Handmaid lies between the Wife's legs while the Commander tries to impregnate her. If Offred fails to become pregnant on this third assignment, she will be classified as an Unwoman. The Commander's Wife, Serena Joy, harbors heretic suspicions that her husband is sterile and asks Offred to engage in a risky and illicit sexual relationship with their chauffer, Nick, to increase the chances of pregnancy. The suggestion that men are infertile is heresy under the regime, which operates under the assumption that only women can be blamed for the failure to produce a child. It is clear from this circumstance alone that there is more to the Gilead regime's motivations than saving an imperiled (white) race, for understanding male infertility and allowing women to find alternate mates would help to increase the population. Rather, the control of *women's* bodies in particular is part of the project.

At the end of the story Offred is taken away by men in the night. They arrive in a van with the logo of the government "Eyes" on its side and tell the Commander and Serena Joy that Offred is being taken for violating state secrets (306). Nick, her illicit boyfriend, tells her to go with the men, that she is being rescued by an underground Mayday movement, but Offred is not sure whether or not Nick himself is an "Eye." It's uncertain whether she has been betrayed by Nick or helped by him,

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many commentators have pointed out, also suggests the words 'afraid,' 'offered,' and 'off-read' (misread)" (137-38).

[25] "Wife" is a title and category in Gilead, as is "Handmaid," "Aunt," "Martha," "Unwoman," and even "Child."

and from the central text the reader is left not knowing if she makes it to freedom. However, the Epilogue suggests Offred did make it out of Gilead, for the tapes containing her narrative were discovered in an "Underground Femaleroad" safe house in Maine (313).

A feminist interest in reproductive technologies, beginning in the 1930s (as Jane Donawerth notes in "Utopian Science" 543) inspired utopian visions of egalitarian parenting (such as the co-mothers in Mattapoisett of 2037 in Marge Piercy's *Woman on the Edge of Time* [1976]) and even freedom to reproduce without the other sex,[26] but in addition to these depictions of women's increased control over pregnancy and childbirth, dystopian visions imagine similar technologies and reconfigurations might place reproductive and parental control in patriarchal rather than feminist hands. *The Handmaid's Tale,* like numerous other science fiction novels, imagines state control of reproduction and child-raising as the expression of a totalitarian regime. Adrienne Rich's assertion that there is potential power in the mothering of children is borne out by the dystopian visions of the consequences of that power in abusive hands, and the lengths that groups will go to in order to maintain or procure that power. Several classic dystopias similarly feature state

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[26] Feminist science fiction writers have imagined single-sex reproduction that enable women to live without men and still have children, for example, in Mary Bradley Lane's *Mizora* (1880-81), Charlotte Perkins Gillman's *Herland* (1915), Joanna Russ' futuristic world of Whileaway (featured in "When It Changed" 1972 and *The Female Man* 1975), and in Élisabeth Vonarburg's *Le Silence de la Cité* (1981).

control of child-raising, such as Yevgeny Zamyatin's *We* (1921), and Aldous Huxley's *Brave New World* (1932), with its Hatcheries and Conditioning Centers. It's also a dystopian feature of Canadian science fiction writer Élisabeth Vonarburg's *Chroniques du Pays des Mères* (1992), where children are raised in Ruches (hives) and Harems, and Phyllis Gotlieb's *O Master Caliban!* (1976), in which reproductive technology in the wrong hands creates monstrous results.

In "Unhappy Housewife Heroines, Galactic Suburbia, and Nuclear War: A New History of Midcentury Women's Science Fiction," Lisa Yaszek asserts that "by linking technological disaster in the public realm to sexual disaster in the private realm, these writers [of midcentury women's science fiction] showed (in rather grim detail) how the unnatural social situations engendered by nuclear war might well distort or even destroy the family itself" (101). In Atwood's text, as in those of her midcentury precursors, we find a merging of "postholocaust narrative with that of the domestic tragedy" (101). The threats to the family are multiple in Gilead; they include the pollution and radiation caused by human destruction of the environment, which threatens biological reproduction, and also the far-right regime that has used the specter of falling Caucasian birthrates as a premise to break up families, construct new highly regulated ones, and systematically and repeatedly remove children from the women who give birth to them, disrupting possibilities of mothering by certain groups of women.

In the U.S., where Atwood's Gilead is set, groups of women (particularly the poor and non-white) have historically been denied the right to raise their own

children,[27] or prevented from becoming mothers through state sanctioned, encouraged, or forced sterilizations.[28] Thus, though the call for access to birth control

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[27] Until 1865, when the 13th Amendment abolished slavery in the U.S., children of slaves were the property of the owner and frequently sold away from their parents. Later, from 1958 to 1967 the U.S. government systematically and deliberately separated Native American children from their families as part of the Indian Adoption Project (see, for example, Maragaret D. Jacob's "Remembering the 'Forgotten Child'"). It is reported that "by 1974, 25 percent of Indian children had been removed from their homes, placed in foster care, adoptive homes, institutions or boarding schools. The majority were cared for by non-Indians" (Arrillaga). In 1978 the U.S. passed a law called the Indian Child Welfare Act, seeking to keep American Indian children with American Indian families, in response to their alarming rate of removal by private and public agencies (National Indian Child Welfare Association).

[28] Angela Davis provides a comprehensive and succinct overview of sterilization abuse by the U.S. government in the twentieth century in "Racism, Birth Control, and Reproductive Rights." She details how by the 1970s over 35 percent of Puerto Rican women of childbearing age had been sterilized as part of an effort to reduce the population (23). She also cites how U.S. states threatened to withhold welfare payments to families unless they sterilized their children, as recently as the 1970s, and some families were even assured that sterilization would only result in temporary infertility, or illiterate mothers were asked to mark consent forms with an "X" and never told that the contents authorized their daughters' sterilization (22). Rosalind Pollock Petchesky, in *Abortion and Wonan's Choice* (1984) notes that Medicaid was

was central to second wave feminism in the U.S., it reflected the centrality of predominantly white and middle-class concerns within the movement and was cause for suspicion amongst Black feminists, as Angela Davis argues in "Racism, Birth Control, and Reproductive Rights." Despite the state treating different groups of women very differently—sterilizing some while imploring others to reproduce—the prevention, disruption, and coercion of motherhood are part of the state control of women's bodies and its treatment of them as resources. Although purportedly operating to ameliorate infertility in Gilead, the Republic allows for clandestine sterilizations to continue when they are desired by men rather than women. Thus abortions and self-abortions are punishable by death, and sterilization or even birth control is criminalized, but meanwhile the leaders sterilize "Jezebels"—women who

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withheld on condition of sterilization, and that women were often required to "consent" to sterilization in order to have an abortion, "the notorious 'package deal'" (180). The widespread extent of the government-funded sterilizations is demonstrated by the director of HEW's Population Affairs Office, who estimates that between 100,000 and 200,000 sterilizations had been funded by the U.S. federal government in a single year, which Angela Davis notes compares to 250,000 sterilizations under the eugenics program of the Nazis during their entire reign ("Racism, Birth Control" 22). Others targeted in the U.S. for systematic sterilization were female prisoners. Petchesky summarizes that "nearly all of the documented or court-adjudicated instances of sterilization abuse in the 1970s involved women who were poor and either black, Mexican-American, Puerto Rican, or Native American, or women who were incarcerated or mentally incompetent" (180).

are not submissive enough to be reincorporated as Handmaids, but whose bodies are still useful to elite men looking for entertainment and extramarital sex.

In the novel, women are condemned for having used birth control in the time before the Republic, because for women of the “right” race, class, and nationality, there is a perceived obligation to reproduce to ensure the survival of that race, class, or nation. It is important that the “right” women are mothers because survival is not only for the species but for the social order, hence the reallocation of children, and the maintenance of Wives who do not produce children. In the United States, anxiety around infertility and decreased birthrates has been linked historically—and specifically at the start of the twentieth century—with the eugenics movement, and thus with race, class, and the perpetuation of patriarchy, as is the case in Gilead. American mothers were called to reproduce as a national duty in 1905, when U.S. President Theodore Roosevelt addressed the National Congress of Mothers, and said:

> There are many good people who are denied the supreme blessing of children, and for these we have the respect and sympathy always due to those who, from no fault of their own, are denied any of the other great blessings of life. But the man or woman who deliberately forego these blessings, whether from viciousness, coldness, shallow-heartedness, self-indulgence, or mere failure to appreciate aright the difference between the all-important and the unimportant,—why, such a creature merits contempt as hearty as any visited upon the soldier who runs away in battle, or upon the man who refuses to work for the support of those dependent upon him, and who tho able-bodied is

yet content to eat in idleness the bread which others provide. ("On American Motherhood")

The parallel of national service and reproductive obligations to the state is a disturbing real-life seed of Gilead, in which social and national obligations of reproduction are enforced.[29]

The year after Roosevelt's address to the National Congress of Mothers, in his 1906 State of the Union address, the President told the nation, "willful sterility is, from the standpoint of the nation, from the standpoint of the human race, the one sin for which the penalty is national death, race death; a sin for which there is no atonement" (Dyer 155). The obligation of women to reproduce for the sake of their country is here couched in terms of morality and religion ("supreme blessing," "sin," "atonement"), as it is in the fictional society of Gilead, where patriotic duty is made to align with religious duty, though it often requires effort, selection, and willful interpretation.[30] In the U.S., where the eugenics movement began, there were "Fitter

[29] The imperative for women to reproduce as a service to the nation in Gilead also has literary echoes of George Orwell's *1984* (1949), in which sex was considered an unpleasant biological requirement entered into between a husband and wife for the sole purpose of producing future citizens.

[30] The Republic of Gilead's mission to save the white race from plummeting birth rates invokes a Biblical precedent for Handmaids, though ironically one of the handmaids in Genesis, Hagar, was an Egyptian slave. Hagar bears a son for Abraham when his wife, Sarah, is unable to (Gen. 16). With an Egyptian wife, the son, Ishmael,

Families" competitions at State fairs in the "human stock" section (Murphy and Lappé 17), and by the late 1920s twenty-four American states had forced-eugenic sterilization laws, with California ordering more forced sterilizations than all the other states combined, and ultimately inspiring the Nazi eugenics program in Germany (Murphy and Lappé 18). As Jane Donawerth notes, in the late1920s and 1930s racial prejudice resulted in increased interest in eugenics that was reflected in the racial anxiety of science fiction texts ("Illicit Reproduction" 28-29). In this anxiety, maternity plays a significant role, as early twentieth-century racism manifests itself in a concern with miscegenation ("Illicit Reproduction" 29). In Gilead, as in the U.S., the anxiety is specifically concerned with a decreasing Caucasian birthrate (as discussed in the Historical Notes 316). The classification of Unwoman in *The Handmaid's Tale*, then, and the rhetoric of duty to the Republic, as well as God, disturbingly echo the very real attempts at state control of women's reproduction in totalitarian and even democratic regimes of the last century.

The purpose of Handmaids in Atwood's dystopia, then, is not just to produce a child, but to produce one who will be in the right hands. In Gilead, where they are rare, maternal bodies are not only guarded and monitored, but like resources in other societies, they are allocated to the elite. As Margaret Atwood, herself, explains:

> The despotism I describe is the same as all real ones and most imagined ones. It has a small powerful group at the top that controls—or tries to control—everyone else, and it gets the lion's share of available goodies. The pigs in

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founds the "great nation" of Ishmaelites, fathering twelve sons (who grow up to be tribal chiefs).

> *Animal Farm* get the milk and the apples. The élite of *The Handmaid's Tale* get the fertile women. ("In Context" 516)

Pre-existing children are also redistributed, as Offred's daughter is after her capture. Thus, *The Handmaid's Tale* is not only about survival (of the Caucasian race), but also about the redistribution of resources for survival, that is, women and children. As a resource for survival, the Handmaids are closely monitored, and controlled. Offred is stamped and guarded, like a prisoner, but also like livestock. She declares herself a national resource in the following passage:

> I cannot avoid seeing, now, the small tattoo on my ankle. Four digits and an eye, a passport in reverse. It's supposed to guarantee that I will never be able to fade, finally, into another landscape. I am too important, too scarce, for that. I am a national resource. (75)

As a national resource she is the milk and apples of *Animal Farm,* but also she is the natural environment that has been exploited to the point of toxicity by a similar utilitarian as opposed to ethics of care in *The Handmaid's Tale.* For destroying the environment has also destroyed fertility. As fetal environments in the novel, women are treated as resources and containers that must be saved from contamination for the sake of the unborn children who might inhabit them. "We are containers," says Offred, "it's only the insides of our bodies that are important" (105). The handmaids are also referred to and come to consider themselves in terms of their biological functions, as "vessels" (75, 255), and seeds (28), or what Offred imagines others think of her, as "a useable body," (172) and "empty" like "a boat with no cargo, a chalice with no wine, an oven - to be crude - minus the bun" (172). As seeds and

containers, then, the Handmaids are not only likened to fruit ("a melon on a stem" 162), and animals ("a prize pig" 79) and to the natural landscape, but they become—at least in the cultural imagination of Gilead—the environment itself. Rather than looking at the polluted environment around them, such as the Colonies full of toxic waste, the elite of Gilead focus, instead, on the potential fetal environment of the Handmaids' bodies. They must be guarded against contamination, kept from exertion or other dangers, and subject to paternalistic rules forbidding them from wearing high heels, exerting themselves by drawing their own baths, or consuming caffeine, nicotine, or alcohol, for example. In this way they are guarded not only against escape, but against themselves, because if they are environments, they are potentially hostile environments. As ecofeminist Lin Nelson has noted, women are often subject to institutional disciplining of their bodies and treated as a "hazardous environment for the next generation" (177), as the Handmaids are.

Eleven years after the publication of *The Handmaid's Tale* a battle between women's rights and fetal safety played out in Canada when a Manitoba court ordered a pregnant aboriginal woman, "Ms G," to be held in an addiction treatment facility against her will, on behalf of her fetus. The Manitoba Court of Appeal overturned the ruling, which then went to the Supreme Court of Canada, who upheld the appeal ruling, and wrote that the fetus had no rights under the law and that the pregnant woman and fetus are one (Roy 108). In Gilead, however, women's rights have been abolished, and Handmaids are nothing more than environments for the fetus. Even Offred begins to imagine her body as a landscape, as in the following passage: "I sink down into my body as into a swamp, fenland, where only I know the footing.

Treacherous ground, my own territory. I become the earth I set my ear against, for rumours of the future" (83).

There are many examples of women being closely linked to nature in an empowering association. However, in *The Handmaid's Tale,* unlike much of Atwood's other work, women's association with nature is part of their exploitation by societal attempts to control their bodies. H. Louise Davis, writing about nature and ecofeminism in Atwood's novels and poetry, claims that her protagonists are closely associated with nature and often use it as a catalyst for a coming to consciousness. The way in which these women use nature for their own development, is akin to the masculine treatment of women, she argues. "Many of Atwood's women appear to invade and use nature in the same way that men invade and use women's bodies and, thus, nature can be read as the subordinate to womanhood in Atwood's work," claims H.L. Davis (81-82). Indeed, narrators in several of Atwood's texts, most obviously *Surfacing* (1972)*,* do have intense experiences with nature, often in connection with self-realization and awakening. I would argue that it is more of a connection than the invasion that Davis describes, but in Offred's case, her connection is oppressive and part of her objectification. For example, Offred likens herself to a prize pig being fattened in a pen, a captive animal whose body is primed and controlled by someone else (79), and even then she wishes for a pig ball to roll about so that she'd have a distraction and something to think about (80). Aunt Lydia also compares women to meat and fruit in unattractive ways, and in contexts linked to their objectification: "The spectacles women used to make of themselves. Oiling themselves like roast

meat on a spit […] And not good for the complexion, not at all, wrinkle you up like a dried apple" (65).

The Commander summons "nature" as a justification for men's promiscuity, telling Offred that "Nature demands variety, for men" as part of the "procreational strategy" even as he is living in a time when "Nature's plan" has failed to maintain birthrates, and he himself is suspected to be infertile (249). Indeed, the most oppressive links with nature are those that reduce Offred to her biological reproductive functions. At the doctor's office, Offred reports, "my breasts are fingered in their turn, a search for ripeness, rot" (70), later describes her own body as "treacherous ground" (83), and wishes for hardness, "not this heaviness as if I am a melon on a stem, this liquid ripeness" (172). Yet if anything demonstrates that women do not invade nature or exploit it as a tool for "coming to consciousness," it is Atwood's representation of nature not as a pastoral retreat from society, but as an abused ecosystem full of pollution and toxicity:

> Stillbirths, miscarriages, and genetic deformities were widespread and on the increase, and this trend has been linked to the various nuclear-plant accidents, shutdowns, and incidents of sabotage that characterized the period, as well as leakages from chemical and biological-warfare stockpiles and toxic-waste disposal sites, of which there were many thousands, both legal and illegal - in some instances these materials were simply dumped into the sewage system - and to the uncontrolled use of chemical insecticides, herbicides, and other sprays. (316-17)

H. L. Davis' article on Atwood's apocalyptic visions was published in 2008, but despite *The Handmaid's Tale* being one of Atwood's most well-known novels, and, at the time (prior to *The Year of the Flood* and the Positron Series) Atwood's only other apocalyptic tale in addition to *Oryx and Crake,* which Davis discusses in-depth, she omits any mention of it. This is likely because *The Handmaid's Tale* does not fit Davis' model of female or feminine protagonist[31] retreating into nature. In fact, there is little interaction with any form of nature by Offred during the time of the narrative, except for her own comparison and positioning as landscape and her passing through the garden surrounding the Commander's house, decidedly the Wife's territory.

For Offred, the possibility of heading into the wilderness would not assist in a coming to womanhood, but actually *threaten* her position as "Woman," as it is defined in Gilead. This is because the radiation outside of the city, in the wilderness known as "the Colonies," is a threat to her capacity to bear a healthy child, a barrenness which would lead her to be declared an "Unwoman." Once declared an Unwoman, the former Handmaid is likely to be banished to the wilderness, which, far from an escape from society and an empowering sanctuary, here functions as a threat, a potential death sentence amid toxic waste. For example, Moira tells Offred, "They figure you've got three years maximum at those [Colonies], before your nose falls off and your skin pulls away like rubber gloves. They don't bother to feed you much, or

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[31] H. L. Davis argues that the male narrator Jimmy/Snowman of *Oryx and Crake* is a feminine figure.

give you protective clothing or anything, it's cheaper not to. Anyway, they're mostly people they want to get rid of" (260).

Besides the wilderness of the toxic Colonies, and some wooded hills Offred sees on the news that she is allowed to watch one night—trees that are "a sickly yellow" (92)—there are few images of nature that are not tied to Offred's own body. The notable exception in a novel almost bereft of non-human life is the garden that is kept by Serena Joy. In this garden, though, there is no escape from society to some kind of communion with the non-human world, as H. L. Davis finds in other Atwood texts. Instead, the only pleasure the ironically named Serena Joy seems to find in gardening is her ability to express her frustration and exact some control. In the only scene the reader is given of Serena Joy gardening, she is enacting a violent symbolic castration. The flowers and their snipped seed pods could signify Serena Joy's own infertility, and her frustration with it, or, perhaps, stand for the fertile Handmaids of whom Serena Joy is jealous and resentful; either way, her attacks upon the pods are clearly marked with aggression. Offred describes the scene of Serena Joy "snipping off seed pods" in the following way: "She was aiming, positioning the blades of the shears, then cutting with a convulsive jerk of the hands. Was it arthritis, creeping up? Or some blitzkrieg, some kamikaze, committed on the swelling genitalia of the flowers?" (161). In a way, then, Serena Joy does engage in nature in a similar manner to the ways men do, for she enacts violence and war ("blitzkrieg," "kamikaze") upon it, and specifically upon the female aspects of nature, for it is the seed pods rather than stamen that she targets. She also directs her violence at the genitalia of the plants, exerting some vengeful reproductive control that she lacks in society at large

and even with regard to her own body. Thus, she can participate to a limited degree in the patriarchal privilege of control within the domestic sphere. She controls to some degree the women below her rank in the household—particularly Offred—and also her small domesticated patch of nature.

Amid the various categories of women—and Unwomen—in Gilead, who are divided and pitted against each other, none are "Mother," and, I believe this loss of mothers and mothering is part of the dystopian nature of the society. Offred is biologically a mother, but the regime has separated her from her daughter, and she is not allowed to participate in mothering. She is shown a photograph of her daughter, who is being raised by others. In "Motherless Daughters: The Absent Mothers in Margaret Atwood," Nancy Peled argues that the female protagonists in Atwood's texts suffer and are vulnerable in part because of lacking connection with their mothers, and she concludes, optimistically, by arguing that, as women, these protagonists end up safe and assimilated and therefore able to have better connections with their future daughters and granddaughters:

> In Atwood's novels, the mother's absence may break the child, but as adult women, Atwood's characters are assimilated, however resignedly, into the maintenance of conventional social order. This role, finally, keeps them safe and allows for their own daughters (or granddaughters) to forge identities not in the reflection of absence, but in the emulation of the presence of their mothers and grandmothers who have saved themselves from potential destruction within the patriarchal world. (60)

Peled references the *Handmaid's Tale* as an example of women suffering at the hands of other women, but does not analyze Offred's relationships to her mother or her daughter in this article. As an adult woman, it is true that Offred, at least for the majority of the text, is reluctantly assimilated. Within the patriarchal society she's living in, she survives by choosing to "give in, go along, save her skin" (261). However, far from seeing this assimilation as a reason for optimism about future generations of women and their connections, the inaction and acquiescence of Atwood's Offred is part of the tragedy of her character. Even Offred herself admits that she wants a hero to fight against the regime, though she's unwilling to herself; for example, she can't bear to think that her friend Moira has given up: "I don't want her to be like me. Give in, go along, save her skin. That is what it comes down to. I want gallantry from her, swashbuckling, heroism, single-handed combat. Something I lack" (261).

The character of Offred distinctly challenges Peled's assessment of Atwood's protagonists on several levels—her acquiescence is fatalistic and dystopian rather than hopeful, and, far from suffering from a mother's abandonment, she was born to a strong woman who chose to be a single mother and who regularly visited her grown daughter and her family before the regime change, a woman who devoted much of her life to the fight for women's rights. Despite being an unusually strong, attentive, and present mother, Offred's mother is depicted rather unflatteringly as a caricature of a radical 1970s feminist, who took her daughter to burn porn on a bonfire (48-49), and who, at least from Offred's point of view, expects her daughter to vindicate her battles and sacrifices:

> She expected too much from me, I felt. She expected me to vindicate her life for her, and the choices she'd made. I didn't want to live my life on her terms. I didn't want to be the model offspring, the incarnation of her ideas. (132)

In fact, it is Offred who is the absent mother, though, again, not by choice, after her daughter is taken from her and given to an elite childless family. Furthermore, Offred's assimilation and survival in the patriarchal culture of Gilead neither promises a better future for the daughter nor hope that she will be able to forge an identity in the "emulation" of her mother's "presence," as Peled has claimed of Atwood's characters.

The heroes of Atwood's texts, claims H. L. Davis, blur the lines between victim and complicit actors (83). They are average women, who *survive* in hostile climates but who fail to rock the boat or strive for social change, for women's rights, or environmental ones. They are not the activist mothers of the peace movement described by Yaszek in other dystopian texts by women, for example, but instead they acquiesce and become part of the system. Elaine Tuttle Hansen describes Offred's ordinariness and lack of courage in the following way:

> […] It sometimes seems that the Handmaid's strongest capacity is her tolerance of boredom. She never tries to escape; she contemplates a variety of criminal acts but never commits them; she is always cautious, or almost always. […] In the end she waits […] to be destroyed or rescued. She speaks of herself as a coward, terrified of pain, who wants to survive; to that end she tries not to feel […] (170)

This lack of courage is contrasted by Hansen to the maternal courage of Connie in Marge Piercy's *Woman on the Edge of Time* (1976), who fights and strikes out against violence and oppression—even literally when she hits her niece's pimp or kills the doctors. Hansen notes that, unlike Offred, Connie is inspired by maternal anger to fight back against the system.[32] In Gilead, then, not only is there an absence of mothers, as I have suggested, but, more crucially, there is an absence of the kind of maternalist politics that women have historically used as a method of intervention for future generations.

The devastating result of this absence is immediate and long-term. In the present time of the novel there is the continuing personal suffering of Offred and Handmaids throughout Gilead, who are oppressed in their biological roles and denied even the freedom to read. There is also the short-term consequence of similar roles for women of the immediate future generations, including Offred's daughter, who is unlikely to become a Handmaid, but as a member of an elite family, might find herself a Wife, circumscribed and unhappy just as Serena Joy is.[33] More broadly, the

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[32] As Hansen observes, Connie's rebellion is directly linked to her motherhood. She poisons her doctor's coffee after a dream of becoming a co-mother and after imagining her daughter reborn as a child in the utopian place of Mattapoisett (Hansen 167).

[33] The wives depicted in the novel are seen from the vantage of the Handmaid, and Offred comes to know something of other Wives through her contact with their Handmaids. Though we don't see any, presumably there are Wives who do not have Handmaids assigned to them and who are able to bear children without assistance. If

lack of action, the complicity, and the lack of Connie Ramos-like maternal anger mean that there exists no challenge to the perpetuation of Gilead's extreme patriarchy.[34]

Atwood implicates not only Offred and the women of Gilead, but the world beyond, too, in being complicit with the status quo and sustaining a regime so tyrannical to women. The Japanese tourists who visit Gilead, who include women, accept the Handmaids as part of the "local colour" and as exotic curios to be photographed (38). Offred guesses that the interpreter is telling the group—of which Offred notices the women most—that "the women here have different customs" (39). The tourists are expected by their guide to accept the oppression in Gilead as cultural difference. In the "Historical Notes" at the end of the novel the academics who discuss Gilead are similarly expected by the speaker to accept and explain away

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Offred's daughter was to become a Wife, whether or not she'd be in a very similar position to Serena Joy would depend on whether she and her husband were both fertile (for even if she was fertile and her husband was not she would still be blamed and obliged to take a Handmaid if she could not become pregnant illicitly, through an affair).

[34] Offred does some things that break the protocol of the regime, but they tend to be at the behest of those in charge. For example she has sex with Nick, but Serena Joy suggests it to her, and she plays games with the Commander, but it is at his request. Thus, despite the affair with Nick and a visit to Jezebels, Offred's most subversive action is her friendship with the fellow handmaid Ofglen, which is something she enters into of her own volition.

differences through “culture.” The conference participants are cautioned by the keynote speaker to avoid “passing moral judgment” (314) on the regime. “Surely we have learned by now that such judgments are of necessity culture-specific,” says the authoritative Dr. Pieixoto, “[…] Our job is not to censure but to understand” (314-315). With that statement, which refuses to condemn the enslavement and rape of certain groups of women, Atwood delivers a scathing condemnation of her own about academia, and particularly the discourses of cultural relativism.

In the end, even Offred’s story itself, which Maria Lauret notes may be “her only act of resistance” (178), is appropriated and assimilated into dominant, patriarchal discourses. Coral Ann Howells notes that Offred’s storytelling “has a double purpose, for not only is it her counter-narrative to the social gospel of Gilead, but it is also her way to self-rehabilitation against the ‘deadly brainwashing’ (Cixous’s phrase) of the totalitarian state” (165). Though Offred may succeed in her personal “psychological and emotional survival” (Howells 165) she does so at the expense of any radical action or intervention in the status quo.

Angela Davis has argued that survival-oriented activities under conditions of slavery are themselves acts of resistance, and that survival is a prerequisite to “higher levels” of struggle (“Reflections” 87). Offred’s situation is analogous to slavery in many ways, including her physical, mental, and sexual oppression, the destruction of the family and separation of children and mothers, and even the similar acts of resistance, such as her reading and writing, and the existence of underground railroads out of Gilead. Feminist critics such as Lauret might be dismayed by Offred’s interest in survival over “high forms of struggle” and failure to act, but

Offred represents a common woman in the face of overwhelming oppression. Her central act of subversion, as Howell notes, is her counter-narrative to Gilead's official patriarchal discourses, which represents the possibility of "women's discursive agency […] even under conditions of extreme duress" (Lauret 178). Given the importance of her narrative as an act of resistance, the ultimate disparagement and cooption of her story by the frame narrative of the Historical Notes that "trivialize and diminish the political status of that act" (Lauret 178) is particularly dystopian.

The Historical Notes at the end of the novel are a parody of male academic discourse, in which the misogyny is emphasized by sexist and lewd puns about "tales" and "tails" (313), for example, as well as jokes about foreplay and golf courses (319). The keynote speaker also denigrates Offred, casting her as an unreliable narrator, and at one point even accuses her of "malicious invention" (321). It's clear that the expert has failed to hear the narrative on the tapes carefully, for he finds no clue to Offred's identity or name—though, if he had paid attention, the text suggests, as several critics have noted, her name is likely "June"[35]—and failing to decipher much about the author, he goes on, instead, to focus on the potential identity of the Commander. Thus the characters of the novel, and those of the frame narrative, fail to prevent the endurance of patriarchy. In fact, Offred is even implicated in the

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[35] At the close of the first chapter the narrator is in the Rachel and Leah Centre with the Handmaids who have become her friends. They mouth their names to each other: "Alma. Janine. Dolores. Moira. June" (14). The only name that does not appear again later in the text is June, which is, therefore, likely the narrator's name, as numerous critics have suggested.

creation of the future audience who will malign and trivialize her. At one point she says: “By telling you anything at all I’m at least believing in you, I believe you’re there, I believe you into being. Because I’m telling you this story I will your existence. I tell therefore you are” (279). The audience Offred has told into being through her narrative of deliberate “ignoring” (66) and acquiescing is one that perpetuates the patriarchy she narrates.

Instead of maternal or feminist agency, Offred finds herself infantilized, for example, being allowed to sit up and watch television on a special occasion, being protected from certain activities, having to beg to be allowed a match, being bathed, and so forth. In the position of complicit victim she waits at the end of the novel for someone else to decide her fate, resigned and ever passive. The reader is left unsure of the existence of the Mayday Movement Offred has heard of, and if she has found it at the end, it is without deliberate action on her part, because she waits like many women in literary history for someone to come and save her. As Offred notes during one of her musings on language, “Mayday” is derived from the French “m’aider,” which means “help me” (54). Of course, not only is maternal agency destroyed, but also the caricature of the traditional household and family is maintained with a violence and militarism that also destroys domesticity—in the sense of familial bonds and traditional home life. *The Handmaid’s Tale* follows in the footsteps of domestic dramas, but the home itself becomes a prison and place of terror, rather than an

institution posited in need of protection. The family is already destroyed and recreated in a patriarchal parody of domesticity without mothering or care.[36]

The loss of mothers and mothering in Gilead is not merely a personal tragedy for individual women like Offred and other Handmaids, or for their children, but, rather, a loss of possibilities for an ecofeminist "ethics of care" and political feminist power, as Rich discussed, becomes possible within feminist mothering. The loss of mothers is consequently a key dystopian element in the society at large, which suffers for a lack of maternalist politics. Without an engagement in improving the world for future

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[36] The destruction of private life through the policing of relationships, and constant supervision within the home are part of recurring Orwellian tropes. In Orwell's Oceania couples with affection for each other were not allowed to marry, and domestic relations were contractual agreements. In both societies husbands and wives treat each other with suspicion and are likely to betray the other to the state, and sex is supposedly for reproductive purposes only (though we know in Gilead the Commanders frequent a club called Jezebel's to engage in illicit prostitution). In *1984,* the citizens are monitored within their own homes via two-way "telescreens." Gilead lacks similar technology, but has a secret police, the "Eyes of God," who torture suspects to confess and reveal others' names, much as the secret police in *1984* do. For example, Offred is relieved when she hears her friend Ofglen committed suicide because she won't betray her to the Eyes (298), and she remains, from the first time she meets him and he winks at her (28) until the end, unsure if her lover Nick is an Eye or not. Therefore affection and confidences between family members and friends are dangerous and often fatal in both worlds.

generations—both socially and environmentally—the women in *The Handmaid's Tale* instead give up their children, and practice ignoring things. Offred explains, "We lived, as usual, by ignoring things. Ignoring isn't the same as ignorance, you have to work at it" (66). They are far removed from the midcentury mother-activists that Yaszek links to the anti-war politics of their time. Without a Connie Ramos-like maternal anger, there's little hope for change in Gilead. *The Handmaid's Tale* follows in the footsteps of domestic dramas, but in it home itself has become a prison rather than a sanctuary to protect, and consequently it also links the dangers of environmental degradation and infertility to right-wing rhetoric about the family. In Gilead, despite the reification of childbirth, and the cataloging of women into social roles based upon their reproductive capacities, amidst the Aunts, Marthas, Handmaids, and Wives there is no group of "Mothers."

Birthstones (2007)

In the section that follows I show how Gotlieb literalizes women's confinement to their reproductive roles in the reduction of Shar women to basic biological functions. These women, due to terrible birth defects, live out their days in Mother Halls, where they are impregnated, give birth, and suckle children that are brought to their breasts. The leaders' solution is not to disrupt the capitalist destruction of the environment but instead to subject women to scientific manipulation and treat them as animals. Gotlieb's response is not to distance women from animals but to show how animal-like characters are deserving of ethical consideration, and more caring than the scientists who objectify them. This novel, like *The Handmaid's Tale*, depicts a dystopian world bereft of mothers in more than

the physical sense. Similarly to the regime of Gilead, the Shar rulers and those of the GalFed fail to address underlying environmental problems and, instead, control women's reproductive bodies through redistribution and science.

Phyllis Gotlieb's *Birthstones,* like *The Handmaid's Tale*, depicts infertility and chronic birth defects as threats to survival that are tied to the destruction of the environment and family. In *The Handmaid's Tale,* fertile women are reduced to their biological functions of reproduction by the social order, while in *Birthstones* women on the Planet Shar are reduced to their reproductive capacities by chronic mutations that mean they function only as "womb capsules" (12). The Planet Shar and its people are suffering from pollution that has been exacerbated by the activities of orbiting multi-planetary corporations that mine the planet for resources. Tragically, the Shar are beholden to these aliens and the orbiting corporations for the food they are unable to produce themselves in their toxic smog-filled environment, and for the financial means with which to purchase resources they need. The extent of neocolonial control by alien corporations is so great that the Planet Shar is said at one point to be "owned" by the orbiting aliens who exploit it (14). The environmental destruction is more starkly depicted in Gotlieb's work than Atwood's, for while the pollution and toxicity are a backdrop and explanatory note within *The Handmaid's Tale,* implicated in the infertility and birth defects, the processes of ongoing destruction in *Birthstones* is part of the central narrative, which include miners and non-native visitors to Shar, who are obliged to undergo a series of injections and wear filters in their noses in order to withstand the pollution when they visit the planet.

The devastation of the environment on the Planet Shar manifests itself most obviously in the terrible birth defects that affect females. Since a period known as "The Change," Shar women have been born without sentience or limbs and serve only a basic purpose in the continuation of the Shar race; their wombs and breasts continue to function. These "Unwomen," as they are referred to by some, are removed from any family setting and from outside society, and instead are housed collectively in the Mother Halls, where they are washed, fed, and maintained by rotations of men who provide the public service—a kind of national conscription. Female babies are born with the same deformities as their mothers, and are destined for a similar life as "womb-capsules" (12) in the Mother Halls, but male babies are unaffected by the mutations of their sisters and mothers.

Thus, Shar society is comprised exclusively of men, who raise their sons without the presence or influence of women. Some of these men are caring, and have good individual bonds with their male children, for example Aesh and his father Ohr, or Kohav, who loves his young son Shemesh, a child Aesh is also willing to risk his career and life to protect when Kohav is away and rioters snatch the boy at the Birthing Center (46-47). There are also some father-son relationships that are without care and full of treachery, such as the relationship between the elder Arvig and his son Ayin, who hires an assassin to attack his father (174). It is possible, therefore to see that some caring takes place, though family units no longer exist in any recognizable form, for the only mothers and sisters the men know are nameless, voiceless, limbless, and committed to care in the public Mother Halls. The caring for women is more a maintenance of their basic needs than an act of care; a rotation of

men are conscripted to wash and feed the women—at least while they are fertile—and perform such duties without any tenderness.

Yet, mothering and caring, as Gotlieb makes clear, can be performed by people besides the biological mother, including men, and even on Shar it is sometimes extended even to the women. Aesh's father, Ohr, is an example of male compassion and care in the novel. He pays for the care for his daughters, Aesh's siblings, in the city, when they would otherwise be kept outside of the city where women are "often left unclean and unfed until they died" (115). He also commits a serious crime when he keeps an (Un)woman privately and expends resources feeding and caring for her. When Aesh discovers the Unwoman in an underground room, she is wrapped in a diaper and being cared for by an old man, in a room scrubbed clean, replete with water, food, and clean cloths, unlike the industrial repositories for them. His father explains that he cares for the old man who in turn cares for the Unwoman. "I knew her," Ohr tells his son, Aesh, who understands that she is one of their (his or his siblings') mothers (142). Ohr, who is a respected former ruler of Shar, disagrees with the policies that treat women only as communal resources or expenditures: "I found her again last year when she was being sent to the inland halls to die," he explains to his son; "Should we not be allowed to love even one of these? It is forbidden to do that, waste food and care on them. I am committing a crime" (142). Like the landscape of the planet around them, that is mined for all it can provide but is not cared for, the Shar mothers are used and discarded.

Although pollution is the cause of the Shar's genetic problems, the Shar leaders as well as the interplanetary Galactic Federation (GalFed) who have vowed to

help them focus instead on women's bodies for the solution. The GalFed promise the Emperor of the Shar, Aesh Seven: "'We will bring you true mothers for your children, help you beget whole ones of your own, and make your world clean'" (13), which suggests they will provide women and help detoxify the planet. However, no steps towards the latter pledge are ever taken. In order to "bring […] true mothers" to the Shar, the GalFed need to take them from elsewhere. Their plan is to enlist women from a race of people descended from the Shar, called the Meshar (which translates as "of Shar"). The Meshar were originally part of the Shar population but had to flee the planet as refugees, with assistance from GalFed, because they were persecuted by the rest of society during "The Change" for continuing to bear non-mutant children. To prevent their massacre on Shar, these people were moved by the GalFed to a liveable but unappealing planet of their own. Their resilience to the genetic mutations afflicting the Shar and their indebtedness to the GalFed make them a target now that the interplanetary body is looking for mothers to help the Shar. At the time the novel unfolds, the GalFed demands repayment from the Meshar in the form of fertile women to serve as "First Mothers of the future" by being inseminated by modified Shar sperm (25).

Thus the threats to the family caused by environmental destruction on Planet Shar reach beyond that planet, and disrupt the Meshar families, too. The central mother in *Birthstones* is a Meshar woman, Ruah, who is taken from her home to be one of the First Mothers. Like Offred and the Handmaids, Ruah is separated from her own children because she's needed to produce future children for the Shar. When the research facility Ruah is being held in is blown up, she tries to survive on the

intermediary planet of Fthel IV, but is captured once again, this time by a powerful, rich man called Vanbrennan. Vanbrennan also wants Ruah for her reproductive capacities, for he has deluded dreams of having his own children with a Meshar woman. It is revealed that Vanbrennan's original love interest was a Meshar woman he "grabbed" (86) and held against her will, who has recently died, and the newly captured Ruah is intended to replace her. This man is treated with disgust, as a pervert, by GalFed and the central characters of the novel. A GalFed envoy is sent to rescue Ruah, but there is a clear irony in the hypocritical definition of kidnapping that classifies Ruah's abduction by an individual man as criminal, but her removal from her planet and confinement to the GalFed labs as something else. Ruah's body, though it's treated as a resource, is not private property; neither Ruah, nor individual men like Vanbrennan can lay claim to it; rather, it is a national/Planet Shar resource, for public service.

When Ruah has been taken from her home to become a "First Mother," she thinks of her family but knows her children will be taken care of by the community: "there were others of her clan who would care for the children" (35). This communal caring for others' children contrasts with the institutionalized care of children and women within the male society on Planet Shar, where even the biological parents do not take in their own daughters or mothers of their children. Instead, there are no personal relationships or care expended beyond the duties of feeding and cleaning done in rotation by different Shar men. Finally, when the Shar women become old they are most likely neglected or "helped along" by their keepers (71).

Gotlieb presents us with the animal-like characters of Shar and Meshar, who are nonetheless often more ethically sophisticated than several of the human-like characters, such as the miners orbiting Shar, the perverted kidnapper, Vanbrennan, or some of the more callous GalFed scientists. In fact the caring performed by some of the animal-like characters is contrasted with the "civilized" scientific approach of the GalFed, and its often callous scientists, who objectify, in particular, women and animals, and especially animal-like women, such as the Meshar. For example, the Meshar community objects to the project and the removal of a group of women against their will. Meanwhile, the scientific community, with the exception of a single female scientist, seem to acquiesce to this solution without moral qualms.

The connection between the way in which the Meshar women are treated by scientists and the way in which other non-human animals are treated is a poignant one, pointing to the objectification and exploitation of both. It is the female scientist and mother, Natalya, who notes this: "She said slowly, 'No one of them chose to come here.' *Like any lab animals…*" (34). Ruah, in particular, is treated as an animal inside the lab, and outside. As an alien on Fthel IV, Ruah is called "dog face" (79) and "lady-dog" (119), and mistaken for a dog or wolf (55). Irene López Rodríguez, in her analysis of animal metaphors for women, argues that "through these animal metaphors, people are linguistically socialized and led to accept patriarchal views about the role of women" (96). Some twenty years before López Rodríguez, ecofeminist Carol Adams made a similar case for the connection of women and animals as intersecting "absent referents" in her ground-breaking text *The Sexual Politics of Meat* (1990). Adams writes: "The patriarchal structure of the absent

referent that renders women and animals absent as subjects, collapses referent points, and results in overlapping oppression" (169). When roaming men approach Ruah on Fthel IV, where she is an alien, she is spoken about, rather than directly addressed, because they don't expect her to understand them, and want to eat her because she looks like a dog (55). Even by the male children who happen upon her, one of whom is the scientist Natalya's son, she is treated badly and poked with a stick (36). This attitude towards animals, aliens, and women—Ruah represents all three—is a lifelong learned one, as we see from the boys' behavior.

There are clear connections between the treatment of women—who are already non-human like Shar and Meshar—and other animals. A tradition of animalizing women, particularly women of color and poor women, as well as women in their roles as mothers has often been used to justify their subjugation under patriarchy. [37] Within the context of the scientific labs in *Birthstones,* the animalization

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[37] Recent real-life examples of these views about maternity include the U.S. Lt. Governor of South Carolina, Andre Bauer, who in 2010 drew an explicit comparison between poor mothers and breeding animals when he stated during a town hall meeting: "My grandmother was not a highly educated woman, but she told me as a small child to quit feeding stray animals. You know why? Because they breed. You're facilitating the problem if you give an animal or a person ample food supply. They will reproduce, especially ones that don't think too much further than that. And so what you've got to do is you've got to curtail that type of behavior. They don't know any better" (Montopoli). Similarly, in March of 2012, U.S. Republican Representative for Minnesota, Mary Franson, likened the government food stamps

of Ruah is used to authorize her captivity, the experimentation upon her as a maternal body, and to render irrelevant the question of her consent. Thus the text is an indictment of the way both women and animals are treated by science and patriarchal society. Ruah cries to herself, “They will all think you are some beast and run to close you in walls like the others,” (56), and after the men have tried to rape and eat her, she shouts, with echoes of Shakespeare and Huxley that point to the savagery of the supposed civilization, “Some world this is with people like you in it!” (56).

Gotlieb makes explicit the connection between the treatment of the maternal bodies of Meshar women and the pre-existing scientific discourses around the treatment of animals by positioning this narrative in conversation with her other works. Understood in the context of Gotlieb’s broader canon, the nameless planet that is home to the Meshar has a history of scientific abuses. Within *Birthstones* there is a

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program that assists poor families to feeding animals, and lamented that it was something the Park Service asked people not to do in case the animals become dependent and unable to take care of themselves (the video was removed from official pages after an outcry, and removed from YouTube, at the request of the Representative, but remains viewable online as part of a media story, “Heartless in the heartland: Representative Mary Franson compares feeding food stamp recipients to feeding wild animals” (Bluestem Prairie). In the same month, the U.S. Georgia State Representative Terry England compared forcing women to carry to term dead or brain-dead fetuses to his experience with livestock on a farm, in which he birthed calves and pigs, both dead and alive (Long).

very brief reference to this history that is, however, sufficient to situate the world as the same world depicted in Gotlieb's Dahlgren series:[38]

> It was part of an old story of how scientists of many worlds joined to create both new species of humanity and ever more complicated machines, until the machines awoke and over-powered the fleshy life. There were none of those left, neither the scientists nor the machines called ergs. Both learned there was no life for them on that world, and ultimately it was given to the Meshar. (27)

The story of failed science, and specifically the reference to ergs, make it clear that the planet where the Meshar live was the location of scientific experimentation in Gotlieb's earlier story, *O Master Caliban!* (1976). The story invoked is one in which a scientist, Edward Dahlgren, takes a team of scientists, robot-workers (ergs), and experimental animals to this same planet. This is relevant to the depiction of science and ethics in *Birthstones,* because the planet where the Meshar women are held captive for experimentation has a history as a place of scientific abuses.

Science fiction critic Dominick Grace makes a compelling case that *O Master Caliban!* should be read as a critique of scientific experimentation with animals and any living creatures:

> Esther and Yigal[39] both emerge from these experiments and might be seen as positive results, but the novel does not simply present animal experimentation

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[38] Gotlieb's Dahlgren series includes *O Master Caliban!* (1976) and *Heart of Red Iron* (1989).

[39] In *O Master Caliban!* Esther and Yigal are the two intelligent and caring animal-like beings who result from the experimentations. Especially relevant to

> as a good or even a necessary thing. Indeed, the plot focuses on the ergs' acquisition of intelligence and their own engagement in experimentation in imitation of their human creators. The results are various monstrosities (in physical terms, anyway), human and otherwise. However, only some of the physical monsters are moral monsters, as well; many are not. The novel clearly critiques the treatment of living creatures (sentient or not) as the subjects of experiment. (31)

By the time of *Birthstones,* Gotlieb replaces experimentation upon animals with experimentation upon the women who have inherited the planet, and the indictment of experimental use of life is compounded.

In *Birthstones* we can see what ecofeminists claim more broadly, that “the oppression of women and the other animals [is] interdependent," (Adams 16). As Barbara J. Cook has noted, “For centuries women have been associated with nature but many feminists have sought to distance themselves from nature because of the representations of women controlled by powerful natural forces and confined to domestic spaces” (1). However, this approach of challenging the association with nature does nothing to address the hierarchies themselves that oppress nature, exploit it, and fail to offer ethical consideration before doing so. For ecofeminists, it is possible to imagine a society where a comparison to and equation with animals and nature is not demeaning and objectifying. Dominick Grace notes that through her novels and poetry Gotlieb “blurs the distinctions between man and animal” (25) and

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contemplations of caring and mothering is Esther the gibbon, who even serves as a surrogate mother in the text.

“problematizes the equation of the animal and the monstrous” (27). In *Birthstones*, the Shar are depicted with various animal-like traits, such as tails, and they are referred to as animals and savages by several non-Shar aliens. The aliens who express such sentiments are not, however, depicted kindly by the text: they are the colonists who are destroying the environment of another’s planet and exploiting their labor. Conversely, in some of the animal-like Shar we are shown the greatest figures of compassion and caring. Thus, part of Phyllis Gotlieb’s ecofeminist contribution is to destabilize the distinctions between human/animal and the hierarchies implied therein.

Gotlieb challenges the hierarchy suggested in the division of human/alien/animal rather than attempting to distance the natives/Shar from nature and animals. For example, one miner says, falsely, of the Shar, “[…] them there’s just animals that ought to be in cages. They’ll tear you apart if you look at them” (206). Yet many of the Shar characters are presented as more ethical than the miners, who appear more human in their shape, but are depicted as coarse, exploitative, cruel, and dishonest. By refusing to *other* animals or to revert to distancing her characters from nature and animal—as have been some responses to the exploitation of women and the environment—Gotlieb’s approach is far more sophisticated. She instead embraces the animalism of her characters and rejects assumptions that such animalism must be linked to irrationality, violence, or lack of civility.

The GalFed’s scientific enterprise demands that the Meshar women give up their individual freedom, and families, to participate in their project in the name of a greater good. The issue that arises here, as in *The Handmaid’s Tale*, and many other

dystopian and utopian worlds, is the obligation to the "greater good" when valued over individual freedom. However, in both of these novels the specific groups of women are targeted to give up rights to their bodies, as well as maternal relationships, in order to serve the regimes, and their reproductive capacities are treated as common goods. In the GalFed's facilities, the Meshar "First Mothers" are imprisoned while their bodies are coopted and manipulated in the name of science and survival. Given that these interventions are scientific ones, Gotlieb implicates science and scientific discourses—including reproductive technologies—in the patriarchal abuse of women that takes place in the novel. In particular, the way that women are treated in the scientific facilities demonstrates that they are considered objects of study rather than participants or agents. The lone female scientist involved in the experiments, Natalya, is herself a mother, and seems to be the only scientist disturbed by the women's treatment. She notes the objectification of the women in their labs. As a mother to a young boy, she has to repeatedly deal with guilt over her role in the mission, and her sense that, by serving GalFed and finding a scientific "solution" to the problem on Shar, she is actually betraying the Meshar women. Natalya harbors these doubts that compete with the official narrative that calls for a scientific intervention into the reproduction of the Shar for the greater good—the survival and restoration of Shar population. It's a scientific solution that necessitates a loss of control by individual women, like Ruah. Men need to provide sperm that the scientists are trying to modify, yet the Meshar women are called to serve and sacrifice, emotionally and physically, in a way the men are not. Just as the Shar women are referred to as "cradles" (33) and "womb-bearers" (14) with only one function to fulfill, the Meshar who are taken to

help the Shar create new "*whole*" women are also reduced to their biological and reproductive functions. As Tracy Marafiote writes in her ecofeminist critique of reproductive technology, the female body is "a battleground upon which cultural skirmishes are waged in relation to woman, maternity, nature, technology, and, fundamentally, choice" (183).

In the Shar world, as well as much of the Western world outside the novel, as maternity becomes more difficult and is threatened by environmental factors, there is a concurrent increase in the medicalization of pregnancy and childbirth and an elevation of the role of science in areas that have traditionally been female domains. Motherhood and maternal bodies are multiply constructed through relationships to scientific studies of the environment and of the body *as* environment. We see this represented in *Birthstones*, where the majority feel scientists must intervene in Shar reproduction. In medical science, feminists argue that a previous domain of female knowledge—particularly the field of midwifery—has been increasingly coopted by patriarchal institutions that treat women as medical subjects rather than participants, and too often disregard and discredit female-based knowledges of pregnancy and childbirth. Rather than a holistic view of maternity, recent science tends to pathologize pregnancy, investigate symptoms, and call for unprecedented medical monitoring, and rapidly increasing rates of major surgical interventions, that are becoming standard procedures in the West. [40] This increasing medicalization of

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[40] In many Western countries, midwives are being replaced by doctors, and in some parts of the United States, homebirths are even illegal, meaning women are required to submit to medical control of their gestation and birth, and medical

childbirth removes control of women’s bodies, and particularly their reproduction, from the women themselves and places it in the hands of masculine doctors, or what ecofeminist Irene Diamond calls “heroic experts.” These doctors are not all men, particularly in the field of gynecology, but their role as “heroic experts” with authority over the body of the female object of study, and specifically greater authority than the woman carrying the baby, positions them as masculine.

Some ecofeminists accuse maternal surveillance, fetal monitoring, and genetic testing of being part of a masculinist medical model that not only excludes women and usurps a hitherto female-led realm of knowledge and practice, but also constitutes an outright attack on women. Ecofeminist Irene Diamond has claimed that “seeking to appropriate women’s reproductive capacities serves to underscore both the masculinist character of scientific ‘objectivity’ and the very real possibility of the complete medicalization and commodification of all phases of human procreation and birth” (“Babies” 203). Women are underrepresented in scientific fields (Donawerth *Frankenstein’s Daughters* 4), including reproductive technologies, science fiction is a

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intervention is increasingly normalized in the form of in vitro fertilization, prenatal testing such as amniocentesis, and surgical methods of delivery such as Caesarean sections, which account for one in four births in Canada (Hall, Ontario Coalition), and more than one in three in the United States. Healthgrades’ 2012 “Trends in Women’s Health in American Hospitals” reports the percentage of babies delivered via caesarean section (C-section) has reached an all-time high of 34%, and rates at Maryland hospitals range from 26-45% C-Sections (International Cesarean Awareness Network [ICAN] of Baltimore).

potential venue for creating feminist visions of such science. In *Birthstones,* the character Natalya represents a more empathetic scientist, who sees connections between the treatment of women and animals and her own relationship to them, constituting an example of "women scientists as characters in women's science fiction" who are "a legacy of the earlier feminist utopias, which represented the dreams of women for education in the sciences" (Donawerth, *Frankenstein's Daughters* 5). Natalya's discomfort with the scientific culture around her indicates that a feminist utopian vision of science must not only include women as scientists, but also allow those women to change the practices and culture of science itself.

In *Birthstones*, Gotlieb presents a damning critique of patriarchal reproductive technologies, a portrayal that includes kidnapping and forced insemination. The Meshar women are taken from their home planet to be part of a scientific project intended to benefit what is an exclusively male society on the Planet Shar. The lack of the women's agency and consent is taken matter-of-factly as part of the project, which is introduced to the reader in the following way:

> Great civilizations would use their sciences and learn new skills to rectify the DNA of the Shar males, and Meshar women would be called to serve as the First Mothers of the future. No one expected them to serve willingly. (25)

In this rhetoric, those in control of the science are both "great" and "civilized" while the Meshar women's consent is made irrelevant and abnegated by the requirement of "service." Too often, claims ecofeminist Lin Nelson, women are treated as research subjects or "biological marker and significant point of data collection" (180) rather than participants in the reproductive process who should be allowed to share in the

knowledge produced.[41] In *Birthstones* the group of Meshar women selected to be First Mothers are treated as objects for study rather than participants in the project, and certainly not potential agents of knowledge.

Even outside of the labs, a pregnant Meshar woman is objectified, as scientists monitor her and turn her unborn babies into “fetal tissue” to be examined (195). Levona, a Meshar woman working at a GalFed hospital becomes pregnant through a consensual affair with a Shar man, and this of course excites the scientists interested in seeing if Meshar and Shar coupling can present a way to eliminate the birth defects afflicting the Shar. It turns out that Levona is pregnant with twins, one carrying the Shar mutation, and the other a healthy fetus. Natalya is upset to learn that Levona is

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[41] Nelson documents how, in environmental research, mothers have had milk samples collected for testing and then been denied access to the results of those tests or obliged to sign non-disclosure and confidentiality notices in order to get information about their own health and the risks for them and their children (180-81). More broadly, Ruth Bleier has provided some of the most powerful critiques of women’s exclusion from science in “The Cultural Price of Social Exclusion: Gender and Science,” analyzing of the influence of gender in science, including the gender of researchers, subjects. Bleier also studied neurophysiology and sex-related brain differences in animals, arguing that biological differences were shaped by environments and experiences. See, for example, “Science and Belief: A Polemic on Sex Differences Research.” Her seminal texts include *Science and Gender, A Critique of Biology and its Theories on Women* and the anthology *Feminist Approaches to Science.*

carrying a child with the mutation. She thinks of the trauma a mother would feel at having a baby with such a birth defect. In contrast, another GalFed scientist, Mukherrjee, is excited that one of the twins will be a mutant, saying, "If it works out it's one more for the population and one for the research" (194). Again Natalya deviates from the predominant masculine and scientific interest in specimens and samples in her concern for the mother as an individual; she is relieved by the miscarriage of the twin with severe defects, "for Levona's sake" (195), while scientists like Mukherrjee are disappointed that there will be less "fetal tissue" to examine (195). Natalya's empathy—her caring—is not subsumed by her scientific interest and inquiries. In fact the dictates of patriarchal science take their toll upon her so greatly because they seem to require an eschewing of feeling and caring and the sacrifice of individual maternal bodies to greater scientific and patriarchal regimes.

There are numerous arguments as to why we should care about nature and not treat it as a mere resource to an instrumental end, the most self-serving and instrumental of which is that the survival of the species depends upon the health of the environment. Within societies that consume resources and discard what's left over, the women in these novels are valued as bearers of future citizens of Gilead or Shar, and disposed of once they have served their purpose, as the aging mothers in Shar, or if they fail to fulfill their duty of producing viable children, as in the case of Handmaids who fail their three assignments. As natural resources, the treatment of these women is permitted in the name of science, or (patriarchal) religion, or nature, and they are not themselves given ethical consideration because they are treated as objects rather than agents. The barely sentient mothers on Shar are used as wombs

and sent out of the city to die from neglect once they are no longer useful, and the Handmaids are sentenced to toxic Colonies if they fail to produce. Thus the treatment of the environment has not only physical consequences for the people and creatures who inhabit them, but also social consequences, in that the instrumental view of the world is extended to its inhabitants, particularly women, who are similarly consumed, used, and discarded. Though scarcity is a real problem, particularly on Shar, where they cannot grow their own food, the distribution of resources is overtly patriarchal and tied to patriarchal opinions of women's worth, made most starkly clear when the women are infertile. For example, the leader of Shar, and central character Aesh is sterile, and while he is somewhat embarrassed and saddened by this, it does not inhibit him from partaking in resources or succeeding socially and politically. In the same way, the infertile Commanders of *The Handmaid's Tale* are allowed to deny their impotence and blame women, even as Handmaids and resources are expended upon men who will never be able to reproduce. It therefore becomes starkly clear that even in societies with primary goals of increasing the population and eliminating birth defects, women are tied to their reproductive capacities while men are valued for more than their biological potential.

In *Birthstones* the GalFed promises to restore "real" women and mothers *and* clean the planet. The steps the GalFed take, however, focus exclusively on gaining control of reproduction and learning to manipulate the sperm of Shar men and the bodies of unwilling Meshar women, rather than addressing environmental problems. Even as the planet teeters on the brink of a civil war, the aliens who mine it for resources are concerned mainly for their ongoing operations. Despite the GalFed's

promises, no measures are taken to address the industrial pollution on the Planet Shar, and, in fact, protecting the mining operation seems paramount, no matter what else goes on around it: the aliens "were unwilling to interrupt the mining of precious metals, gems and liquid fuels with the election of a new Emperor" (69). Thus it's evident that while women are called upon to give up their bodies for science, and for species survival, the mining and pollution continue unchecked.

In the Shar's plight, and the scientific solution offered to them, technology is made to stand in for meaningful changes in their relationship with the Planet Shar; they attempt to rectify the birth defects with reproductive science rather than disrupting the practices of the orbiting corporations that are harming the Shar people and the Shar planet. It is possible that ceasing pollution and attempting to heal the ecosystem might organically create changes in mothers and children on Shar, but, instead, the response is to experiment on reluctant maternal bodies from another planet in a lab. It is easier than stopping the ongoing extraction of resources for profit. In fact, the greater the focus on fertility problems instead of the environmental problems that cause them, the more interventions in reproduction may be necessitated as the environment worsens, for perhaps more men will also feel the reproductive consequences of pollution, for we know some, like Aesh are infertile. Ecofeminist Irene Diamond notes that, with the focus on technologies and the microcontrol of reproduction in our own world, it is easier to ignore the more systemic problems. She writes that through reproductive technologies "the power of heroic experts is extended, the toxicities of late capitalism persist, and the poisoning of the Earth can continue. Thus the challenge of transferring our relationships with each other and

with the Earth is postponed" ("Babies" 210). "For the most part," notes Diamond of reproductive technologies, "the dominant discussion places its faith in the expertise to alleviate the individual trauma of infertility or the fear of malformed babies. The notion that the health of individual bodies is related to the health of the social body and the ecosystem that sustains all bodies recedes into the background as the heroic experts focus on the microcomponents of baby-making" ("Babies" 203). Diamond's analysis is clearly applicable to the Planet Shar where "heroic experts" in the form of GalFed scientists are called upon to alleviate the problem by modifying Shar sperm and using Meshar women, yet they ignore the continuing problems of a toxic planet.

The solution for eco/feminists cannot be the coercion of motherhood and the reduction of women to wombs, even if that solution has the backing of a scientific community. Ultimately the scientific project of "First Mothers" in *The Birthstones* is literally blown up. Gotlieb offers hope, instead, in two unexpected discoveries that happen outside of the surveillance and control of the GalFed scientists: Levona's healthy fetus, and the discovery of occasional healthy females being born in the remote and unexplored, though equally polluted territory of the Western Declivity on Shar. In the end the attempts to focus on a scientific solution at the expense of the bodies of a few First Mothers is brought down by violence and politics when the labs are attacked by terrorists. Hope for survival exists not in interpolating maternal bodies into the scientific system or in attempts to study and manipulate health and fertility as something isolated from the environmental context, but is glimpsed from Levona's voluntary inter-species relationship, and the healthy females being born in the Western Declivity.

Some ecofeminists, such as Sheila McGregor, have argued that a focus on caring is part of the privatization of environmental responsibility. The emphasis upon women's roles, they fear, can all too easily be coopted by patriarchal capitalist culture. The danger they see is that solutions to environmental destruction will be domestic ones rather than systematic assessment and change. Consequently, McGregor explains, we will fail to look at the social structures, the mass pollution by corporations, the global corporate cooption of food production, and the displacement of female farmers, and instead focus on our personal responsibilities within our domestic realms. The redirection to individual and domestic solutions would include participating in a booming eco-product market in which profits can be made and consciences appeased through the purchase of recycled toilet paper and kitchen towels, for example—environmental privatization. This focus on the domestic and micro rather than systematic root of ongoing destruction is precisely the attitude of the Galactic Federation and Shar leaders in *Birthstones*, when they postpone meaningful changes in mining and business relations for the micro-management of maternal bodies. In *Birthstones*, while the scientists work to correct the birth defects affecting women, they fail to address the terrible pollution that has caused them. Consequently the control of women's bodies as fetal environments is substituted for addressing the underlying causes.

Conclusion: Maternal Bodies and Domestic Dystopias

The genre of science fiction—a genre birthed along with the obscene creature in Mary Shelley's *Frankenstein* (1818)—offers us fearful figures of pregnant aliens, of human women pregnant *with* aliens, of monstrous mothers and offspring, and of

imagined reproductive technologies and what they might mean for who might be able to mother. Motherhood and reproduction are well established themes. Patriarchal cultures' anxieties about maternal bodies manifest themselves perhaps nowhere as powerfully as in the depictions of monstrous mothers, and pregnant carriers of dangerous and usually disgusting alien parasites.[42] At the same time, for women writing science fiction, the genre has offered a space to imagine alternative childbirth and child-raising practices, and different means of conception and gestation, even some that do away with men all together.[43]

In this chapter I have demonstrated how two texts by Canadian women science fiction writers address the pressing issue of environmental degradation by mapping the dangers onto women's bodies and domestic life. The texts I have

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[42] For example, a recent popular science fiction film, *Prometheus* (2012), directed by Ridley Scott, includes a scene of a woman desperately performing her own abortion of a parasitic alien fetus.

[43] Feminists writing in the 1970s, like Joanna Russ and Marge Piercy, were often motivated by a desire for women to escape the physical constraints and pain of repeated and unwanted pregnancies that were common prior to the propagation of birth control in the second half of the twentieth century, and the concomitant nursing and childcare and unequal divisions of domestic labor that remain common. For example, Russ' "Nor Custom Stale" is an indictment of the drudgery of housewifery that does in fact, with custom, stale. In Piercy's Mattapoisett, co-mothering among three care-givers is a possible solution to the weight of child-raising, and cleaning and cooking are public work (*Woman on the Edge of Time*).

discussed here offer visions of societies *without* mothers who are able to practice mothering, and they are visions that are equally monstrous and dystopian. Lin Nelson notes that "one of the most sobering aspects of the ecological degradation we endure is the impact on our capacity to bear healthy children" (177), and a second threat within these novels is the impossibility of maintaining healthy relationships and practicing social caring when attitudes towards the planet(s) and our communities are exploitative.

Ecofeminist Karen Warren argues that the theorizing of ethics has too long perpetuated a male bias that fails to take caring seriously. The modes of caring that she advocates for align with practices of mothering and the almost entire absence of such practices in these novels makes them truly dystopian. Ecofeminists argue that mothers, fathers, and women and men in general need to adopt caring and apply it to the non-human world in order to achieve ecological sustainability. Part of the solution, for ecofeminists, is not to deny women as part of nature—even though the association has historically been manipulated and used against them—but to deny that men are further from nature. Phyllis Gotlieb helps us to do this by her construction of caring women, men, and creatures who have sophisticated and ethical relationships with others and the land without being removed from nature or animals.

The practices of caring and connections that are traditionally ascribed to women, and in particular, mothers, are what are missing in objectification of women and nature as resources. In these novels the regimes destroy families, even as they fight to maintain birthrates, legislate about reproduction, and compel homes into rigid structures. The narratives are instead permeated with a sense of loss that comes from

the destruction of families and practices of mothering, a loss of "care," in the ecofeminist sense. In these future societies, then, the population survives, but the family does not. Lisa Yaszek has documented how maternalist politics were used by science fiction writers of the 1950s to dramatize threats to the family, and these authors similarly employ such politics to convey environmental and social threats as they are mapped onto families and domestic life, in visions in which mothering itself is destroyed. Atwood and Gotlieb, I argue, demonstrate that the threat to survival in their futures is not only the environmental destruction that imperils the future population, but also patriarchal systems that destroy the family and society even when the population endures.

Chapter 2: Ecofeminist Protagonists: The Alien Traveler and Specimen-Turned-Scientist

Ecofeminism argues that the subjugation of women and nature are related through the construction of difference. Within hierarchical paradigms, difference is created as binary and one side of the binary pair elevated over the other (Plumwood *Feminism* 41-44). This difference is used to systematically dominate those found on the "lower" side of the binary, including women (man/woman), nature (culture/nature), and Other (self/other). Science fiction as a genre is founded upon explorations of difference, exemplified and amplified in alien encounters. Traditionally, the protagonists of science fiction and utopian writing have been male characters who were travelers, scientists, or both. In this chapter, I examine the characteristics of science fiction protagonists who are constructed to confound hierarchical difference, who, despite the patriarchal and colonial conventions, might destabilize the binaries of Self/Other and other dualities along with this central one. Thus, I take the figure of the scientist and traveler as a central focus for my analysis of contemporary science fiction writing by women, reading female scientists and travelers and their relationships to Others (human and non-human) in the works of Élisabeth Vonarburg as subversive alternatives to the colonial and masculine protagonists that have been established by the genre. In addition, Vonarburg's narratives oppose the traditional kinds of imperial, authorized, and institutionalized knowledges that were "discovered"—but in reality, more properly, constructed—about nature, natives, and women through experiment or voyage. These figures

contrast with the conventional male protagonists whose accounts of new scientific and/or geographic discoveries are authoritative and supposedly disembodied and neutral. As I shall demonstrate, the female protagonists I consider here, while they are also scientists and travelers, are *embodied* rather than neutral, *illegitimate* rather than authorized, destabilizing boundaries of self and other, and producing knowledge that is uncertain, multiple, and conflicting.

These alternative embodied scientists and travelers are crucial to ecofeminist revisioning of science fiction because the genre has strong ties to masculine and colonial adventuring, patriarchal and heterosexist romance, and scientific exploitation of women, nature, and Others, all of which are problematic to ecofeminists. To challenge the tradition of science fiction that promulgates sexism, colonialism, speciesism, and exploitation of nature, Vonarburg not only substitutes female protagonists as travelers and scientists, but also changes their relationship to science, travel, land, women, and Others. Her protagonists approach travel and science not as a masculine pursuit into crevices, or the conquering of frontiers, but as personal and even bodily experiences. Though women's bodies were historically used as a reason to bar their entrance to scientific communities and knowledge production, as well as travel, these narratives do not offer disembodied or neutral protagonists, as traditional masculine science fictions do, but instead break down the mind/body dualism by foregrounding personal histories, family, and embodiment as crucial to what the characters know and how they travel. Sociologist and ecofeminist Richard Twine argues the following:

> Embodiment is of fundamental importance to ecofeminism. Historically, the human body, as a constant reminder of our organic embeddedness, has been the location of the intersection between both the mastery of nature and nature-associated peoples. […] As a parallel to and aspect of the West's categorization of "women" as "closer to nature" has been the dominant view of "women" as "more embodied" than men. While the body has figured within ecofeminist writings since the early texts (Ruether 1975), it may be argued that there remains much work to be done […] (32-33)

I suggest that Vonarburg's characters foreground embodiment rather than eschew it, and in doing so answer Twine's call to "unsettle the dominant ways of looking at and judging bodies" (33).

Vonarburg's protagonists also connect with "Others" in ways that challenge the paradigms of domination. Ecofeminists argue the interrelated treatment of women, land, and Other, and Vonarburg challenges these interlocking oppressions by foregrounding women who are closely identified with nature, natives, and what has conventionally been objectified, and instead making these the protagonists we identify with. The other characters who appear in her texts—including animals and natives—are consequently *less* "Othered" than they are in traditional masculine and colonial works of the genre, because the protagonists themselves occupy that position of "other," also—including, in the texts I shall consider here, an alien from another world and a woman who was formerly the object of scientific experimentation.

I begin by considering science fiction's colonial roots, as they are interwoven with voyages of exploration and tales of discovery, and the conventional travelers

formulated within such discourses. I turn first to Vonarburg's *Les Voyageurs malgré eux* to situate her protagonists as oppositional travelers, within postcolonial narratives. I then go on to consider the second common form of science fiction protagonist, the scientist, and Vonarburg's revision of this figure in *Le Silence de la Cité*. Throughout I read the theme of survival that is common to much science fiction, but particularly central to Canadian literature, from the perspective of these alternative characters. My analysis focuses upon the survival of the reluctant voyager, the scientific specimens, the natives, and non-human others.

The Alien Traveler in *Les Voyageur Malgré Eux* (1994)

The figure of the traveler as protagonist has been central to science fiction, as it was to colonial tales.[44] It is both the narrative vehicle that conveys tales of new societies and people to the audience at home, and the manifestation of science and

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[44] In addition to the perpetual search for new and exotic goods (spices, pepper, tea), as well as new markets for domestic products, the real-life travelers who inspired early science fiction heroes were part of a scientific endeavor to discover knowledge about the New World. They kept diaries and log books of the geography, flora, fauna, and the people they encountered. Though women were not explorers and did not participate in official science of the period, they were nonetheless involved in telling stories about the New World, and conveying knowledge about it, often through art. For example, there were many botanical drawings by women in the eighteenth century, and artistic depictions of the new world by Victorian women travelers during the nineteenth century (Pomeroy).

exploration that the genre is founded upon. I turn first to Vonarburg's ecofeminist revisioning of that character, along with alternative tales of survival and displacement rather than "tales of discovery." *Les Voyageurs malgré eux* (2009) opens in a Montréal with a different history than the one the reader knows. The protagonist, Catherine, is a university professor, living in an Enclave surrounded by checkpoints and reverberating with the aftermath of colonial conflicts. Yet, Catherine herself is not particularly politically engaged, and her character does not promise the kind of heroism one might expect of a protagonist. She appears quite ordinary and cautious as she witnesses the political struggles and police brutality around her. Through her students she overhears political conversations and witnesses their bodies arrive in class bearing the brutal marks of the state's response to resistance and protest. Thus, the scene set at the start of the novel displays violence, conflict, and mounting tension.

Catherine begins to have strange visions, to find herself lost in familiar locations, to forget important events in national history, and consequently she starts to question her sanity. Thus, very early in the novel, she is established as an unstable and unreliable narrator. We later discover that her memories of this earth are false, that she is an alien from another planet. But even Catherine does not know this until the end of her story. In the meantime, her unreliable memory and confusion make her believe she might be losing her mind, and so she plans a holiday, hoping that it will give her a chance to recuperate and relax, to reestablish mental clarity and reliable memory. However, by the time she leaves the Enclave for her Christmas skiing vacation, she is not sure if she is being followed, targeted, or becoming even more

paranoid. Her travel leads to strange dreams of other realities, and visions in which she encounters an alter-ego called “Katrin.” All this culminates in a journey north to find out the truth about the world she’s living in.

Catherine is an unlikely explorer. Though she is eventually obliged to embark on a somewhat epic quest for knowledge, in which it will be revealed that she is an intergalactic “Voyageur,” she begins as a very ordinary traveler, perhaps epitomized by her bourgeois attempt to escape from it all on a Christmas skiing trip. Unlike traditional masculine colonial science fiction explorers, Catherine is not heroic or searching for excitement and adventure. In fact, her journeys are more displacements than expeditions, and these displacements are directly linked to colonialism and empire. The reader learns that these displacements began when she was a little girl, being dislodged by war; she recalls sheltering in a country house, when she was just six years old, as allied troops approached Paris in 1951 (rather than 1944 as in the reader’s reality) (98). In fact, Catherine has had to move so often that she has lost her sense of home and laments: “Elle avait quitté trop d'autres maisons, Paris, Tannerre, Sergines...” [“She had left too many homes, Paris, Tannerre, Sergines…”] (220). She describes herself as being transplanted [“transplantée” (135)], and her personal history as one of abusive survival [“survivance abusive” (95)]. Shortly after the novel begins, Catherine once again becomes a reluctant traveler, when she tries to escape the strange threats and fears of surveillance that she doesn’t understand but that seem to be related to the political events unfolding around her. When she leaves for her ski trip, she fears that it will not be a holiday but rather the beginning of life as a fugitive and that she will, yet again, never be able to return home (“elle ne pourrait pas

retourner chez elle" 219). In *Les Voyageurs malgré eux,* Catherine travels to escape and survive rather than to conquer or dominate. The verb that recurs in the text is *fuir*, "to flee." Thus Vonarburg creates a woman who is more protagonist on-the-run than explorer.

This construction differs from the early science fiction narratives that were born out of the excitement of European mercantile expansionism,[45] steeped in the tradition of colonial exploration, a continuation of the tradition of sea narratives and tales of voyages of discovery. For example, Utopian travelers were often ship-wrecked young men[46] who uncovered new lands (such as Utopia, in Thomas More's 1516 composition; Christianopolis, in Johann Valentin Andreä's 1619 text by the

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[45] European governments commissioned voyages of acquisition; for example, the Portuguese explored the Indian Ocean in search of the "Spice Islands" and valuable nutmeg and mace, and Christopher Columbus crossed the Atlantic, or "Sargasso Sea," in 1492, as part of Spain's commitment to finding new trade routes to compete with Portugal's colonial expansion.

[46] There have occasionally been shipwrecked young women, but their travels tend to be of a different nature from those of their male counterparts of the merchant-mariner and explorer traditions. Notably, there is the lady of Margaret Cavendish's *The Blazing World* (1666), who did not set out for adventure but was "stolen" by a traveling merchant; and Vera Zarovitch of Mary E. Bradley Lane's *Mizora* (first published in serial form 1881-81), whose kayak is swept to the land of Mizora, again, not from a deliberate adventure, but during her attempt to escape political exile in Siberia.

same name; and Bensalem in Francis Bacon's *New Atlantis* of 1627). In 1516, Thomas More drew explicitly upon the popularity of a real-life contemporary explorer of the time, Amerigo Vespucci, and claimed his protagonist, Raphael Hythloday, was one of the men left by Vespucci in Brazil, gone on to travel further and discover a place called Utopia. Andreä and Bacon developed situations along the lines of More's model.

Then, in 1818, Mary Shelley's novel, *Frankenstein,* provided one of the first and finest interweavings of science fiction and travel narrative, in which a gripping plot of monstrous scientific creation is embedded within a frame narrative of doomed Arctic exploration. *Frankenstein* itself is a satire of masculine and colonial voyages of discovery, and the narratives of these, that were so popular in the nineteenth century.[47] Even in contemporary science fiction, critic John Rieder identifies "the lingering presence of the conventions of colonial-imperial adventure fiction" (35). The conventions of the genre, Rieder argues, have "a lot to do with the 'xenophobia

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[47] The compelling nature of sea captains' discoveries and journeys is demonstrated in the eagerness with which their accounts were awaited, consumed, and celebrated by the reading public back home at the imperial center. For example, one of the most famous and popular publications of the eighteenth century was *An Account of the Voyages Undertaken by the order of His present Majesty, for Making Discoveries in the Southern Hemisphere, and Successively Performed by Commodore Byron, Captain Wallis, Captain Carteret, and Captain Cook* (1773), which included the journal of Captain James Cook and botanist Joseph Banks, aboard the Endeavour (1768-1771).

and colonialism' that [science fiction scholar E. F.] Bleiler[48] finds an overwhelming presence in pulp science fiction during the Gernsback[49] era (*Gernsback Years xv),*" and, moreover, elements of xenophobia and colonialism "certainly persist in late-twentieth-century mass-market products such as the *Star Wars* saga" (35).

In the specific context of the alternative Montréal where Vonarburg sets *Les Voyageurs malgré eux*, the colonial narratives and legacies are multiple and overlapping. Indeed, this novel adapts the classic conventions of colonial science fiction colonizing adventure narrative to overtly and thematically engage in discourses of postcolonial survival—both in terms of the survival of the character herself (her repeated fleeing and displacement), and also in terms of the postcolonial stories and knowledge she highlights. The French-speaking Canadians find

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[48] E. F. Bleiler is an important source in assessing the roots and developments of conventions within science fiction because he is author of (amongst other things) *Science-Fiction: The Early Years* and *Science-Fiction: The Gernsback Years,* important seminal scholarly texts spanning a great deal of science fiction writing, both of which were nominated for the Hugo Award. Bleiler was recognized in 1984 with the Pilgrim Award for lifetime contributions to science fiction and fantasy scholarship, and in 1988 he received the World Fantasy Award for Life Achievement.

[49] The "Gernsback Era" refers to a period also dubbed the "Golden Age of Science Fiction," during which there was a proliferation of American pulp science fiction. Hugo Gernsback (1884-1967) was a key editor and publisher of science fiction stories. His major magazines were *Amazing Stories* (launched in 1926) and *Wonder Stories* (1929-1955). Gernsback himself was also a writer and inventor.

themselves simultaneously colonized by British power and the English language—so much so that the Quebeçois independence movement adopted Frantz Fanon's concept of Negritude (first developed in his 1952 *Peau noire, masques blancs* and later in the context of the Algerian revolution in *Les Damnés de la Terre*, in 1961) to their own condition. However, they are also complicit, as part of earlier French colonization and settlement of the region. The conflicting allegiances of old and new world—colonial settlers from Britain and France and the postcolonial political and linguistic minority of Francophone Canadians—play out through the protagonist, Catherine, who finds herself perpetually displaced, with little sense of belonging.

Just as Canada may be termed "hybrid," not easily categorized as colonial or postcolonial, so Catherine may be described as "hybrid" as defined by postcolonial theorist Homi Bhabha in *The Location of Culture*. Bhabha argues that the condition of postcoloniality is hybrid and complicated, and that postcolonial identities are messy and implicated. Vonarburg's Catherine is exactly such a messy, hybrid figure. For example, she does not identify with English-speaking Canada and is living in the French Enclave, but she is not a native member of the political minority of Québécois; rather, she is European, and thus tied to France as well as Québec. Catherine has fled ("fuies"), from France as well as Montréal (95), and she flees not only from these places but also from the violent colonial legacies of her past. Reflecting upon her move from France to Canada, Catherine realizes she was trying to escape not only France, but also her heritage:

> Ce n'était pas vraiment la France qu'elle avait quittée, mais l'heritage, le passé, l'amoncellement invisible de devoirs, d'obligations, les codes absurdes

> que s'étaient transmis des générations et des générations, le passé, cette survivance abusive qu'elle traînait dans les sacs-poubelle jusqu'à l'entrée de la cour, l'héritage, qu'elle regardait s'envoler enfin dans les camionnettes des antiquaires. (95)
>
> [It was not really France she had left, but her heritage, the past, the invisible accumulation of duties, obligations, the absurd codes of behavior transmitted from generation to generation, the past, that abusive survival that she had dragged in garbage bags to the entryway of the courtyard, the heritage that she watched finally disappear in the antique dealers' vans.]

Yet, her French-from-France identity is repeatedly referenced and evident even to people she meets in passing, including a bus driver, as well as the students she teaches, who mock her accent—"les blagues inévitables sur son accent français, 'Vous n'êtes pas d'ici, vous'" ["the inevitable jokes about her French accent, 'You're not from here, are you'"] (30). Thus, while living in a political Enclave that is fighting for independence, Catherine also has familial ties to the imperial center, France, and its colonial past.

Quebeçois science fiction critic Amy Ransom notes that Catherine's and her family's journeys mirror those of Québec's colonizers: "… her grandfather represented Europe's colonial presence in Asia; her mother is of Vietnamese origin, and she herself has emigrated from France" ("Uncommon Ground" 454). The male family line is allied to the colonizers, and the female to the colonized. All of this symbolic lineage serves to implicate Catherine's personal history with that of empire and colonial dominations of the past, even as she critiques it. Caught between the Old

World and the New World, the colonial heritage of France and the colonized settlement of a linguistic and political minority in Montréal, "Un troisième monde à elle toute seule, d'une certaine façon, parce qu'en appartenant un peu aux deux, elle n'appartenait à aucun." ["In a way, she was alone with a third world, because while belonging a little to both, she belonged to none."] (135-36). Catherine's displacements—particularly as a result of war—speak to a postcolonial condition and diasporic subjectivity that position her more as a displaced wanderer than an explorer. Because of her colonial ties, it is crucial that Catherine is an unwitting traveler (she doesn't realize she is an alien), and a reluctant traveler (one who is more easily identified as a refugee than an explorer), for her innocence and reluctance undercut her complicity in the colonial ties that surround her.

The reluctant traveler and her travel in the novel demonstrate a second side to the colonial journey that is omitted from traditional exploration narratives and from science fiction, that of the displacements caused by colonial expansion. The specter of forced migration and displacement that is silenced by traditional colonial narratives of the heroic explorer, rather than those he encounters, bubble up throughout *Les Voyageur Malgré eux*. For example, the independent francophone state of the fictionalized Montréal is itself founded on a forced resettlement camp where, we are told, Canadian authorities corralled francophone Canadians to neutralize their activity and influence (66). The novel teaches us that during this period of forced resettlement, a portion of the francophone population emigrated to Louisiana, while others were exiled within Canada. This fictional history mirrors a real one in which Franco-Canadians were similarly exiled and deported after the British captured Nova

Scotian territory, known to the French as “Acadie.” In the years that followed, particularly after 1749 when residents were forced to swear unconditional allegiance to the British, the French residents fled to neighboring regions. In 1755 the British began to deport Acadians,[50] fearing their threat during the Seven Years’ War (1754 to 1763), known to the French as “La guerre de la Conquête” [The War of Conquest] and to the Americans as “The French and Indian War.” As in the fictional history, many of these French Canadians escaped capture and deportation by fleeing to the wilderness, and later many would settle in French-colonized Louisiana, where the Acadians became known as “Cajuns.” In a postcolonial turn, Vonarburg deftly inscribes and foregrounds in her fiction these journeys that are a part of colonial expansion, but constitute the travel that is elided by many historical accounts and fictionalized retellings that focus upon the adventuring explorer.

Feminist and postcolonial critics often challenge historical accounts and practices for their omissions and for claims of objectivity that deny the narrative construction and mediation of events.[51] Postcolonial theorists Childs and Williams note, “since the West has a deplorable record of simultaneously denying the existence

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[50] The expulsion of Acadians is romanticized and popularized in Henry Wadsworth Longfellow’s poem *Evangeline, A Tale of Acadie*.

[51] Fredric Jameson argues that history is not a text but that our access to history is mediated through textual representations. In his book *The Political Unconscious* Jameson writes “history is *not* a text, not a narrative, master or otherwise, but an absent cause [which] is inaccessible to us except in textual form, and our approach to it and to the Real necessarily passes through its prior textualization” (35).

of any worthwhile history in areas it colonized (Africa is the most obvious example) and destroying the cultures which embodied that history, an important dimension of post-colonial work has been the recovery or revaluing of indigenous histories" (8). A recurring strategy for those who do not have the ability to see their stories represented in historical accounts is inscription through fiction. In Canadian literature, works of fiction frequently incorporate Canadian histories, including indigenous and immigrant ones (for example the retelling of the Métis rebellion led by Louis Riel in Margaret Laurence's novel *The Diviners*, and the recuperation of Caribbean-Canadian myths in Nalo Hopkinson's work, particularly *Midnight Robber*). As part of her challenge to positivist knowledge about the world, Vonarburg recuperates the stories of forced migration that paralleled the travels of heroic captains who were part of colonial expansion. Through these competing historical narratives within the protagonist's consciousness, Vonarburg also suggests not only omissions but also conflicting histories.

Initially, however, the reader, like Catherine, attempts to understand "the truth," to discern an accurate account of the world of the novel, and to comprehend the unfamiliar history that has led to a different Canada. When Catherine, at the beginning of the novel, keeps forgetting important parts of Canadian history, she goes to an authoritative source, in search of facts: "elle se dirigea vers la bibliothèque. Il lui manquait des données? Elle irait les chercher" ["she headed to the library. She lacked data? She would find it"] (64). Initially, then, Catherine's response to her strange visions and memories and the absences in her knowledge is to turn to the institutionalized authority, the university library. It is through this search that the

narrative begins to point to the unreliability of official metanarratives promulgated in academic institutions, not just the unreliability of the protagonist. Although Catherine's memory loss could be a symptom of her traumatization, making her an unreliable narrator, several of the historical facts she discovers are disorienting to the reader, too, and they are more likely to identify with Catherine's familiar accounts than the conflicting authoritative ones. However, by the end of the novel, the reader must accept that there are multiple versions of history, that positivist singular truth about the world is impossible, and in the end, that there are multiple worlds. Though Catherine is unreliable and tells plural and conflicting stories, when we learn that there are multiple worlds, the reader has also to accept the possibility that the stories that contradict each other might all be true.

In contrast to the supposedly universal, objective knowledge of travelers in colonial texts, who kept meticulous log books and charted new land and new people, Catherine possesses instead what Foucault describes as "local, discontinuous, disqualified, illegitimate knowledges" (Foucault 83). She can possess only partial and fragmented information; it is local to her experiences, rather than universal to everyone around her; and it is *illegitimate,* for it is not only unauthorized but also contradicted by other more official knowledge documented within the library books, for example. She experiences the world and her own identity as multiple, partial, fragmented, and shifting. Her discoveries and acquired knowledge only serve to destabilize and render less certain what she—and we as readers—know about the world. Rather than a secure, masculine, imperial traveler, the protagonist Catherine is thus the kind of messy, implicated, and hybrid postcolonial figure outlined by one of

the leading figures in postcolonial theory, Homi Bhabha, and as such she offers an intervention into the tradition of colonial domination of land, women, and nature, and resistance to facile "truths" and positivist knowledge about the "other."

With its roots in imaginings of new lands and new peoples, science fiction has historically been allied to the colonial literature of Great Britain and the cultural and literary imagination of the U.S. frontier. Meanwhile, within "a genre that conventionally thematizes empire and colony building" (Ransom, "Oppositional Postcolonialism" 291), Canada's complex colonial and postcolonial history means that it has a different relationship to voyages of discovery and imperial adventure stories than Great Britain or the United States.[52] Covering Canadian science fiction as diverse as the pioneering text *A Strange Manuscript* by James De Mille (1888), Québec science fiction, including *Le Silence de la Cité* (1981), and internationally acclaimed works such as William Gibson's *Neuromancer* (1984), and Margaret Atwood's *The Handmaid's Tale* (1985), David Ketterer's study concludes:

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[52] Consider, for example, a few popular science fiction novels by American men, and their colonial themes: *The Foundation Series* (1942-1950) by Isaac Asimov includes the colonization of planets, massacre of settlers by another colony, and take-over of planets through emotional manipulation and instilling of fear by an ominous creature known as "The Mule"; the *Mars Trilogy* (1992-1999) by Kim Stanley Robinson pictures the environment of Mars manipulated to suit human colonists through "terraforming"; and *Dune* (1965) by Frank Herbert presents the colonization of natural resources ("The Spice") leading to the enslavement of native people.

> America's aggressive attitude toward nature and the unknown, whatever lay west of the ever-advancing frontier, translates readily into the mythology of conquering and domesticating the unknown that finds expression in much SF. The Canadian attitude seems to be simply that nature is too vast, too threatening, too powerful; man is nature's victim rather than the reverse, survival not conquest is the issue. (3)

I agree with Ketterer that survival, not conquest, is the issue—and part of the story is the survival *after* conquest and violence—that is, survival not by the traditional explorer, but by those conventionally found on the other side of the frontier, the "wild," and undomesticated. However, Ketterer presumes a dichotomy of man as "nature's victim" or the "reverse," presupposing a hostile antagonism. Ecofeminists would argue that humans are part of nature, not set apart and destined to battle and subdue it or else fall victim.

In dystopian texts, in particular, we clearly see the intertwining of nature and humans where the destruction of one imperils the other, as in *Le Voyageur Malgré Eux*, where environmental contamination has caused genetic mutations that threaten the human species. Vonarburg reminds us that danger need not necessitate hostility, however, for as she says of her planet Tyranaël (which first appears in *Contes de Tyranaël* (1994) and later as part of a series of texts[53]) it is "very much *not* a hostile environment. It is a *mysterious* environment, hence a sometimes dangerous place if

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[53] The Tyranaël series comprises five novels all set in the same world: *Les Rêves de la Mer* (1996), *Le Jeu de la perfection* (1996), *Mon Frère L'Ombre* (1997), *L'Autre rivage* (1997), and *La Mer Allée avec le soleil* (1997).

one is not careful with the mystery/mysteries" (E-mail to the author). Approaching other-worldly environments with humility and care is quite different from seeking to master, conquer, or domesticate, and these differences are responsible for "changing the story."[54] Vonarburg's texts change the story by challenging traditional expectations of science fiction protagonists, their relationships to others, and therefore the stories they tell.

As a messy and implicated figure, Catherine is quite different from the secure travelers of masculine adventurers to the frontier, or the scientist-travelers of science fiction, who are removed from the native characters they encounter and objectify. She destabilizes the categorization of Other. She has an uneasy alignment with colonial France and postcolonial Québec, and furthermore, she's an alien. At the end of the novel, it is revealed that Catherine actually participates in travel on a much more grandiose scale than either she or the reader could have imagined. Thus, Vonarburg reworks the alien-coming-to-earth paradigm, wherein aliens come either to conquer and enslave, or as colonists to civilize and "help" the less intelligent earthlings (the variants of the story elaborated by Greg Grewell in "Colonizing the Universe: Science Fictions Then, Now, and in the (Imagined) Future"). Catherine, instead, is an unwitting alien until the end of the novel, and harbors neither civilizing

[54] *Changing the Story* is the title of Gayle Greene's 1992 analysis of American, British, French, and Canadian feminist fiction, their similarities and differences and the ways they approach traditional narrative structures.

nor malicious intent. In fact, she has fabricated memories from a childhood on earth,[55] and believed herself to be of that world. Thus, she is not a hostile or civilizing force, but rather a destabilizing one. She forces us to question the construction of difference and what it means to be native or alien, to complicate the division between "us" and "them" that so much colonial fiction and science fiction relies upon.

Canadian science fiction writer Nalo Hopkinson has noted that the resonance of exciting plots of colonial adventure is lost on those who identify more with the natives/aliens at whom T-Probes and Lasguns[56] are traditionally directed than with the colonizers who employ them. Hopkinson writes: "Arguably, one of the most familiar memes of science fiction is that of going to foreign countries and colonizing the natives, and … for many of us, that's not a thrilling adventure story; it's non-fiction, and we are on the wrong side of the strange-looking ship that appears out of

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[55] Catherine has the kind of memories imagined by American science fiction writer Philip K. Dick in several of his novels, including *Do Androids Dream of Electric Sheep* (1968), where it is purported that the android Rachael may honestly believe she is human because of her false memories (though this is ultimately not true and part of the deception), and the short story "We Can Remember It for You Wholesale" (1966), in which a corporation claims to be able to implant memories of holidays and even visits to Mars in which you can be a secret agent (the story was adapted to become the film Total Recall, starring Arnold Schwarzenegger in 1990, and a second adaptation with the same name starring Colin Farrell in 2012).

[56] T-Probes and Lasguns are the weapons used in Frank Herbert's 1965 science fiction novel *Dune.*

nowhere" (*So Long Been Dreaming* 7). In *Les Voyageurs malgré eux,* as the title of the novel suggests, the traveler is a reluctant one, a traveler "malgré elle" [in spite of herself], displaced, rather than adventuring, and therefore in some ways more easily aligned with the postcolonial than colonial. Postcolonial theorists Helen Gilbert and Joanne Tompkins[57] have claimed that postcolonialism represents "an engagement with and contestation of colonialism's discourses, power structures, and social hierarchies" (2). Ecofeminism aligns itself with discourses of postcolonialism to similarly suggest alternatives and resistance to the hierarchies of conquering and domesticating, though Ecofeminism makes women central to its analysis and is also concerned with the decolonization of land and nature in ways postcolonialism is not necessarily committed to. Yet, an allegiance between postcolonial and ecofeminist discourses and politics could yield useful strategies and possibilities. In *Les Voyageur Malgré Eux,* the protagonist is not necessarily from the wrong side of the ship, but she does not know which side she's from. More importantly, the alien character we identify with works to destabilize the audience's identity, too, and thus ideas of self and other, by making us unsure of which side *we're* on.

The immersion of the reader in a world that is familiar but somehow strange, with familiar events happening on different dates, for example, means that the reader experiences a disorientation similar to Catherine's, and, sharing her memories and

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[57] Scholars have argued over what qualifies as properly postcolonial. The emergence of Ashcroft, Griffith, and Tiffin's *The Empire Writes Back*, in 1989, is an important historical moment for post(-)colonial studies, signaling, as such a publication does, the consolidation of a "legitimate" field.

knowledge, identifies with her, rather than dismissing her as mad. For example, a psychologist Catherine visits during her search to understand visions has never heard of "psychoanalysis," until Catherine mentions it, yet it is a familiar term to the reader. We're also familiar with some events, but find the dates are off and the history slightly changed. In fact, given our familiarity with Catherine's own knowledge and perspective, when readers learn that Catherine is an alien, they also learn that the alternative world of the strange alien Voyageurs she has come from is likely their own. Consequently, we realize, within the world of the novel, that we not only relate most to the alien, but are actually also aliens, ourselves. Part way through, we, like Catherine, realize that this is not our world. Ultimately, who is "alien," and who is one of "us" depends on the vantage point, something Vonarburg manages to thoroughly destabilize.

Alternative stories from different perspectives are important in the cultural survival of the postcolonial. Postcolonial cultures repeatedly face attack by colonial narratives and imperial accounts of history that erase their own histories and practices. Catherine's narrative recuperates lost stories and narratives of resistance as well as documents the physical violence of colonialism. Thus she manages to survive—to "hang on" and "stay alive" as Margaret Atwood says of Canadian characters, but she also keeps alive other sides of the story of colonial encounters and adventures. Her survival, then, is not only at the personal level, but also extends to cultural and narrative levels.

Ultimately, Catherine discovers that the world she has been living in is a simulacrum. She realizes that the Canada she once saw as divided between Old and

New World through a legacy of colonialism is, in fact, all a construct of the "Voyageurs." She learns that everything is comprised of the same material and energy—le bleu ["the blue"] ("Uncommon Ground" 538). This realization undermines the socially constructed differences, as Amy Ransom notes: "That the Voyagers have constructed the fictions behind national conflicts literalizes a current commonplace of political theory: that national identity is not an essential quality but a cultural construct, often developed negatively in opposition to an other" ("Uncommon Ground," 455). The revelation that everyone is made up of this "blue" is a final postcolonial twist in a novel that reveals that the narrator is herself an alien—an "Other"—and likely so are we, and thus challenges the existence of Otherness and alterity. Though the people she has lived among are part of a replication created by the aliens, Catherine ponders what it means to be human, and decides to stay living among them. She reflects: "[…] le corps humain était une condensation locale de matière/énergie, le nuage avait exactement imité la matière organique du corps humain" ["[…] the human body was a local condensation of matter/energy, and the cloud had imitated the organic matter of the human body exactly"]. Moreover, she further challenges, "Quelle difference?" ["What's the difference?"] (538). These questions of sameness and difference, posed by an alien living in a fabricated world, are surely postcolonial and posthuman ones.

The Immodest Scientist in *Le Silence de la Cité* (1981)

Élisabeth Vonarburg's *Le Silence de la Cité* offers a scientist protagonist who is again a revisioning of conventional masculine science fiction protagonists, as in her more recent *Les Voyageurs malgré eux*. *Le Silence de la Cité* incorporates elements of

several popular science fiction themes of importance to feminists and ecofeminists, such as imperiled population rates, gender fluidity, reproductive technologies, and environmental degradation. It is set in an underground technological and scientific enclave, where scientists and the European elite have withdrawn from the face of the earth to escape the harsh environment. Environmental devastation above has destroyed the land and created genetic mutations that threaten the future survival of humans. The earth has therefore become segregated into a technologically advanced subterraneous metropolis and a surface world above where people live comparatively primitive lives and are divided into warring clans. At the time of the coming of age of the novel's protagonist, Élisa, the city is sparsely populated, with only a few remaining descendants who themselves are not reproducing. Instead, the eclectic handful of city residents live incredibly long lives in bodies that are restored by rejuvenation processes, and, following the failure of their exceedingly aged bodies, survive even longer in machine forms, known as "ommachs" (a contraction from "homme[man]-machine").

Genetic changes due to human environmental destruction, and, indeed, *man*-made destruction (environmental and nuclear), mean that male heirs are a precious commodity and girls and women are of little social value. In the "Extérieur," as it is known within the city, the other humans are surviving and reproducing, but they live with a legacy of environmental pollution and radiation, and without scientific and technological advancements to aid them. Due to a virus, these people reproduce at a

ratio of ten women to every man, which threatens the future of the population[58] and also means that girls are subject to infanticide and women to enslavement, under the extreme patriarchy within the clans on the surface. Clan leaders, like Carlo Vietélli, have multiple wives to (re)produce their male heirs, and exploit women as slaves in the service of domestic and social (re)production. Judith, the youngest wife of Manilo Vietéli, who becomes the protagonist's lover outside the city, is one of the women who serve meals to Vietélli's clan. Other women engage in domestic labor or work in industry, toiling in mines, for example. So, although women are seen as disposable and replaceable, they also perform a great deal of the work within the society, including domestic, industrial, and reproductive. Their treatment is thus analogous to that of the environment and natural resources: they are exploited, simultaneously vital and abused and devalued.

The novel foregrounds the figure of the scientist, and Vonarburg offers us two starkly contrasting examples of such characters—one abusive and patriarchal, and one caring, maternal, and connected to others. The first is Paul, a brilliant and ruthless man attempting to genetically engineer a solution to the population crisis facing the world. The second is his creation/daughter, Élisa, who is the novel's protagonist. In a satiric glance at the eroticizing of scientific discovery, in Élisa Paul literally creates his *object* of desire, and becomes Élisa's lover once she reaches adolescence. Yet, Élisa does not remain the docile, perfect woman/child/lover/object. She grows up to

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[58] As we have seen in Chapter 1, declining birth rates is a common science fiction trope that has also been featured in the works of Gotlieb (*Birthstones* 2007) and Atwood (*The Handmaid's Tale* 1985).

similarly seek to solve the problem of low male birthrates, becoming a scientist in her own right, and continuing Paul's project after he is gone. She has the capacity to regenerate herself, and later discovers she can also metamorphose into male form. When she needs to leave the city, first to escape Paul, and later to find one of her children, Élisa does so as a man, using the pseudonym "Hanse."

Élisa is a boundary figure straddling cultures, like the "new mestiza" described by Gloria Anzaldùa. She has been created from the genes of a man named "Hanse," who was kidnapped by Paul and taken from the surface to be experimented upon in his lab. Yet, she is also raised in the metropolis and loves Paul as a father, and later sexually. She also manages to straddle gender binaries of man/woman. Élisa becomes a scientist, but as the product of genetic experimentation herself, she cannot callously reduce people to experimental specimens, as Paul did. She becomes, instead, a different kind of scientist, because of this hybridization, and because she is shaped by her experience of being an object of science before she was ever a Subject.

Paul is a scientist of the enlightenment ideal, as feminist science theorist Donna Haraway describes it in her study, *Modest_Witness@Second_Millennium.FemaleMan_Meets_OncoMouse: Feminism and Technoscience* (1997). That is, he is one engaged in an epistemological search for scientific "advancement," and dedicated to objective knowledge. His life project is to produce an enhanced species with the capacity to regenerate itself. The people outside the city are useful to him because some of them have mutated to develop self-regeneration. Unfortunately, that quality is linked to accelerated aging, which makes those on the outside less viable as prototypes for his ideal race, so he experiments

upon them and attempts to isolate the positive mutation of regeneration. Both his life and project span hundreds of years, thanks to the scientific marvels within the city, and the cyborg "l'ommachs" that are connected to and serve as bodily repositories for the aging population (including Paul). He is quite literally a disembodied knower, who appears in first human and then artificial form, as the reader and Élisa come to learn together. In Paul's case, the commitment to science and knowledge is intense enough to reduce humans to "specimens"—even his daughter, Élisa, and the failed prototypical siblings he disposed of before her.

Historically, scientists have been *male* figures, the likes of Paul, and thus Vonarburg depicts an archetypal scientist as dispassionate, rational, and disembodied knower. Donna Haraway offers a feminist critique of these European and American scientists of the Enlightenment, whom she refers to as "modest witnesses," and as physically neutral and socially authorized. She describes such traditional scientific figures this way:

> the modest witness is the legitimate and authorized ventriloquist for the object world, adding nothing from his mere opinions, from his biasing embodiment. And so he is endowed with the remarkable power to establish the facts. He bears witness: he is objective; he guarantees the clarity and purity of objects. His subjectivity is his objectivity. His narratives have a magical power—they lose all trace of their history as stories, as products of partisan projects, as contestable representations, or as constructed documents in their potent capacity to define the facts. The narratives become clear mirrors, fully

magical mirrors, without once appealing to the transcendental or the magical. (*Modest Witness* 24)

Since Anglo-American and white European male bodies were the ones to occupy that privileged space of (supposed) neutrality, they were able to be involved in producing knowledge. They represented themselves as gentlemen and thus "truth-tellers." According to Haraway, "women, as well as other categories of non-independent persons" were excluded from "the preserves of gentlemanly truth-telling that characterized the relations of civility and science in seventeenth century England" (*Modest Witness* 26-27). They were not allowed to forget their bodies to pursue a "life of the mind," in the way men were, for they were considered too corporeal. Men were the ones accepted by science as rightful participants in the pursuit of knowledge, and for a large part continue to be, for, as Jane Donawerth points out, "equitable participation of women in science is still a utopian proposition in our century" (*Frankenstein's Daughters* 4).

Paul is an unflattering caricature of a "modest witness"—ruthless, egotistical, and rational rather than caring, and he serves as the foil to the scientist Élisa grows into. He is portrayed as cold, objective, and pragmatic, and ultimately as monstrous (an aspect to which I shall return). He believes, for example, for the sake of exigency, that female children are not only disposable but that most should be disposed of,[59] as he explains to a horrified Élisa:

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[59] The female infanticide advocated by Paul mirrors contemporary patriarchal practices in India and China as well as the impetus behind sex prediction enabled by enhanced technologies such as ultrasound and a recent early blood test that is not

"C'est leur problem. Dehors. Trop de femmes. Ils n'en suppriment pas assez à la naissance. Et ici dans le Sud, ils les traitent trop bien, ells survivent trop longtemps. Plus elles vivent longtemps, plus elles font de filles, c'est un cercle vicieux. Il faut les supprimer avant qu'elles aient des enfants. Pas toutes, évidemment, mais régulièrement. Comme les mauvaises herbes." (128) ["That's their problem. Outside. Too many women. They do not eliminate enough at birth. And here in the South, they treat them too well, they survive too long. The longer they live, the more girls they have, it's a vicious cycle. One should get rid of them before they have children. Not all of them, obviously, but steadily. Like weeds."]

As he talks about murdering young women, Paul compares them to unwanted plants, explicitly articulating a conceptual connection that ecofeminists argue is inherent in the domination of both women and nature. In a traditional colonial relationship to the "uncivilized" people and non-human nature outside the technological enclave of the city, concerned only with use-value of the world around him, Paul treats women, nature, and native Others all as potential resources and objects of study. On occasion, when they can be of use to him, he abducts both adults and children from l'Extérieur (the Outside) as "les spécimens" (6) to bring back to the city for his experiments. Thus Paul is securely situated as Subject and scientist, while the natives of the wilderness beyond serve as disposable specimens for furthering his knowledge.

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available legally in the U.S. partly due to concerns of sex-selection through selective abortions.

The scientific relationship created by Vonarburg at the start of the text sets up the traditional objective male scientist—a horrifying image of the modest witness– as the subject, and situates the woman, Élisa, as an object of scientific study, rather than a subject of such knowledge. Throughout her childhood she is experimented upon by the man she calls “Papa.” Paul begins each of his visits to her by slicing open Élisa's finger to see how quickly she can heal (a capacity she has due to genetic mutation):

> Papa ne venait pas souvent: une fois par mois, il passait une journée entière avec elle; […] La journée, cependant, commençait toujours par le même jeu bizarre: Papa mettait à Élisa une sorte de chapeau de fils, et il la coupait au bout d’un doigt. Ça ne faisait pas mal longtemps. D’ailleurs, le jeu consistait à avoir mal le longtemps possible, à guérir le plus vite possible. Il suffisait d’arrête le sang et de refermer la coupure. Il lui avait expliqué: elle pouvait le faire si elle voulait. Et elle le faisait. À mesure que le temps avait passé, les coupures étaient devenues plus profondes, jusqu’à l’os: maintenant, Papa endormait le doigt d’Élisa, avant de couper, pour qu’elle n’ait tout de même pas trop mal (elle avait appelé “Anesthésie” sa poupée qui fermait les yeux…), mais le jeu restait le meme: fermer la coupure, le plus vite possible.” (10-11)
>
> [Papa did not come often: once a month, he spent a whole day with her. […] The day, however, always began with the same strange game: Papa would put a kind of wire hat on Élisa and then slice the end of her finger. It hurt, but not for long. Anyway, the point of the game consisted of making it better as quickly as possible. You just had to stop the blood and close up the cut again.

> He had explained to her: she could do it if she wanted to. And she did it. As time passed, the cuts became deeper, to the bone: Papa numbed Élisa's finger before cutting it, so it didn't hurt too badly (she had called her doll that closed its eyes "Anesthesia"…), but the game remained the same: to close the cut as quickly as possible.]

Slowly the reader and Élisa both come to realize that she is part of Paul's experiments to create a future human race who can self-heal; a specimen/daughter, who, we learn, has followed from many terminated prototypes/siblings.

This early experience of being an object of study means that, even after Paul is gone and Élisa leads the city, and even laboring towards a similar goal of restoring the population, she will never be the kind of scientist who can feign disembodied objectivity. Jane Donawerth argues, "Women scientists as characters in women's science fiction are thus a legacy of the earlier feminist utopias, which represented the dreams of women for education in the sciences" (*Frankenstein's Daughters* 5), and Vonarburg creates such a female scientist but also one who will practice differently. Élisa is not simply scientist, for she has been first established as a traditional object, too: descendant of a native person from beyond the "Outside," emphatically female, and the worn trope of love-interest to the scientist, but also the object of scientific experimentation. Thus she will necessarily destabilize the subject-object divisions foundational to traditional masculine scientific discourse.

Élisa is what I shall call an *immodest witness,* for she is the antithesis of the traditional scientific knower that Haraway identifies as the "modest witness." While the *modest* witness was physically and epistemologically transparent, and crucially

disembodied, Élisa's body and its fantastic capacities are repeatedly foregrounded. She is multiply and conspicuously embodied. Thus, she is immodest because her corporeality cannot be ignored. Her body is part of the story—from her ability to regenerate and heal herself to her startling metamorphosis between sexes, to the number of children she produces (with a great deal of technological assistance). Thus, with a female scientist, Vonarburg simultaneously counters Élisa's objectification and the conventional opposition between intellectual knowledge and embodiment. This is a break with the traditional view of the body as antithetical to scientific knowledge, for, as Price and Shildrick explain, "in terms of intellectual activities, the body seems to have been regarded always with suspicion as the site of unruly passions and appetites that might disrupt the pursuit of truth and knowledge" (2).[60]

In particular, the association of women, as well as people of color, with leaky and disruptive bodies, and with denigrated matter (in the Platonic sense), was used to

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[60] The perceived unruliness of women's bodies and supposed mental and emotional implications is perhaps best epitomized through the example of hysteria, a psychological disorder that the medical community believed women were susceptible to due to their "wandering wombs." The idea of "wandering wombs"—that the uterus was like an animal inside the woman, or was a part of the body that could move about and become dislodged—dates back to ancient Greece and was succeeded by various theories of "vapors" and sexual dysfunction that all pathologized women's bodies with regards to "hysteria" well into the twentieth century. For a comprehensive history of hysteria, see Mark Miscale's *Approaching hysteria: disease and its interpretations* (1995).

prevent them from being knowing subjects. Feminist criticisms of neutrality and universality, however, have taught us the impossibility of any neutral observer/scientist/narrator and the inevitability that ideals of neutrality will serve institutionalized values, privileges, and exploitations.[61] Requirements of neutrality, as Haraway notes, have worked to define as neutral and masculine, and to exclude women from knowledge production and fields such as science. Thus, women have often been the objects of anthropological and medical knowledge, as Élisa is initially, rather than its agents or subjects. This is particularly true of women whose bodies are marked by class or race in addition to gender.[62] With the protagonist Élisa, not only is

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[61] Sandra Harding not only asserts the impossibility of objectivity and neutrality in several of her works critiquing science, but also argues that attempts to depoliticize science result in supporting the institutional biases that structure both society and science and normalize and perpetuate "male supremacy, class exploitation, racism, and imperialism" ("After the Neutrality Ideal" 568). In addition, Dorothy Smith argues that the universal and neutral are always specific and gendered; Donna Haraway details the very specific social and physical requirements under which one could be classified as neutral enough to be a scientific witness (*Modest Witness)*; and Patricia Hill Collins outlines how the identity and standpoint of individuals affect the knowledge they produce, analyzing in particular black feminist thought, as it is shaped by the lived experiences of black women.

[62] Non-white female bodies, as well as poor women's bodies, have been particularly exploited by medical research and science, and historically objectified by the white male scientific gaze. To give one of the most notorious examples, Sarah

a woman inserted into the position of scientist, but inserted as one who makes no pretenses of disembodiment and whose body is a thematic focus.

With a woman as science fiction heroine, we are forced to notice how the patriarchal and (hetero)sexualized discourses of scientific discovery no longer fit. Though conventional science fiction was about scientific and geographic pursuits, the journeys and scientific quests were often overlaid with a language of sexual conquest.[63] Conventional male travelers were represented as patriotic, scientific,

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Baartman, a Khoikhoi woman, was exhibited at nineteenth century freak shows in Europe under the name of "Hottentot Venus." She was exhibited because of her exotic and unusual (by European standards) bodily features, including her buttocks. During her life she was exhibited in Great Britain and France, painted and drawn by scientists, and after her death her brain and genitals were displayed in the Musée de l'Homme in Paris (until 1974). Much has been written about state and medical control and coercion of non-white women's bodies: see, for example Dorothy Roberts' *Killing the Black Body: Race, Reproduction, and the Meaning of Liberty*, which details access to reproductive medicine, coercion, and treatment of black women's bodies in the United States. The exploitation of women's bodies by medical science is also central to other texts by Canadian women writers, such as Nalo Hopkinson's *Brown Girl in the Ring* (1998) and Phyllis Gotlieb's *Birthstones* (2007), which I analyze in other chapters of this dissertation.

[63] The common conflation of sexual and scientific conquests demonstrates how science fiction tales of adventure were also part of the patriarchal, heterosexual, and imperial missions of eighteenth-century empire. For more on Romance and empire,

colonial, and romantic figures all at once.[64] Jessica Richard writes that the "sexual image of the scientific method seems almost too apt for the expedition of discovery, in which sharp-prowed ships venture to unknown parts of the globe" (302). In these traditional discourses that Vonarburg is writing against, both women and nature are treated as objects to gain knowledge of and possess. For example, in Mary Shelley's seminal novel, *Frankenstein* (1818), which offers a proto-feminist critique of both science and voyages of discovery, Victor Frankenstein is taught by an instructor who "aligns modern scientific enquiry with sexual conquest (and gynecological mastery)" and teaches Frankenstein that "scientists 'penetrate into the recesses of nature, and shew how she works in her hiding places'" (Richard 301-2). The common conflation of sexual and scientific conquests is parodied in *Le Silence de la Cité.* Paul, an archetypical scientist, finds that his scientific and sexual interests are joined in Élisa. He watches her abilities to regenerate and heal during his visits, and after seeing her masturbate via a feed from her room, when she is an adolescent, he decides to have sex with her:

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see Lamb and Casid. Lamb's study considers the appeal of South Sea narratives, and the extension of empire alongside art and science, and Casid focuses on the imperial reshaping of landscapes and agriculture as part of the colonial, patriarchal, and heterosexual missions of eighteenth century empire.

[64] See Rieder on quest romance (*Colonialism and the Emergence of Science Fiction*); and Richard on romance and exploration narratives ("'A Paradise of My Own Creation': *Frankenstein* and the Improbable Romance of Polar Exploration").

"C'est une femme maintenant. A-t-il droit de lui dénier… En fait, ce serait plutôt un service à lui render! Et puis ce serait intéressant… Vérifier jusqu'à quel point elle peut controller son corps dans ces conditions-là…

Et puis tu en as envie.

Eh bien oui, il en a envie, et alors? Ça veut dire qu'il est bien vivant. Il pose la main sur son sexe durci et se met à rire." (41)

["She is a woman now. What right does he have to deny her…In fact, it would rather be a service he was rendering her! And it would be interesting…Verify to what degree she could control her body in those conditions…

Besides, you want it.

Well yes, he wants it, so what? That means he is alive. He puts his hand on his hard cock and starts laughing."]

Thus, Vonarburg parodies the misogynistic conflation of sexual and scientific conquest through her depiction of Paul's doubled and disturbing interests in Élisa. Furthermore, Élisa is doubly objectified as specimen and sexual object.

Understanding the romantic quest narrative as inseparable from the scientific one, it becomes clear that the scientists and explorers who were the heroes of traditional science fiction were never neutral or disembodied, but specifically masculine and heterosexual. In fact, somewhat ironically, in pulp science fiction, even the traditional male scientist was also less "modest" than the ideal "witnesses" imagined by Haraway. In many cases, the traditional protagonists were more masculine romantic adventurer than scientist. Brian M. Stableford, author of an encyclopedia of science fiction, asserts that "the heroes of the great majority of pulp

science fiction stories were young men of no great intellectual attainment, who often became involved with scientists merely by virtue of falling in love with their lovely daughters. The narrative utility of naïve viewpoint characters, who could legitimately ask for detailed explanation of the story's scientific background—and pursue its thornier points until they were able to grasp the gist—were keenly appreciated by writers and readers alike" (470). Vonarburg's text can therefore be read, in part, as an amusing parody of this conventional story-line, for instead of a hero falling in love with a scientist's daughter, we are given a scientist who falls for his own daughter. He is a disturbing representation of the traditional patriarchal scientist and an incestuous anti-hero all in one. Furthermore, it becomes clear that the male protagonists were not disembodied scientists, but specifically embodied male. They were men with passion, emotion, and physical presence, who fell in love, who rescued women, who came to fisticuffs with the antihero or aliens, and who were vividly depicted in adventurous battles (rather than scientific labs) on the majority of pulp covers.[65] These romantic heroes of no great intellect point to the hypocrisy and fallacy of disembodiment, for the men neither transcend nor forget their bodies. They also point to a further reason for the exclusion of women as science fiction protagonists: the convention of heterosexual romantic quests as part of the narrative.

Just as impossible conditions of neutrality and disembodiment bar women from positions as scientific heroes, they find themselves equally excluded from the

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[65] For more on pulp science fiction covers see Robin Roberts' *A New Species: Gender and Science in Science Fiction* (1993); and Brian Attebery's *Decoding Gender in Science Fiction* (2002).

role of romantic questing hero because of their sex. Within conventional texts the female characters are reduced to fetishized objects for patriarchal possession and knowledge in both the sexual and scientific sense. This is particularly true of native women of other races, species, or times. For example, in H.G. Wells' *The Time Machine* (a novel fragmented into surface and underground worlds, like Vonarburg's), we see a demonstration of the patriarchal and colonial romantic quest through the paternalistic rescue of Weena, the feminine and infantile alien, by the gentleman scientist time traveler. Similarly, the object-subject divide is bridged, in Vonarburg's text, by Paul's sexual possession of Élisa, who is also his scientific object. These recurring instances suggest that conventional science fiction found that alterity could only be bridged by patriarchal romance, in which men come to love an individual alien, or care for a particular woman from another time.

Vonarburg's intervention into the questing romance of science fiction involves a heroine who becomes a man and thereby queers the adventure narrative. Shortly before that first journey Élisa learns from her "Grandpa,"[66] the machine/man (ommach) she will be traveling with, that she has the ability to metamorphose between sexes and to change other aspects of her physical appearance. This ability enables her, therefore, to adopt male privilege when she travels, and since that first journey is an attempt to escape Paul, her male body also serves as disguise. Though it

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[66] The "Grandpa" figure is not a traditional grandpa, for Élisa was created in a lab by Paul and has no mother or biological grandparents, and even this "Grandpa," himself long dead, is simulated by machines. However, he is Élisa's friend, confident, and companion on her travels.

is surprising that a strong female character like Élisa must become a man, she realizes it's a necessity, given the world outside. Élisa is conflicted about her decision, but the advantages of the more privileged sex abound. In the following passage she briefly considers attempting the journey with the female body she is familiar with:

> Un sursaut de révolte le secoue: pourquoi ne pas rester Élisa, après tout? Pourquoi consentir à ce mensonge? Puis elle hausse les épaules: elle regretterait vite cette belle honnêteté, Dehors. Dehors, les femmes trop nombreuses ne sont pas grand-chose devant les homes-rois, les homes rares, les précieux reproducteurs. Au mieux des esclaves dans des harems, au pire des esclaves dans les cuisines, les champs et les mines. Dehors, meme accompagnée d'un homme, une femme n'irait pas bien loin. Même si l'homme est en fait une puissante machine capable de la defender contre n'importe quelle agresseur. (95-96)
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> [A burst of revolt shakes her: Why not stay Élisa, after all? Why consent to this lie? She shrugged. She would quickly forget her beautiful honesty on the outside. On the outside there are too many women and they don't count for much under the rule of men. Men are rare, the precious reproducers. Women are slaves in harems, in kitchens, in fields and mines. Outside, even accompanied by a man, a woman would not get far. Even if that man is really a powerful machine capable of defending her against any aggressor.]

Thus, when she travels outside the city, Élisa does so as Hanse.

Élisa/Hanse is in good company, for there are numerous cross-dressing heroines in literature [67] who have similarly disguised their sex in order to travel; for example in the 1929 science fiction story "Out of the Void" by Leslie F. Stone, the central character, a woman, cross-dresses in order to secure her ride on a spaceship, and Octavia Butler's involuntary time-traveling heroine Dana, in her 1979 novel *Kindred,* dresses as a man during part of her travels in antebellum Maryland. In science fiction, there are also female characters who, though they travel, do not control their own journeys, like Octavia Butler's Dana (*Kindred*), and Vonarburg's Catherine in *Les Voyageurs malgré eux*. Some female protagonists of science fiction have even been physically restricted, like Marge Piercy's Connie Ramos in *Woman*

[67] In reality, as well as fiction, the practice of cross-dressing and passing for male has a long history in journeys made by women. A well-known Canadian example is Sarah Emma Edmonds (1841–1898), who escaped from her abusive father when he tried to marry her to a much older man. She cut her hair, dressed as a man, and adopted the name "Franklin Thompson." As a man, Edmonds/Thompson fled south to the U.S. and later served in the Union army during the Civil War. In America, many slave women—Ellen Craft (1826–1891) for example—dressed as men to escape slavery. The British woman Hannah Snell (1723–1792) dressed as a man to search for her husband and, after learning of his death, joined the marines and traveled to Portugal and India. Many other women have worn male disguises to enable them to serve as soldiers. Still more have passed as men to enable social and economic participation, like Dorothy Lawrence (1896–1964), an English woman who disguised herself as a man in order to be a war reporter in World War I.

on the Edge of Time (1976). Connie visits the utopian future of Mattapoiset and also visits a dystopian alternative future—though we're privy to no journeys beyond mental ones—but in her present reality her physical movement is severely constrained by her commitment in a mental institution. Even in science fiction, then, the ability of women to travel is often curtailed, despite feminist interventions in the genre.[68] In addition, the majority of scientist-explorers of prototypical science fiction were male protagonists partly because those were the bodies permitted to travel and participate in the Age of Exploration, and partly because they were the primary figures who would have been able to travel freely and be invested with the authority to give their stories credibility.[69] Credence as narrator is particularly important when

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[68] A few female travelers have been imagined by women science fiction writers, including Scottish writer Naomi Mitchison's *Memoirs of a Spacewoman* (1962), American Andre Norton's *Year of the Unicorn* (1965), and later American Marion Zimmer Bradley, who, in *The Shattered Chain* (1976) features female travelers guarded by Amazons dressed as men. Similarly, in *Les Guérillères* (1969) the French author Monique Wittig creates some of the first freely mobile women, who travel to parlay with other armies, and who include fast runners who carry news. However, the collective protagonist of the women (les femmes) meet men as they arrive in their community, ambushing their canoes, and thus the story itself is not a voyage, but an encounter in their own state, discovered by male travelers.

[69] The battle for narrative authority has been an ongoing one for female characters and authors, alike, with many writers performing an analogous literary cross-dressing by adopting male nom de plumes, to give their stories authority (Lanser *Fictions of*

conveying incredible worlds and telling “amazing stories” of first contact or scientific discovery. Male bodies were required in order to travel, in order to modestly witness, and in order to convey what was witnessed—to be “gentleman truth-tellers” (Haraway), and Élisa recognizes this when she decides to become Hanse.

In many ways Hanse mimics the journeys of traditional male explorers, and as a man, s/he finds himself expected to participate in traditional patriarchal and heterosexual behavior. This includes a one-night stand with Judith, the youngest wife of a man called Manilo. Hanse has his own qualms about spending the night with the young woman, but she tries to reassure him that her husband has agreed to the liaison, and it is customary with travelers (“Manilo est d’accord, murmure-t-elle. C’est la coutume, avec les voyageurs” 120). Thus Hanse realizes that the clan he is visiting has its own genetic project and part of it involves encouraging or requiring women to sleep with travelers: “Élargir le reservoir génétique. Bien sûr.” [“Broadening the genetic pool. Of course”] (120). Hanse is thereby made acutely aware of his own participation in a patriarchal plot that involves access to women through agreements between men, and the erasure of women’s own agency and subjectivity. Unhappy with his interpolation into this custom, Hanse spends the night with Judith only after she insists upon her own desire and volition. She tells Hanse she would have come to him even if her husband had not given the okay:

> “Je le veux. Manilo est d’accord, mais s’il avait dit non, je l’aurais fait quand meme.” Elle continue á la caresser d’une main tandis que l’autre finit de

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Authority; Donawerth *Frankenstein’s Daughters*), for example, the American science fiction writer Andre Alice Norton, née Alice Mary Norton.

> délacer la tunique: "Je veux, une fois, avec quelqu'un que j'aurai choisi moi-même. Toi, Hanse. Parce que tu es bon, parce que tu es courageux. Et parce que tu es beau. Et parce que je ne suis pas *obligée*." (121)
>
> ["I want it. Manilo approves, but if he didn't, I would have anyway." She continues to stroke him with one hand while she finishes untying the robe with the other. "For once I want to be with someone I would have chosen myself. You, Hanse. Because you're good, because you're brave. And because you're handsome. And because I am not *obliged* to."]

Thus, the scene raises questions about women's agency, consent, and obligation, particularly around questions of reproduction in times of imperiled birthrates,[70] but Hanse is—rather conveniently—exonerated from his own participation in the patriarchal exchange of women. In fact, he is even posited as an alternative to this convention, for Judith's assurances reveal that she has been obligated to sleep with travelers before but wants to sleep with Hanse because she has freely chosen him.

In an interesting narrative twist, we find that it is Hanse's free choice that has been manipulated. It is revealed that Paul, disguised as Manilo, sent Judith to Hanse, and gave her an aphrodisiac to administer to him that night, so that Paul could watch the sexual performance.

> "[…] je te l'ai envoyée, avec un petit aphrodisiaque. C'était trop drôle. En intéressant aussi." Son regard se promène sur le corps nu d'Élisa: "Vraiment

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[70] The question of women's rights amid genetic imperatives is a repeating trope in science fiction (including two texts discussed in this dissertation, Margaret Atwood's *The Handmaid's* Tale, and Phyllis Gotlieb's *Birthstones*).

> fascinant. Un corps d'homme, et parfaitement opérationnel. Je ne t'avais jamais vue… fonctionner sous cet aspect. Impressionnant. Fascinant." (127) ["I sent her to you, with a little aphrodisiac. It was too funny. Interesting, as well." His gaze wanders over the naked body of Élisa: "Truly fascinating. A man's body, and fully functioning. I have never seen you…work in this way. Impressive. Fascinating."]

Yet again, Élisa, even in male form, has been turned into an eroticized scientific object for Paul to observe and manipulate. Once again her/his body is on display and part of the narrative, rather than hidden from it.

At this point, rather than a reinscription of a quest romance, as Hanse's liaison with Judith may have first appeared, Vonarburg creates, instead, an anti-abuse narrative in which Élisa must triumph over Paul. Importantly, she does just this and also saves Judith (as is to be expected of the romantic hero), but she does so in female form. Paul, demonstrating his ongoing control over Hanse/Élisa's body, forces him to metamorphose back into a woman once again, and simultaneously makes her weak, as if under a fog ("brouillard"). Élisa is seemingly unable to resist his commands, but finds her strength to revolt against him through her capacity for compassion. In the following passage she realizes that Paul is planning to take not only her but also Judith with him, and she finds her strength to fight him:

> "Pourquoi Judith?"
>
> - Parce que tu lui as peut-être fait un enfant, dit Paul en haussant les épaules, et que je veux voir le résultat.

> Judith? *Judith?* Transformée en animal de laboratoire? Un nœud de colère se gonfle dans la poitrine d'Élisa, rassemble ses forces; la révolte est un feu soudain, qui chasse le brouillard où elle se sentait couler.
>
> ["Why Judith?"/ Because you have perhaps made a child, said Paul shrugging his shoulders, and I want to see the result./ Judith? *Judith?* Turned into a lab animal? A knot of anger swells in Élisa's chest, gathering strength; revolt is a sudden fire that drives away the fog she had felt sinking over her.] (133)

Although she was resigned to her own fate, Élisa finally kills Paul in order to save Judith from becoming another specimen in his lab. Like other noble travelers before her, she rescues the woman she has come to care for and destroys the villain. However, the story is different, because Élisa slays the monster as a woman and because her feelings for Judith are compassionate rather than merely sexual, because she wants Judith to be free rather than to sweep her away as some prize or possession. Élisa also leaves Judith with choice and agency, for, despite her Grandfather's urging, she refuses to deprive Judith of her memory of what has transpired. Instead, Élisa instructs Judith to only tell people what she thinks they will understand, and leaves her with control over what to do with that information. Judith is freed.

In numerous earlier science fiction and utopian texts, male travelers discover alien or foreign women as part of their journeys and develop romantic connections, for example in Wells' *Time Machine,* or even the feminist Gilman's *Herland*. For a traditional heroic science fiction traveler, a romantic tryst with a native woman might be conventional, yet Vonarburg's queers the story (what Robyn Warhol calls "queering the plot") by transgendering the traveler, and so frustrates the heterosexual

romantic quest narrative. She creates a scene in which Paul, who was initially the established scientist, is instead cast as a monster. I believe the climatic confrontation between Paul and Élisa could, in fact, be read as a queer recreation of the ultimate confrontation between the scientist and his monster in the classic *Frankenstein.* The boudoir scene of *Le Silence de la Cité* echoes that of Victor Frankenstein's wedding night, and Paul is the monster who has tracked Élisa. In the classic text the monster takes revenge upon Dr. Frankenstein by murdering his new wife, Elizabeth; in *Le Silence de la Cité,* Paul intends to capture Élisa's new lover and take her back to his lab. Though Paul was initially the Frankenstein-like figure, and Élisa his creation, Élisa has become a scientist, and Paul a monster.

Rather than a solution to the insurmountable difference of otherness being individual heterosexual romance, ecofeminist science fiction demands the possibility of broader models for caring and community. The figure of Élisa demonstrates a form of kinship with the other that confounds absolute difference, for she is related to the people on the surface, her genes even derived from those of "Hanse," who was kidnapped by Paul. Élisa also complicates the subject-object divide between scientist and specimen.[71] As Élisa matures into a scientist herself, Vonarburg shows us the possibilities of an *immodest* witness and scientist by emphasizing her *connections* rather than her neutrality. Élisa necessarily has a different relationship to the people

[71] Similarly, in the American science fiction novel *Kindred* (1979) Octavia Butler's protagonist, Dana, is forced to care about a group of people from another time, slave-owners, whom she initially dislikes, although she shares a literal kinship with them.

from the Extérieur than Paul did because she is a descendent of one of them, and because she would have been cast into the toxic world above, like the prototype-siblings before her, had she failed to regenerate and pass Paul's tests. Therefore, Élisa cannot occupy the neutral and removed space of scientific observer; she is related to the others that her father's colonial gaze saw only as disposable specimens from the wilderness. Her connections are not romantic—despite the aphrodisiac-induced tryst with Judith—but empathetic and caring.

Élisa returns to the city, where she raises numerous children[72] with the help of technologies and an artificial womb.[73] Her children inherit her capacity to

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[72] In fact, Élisa creates a child with Judith, too. The result of Hanse's night with Judith is a daughter, Lia, the only child Élisa/Hanse produces sexually. It is ironic that while Élisa makes raising the children she mothers in the city a full-time and life-long commitment—in fact her role and purpose—her paternity is one that makes no demands and requires no commitment. That Élisa/Hanse is able to leave after a night with Judith, and male experience of parenting doesn't curtail his/her continued movement as a traveler suggests that the experience of paternity is not a consuming one, in the way her maternity is. Though Hanse is not knowingly a neglectful parent, the striking difference between the oblivious and accidental fathering and deliberate work of mothering speaks to very distinct differences in the bodily knowledge and responsibility of parenting in the novel and in the wider world, as well as the constraints or lack thereof placed upon the traveler's mobility in each case.

[73] Numerous feminist utopias have imagined worlds without men in which the population can continue through some form of asexual reproduction: for example,

regenerate and to metamorphose between sexes, and their bodies, too, become part of the story. Élisa recognizes that the experience of inhabiting a sexed and gendered body will be formative to the children's identities, and attempts to regulate their embodiment by asking them to alternate between female and male[74] as they grow up. She appreciates that there is no universal experience, only sexed and gendered ones, and is particularly eager to ensure that when they leave the city as men and take female partners "sur l'Extérieur" (as is her plan for them) they will not have forgotten

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Herland (Charlotte Perkins Gilman, 1915), *The Female Man* (Joanna Russ, 1970), and *Motherlines* (Suzy McKee Charnas, 1978). However, few have imagined *parenting* from the male perspective. One is Marge Piercy's *Woman on the Edge of Time* (1976) in which characters co-mother, and men are able to breastfeed thanks to hormones, but these characters no longer identify as male and female and the only pronoun that remains is "per"; thus, it is hard to say there is really a *male* perspective remaining in this future. Another novel that imagines a man as mother is Angela Carter's *The Passion of New Eve* (1977), in which a militant feminist sect captures the protagonist, acquires his sperm, and uses it to inseminate him after a non-consensual sex-change operation. However, the experience of parenting in Carter's novel is one of a man experiencing pregnancy as a woman, rather than what Vonarburg offers us in Élisa, a character who is both father and mother. In Ursula K. LeGuin's *The Left Hand of Darkness* (1969) androgynous characters hold the potential to both mother and father children, but this is a hermaphroditic society.

[74] A precedent for characters' alternation of sex in feminist science fiction can be found in Ursula K. Le Guin's *The Left Hand of Darkness* (1969).

what it's like to be a woman. There is a kind of essentialism to Élisa’s beliefs about gendered identity—she presumes that to have a female form is to be a woman, that her children will experience being both sexes by anatomical adoption alone—yet the destabilizing of male identities confounds sexism.

The fluidity of the children’s sex (in addition to Élisa’s own relationship with Judith), again foregrounds the importance of embodiment, and also complicates what might otherwise be a heteronormative narrative, one in which Élisa intends to send her children forth to procreate. Although she imagines that her children will choose to live as men, take wives, and repopulate l’Extérieur, the text frustrates any traditional plot of “compulsory heterosexuality” (Adrienne Rich) and compulsory reproduction —including in its many science fiction iterations of urgent population dilemmas and human extinction.[75] The challenge to heteronormativity by the children is demonstrated most clearly through Francis and Florie, who continue their difficult romantic relationship as they change sexes throughout their childhood and adolescence. All of these questions about identity, sexuality, and gender formation are posed by foregrounding the bodies of characters, and they are precisely the questions that challenge the narratives of science fiction’s romantic questing heroes.

Far from disembodied, then, Élisa and her children in *Les Silence de la Cité* have multiple and changing embodiments. The children even have the ability to leave the human body and assume animal forms, as well as change sexes. This is an

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[75] In Chapter 1 I analyze the treatment of mass infertility and the specter of human extinction in relation to compulsory reproduction in the two science fiction novels by Atwood and Gotlieb.

exciting possibility for connecting with animals, for although there have been frog-men and creature-people in other works of science fiction, these descriptors invariably refer to the appearance of the character (for example, Margaret Cavendish's *The Blazing World* and the Frog-Man, Cat-Man, and Ape-Man of Marvel Comics), rather than their ability to take an animal form; in the case of H. G. Wells' Beast Folk in *The Island of Doctor Moreau*, the Leopard-Man, Ape-Man, and so forth, are hybrid creatures created through vivisection. The unique ability to morph between human and animal that we find in *Le Silence de la Cité* has a kind of precedent in the narratives of werewolves that are a common trope in fantasy literature, including the French lineage within which Vonarburg is writing.[76] However, the joy and playfulness with which one of Élisa's children, Francis, "changes" differs starkly from the images of characters turning into werewolves

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[76] The fantastique is also an important and substantial genre in French Literature. The tradition of fantastique is an expansive one, spanning genres and forms, but includes, for example, fairytales such as Jeanne-Marie Leprince de Beaumont's *La Belle et la Bête* ([Beauty and the Beast] (1757), plays involving ghosts, such as Jean Giraudoux's *Intermezzo* (1937), and vampire novels like those by Paul Féval *La Vampire* [*The Vampire Countess*] (1867), and *La Ville Vampire* [*The Vampire City*] (1874). Vampire novels have enjoyed recent contemporary popularity in the U.S.A; Anne Rice's *Interview with a Vampire* (1976), young-adult fiction such as L.J. Smith's *The Vampire Diaries* (1991-2012), and the *Twilight* series by Stephanie Meyer (2005-08), and there has been a similar theme for recent French-Canadian works, such as *Héloïse* (1980) by Anne Hébert.

against their will, and with a loss of their own control and identity. In *Le Silence de la Cité* the child Francis becomes a large cat and does so according to his own volition. If the non-hierarchical relationship to the "natives" outside the city is created, in part through kinship, a similar ecofeminist relationship to non-human nature is fostered by the relationship between Élisa's children and animals. The future travelers created by Élisa in the form of her own children have the potential to be embodied travelers who are male, female, or even non-human animals. If Élisa is correct about the embodied experiences of being female and male having the potential to eradicate sexism, then the experience of animal embodiment might also yield a solution to the human domination of animals. Élisa believes that her future sons (as she imagines them) will treat women with compassion from their experience in female form, and attempts in this way to do away with hierarchies between the sexes; thus the analogous experience of being both human and animal ought to similarly deconstruct what some term "speciesism."

Élisa has already begun to question how sexual difference is created and maintained, and the children pose the question of human difference from other animals. Many science fiction novels question what it means to be human (for example in *Do Androids Dream of Electric Sheep* there is even a test—the Voigt-Kampff test—to determine who is human and who is android). However, the conventional questions about what it means to be human are usually attempts to understand distinctions between people and cyborgs. This is true within *Le Silence de la Cité*, too, because the older inhabitants of the city, the former scientists, are literally disembodied knowers, and the city is populated with cyborgs: les hommes-

machines, ommachs, robots. The ommachs even continue after the physical demise of the human body, like Élisa's companion, "Grandpa": "Un home mort, qui survit dans un ensemble de programmes" ["a dead man who survives in an arrangement of programs"] (260). Grandpa's ommach form survives after his human form is gone, and he remains a companion to Élisa/Hanse. Yet, *Le Silence de la Cité* also poses questions about the difference between sexes, and species, as well as human consciousness in machine form. Thus we are left, again, questioning what the definition and boundaries of the human are, just as we are at the end of *Les Voyageurs malgré eux,* when we realize Catherine is an alien and the world a simulacrum.

Conclusion

Canadian women science fiction writers offer, as I have begun to demonstrate through an analysis of Vonarburg's protagonists, *immodest* protagonists. They are aware of their bodies and do not purport to be neutral or universal witnesses. Their very identities are unstable, doubled and uncertain, untrustworthy, and they are unable to trust themselves or their memories, finding no "truths" or absolutes, telling multiple stories. In contrast to bringing home empirical truths about the places and people they encounter, the protagonists are the inheritors and creators of multiple and unreliable stories, thus constructing post-positivist and postcolonial narratives. Rather than authorized "modest witnesses" (in Donna Haraway's words), Vonarburg's female travelers and scientists are what I call *immodest* witnesses and bearers of illegitimate—as opposed to authorized—knowledges. The protagonists I analyze in Vonarburg's work are in opposition to the secure and authorized bearers of

knowledge in traditional science fiction because, while they are also scientists and travelers, they are embodied rather than neutral, illegitimate rather than authorized. Knowledge itself is uncertain, multiple, and conflicting, a challenge to positivist conceptions of truth. In *Le Silence de la Cité*, as I have shown, the travelers themselves are unstable, changing sex, or even crossing between human and animal form. In *Les Voyageurs malgré eux* there are alternative histories, the narrator navigating through multiple contradictory memories, and ultimately we discover that the entire world and its inhabitants are the imaginative construction of aliens. Thus Vonarburg demonstrates that the protagonist's narration and her world, are, like all knowledge, constructs rather than truths, while simultaneously pointing to the constructedness of all knowledge, including the scientific realm and masculine universality.

In early science fiction, authors and audiences alike paid little attention to the narrators' influence on the "truths" they bring home from their travels, or on the ways the travelers' interactions with other people might be informed by and even predicated upon their own identities and bodies. The adventurers' contact with the "other" was in fact often an expression of their own identity, producing narratives and creating aliens that reflected white, European and Anglo-American, masculine fears about loss of identity, racism, colonialism, xenophobia, and miscegenation (Donawerth "Illicit Reproduction"). Yet Vonarburg makes the bodies of her protagonists central, even part of the plot, and so the specific raced and gendered bodies of the travelers insist upon what is usually elided in traditional science fiction: feminist and postcolonial knowledges. In this way, the characters provide points of view different from those of the traditional men of science fiction, and the female science fiction writer questions, as Vonarburg has said, "les points aveugles des

auteurs de SF" ["the blind spots of male science fiction writers"[77]] (Vonarburg "Postface" 118). Positioning women as subjects and not only objects of knowledge, as travelers and not only "others" to be encountered, Vonarburg brings us closer to the scientist/traveler who has a different, non-hierarchical relationship to the land traveled through and resided in, and to its other inhabitants, human, animal, and Other. That is to say, she brings us closer to an ecofeminist protagonist. What Vonarburg answers in her fiction, then, is what Donna Haraway calls for in her critique of science, when she claims, "Feminist embodiment, feminist hopes for partiality, objectivity and situated knowledges, turn on conversations and codes at this potent node in fields of possible bodies and meanings. Here is where science, science fantasy, and science fiction converge in the objectivity question in feminism" (Haraway, "Situated" 201).

[77] A literal translation would be science fiction writers, but "auteurs" is italicized in the original to emphasize that Vonarburg is referring specifically and deliberately to male authors. The female science fiction writers who question the blind spots are referred to as "les auteures de SF," in the feminine plural.

Chapter 3: Ecofeminist Science and Survival in Novels by Atwood and Hopkinson

Despite their many differences, Nalo Hopkinson's *Brown Girl in the Ring* (1998) and Margaret Atwood's *Oryx and Crake* (2003), share some striking similarities. Both offer critiques of capitalism through their depictions of societies and environments destroyed by hyper-individualism and greed. Both also implicate Western science and technology in the abuse of the planet, its inhabitants, and society. They portray the established scientific institutions and practices co-opted by capitalism and instrumentalism. Such industries are part of the destruction and violence within these apocalyptic worlds, where scientists and doctors have become corrupt and even murderous. Yet, despite the bleak futures, both novels offer hope for survival. The communities these narratives focus upon are isolated, unable to access mainstream technologies, and in need of a different science, one that will not replicate the abusive relationships of the past—among humans and between human and non-human. In these texts the characteristically Canadian theme of survival is tied to community and to cross-generational teaching of alternative scientific literacies. Both Hopkinson and Atwood offer us a vision of science for the future, and for both it is non-Western, based on traditional ecological knowledge (TEK) and Indigenous scientific literacies, and constituting a possibility for ecofeminist science.

Science Fiction and Ecofeminist Critiques of Capitalism

Science fiction, as a genre, frequently reflects anxiety about growing corporate domination.[78] In contemporary dystopian visions, Big Brother has often been replaced by "Big Business." The authors considered here continue in a tradition of feminist science fiction that imagines alternatives to capitalist systems, a tradition that includes Charlotte Perkins Gilman's *Herland* (1915), and Ursula K. Le Guin's *The Dispossessed* (1974), for example. Though it is a particular concern of women's science fiction writing, given the way in which women have historically been excluded and exploited by the capitalist market system,[79] capitalist critiques also feature in science fiction and utopian/dystopian writing by male authors, perhaps

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[78] Critic Lisa Yaszek has noted that "scholars including Darko Suvin and Fredric Jameson sometimes even talk about science fiction as 'THE literature of late capitalism" because it so effectively captures the experience of living in a high-tech world'" ("Afrofuturism, science fiction, and the history of the future" 46). Critic Eric Otto offers an ecosocialist critique of the late Twenty First Century, identifying "unfettered capitalist development" (101) and anxieties about capitalist production and consumption patterns" (100) in texts by Kim Stanley Robinson, Frederik Pohl, C. M. Kornbluth, Le Guin, Piercy, Callenbach, and others.

[79] For a comprehensive analyses of gender-specific inequalities and exploitation under capitalism see for example, Maria Mies' "Dynamics of Sexual Division of Labor and Capital Accumulation"; and Chandra Mohanty's comparative study of women workers in Silicon Valley, California, Narsapur, India, and Great Britain in *Feminism Without Borders*.

beginning with Sir Thomas More's early *Utopia* (1516),[80] and with contemporary examples abounding.[81] Hopkinson and Atwood add to the body of feminist science fiction an interesting *ecofeminist* critique of capitalism, capitalist science, and its implications for the environment and its inhabitants.

In two central philosophical ways, ecofeminism finds itself at odds with capitalism. First, capitalism in its current form works against ecofeminist goals at the material level by exploiting women and nature (particularly the poor and non-white who have traditionally been tied most closely to nature) both as resources and as labor. Second, capitalism relies upon a paradigm of thought that promotes individualism, and instrumentalism, which are antithetical to the connections and relationships upon which ecofeminism is founded. Instrumentalism, in the ecofeminist context, is used to describe a world-view that dismisses any intrinsic significance and values something or someone only as a resource to another's end. Ecofeminists use the term to describe an approach to others that views women,

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[80] In the country of Utopia there is no private property, men are free to enter each other's houses, and citizens rotate homes every ten years.

[81] Among many others, consider Neal Stephenson (*Snow Crash* 1992 and *The Diamond Age* 1995); and Kim Stanley Robinson (for example his Mars Series—*Red Mars* 1993, *Green Mars* 1994, and *Blue Mars* 1996—in which he depicts corporations known as "Transnats" and later "Metanats" that become far more powerful than governments); Richard K. Morgan (most overtly *Market Forces* 2004); and Max Barry (who created privatized governments in *Jennifer Government* 2004, and *Machine Man* 2011).

nature, and othered groups as resources, and sees in them only use-value. Jytte Nhanenge, author of *Ecofeminism: Towards Integrating the Concerns of Women, Poor People, and Nature into Development,* identifies instrumentalism as part of a master-slave relationship within the system of dualisms that ecofeminism seeks to deconstruct. Nhanenge argues that it is part of objectifying the Other, and she offers the following definition of instrumentalism or objectification:

> *Instrumentalism* or *objectification:* The slave is obliged to put aside his or her own interests for the interests of the master. The slave is the master's instrument, a means to the master's ends. Hence, the master defines the slave's needs only in relation to his own needs. This objectifies the other. The slave is a resource for the master. Instrumental standards are judging the other into a good wife, an easy slave, a useful worker, etc. However, the slave is not a subject with intrinsic value. (113)

As a global patriarchal structure, capitalism, as ecofeminists complain, treats the world, including women and non-human nature, in terms of resources (Carolyn Merchant, Warren, et al.), interested only in their instrumental value.

Science fiction depends upon science as the core of its plotlines or its fictional worlds. It is "the signature feature of the genre" (Grace Dillon, *Walking* 7). Yet science, and particularly technoscience, is frequently tied to capitalism and industry. In *Ecofeminism* (1993), Vandana Shiva and Maria Mies challenge the purported value-free approach towards research that turns nature into an object of study and capitalist production. Their critique particularly condemns conventional science and technology for eschewing ethical considerations, and serving capitalism. Mies and

Shiva argue that capitalism requires specialists and scientists in order to obtain the maximum efficiency and capital from nature and that that these scientists are compelled to treat nature as merely a resource, an approach they call the "reductionist" or "mechanical paradigm." Other ecofeminists, such as Val Plumwood, use the term "instrumentalist," defined above, but similarly identify this paradigm as part of patriarchal capitalism, and thus view capitalism as an important system for ecofeminists to challenge. Plumwood argues: "The same basic structures of self which appear in the treatment of nature as lifeless instrument also underlie the rational egoism and instrumentalism of the market, the treatment of those supposedly less possessed of reason as inferior, and as instruments for their more civilized western neighbours (as in slavery, colonialism and racism), and the treatment of women as inferior others whose norms of virtue embody a thinly disguised instrumentalism" (*Feminism* 143). The novels I consider in this chapter explicitly demonstrate similar concerns about capitalist science and its lack of moral and ethical tethers. They counter instrumentalism with examples of "ecological selfhood" (Plumwood) that involve caring, connection, and scientific practices that take account of their effects upon others (human and non-human), rather than seeking only profit.

The science typically deployed by the genre of science fiction tends to involve new technology, the kind of technoscience invoked by cyberpunk authors like William Gibson and Neal Stephenson. The concept of "novum," developed by Darko Suvin, in fact suggests that science fiction *requires* something new within the text; thus we often imagine futuristic inventions tied to *progress,* with all its patriarchal and colonial connotations. Thus the science of science fiction is overwhelmingly tied

to Western industrialization and technology. Science fiction critic Grace Dillon notes that science fiction is "a genre associated almost exclusively with 'the increasing significance of the future to Western techno-cultural consciousness,' as the editors of the popular *Wesleyan Anthology of Science Fiction* (2010) view the field" (*Walking* 2). Yet, as the texts I shall discuss in this chapter will show, there is the possibility of alternative forms of science, ones that avoid capitalist and exploitative modes of interaction, as well as nostalgia for an artificial past, and which can be fittingly adapted to ecofeminist science fiction.

The kind of promising science Atwood and Hopkinson highlight in the midst of the bleak futures of their novels, existing alongside frightening and violent depictions of traditional scientific institutions, are alternative models that do not exploit women and nature, and that also challenge some of the genre's presumptions about what science looks like. Hopkinson imagines a world where transplant technologies have advanced, and humans can receive animal hearts, yet the world of *Brown Girl in the Ring* also allows for conjuring spirits. The knowledge that is important to survival in this text does not emphasize the latest discoveries conventionally associated with scientific *progress* but ancestral knowledge and traditions. Similarly, Atwood regales us with transgenic animals and corporate technoscience in the world of *Oryx and Crake,* but the key to survival in the post-apocalyptic world is ultimately tied to Traditional Ecological Knowledge of plants and the environment. The new people of Atwood's future are increasingly connected to nature rather than removed from it; they can deter predators with their urine, survive on excrement, and they find wonder in simple human joys such as

storytelling. Thus, *Brown Girl in the Ring* and *Oryx and Crake* do not posit promise for the future in the kind of technoscience often associated with "hard science fiction," but within both novels this kind of technoscience is viewed as violent and abusive. Rather, they suggest that the future depends not on the "new," as formulations of the genre around the novum suggest, but rather on older, nature-derived practices.

Re-Embedded Indigenous Scientific Literacies

The science of the future, in these novels, then, requires not new technology, but reclamation of older knowledges and practices that are in relationship with the natural world, rather than in opposition to it. They are scientific practices derived from Traditional Ecological Knowledge (also known by the abbreviation TEK), involving Indigenous knowledge of the environment. Traditional Ecological Knowledges are nature-derived, rather than lab-engineered. In *Traditional Ecological Knowledge,* Julian Inglis describes the specific knowledge denoted by the term TEK in the following way:

> TEK refers to the knowledge base acquired by Indigenous and local peoples over many hundreds of years through direct contact with the environment. It includes an intimate and detailed knowledge of plants, animals, and natural phenomena, the development and use of appropriate technologies for hunting, fishing, trapping, agriculture, and forestry, and holistic knowledge, or "world view," which parallels the scientific discipline of ecology. (vi)

Grace Dillon, professor of Indigenous Nation Studies, and science fiction critic, argues that "Native/Indigenous/Aboriginal sustainable practices constitute a science

despite their lack of resemblance to taxonomic western systems of thought" (*Walking* 7). This kind of science might at first be elided because it does not look like the kind of high-tech science that is usually the stuff of science fiction. Yet, identifying and asserting the place of Traditional Ecological Knowledge in futuristic Canadian science fiction, especially environmental science fiction, is particularly fitting because of Canada's promotion of TEK in its planning and decision making around sustainable development. For example, in 1991, the UNESCO Canada Man and Biosphere Programme (MAB) and the Canadian Environmental Assessment Research Council sponsored the International Workshop on Indigenous Knowledge and Community Based Resource Management, and out of this came a program to promote TEK as part of sustainable development (Inglis vi). Furthermore, scholar of aboriginal studies, Deborah McGregor reported in 2004: "the field of TEK [Traditional Ecological Knowledge] is well on its way to becoming firmly entrenched in the discourse on environmental management and decision making in Canada, particularly in the north, where it is part of public policy. The practice and application of TEK research in Canada, and the specific research methods devised to access this knowledge from Aboriginal people, are approximately two decades old. In Indigenous communities themselves, however, the practice of TEK is thousands of years old" (385-86).

In several analyses, Grace Dillon offers descriptions of Indigenous scientific literacy, the term she prefers to Traditional Ecological Knowledge. She repeatedly highlights the interconnectedness of humans and nonhuman nature that is part of this knowledge, and thus demonstrates why such a science is linked to ecofeminist beliefs.

Dillon explains, “the essence of Indigenous scientific literacy, in contrast to western science, resides in this sense of spiritual interconnectedness among humans, plants, and animals” (“Indigenous” 26). She also sets up Indigenous science as standing *in contrast* to industrialized capitalist science. In fact, “in contrast” recurs over and over in Dillon’s definitions of Indigenous scientific literacy. In her essay, “Indigenous Scientific Literacies in Nalo Hopkinson’s Ceremonial Worlds,” she states that “the term stands in contrast to more invasive (and potentially destructive) western scientific method” (25). In the introduction to her anthology of Indigenous science fiction, Dillon elaborates again upon this term as oppositional to established science, as well as based upon interconnectedness and relationships:

> In contrast to the accelerating effect of techno-driven western scientific method, Indigenous scientific literacies represent practices used by Indigenous peoples over thousands of years to reenergize the natural environment while improving the interconnected relationships among all persons (animal, human, spirit, and even machine). Some of its features include sustainable forms of medicine, agriculture, architecture, and art. (*Walking* 7)

Within Anthropology Indigenous knowledge is often used to describe alternative knowledge that is in opposition to privileged scientific knowledge.[82] Thus, though “Indigenous” is a term that encompasses many geographically dispersed peoples, with different cultures, it also serves as an oppositional term.

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[82] See my definitions in the Introduction of this dissertation, and discussions of Indigenous science by Marie Battiste and Helen Watson-Verran and David Turnbull, for example.

Ecofeminists seek to deconstruct binaries, such as man/woman and human/nature, and must be particularly careful not to construct a similarly false *binary* between Indigenous and Western. Professor Marie Battiste, Canadian scholar of Aboriginal education argues:

> For as long as Europeans have sought to colonize Indigenous peoples, Indigenous knowledge has been understood as being in binary opposition to "scientific," "western," "Eurocentric," or "modern" knowledge.[…] Indigenous scholars discovered that Indigenous knowledge is far more than the binary opposite of western knowledge. As a concept, Indigenous knowledge benchmarks the limitations of Eurocentric theory—its methodology, evidence, and conclusions—reconceptualizes the resilience and self-reliance of Indigenous peoples, and underscores the importance of their own philosophies, heritages, and educational processes. Indigenous knowledge fills the ethical and knowledge gaps in Eurocentric education, research, and scholarship. (2)

What makes Dillon's term "Indigenous scientific literacies" particularly useful, then, is that it insists upon Indigenous knowledge as scientific. Thus, Indigenous scientific literacies offer an alternative possibility of science that, rather than being "value-less" and instrumental, embraces ecofeminist ethics of care, filling the ethical gaps critiqued by ecofeminists, and embracing connectedness between the human and non-human world. "Indigenous scientific literacies" is a term that articulates alternative practices, but also maintains its scientific standing even as it opposes the privileged Western concepts of science.

This is the vision of alternative science I identify in Hopkinson's and Atwood's work. I believe it is important to recognize the roots of the practices and worldviews as Indigenous. In fact Atwood cites Indigenous relationships to the land as an inspiration for *Oryx and Crake* (Ingersoll 163). However, the term raises difficult questions when applied to immigrant characters who are not native to the land they are living on, as is the case with both Gros-Jeanne in *Brown Girl in the Ring* and Oryx in *Oryx and Crake.* Grace Dillon, and Jessica Langer, following her, discuss Nalo Hopkinson as an Indigenous writer, though they offer no elaboration or explanation for this. Nalo Hopkinson, herself, says she believes she can claim some Native American ancestry, and in part, that is why Grace Dillon embraces her as an Indigenous writer (Skype conversation with Hopkinson). Yet, within her texts, Nalo Hopkinson incorporates language and systems of knowledge that she says, "if they are Indigenous, they are Indigenous to Africa" (Skype conversation). Some argue that Indigenous knowledge *does* encompass migrants, as Battiste does in the following passage:

> According to the categories used by Eurocentric knowledge, it is a transcultural (or intercultural) and interdisciplinary source of knowledge that embraces the contexts of about 20 percent of the world's population. Indigenous knowledge is systemic, covering both what can be observed and what can be thought. It compromises the rural and the urban, the settled and the nomadic, original inhabitants and migrants. (4)

Yet, to others the application of "Indigenous" to migrants and immigrants seems oxymoronic.

Battiste notes that Indigenous knowledge encompasses what has been called "folk knowledge," "non-formal knowledge," "Indigenous technical knowledge," "traditional ecological knowledge," and "traditional knowledge," among others (4). Though I considered using other terms in my analysis, such as "traditional knowledge," I also wanted to avoid obscuring the Indigenous origins of the practices. For example, "traditional knowledge" fails to recognize *whose* traditions we are talking about, and in its lack of specificity could even be read as referencing Western traditions, and inadvertently become a synonym for conventional knowledge. Within an increasingly diasporic era, and within narratives of science fiction, particularly, it seems important to find a way to talk about Indigenous science that might be practiced in a non-native landscape, or even another world.

Sven Ouzman, scholar of archeology and social science, grapples with the difficult question of defining Indigeneity without essentializing and "de-historicizing personhood" (209). He suggests the possibility of two kinds of knowledge tied to the land: Indigenous and "Embedded." He defines them the following way:

> "Indigenous" knowledge is held and developed by a specific autochthonous people, usually long-term residents of a landscape. "Embedded" knowledge refers also to a landscape-specific fund of knowledge, but one that has been contributed to by a variety of peoples who have lived on that landscape; some of whom may not be Indigenous. The two knowledge systems can be identical; more typically they are two voices in the same conversation; akin to a storyteller and her apprentice. (209)

What Ouzman is grappling with is the changing demographics within South Africa, and the impact upon knowledge of the land that is no longer limited to the first people, the Bushmen. Specifically, Ouzman is thinking of European descendants who have settled in South Africa and find themselves identifying primarily with that land. He notes, “the descendants of Europeans that settled in South Africa’s Cape of Good Hope in 1652 have transformed into ‘Afrikaners’ whose language, identity and allegiance is dominantly shaped by southern Africa. Yet, their apparently non-African blood is argued to exclude them from ever becoming southern Africans” (209). What I am considering in identifying scientific knowledge in these novels is, however, knowledge systems of Indigenous people, practiced in a new landscape. Specifically I will focus on a Caribbean-Canadian grandmother, and a woman who was sold from her Asian farm village and ends up in a future United States. The question is how to describe the practices and knowledge of such people who have moved, or been removed, from their homeland. The term I have settled upon is “re-embedded Indigenous scientific literacies.” They are “Indigenous” because they are derived from Indigenous practices learned by the characters in their childhoods and early life, and they are “re-embedded” because the knowledge is adapted to its new landscape.

I believe it’s particularly important to recognize the Indigenous origins of the knowledge because, unlike Ouzman’s Afrikaners, these characters are not necessarily deliberate immigrants, but part of a diaspora marked by violence and reluctant displacement. Thus, these people, separated from their native homelands, are not creating embedded literacies and identifying primarily with the new landscape, but rather they are maintaining older practices and knowledges they brought with them,

in a new place where, rather than assimilating, their experience is likely to be one of oppression and alienation.[83] The *re*-embedding, would be the adaptation of old knowledges to the new location, for example, the way in which Gros-Jeanne substitutes Canadian herbs for ones she would have found in the Caribbean,[84] and Oryx teaches botany not only in a different country, but surrounded by new transgenic species that are not Indigenous to any land.

I begin by considering Hopkinson's novel, and outlining the capitalist and instrumentalist threats to the small community of impoverished survivors that the audience comes to root for. I then analyze the re-embedded Indigenous scientific literacies that aid the community's survival within their abandoned inner city. Finally, I demonstrate how the novel can be read as a battle between instrumentalism and ecological selfhood. I turn next to Atwood's *Oryx and Crake,* which was published five years later, and consider its depiction of the urgent dangers of ethically

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[83] Nalo Hopkinson remarked that finding a brochure in a travel agency and flipping through the pages with pictures of cruise cabins brought to mind slave ships. She suggests, "perhaps that's why you don't see many Black people on cruises […] we were brought to the Americas by sea" (Skype conversation). This is of course a very different legacy to the one of Ouzman's Afrikaners who are descendants of settlers, rather than slaves.

[84] Though Gros-Jeanne is Caribbean-Canadian, she is also of African ancestry. Hopkinson, though she does not personally use the term "Indigenous" to describe herself or her characters, states that Indigenous aspects of Gros-Jeanne would be Indigenous to Africa, too (personal communication, October 22, 2013).

disengaged scientists and their instrumental approach to people and nature. I will argue that this novel, too, offers an ecofeminist alternative to capitalist science, which is similarly located in the teachings of a woman of Indigenous origins. The battles for survival in both novels are tied to the continuation of older Indigenous knowledges and ways of being, adapted to new places and futures. In *Brown Girl in the Ring* it is an immigrant grandmother who struggles to teach her granddaughter natural medicine and conjuring, and caring ways of being, and in *Oryx and Crake* a non-Western woman who comes to the U.S. as a sex worker is tasked with imparting ecological knowledge to a new species.

Brown Girl in the Ring (1998)

Nalo Hopkinson's *Brown Girl in the Ring* is set in apocalyptic Toronto, a city the government, businesses, and legal institutions have fled from, leaving a "donut hole" filled with corruption and malignancy. Global warming has progressed, and, echoing the prophesy of the children's rhyme with the same title as the novel, "all had water run dry," for Lake Ontario is nothing more than mud. The ring or "donut hole," as it is referred to in news reports within the novel, denotes an area known as the "Burn," which is where the action of the novel takes place. Without support from the federal government, the plagued former industrial city is bankrupt and an ongoing exodus of the more mobile and affluent has depopulated it. The remaining inner-city of the Burn is ruled over by a drug-lord and his "posse." However, within the Burn there also remains a resilient community of residents, persevering and surviving without external support, and in spite of the danger and crime that surround them. These people who remain behind consist of those who can't or won't leave,

particularly the poor, including immigrant families, such as the multi-generational female-led household of the protagonist, Ti-Jeanne. They rely on their own skills in gardening, hunting, and herbal medicine, and interact through community practices of giving and barter.

Beyond the city, where those who could leave now live, the Premier is ailing in her hospital bed and in need of a new heart. During the campaign for re-election, she makes a political play for popularity by refusing the standard swine organ,[85] allegedly because of an animal rights stance. However, in a time when medical technologies have developed animal organs for human use, human donation is no longer needed or practiced, and so the Premier's decision begins an urgent search for a suitable human "donor." The availability of a donor, given the importance of the

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[85] Interest in developing pig organs for human transplant is not new. However, recipients tended to physically reject the organs that are not the same tissue and blood type and a reaction to the organ of another animal would be more severe. So far the longest an animal has survived with an organ from cross-species transplantation is 83 days (baboons given kidneys from genetically modified pigs) (Singer). In 2006 the American scientist working with baboons and pigs said he was considering not just modifying the pig's genes, but introducing human ones (Singer). In November 2013, Lord Winston, the head of the Institute of Reproductive and Developmental Biology at London's Hammersmith Hospital announced their plan to create pigs with human genes, which could be used to provide organs to humans in need of them (*The Scotsman*). In the world of *Brown Girl in the Ring,* such science has become so successful there is no longer the need for human donors.

recipient, cannot be left to chance. Consequently, the novel introduces us to a darker side of organ "donation" and an instrumentalism within the medical industry that involves theft, trafficking, and ultimately murder.

The novel constitutes a damning portrait of life under capitalism. Through the creation of the Burn, Hopkinson highlights key socioeconomic inequalities, including a lack of access to established science and technology, particularly health care, which has resulted from the instrumental capitalist system. The Burn is an isolated former industrial center that resembles many inner cities. In his article, "Nalo Hopkinson's Urban Jungle and the Cosmology of Freedom: How Capitalism Underdeveloped the Black Americas and Left a *Brown Girl in the Ring,*" Gregory Rutledge, Professor of African-American Literature and Culture, suggests that the Burn could be based upon the real-world U.S. industrial centers of the Bronx or Detroit, which have similarly seen poverty, population loss, and rising crime. Indeed, the exodus of the wealthier residents of the Burn out of the troubled center is clearly analogous to the urban phenomenon of "White Flight" from many U.S. cities. A book review of *Brown Girl in the Ring* notes that the novel "has striking similarities to the documentary *Requiem for Detroit* about the current urban decay of a once great city" (Kimchichi). Indeed, located across the river from Ontario, and a city that has seen the flight of many of its more affluent, and especially white, residents—losing a quarter of its population in just one decade (CNN), and over half its population since 1950 (Ryssdal) — Detroit is a likely inspiration for the Burn. This makes the novel especially poignant and prophetic, given the contemporary fate of the municipality, which filed for bankruptcy on July 18, 2013, fifteen years after *Brown Girl in the Ring* was

published. Many identify the Burn with U.S. America, as Rutledge's application of the novel to Black urban life in the Americas, bears out. Since a recurring anxiety in Canadian literary and cultural imagination is that Canadian identity is increasingly endangered by the neo-colonial superpower to the south, the resemblance of a future Toronto to a U.S. inner city, dominated by capitalist culture and self-interest and rife with racism, as Rutledge documents, is particularly dystopian. In this sense, Hopkinson's fictional future with a Canada that is increasingly indistinguishable from the U.S.[86] is, ironically, still articulating a specifically Canadian concern.

In many ways, the Burn is an accentuated portrait of contemporary inner-city areas and the problems plaguing them, such as lack of access to fresh food, technology, and governmental services, including police security and healthcare. It can be read as an illustration of the urban life of the poor under capitalism, and a dramatization of what Gregory Rutledge identifies as the desperate reality for urban Black communities. Rutledge claims that the "system forcing children into gangs, drug-trafficking, and an assortment of illegal activities," is created and supported by "a hyper-individualistic ethos in which inner-city residents place self-gratification

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[86] Although the fictitious Burn is analogous to a U.S. inner-city, environmental racism and limited access to technology in *Canada* have been most evident in rural – as opposed to urban – areas. For example, in 2005, an Assembly of First Nations press release reported over 100 First Nation communities currently had to boil their drinking water (Assembly of First Nations). An additional element that makes the future Toronto of the novel look more like the U.S. is the absence of the national healthcare system that Canada currently enjoys.

above the needs of the elderly, the young, their families, and women" (25). He notes that capitalism, lack of communal government, and the disenfranchisement of Africans from "financial media" have created urban centers of hyper-individualism, epitomized by men like the malevolent drug-lord Rudy and hapless Tony, who will kill their own family members for personal gain.

Indeed, Tony, a young black man, and already an absent father, is one of the most tragic figures in *Brown Girl in the Ring* because, due to his drug abuse, he loses both the woman he loves and the job he loves as a nurse, and, furthermore, his addiction allows him to be manipulated by Rudy. He's a reluctant participant within the criminal network, yet he can't seem to escape his fate. As Tony's desperation grows, he shares with Ti-Jeanne his dreams of leaving the Burn to be free from Rudy and his past, and to start a new life with Ti-Jeanne and their baby. But Ti-Jeanne asks him how he plans to escape the Burn: "'How you going to get out of the city?' It had been years since she had seen a working car, except for the Angel of Mercy ambulances—the Vulture Vans, people called them—and Rudy's elegant, predatory Bentley. Who could afford gas, batteries, tires?" (23). There is no easy escape in the novel, for the Burn is physically sealed off in a literalizing of the social and economic immobility of the poor and non-white who remain behind. Though Tony dreams of a different life, and tries to refuse Rudy (to whom he is useful because he has medical training), he is physically stuck within the Burn, where Rudy's lackeys hunt him down and torture him until he agrees to play a part in their plans to murder Gros-Jeanne, the great-grandmother to his own baby, and the one person who has tried to help him escape.

The primary example of established science in the novel is the medical industry. The healthcare system in this future Canada has been incorporated into the capitalist marketplace, and the real-world nationalized service has disappeared. Mainstream medical care is unaffordable to the people of the Burn, who refer to ambulances as "Vulture Vans" because only the near-dead would be desperate enough to call them. In fact, "the price for established medical care was so high that only the desperately ill would call for help. If you saw a Vulture making a house call, it meant that someone was near death" (8). For the residents of the Burn, established healthcare is not only unaffordable and unavailable, but also predatory. In an opening scene that illustrates the corruption of the society's medical institutions, a hospital official goes into the Burn, complete with bullet-proof vest, to meet with the leader of the criminal enterprise, Rudy, and colludes with him in a murderous plot to acquire an organ. In a story that is not implausible, but mirrors the real-world targeting of the poor by the organ trade, [87] the Burn becomes a hunting ground for "spare" human parts to be used in medical science.

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[87] The specific crime of organ trafficking that Hopkinson depicts in *Brown Girl in the Ring* continues to be a real human rights problem, although it is illegal in all but one country (Iran). In general, the victims of organ trafficking are from poorer countries, and the World Health Organization has documented that it is the impoverished within those countries who are the primary "donors": in India, they found 71 percent of donors were below the poverty line (Shimazono). Thus a global industry and technoscience is involved in exploiting very specific local communities and people, as Hopkinson highlights in the specific targeting of members of the Burn

Ecofeminists point to instrumentalism as a way of interacting with the "natural" world that turns nature into mere resources, and in *Brown Girl in the Ring* we see how this way of viewing the world is extended to encompass human beings as well as non-human nature. If science and technology can reconfigure nature as objects and resources, rather than agents, as ecofeminist Carolyn Merchant, amongst others, has argued, then it can do the same to the human. After all, a basic tenet of ecofeminism is that the way we treat nature and the way we treat human Others are

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by the industry beyond. A World Health Assembly Resolution (WHA57.18) asks Member States to "take measures to protect the poorest and vulnerable groups from 'transplant tourism' and the sale of tissues and organs." The aspect of "tourism" highlights the importance of the *global* industry and technoscience in the oppression and exploitation of *specific* local communities and people. Ecofeminist and anti-globalization activist Vandana Shiva notes in *Stolen Harvest: The Hijacking of the Global Food Supply* (2000), that globalization and global markets profit a few international corporations while destroying local economies, environments, and livelihoods. Similarly, global technoscience and "transplant tourism," benefit particular sets of usually white, Western, affluent bodies, whilst exploiting the most vulnerable people in the world, most often the poor in "developing" nations. In 2007 the World Health Organization reported that the leading organ-exporting countries, those with the most organ "donors," were India and China, while primary organ-importing countries – where patients went overseas to purchase organs – were identified as Australia, Canada, Israel, Japan, Oman, Saudi Arabia, and the U.S. (Shimazono).

intimately related. Patriarchal science and technology within the medical industry routinely reduces animal life to experimental subject, and in *Brown Girl in the Ring,* Hopkinson shows us how the substitution of animal body and animal suffering can work the other way, too, when the Premier refuses the standard swine organ and demands a human's instead. We see Rudy's process of othering and objectification quite clearly when he recommends to the hospital administrator that they use street children as a source for the Premier's organ, referring to these children as "rats" (7). [88]

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[88] A comparison to animals can be a particularly effective means of objectifying humans, especially in the medical context, because in claims for moral consideration, and subjectivity, the poor, female, non-white, and animal have been the groups least often granted respect and agency. The search for human organs in *Brown Girl in the Ring* has real-life precedents in the medical abuse of similar poor, female, and non-white bodies by Western medical science. In the history of Western medicine animals, plants, women, racial minorities, and the poor have all been treated as specimens to be studied, objects upon which to experiment, or creatures reduced to their various organs and parts. They are either useful or not, but without intrinsic value, according to the worldview that abuses women, poor, and non-human nature. A well-known example of the body of a woman of African descent being used in medical research without her consent is Henrietta Lacks, who had healthy and cancerous parts of her uterus removed without her permission, and whose cells became the HeLa cell line that continues to be used in biomedical research. Her life was recently documented by author Rebecca Skloot in *The Immortal Life of Henrietta Lacks* (2010), but examples of similar use of reluctant or unwitting bodies in

Rats are bodies routinely used within medical science, and the extension of the way of thinking about rats to thinking about children helps transform them into resources rather than individuals or agents (7). The irony, of course, is that the Premier is looking for a human donor because she is taking a stance for animal rights, in an effort to appear more humane, and yet the result is not the better treatment of animals but the worse treatment of humans.

In opposition to the kind of capitalist medical science steeped in corruption and murderous profiteering, Gros-Jeanne offers free care and practices alternative re-embedded Indigenous medicine. For example, she sends eczema cream to the self-appointed librarian, she delivers babies, provides medicine for sore throats, and she heals the street children who arrive injured at her door. Established medical care is unavailable to these residents because of the cost, and so their only recourse is the alternative medicine Gros-Jeanne provides. Grace Dillon notes that, "without the comforts of western technologies, the remnants [of the Burn] return to traditional indigenous farming and husbandry in order to survive. Grandmothers reclaim old memory and dispense 'bush medicine' because federal, provincial, and city aid no longer exists" ("Indigenous" 31). Indeed, since the residents of the Burn are living

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biomedical research and testing abound. Even in anti-racist and feminist arguments, non-human nature is frequently forgotten by all but ecofeminists. Lynda Birke and Barbara Noske are two of the early feminist authors to challenge the treatment of animals as "others."

without any access to modern technology and services,[89] Gros-Jeanne's repository of knowledge of plants and herbal recipes is vital to the community's survival. What is equally important, however, is the way in which she makes her care available, so that it is tied not to an exploitative and exclusionary capitalist system, but rather to

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[89] This differential access to modern technology expresses a tragic reality in instances of environmental racism in Canada, in which poor and minority communities lack necessary resources, but also technological training—for example, take the well-known case of Kashechewan water pollution, for which the Burn is a possible analogy. In Kashechewan, drinking water was polluted, likely by a sewage treatment plant, which also, due to mismanagement, lack of training for local operators, and broken equipment, led to dangerous chlorine levels in the water. The result was a chronic skin condition within the community, as well as other illnesses suspected to be water-borne. The First Nation residents of this remote area of Northern Ontario were under a Health Canada "boil water order" for over two years, from 2003 to 2005. Unfortunately these are common occurrences in First Nation communities. Kashechewan, however, became notorious in 2005, when health officials sampled tap water in the area and found it contained dangerous E. coli bacteria, and upon further investigation discovered wide-ranging illnesses within the community, which led to a government-ordered evacuation of the area, during which between 800 and 1,000 members of the 1,900 person community were airlifted (*CBC News, Wawatay News*). Subsequently the federal government shipped bottled water to the community for many months. This is precisely the lack of access to modern technologies and basic necessities for survival dramatized by Hopkinson.

feminist ethics of care,[90] to ecofeminist ideas of self-in-relation, which I shall argue Gros-Jeanne represents, and to Indigenous practices of gift-giving.

Rauna Kuokkanen, Professor of Political Science and Aboriginal Studies at the University of Toronto writes that "the notion of the gift is one of the structuring peoples' philosophies" (255). In addition, Kuakkanen argues, Indigenous peoples' notion of the gift is tied to understandings of and connections to nature:

> The understanding of the world which foregrounds human relationship with the natural environment, common to many indigenous peoples, is manifested by the gift, whether give-back ceremonies and rituals or individual gifts given to the land as a recognition of its abundance and reinforcement of these relationships. While these gift practices are often very different from one society and culture to another, the purpose of giving is usually alike: to acknowledge and renew the sense of kinship and coexistence with the world. (255-56)

Feminist and peace activist Genevieve Vaughan further links gift-giving to feminist and maternal practices. In her 1997 text *For-Giving: A Feminist Criticism of Exchange*, Vaughan writes:

> I believe there is a large part of life that is being denied and ignored. [...] we are indeed turning our attention away from it in order to maintain a false reality, the patriarchal *status quo.* I call this unseen part of life "the gift paradigm." It is a way of constructing and interpreting reality that derives

[90] I discuss feminist care-based ethics in Chapter 1, as part of ecofeminist and maternalist politics.

> from mothering and is therefore woman-based (at least as long as women are the ones who are doing most of the mothering). (30)

In *Brown Girl in the Ring,* Gros-Jeanne, as grandmother, is the key mothering figure, who has raised a daughter, Mi-Jeanne, and after her daughter's disappearance raises her granddaughter, Ti-Jeanne. She even schools the initially self-absorbed Ti-Jeanne in mothering, for example, scolding her when she sees Ti-Jeanne return home with her great-grandchild, who is crying with hunger, after a scene in which the reader witnesses Ti-Jeanne shake the baby (33-34)). On several other occasions, Gros-Jeanne instructs Ti-Jeanne to see to the baby, and to feed him; for example, when Ti-Jeanne is preoccupied with a visit by her former boyfriend, Tony, Gros-Jeanne has to tell he, "Go and see to your child […] He hungry" (75).

Gros-Jeanne serves the broader community through her "private practice," as Ti-Jeanne calls it (32), through which she provides medical services to residents of the Burn. In return, the patients bring her items to exchange for their care, including medical supplies. Yet she also provides care without any barter, as a gift. For example, when a group of street children arrive at her door, one with a broken arm, she treats the child for free and also insists upon providing the entire group with a hot meal before they leave (63). Thus, though she provides medical care through a system of bartering—for example Paula and Pavel send herbs to Gros-Jeanne when they ask for cough syrup — she does not turn away those unable to offer anything in exchange. This is important to note because the concept of exchange demands equivalence and is entered into in order to satisfy personal needs rather than the other's needs. Vaughan explains:

> The gift paradigm emphasizes the importance of giving to satisfy needs. It is need-oriented rather than profit-oriented. Free giftgiving to needs—what in mothering we would call nurturing or caring work—is often not counted and may remain invisible in our society or seem uninformative because it is qualitatively rather than quantitatively based. However, giving to needs creates bonds between givers and receivers. (30)

In *Brown Girl in the Ring,* the practice of gift-giving is part of a world-view tied to maternalism, to the land, and to Indigenous practices. It creates bonds and community, and it is a radical alternative to patriarchal capitalism. Thus Gros-Jeanne is a caring figure who counters the reductionist and instrumental approach of Rudy, the government, the medical industry, and the hyper-individualism of the capitalist system in general.

Gros-Jeanne's only argument with another resident arises in defense of animals, and her refusal to sell one to her neighbor for meat (65). Through this example we learn that Gros-Jeanne, who is mostly vegetarian, offers care and consideration to non-human animals, too. She has a connection to animals that involves mutual trust and affection, as highlighted in the following passage:

> The turtles from the lower pond would take food from her hand. Harold, the irritable goat who always tried to butt Ti-Jeanne, followed Mami like a dog and would nuzzle his head against her leg. In return, Mami ate almost no meat. At most, the animals that were old and sick. She would ask them if they were ready to go, and Ti-Jeanne could swear that she had seen egg-bound hens and lame horses stagger gratefully toward the knife. Ti-Jeanne had once

jokingly complained to Tony that the only meat she got at Mami's was old and tough. Mami and Roopsingh had even fallen out over it, because Mami refused to sell him any goats for his curry. (64-65)

She cares for others for their own sake, not as a means to an end, and in doing so provides an alternative model for interacting with the earth, non-human animals and nature that is the foundation for what Val Plumwood names the "ecological self."[91] Describing her vision of ecological selfhood (which centralizes caring in a way that echoes many ecofeminists and also feminists, such as Hilary Rose), Plumwood writes: "Concepts of care, solidarity and friendship present alternatives to the instrumental mode within existing liberal societies" (*Feminism* 154-55). Gros-Jeanne is the character who embodies such ideals and serves as an alternative in the dystopian future society, and in particular, the antagonist, Rudy, who exemplifies the instrumental mode.

Within the Burn, then, there are two powerful and opposing figures. Rudy, the drug-lord and gang-leader, represents the individualistic and exploitative, and Gros-Jeanne, grandmother, healer, and conjurer of spirits, stands for the connected and caring. While Gros-Jeanne offers medicine and healing, Rudy ensures that the

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[91] The Self-in-Relation and Plumwood's Ecological Self, are developed from the Ecological Self outlined by Arne Naess, founder of Deep Ecology. However, while indebted to the similar rejection of the individual self, ecofeminists have challenged some of the gendered assumptions about Deep Ecology's "Ecological Self." For a detailed analysis of this relationship between Deep Ecology and Ecofeminism see Kheel, Spretnak, and Zimmerman.

technology and drugs that make it into the center are not healthcare and medicine but the inverse—weapons, guns, and a substance known as "buff," all of which he uses to manipulate and control the inhabitants. As the plot unfolds, it is revealed that these two oppositional characters were formerly husband and wife. Now estranged and opposed to each other's way of living, they constitute two conflicting forces that influence their community—for the better in Gros-Jeanne's case, and for the worse in Rudy's. These competing influences play out, in particular, through the next generation who are coming of age and finding ways to survive in the devastated former city that is the Burn. The struggles of the young people are highlighted primarily through their granddaughter, Ti-Jeanne, who is the narrator of the novel, and Tony, her boyfriend.

The novel can be read as a science fiction version of a bildungsroman, for it is the story of Ti-Jeanne's coming of age, which is part of the battle between the caring and instrumental that spans generations but that culminates in a literal fight within the spirit world, that Ti-Jeanne must determine. She begins, like her boyfriend, Tony, as an immature and selfish young woman. Rutledge, writing about *Brown Girl in the Ring*, observes of the young Ti-Jeanne whom we meet at the beginning of the novel: "Like too many young minority women throughout the Americas, she was blind to the necessity and value of using her native culture to balance her new culture. For her, the culture of romance, upward mobility, and middle-class existence, all of which stress individual as opposed to communal, were to be preferred." (32) The folly of her initial priorities is made obvious by the destructive qualities of her romance with Tony, and the impossibility of mobility, both social and physical, inside the Burn. Ti-

Jeanne has to adapt, to learn an appreciation for her grandmother and her culture, and to give credence to “bush medicine” and conjuring. In order to do so, she has to cast off the egotism that links her instead to Tony and to individualistic ideologies rather than a sense of tradition and community.

“Increasingly,” notes Dillon, “tellers of cautionary tales are juxtaposing the technologically compromised natural order with native and indigenous worldviews, as Attebery, Ketterer, and Jameson observe. Further refining distinctions, we sometimes include this emerging movement within the larger category of ‘postcolonial sf’ because it reintroduces ‘indigenous’ elements that fifteenth- through twenty-first-century colonization has marginalized” (23). In *Brown Girl in the Ring* the world view of the ecological, relational self that is Gros-Jeanne clearly aligns with the Indigenous world views, and with re-embedded Indigenous scientific literacies that will be less compromising to the world around them.

Indigenous scientific literacies, argues Dillon, are part of a strategy to overcome the high-tech, institutionalized, and “exported ‘technoscientism’ of the ’90s globalization practices” that threaten immigrant, poor communities, and their environments (“Indigenous” 24). Yet, although Gros-Jeanne’s science is far from technoscience, there are in fact global and exported elements to it, due to the transnational aspect of living in an immigrant community. For example, the cards that Gros-Jeanne uses to help Ti-Jeanne’s understand what her frightening vision means are not local to Canada and the Burn, or even to the Caribbean, but are tarot cards that she was taught to read by another immigrant woman, as she explains to Ti-Jeanne:

> Ti-Jeanne wasn't really listening. She stared at the deck of brightly coloured cards in Mami's hand. She'd never seen anything like them. Mami's eyes followed her gaze. The old woman sat on the bed and fanned the cards out.
>
> "You know Romni Jenny, who does live in the old Carlton Hotel? She people is Romney people, and she teach me how to read with the tarot cards, way back before you born. This deck is my own. Jenny paint the cards for me, after I tell she what pictures I want." (49-50)

Thus, there's an element of Gros-Jeanne's knowledge and practice that is global. In addition, her Indigenous knowledge is of another landscape, yet she adapts these scientific literacies to her contemporary environment of apocalyptic Toronto.Thus, when Gros-Jeanne teaches her graddaughter about healing, she shares not only medicinal knowledge from her ancestors, but also local adaptations, as in the following passage where she quizzes Ti-Jeanne:

> "What you does put on a cut to heal it?"
>
> Damn. One of Mami's spot tests. "Ah, aloe?"
>
> "And if we can't get aloe no more? Tell me a Canadian plant." (35)

This adaptation is the process of re-embedding her Indigenous knowledge within the local environment, so it is able to survive and continue to serve her and her (new) community.

Though the re-embedded Indigenous elements ultimately triumph in the novel, Hopkinson dramatizes their repeated marginalization. For example, the gang of street children is initially afraid of Gros-Jeanne, believing that she eats children and is some kind of witch, a classification female healers have often faced as part of a patriarchal

dismissal of their practices of medicine. Initially, Ti-Jeanne is embarrassed by her grandmother's medicine and public acknowledgement of it. After neighbors call out requests to relay to her grandmother, the mortified Ti-Jeanne laments that, "in the eleven years since the Riots, she'd had to get used to people talking out loud about her grandmother's homemade medicines. Among Caribbean people, bush medicine used to be something private, but living in the Burn changed all the rules" (14). Part of the privacy and, for Ti-Jeanne, embarrassment, comes from the way in which age-old traditional medicines have been discredited by Western epistemology. As Bowker and Star note in their study of classification systems (including the International Classification of Diseases) and its consequences: "We, the holders of Western medicine and scions of colonial regimes, will decide what a disease is and simply obviate systems such as acupuncture or Aryuvedic medicine" (45). Gros-Jeanne's "bush medicine" is humiliating to the granddaughter who has been brought up with a culture of industrialized capitalist medicine, and who doubts the efficacy of such Indigenous science. At one point we see Ti-Jeanne slipping anti-inflammatory cream and vitamin tablets into her grandmother's package for Mr. Reed in case the concoction of herbs doesn't work (13). Yet, if traditional Indigenous medicine is suspect and taboo, Gros-Jeanne's conjuring is even more so.

To a Western audience, at least, conjuring may appear to be more magical than scientific. However, Gros-Jeanne's conjuring proffers a challenge to Western (rationalist) epistemologies of scientific knowledge. Gros-Jeanne battles these Eurowestern prejudices in the novel, even within her own family, for her daughter and, at first, her granddaughter resist any attempts to teach them to interpret visions or

to conjur, and she has to repeatedly tell Ti-Jeanne that what she practices is not "Obeah" (a pejorative term for sorcery). In the end, knowledge of the spirits will be crucial to Ti-Jeanne in her battle with Rudy, who knows their power and importance only too well.

Rudy has derived his powerful "black magic" from the knowledge Gros-Jeanne shared with him while they were married. His appropriation and misuse of these powers might well be read as an analogy for the theft of Indigenous scientific knowledge. Under global capitalism, traditional medicinal knowledge, for example, has been coopted to produce prescriptions and supplements by large pharmaceutical companies, a process which not only enables corporations to profit from cultural and Indigenous knowledges, but also makes private and exclusive the rights to those remedies in the future, something that has become known as Biopiracy.[92] Rudy similarly uses his knowledge of conjuring to exploit others and profit from not only their science but also their labor and their bodies. One of the most horrific depictions of abuse in the novel is that of Rudy's cleaning lady, Melba, who cleans his office incessantly without eating, starving to death, and is finally skinned alive by Rudy to feed his "duppy" (a term for a malevolent spirit that features in much Caribbean folklore). The literal depiction of a starving worker can readily be interpreted as a

[92] One of the most famous cases of what has become known as Biopiracy involved the Hoodia plant found in South Africa, which has been used for generations by San people in the desert as an appetite suppressant. The plant was patented by bioprospectors and sold to the corporation Unilever, who planned to use it as a diet product, without recognition or profit for the San.

critique of the exploitation of labor (especially non-white and female) under capitalism, particularly within the context of the broader critique of capitalism and hyper-individualism that *Brown Girl* constitutes. Rudy even enslaves Mi-Jeanne, his own daughter from the union with the very woman who taught him to conjure, suggesting a terrible level of betrayal involved in appropriating knowledge and misusing it to the detriment of the very people who shared it. This is perhaps a metaphor for how capitalist forces such as corporations and governments privatize and profit from a range of properties relating to native life, from coopting former tribal land, to patenting and commercializing Indigenous knowledge and medicinal formulae, to exploiting resources such as oil. Meanwhile Indigenous communities live on reservations, in poverty, without access to developed technology and medical care, such as the hundreds of native peoples in Canada living under boil-water orders. Gros-Jeanne freely shared her knowledge of conjuring with Rudy, but in return he uses it against her, in ways that devastate her family and community. It is conjuring that enables Rudy to track Tony and send his lackeys to torture him into complying with the plan to murder Gros-Jeanne so her body parts can be used for the Premier, and for Rudy's political and financial gain.

The dramatic climax is a battle involving the spirit world but primarily between Ti-Jeanne and Rudy. The transformed Ti-Jeanne takes on her wicked grandfather and is able to triumph because of the knowledge her grandmother has taught her and because of the help she receives from her ancestors in the spirit world whom she has come to understand and call upon. During her final battle with Rudy, she also receives vital help from the street children she initially disdained, but whom

her grandmother obliged her to assist with medical care. Due to the interconnections with members of the community, with her ancestors, and the technology of conjuring that she has been taught by Gros-Jeanne, Ti-Jeanne is able to defeat Rudy. She triumphs as a Self-in-Relation, rather than the ego-centered young woman at the start of the novel, and she succeeds in defeating him only because of the relationships she has, such as the grandmother who has helped to prepare her and the street children who come to her aid. Rudy represents, instead, the self-serving, individualistic, instrumental self who seeks only profit and cares about the world around him only in so far as it can serve his needs. This battle of spirits is between the relational and ecological self, represented by Ti-Jeanne, and the instrumental self, embodied by Rudy. Thus we are presented with a battle not between worlds (as in *War of the Worlds* and other science fiction) but between ways of being in the world and treating the world; the caring and ecofeminist values of Gros-Jeanne and traditional knowledge contest the selfish and instrumental values of the contemporary Burn.

The battle for post-apocalyptic survival in the novel is not personal, but community-based. We know this because at the story's ending the community comes together, Ti-Jeanne is finally ready to name her baby, and even the selfish and unscrupulous Premier has had a figurative as well as literal change of heart. Yet, the most likeable character, Gros-Jeanne, is dead. It's a happy ending, nonetheless, because what Gros-Jeanne stood for, fought for, and cared about—in terms of community, practices, and ways of being and interacting—survive. A critical aspect in the battle for survival, then, is the teaching of knowledge and values to the next generation. These values and re-embedded Indigenous scientific literacies, of the kind

imparted by Gros-Jeanne, must be passed down not only for their intrinsic worth, but because they are themselves necessary survival tools for the community. Gros-Jeanne's daughter, Mi-Jeanne, serves as a cautionary figure in this respect. Mi-Jeanne refused to learn conjuring from her mother, but was eventually overcome by visions of the future collapse of the city. Attempting to suppress these frightening images, Mi-Jeanne wouldn't allow Gros-Jeanne to help her interpret them and instead fled from her family and was driven to madness. Through the fate of the absent Mi-Jeanne, the novel suggests that rejection of cultural heritage and ways of knowing leads to madness and isolation. It is later discovered that Mi-Jeanne did not simply disappear; instead her spirit was captured and made to serve Rudy, her estranged father, and the man who stands for instrumentalism, capitalism, and greed. Gros-Jeanne battles to save her granddaughter from a fate similar to that of her daughter by teaching Ti-Jeanne how to understand and communicate with the spirit world, along with other important knowledge, such as Indigenous plant-based medicine. The struggle that Hopkinson dramatizes through the relationship between Gros-Jeanne and Ti-Jeanne is the struggle to communicate values and knowledge to future generations, particularly in an immigrant setting, where connections to a specific landscape and culture have been severed. Grace Dillon notes that in *Brown Girl in the Ring*, the "diasporic Caribbean landscape imagined here depends for survival on adaptive fit and the oral transmission of knowledge to younger generations" ("Indigenous" 32).

"The grandmother in Caribbean literature personifies cultural unity or rhythm which crosses boundaries [...] and acts as a unifying agent, an archetype of cultural

bonding," asserts Ian Bennett, in his analysis of Caribbean grandmothers as literary and cultural symbols of the Caribbean (7). In the Caribbean, grandmother-led households have been precipitated by harsh socio-historical factors of colonialism, war, and poverty. In Gros-Jeanne's family three generations of fathers are absent, and even Ti-Jeanne's mother, so that the grandmother is the primary caregiver for her grandchild. The grandmother is thus a figure of wisdom and caring, whose resilience and skills have been honed out of struggles under capitalism and colonialism. Gros-Jeanne is like grandmothers in much Caribbean literature who Bennett describes as the "strong symbol of the familial emotional support" (Bennett 7). She counters the isolation, loss of family, instrumentalism, and "hyper-individualism," as Rutledge calls it, of the capitalist model by offering multiple kinds of connections—with ancestors, the spirit world, the natural world, and with her community. At another level, as a grandmother, rather than simply mother, she also connects the novel *Brown Girl in the Ring* to the Caribbean literary tradition of such women as agents of family, bonding, and community. Her name itself echoes with Caribbean literary resonance, as a female recreation of the characters in Derek Walcott's 1958 play *Ti-Jean and his Brothers,* in which three generations of men in a poor family do battle with the devil. Gros-Jeanne is thus a connecting figure for her granddaughter and her heritage, but also for Hopkinson as author, situating the novel, which is itself a treatise on the importance of heritage and connections, clearly in the tradition of Caribbean literature.

Ultimately, Gros-Jeanne saves not only Ti-Jeanne (from a fate like her mother), but also the community at large, through her teaching. After her death, her

granddaughter keeps her house open all day as an improbable stream of people visit for help and Ti-Jeanne heals and cares for them. She uses the same re-embedded Indigenous knowledges taught to her by her grandmother and adopts the plant and herbal remedies she once doubted and was embarrassed by. Thus, Ti-Jeanne is transformed from a selfish and irresponsible girl to a caring and mature mother and community member. At the conclusion of the novel, she is ready to carry on her Grandmother's work, to finally name her child, and to become a "Self-in-Relation." What triumphs over societal neglect, capitalist individualism, and abusive technologies in Hopkinson's novel are re-embedded Indigenous scientific literacies, community, and caring, and what Plumwood would call the Ecological or Relational Self. In the final confrontation, Hopkinson suggests that the way to survive in the desolated future city of Toronto—which, as Rutledge demonstrates, represents problems found in many other communities and cities—involves interdependence of community members, family members, and local ecosystems. As Rutledge asserts, "the survival of the group necessitates promoting an interdependent mode of living" (30).

Oryx and Crake (2003)

In her novel *Oryx and Crake,* Margaret Atwood offers strikingly similar messages about the need for non-instrumental modes of interacting with the world, and for teaching traditional ecological knowledge and Indigenous science in order to survive. A great deal of the tale is a retrospective, as the narrator, Snowman, looks back to the time before, when he was called "Jimmy." Through Snowman's reminiscence, the reader slowly learns how the human population was nearly

eradicated by a bioengineered pandemic plague, secretly spread through a sex enhancement drug called BlyssPluss,[93] and how Jimmy/Snowman came to be alone on a beach with a strange group of genetically modified people called the Crakers.

The two other central characters, for whom the novel is named, are Oryx and Crake. Both are dead by the time of the narrative. Crake is Jimmy's brilliant childhood best friend, who grew up to become a scientist and to successfully engineer a new species of people, whom he has left in Jimmy/Snowman's care. Oryx is a woman Jimmy and Crake see on a "kiddie porn" internet site when she is a small girl (and they themselves young teens). Later, at college, Crake requests a woman who would match the screenshot of that girl, and hires her to work for him. Jimmy falls immediately in love with Oryx, seeming always to believe she is the very same woman who captivated him on the internet when he was an adolescent. At the start of the novel, Jimmy is alone except for the Crakers, for whom he was asked to care by both Crake and Oryx. We learn that Crake, after perfecting his new race of people, has worked with a team of scientists, known as the MaddAddamites, to create and disburse a pandemic plague to wipe out the entire human race, apart from Jimmy/Snowman who is with Crake, Oryx, and the Children in a sealed base named "Paradice." Crake then masterminds his own death and that of Oryx (presumably, from some foreshadowing conversations, to spare her from the suffering to come) by slitting Oryx's throat in front of Jimmy, knowing his best friend will be compelled to

[93] BlyssPluss was a drug marketed as a pleasure enhancer that would also protect against sexually transmitted diseases and extend youth. However it was also designed to secretly sterilize the users, without their knowledge (294).

shoot him as he witnesses the death of the woman he loves so obsessively, and therefore manipulating Jimmy into a kind of assisted suicide. Snowman is left scavenging for food, reusing discarded refuse from the former time of overconsumption and wastefulness, obligated by his promise to Oryx to care for the Crakers, and trying, himself, to survive, haunted by voices from the past and memories he shares with the reader as he tells a retrospective tale of how he came to be, quite probably, the last man on earth.

In the world of Jimmy's childhood and earlier life, humans, through industrialization, capitalism, and greed, have wrought destruction upon the natural world. The near-future environment is a deteriorated and damaged one, as we quickly learn from the narrator. Snowman has to shield himself from the sun's dangerous rays, and rain comes in such downpours that it turns the air to mist (44); he also recalls his mother's laments that her grandfather's grapefruit orchard "dried up like a giant raisin when the rains had stopped coming" (63).[94] Before Jimmy was born, his mother's east-coast beach house, we are told, disappeared under water; later a volcanic eruption in the Canary Islands caused a tidal wave; and the Everglades were on fire for three weeks. In short, far-reaching climate change is underway by the time Jimmy is a child: "The world has warmed […] the coastal aquifers turned salty and the northern permafrost melted […] the drought in the midcontinental plains region went on and on, and the Asian steps turned to sand dunes, and meat became harder to come by" (24).

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[94] Perhaps a reference to Langston Hughes' "A Dream Deferred."

In this future, the government has mostly been replaced by corporations, which is perhaps why pollution and environmental destruction have progressed to terrible degrees, for as Shiva, Mies, Plumwood, and others argue, the capitalist approach relies upon instrumentalism and treating the world as resource. Indeed, in *Ecofeminism Meets Business* Chris Crittenden urges: "In the age of corporate capitalism, where transnational corporations dwarf the power of many countries to resist their presence, expropriation of capital, and concomitant exploitation of natural resources, it becomes urgent to examine the beliefs that underlie the activities of business to determine if they are best for us and our planet" (51). However, by the time of *Oryx and Crake,* business interests are the controlling ones. Citizens reside in Enclaves of different corporations, rather than areas primarily identified as countries or states. As we learn about the sex tourism industry in *Oryx and Crake*, we are told that men go abroad to perform acts that would be illegal in their own countries, but this is one of the only references to the persistence of nation-states. Even law and order seem to be predominantly corporate matters. The police enforce corporate regulations within the compounds and maintain compliance of citizen-workers; the force's name—CorpSeCorps—beautifully and sinisterly suggests the merging of death, "corpse," with (alleged) security, the "Sec" part of the name, the capitalist industries in the novel, frequently referred to as "the corps" (an abbreviation of corporations), and military units, "corps." The corporate enclaves, also referred to as "compounds," are surrounded by "Pleeblands" of disorder, corruption, and filth. Those who are not employees of the major corporations or members of employees' families live in these dangerous and impoverished areas, without official identities,

where there is pollution, scarcity, gangs, and rampant crime. The people of the "Pleebs" are reminiscent of the abandoned poor who were similarly left behind by capitalist society in Hopkinson's Burn.

Instrumentalism, as "the kind of use of an earth other which treats it as entirely a means to another's ends, as one whose being creates no limits on use and which can be entirely shaped to ends not its own" (Plumwood *Feminism* 142) is most vividly demonstrated in this novel through the meat and medical industries' treatment of animals. The animals we see depicted within these corporate enclaves belong to the corporations and are viewed only as resources and even stripped down to their "useful" parts, treated only as assets for human consumption and profit. Wild animals are prohibited, as are most pets, in order to protect the specialized creatures that are corporate assets—for example, Jimmy is delighted when he is given a pet for his birthday, a Rakunk, that has been deemed "safe for the pigoons" (51), the pigoons being the primary corporate animal in that particular compound, OrganInc Farms. Jimmy spends part of his childhood on OrganInc Farms because his father works on the "Pigoon Project." The "Farms" aspect is an ironic misnomer because, rather than anything akin to a contemporary farm, it is a highly industrialized and monitored compound. The project involves growing human-tissue organs in a transgenic host that can grow five or six kidneys at a time. As it is explained to Jimmy, "Such a host animal could be reaped of its extra kidneys; then, rather than being destroyed, it could keep on living and grow more organs, much as a lobster could grow another claw to replace a missing one. That would be less wasteful, as it took a lot of food and care to grow a pigoon. A great deal of investment money had gone into OrganInc Farms"

(22-23). While adopting such modifications is a sign of a progressive future in much science fiction, it is satirized by Atwood as a grotesque debasement of life. The pigoons are not contemplated as suffering animals or sentient beings, but only as sites of invested resources and potential returns.

Ecofeminist and anti-globalization activist Vandana Shiva describes cloning, genetic engineering, and patenting of life as "the ultimate expression of the commercialization of science and the commodification of nature" (*Biopiracy* 24). In *Oryx and Crake*, Atwood depicts such commercialization and commodification in horrific dystopian extremes, both as medical resources and meat. The degradation of animals in the meat industry is best epitomized by the horrifying Chickinobs. In an extreme extension of contemporary factory farming—or what Barbara Noske has called the "the animal industrial complex"—beakless chickens, full of antibodies, are not raised as animals but produced as "meat-on-a-stick," with as few extraneous parts as possible.[95] When Jimmy first visits NeoAgriculturals, he and the reader are horrified by the bulblike objects with fleshy tubes that are being developed:

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[95] The instrumental use of animals in this industry is well underway in reality, so that animals are contemplated not as whole creatures, but as useful parts, for example, parts of chickens – especially beaks – are already routinely removed, "trimmed," in the production of eggs, to avoid damage from pecking that would occur between birds caged together. However, unlike the beakless chickens in *Oryx and Crake*, in the real world the majority of chickens intended for meat consumption are killed before six weeks of age, the stage at which beaks are trimmed (Hester and Shea-Moore). Increasingly animals, plants, and organisms are being altered to better suit their

"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..."

"That's the head in the middle," said the woman. "There's a mouth opening at the top, they dump nutrients in there. No eyes or beak or anything, they don't need those."

"This is horrible," said Jimmy. The thing was a nightmare. It was like an animal-protein tuber. (202)

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intended purpose as human food, medicine, or research. Genetically modified organisms (GMOs) are becoming commonplace, particularly transgenic plants, which might be used for biopharmaceuticals, and are commonly used for food; for example, many crops are being produced to be pest-resistant, and a California company (later acquired by Monsanto) created the Flavr-savr tomato, with delayed ripening to improve shelf-life and taste. The first genetically modified animal bred for food in the United States is the AquAdvantage salmon, which has been altered to grow year round and can reach consumable size in half the time of regular salmon (eighteen months rather than three years). Data on the AquAdvantage salmon was submitted to the FDA for approval in 1996, but approval of the fish – nicknamed "Frankenfish" by objectors—has been delayed by protests, further studies, and public comment periods. The FDA is likely to approve its sale for human consumption in the U.S. by the end of 2013 (the extended public comment period ended in May 2013).

Throughout the novel, Atwood continues to orchestrate a monstrous parade of altered and spliced creatures that are designed to make the reader shudder at the plausible extension of today's genetic engineering and corporate control of animals. Complete corporate control over animal life and nature requires vigilance to maintain, and there are glimpses of fissures in the system throughout the novel: for example, the antibiotics needed to ward off increasing strains of viruses (22), and Jimmy's memory of bonfires of animals, with which the novel opens (reminiscent of the real-world pyres burning cattle during the foot and mouth outbreaks in Great Britain) (16). The fallacy of complete human control of nature has become glaringly obvious by the end of the novel when the unintended offspring of the pigoons roam wild and terrorize Snowman. What animals become with the interference of corporate science, is, however, only part of the horror of the dystopia. The other equally horrifying part is what humans become as they control, use, and abuse the animals and nature. Human indifference and desensitization to animal suffering and debasement of non-human life is highlighted through Jimmy, who is initially distressed for the pigoons he sees at his father's work, and appalled by the "chicken" at NeoAgriculturals. Though he initially finds the chickens nightmarish and imagines that eating their deformed bodies would be akin to "eating a large wart" (203), he becomes acclimatized and desenstitised and is shown a few years later, in college, living almost exclusively off a diet of ChickiNobs and Buckets O'Nubbins. Chickinobs are not dissimilar in name to chicken nuggets, and Buckets O'Nubbins is clearly intended to bring to mind contemporary fast-food chicken, since fried chicken is about the only food sold in "buckets." The cognitive disconnect between the knowledge of what

goes into food and the choice to consume it anyway, is satirized in these names. Jimmy's diet of grotesque chicken pieces parallels the real-life dissociation between animal and meat product by our contemporary fast-food industry, and the wide-spread lack of conscious, intellectual, and emotional connection to food.[96]

In *Oryx and Crake,* the capitalist instrumentalism that abuses and denigrates animals and nature predictably also extends to humans, and especially women. The commodification of human life is repeatedly highlighted in the novel. When Jimmy finishes school he is "bid on" by universities, (and goes to the less-desirable and underfunded academy for arts and humanities, where he learns marketing or "spin and grin"), for example. However, the most pronounced commodification of human bodies is that of women's and children's in the sex industry and child trafficking. The character of Oryx is a primary example because she has been bought and sold from an early age: she is first sold to a man named "Uncle En" who wants her to market flowers to tourists in the city; after his murder she becomes the property of a child pornographer; and later she becomes a sex worker in America, where she works off the cost of her entry to the country by working in pornography for a pimp in California. It is not clear how she escapes the California basement where she begins the U.S. chapter of her life, but she is still in the sex industry when Crake finds her. Her objectification and ownership is institutionalized when Crake finds her through "student services" at the university he attends, and jokes that Oryx *was* the "service." Crake finds this amusing, while Jimmy finds her exploitation upsetting and enraging

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[96] It is not coincidental that Atwood adopted a vegetarian diet for her tour with the second book in this trilogy, *The Year of the Flood.*

(though he participates in the similar treatment of other women), but Oryx herself is pragmatic and resigned to her interpolation into the capitalist system. She dispassionately explains to Jimmy the benefits of having a monetary value of the kind that has been clearly and repeatedly placed upon her:

> Of course (said Oryx), having a money value was no substitute for love. Every child should have love. Every person should have it. She herself would rather have had her mother's love […] but love was undependable, it came and then it went, so it was good to have a money value, because then at least those who wanted to make a profit from you would make sure you were fed enough and not damaged too much. Also, there were many who had neither love nor a money value, and having one of these things was better than having nothing. (126)

In fact, those without a mother's love or monetary value were likely thrown away, as Oryx recalls that in her country of birth, "'The rivers are so useful, for the garbage and the dead people and the babies that get thrown away, and the shit'" (135). Though this is already the case in many parts of the world, the audience is likely disturbed by the fact that garbage, babies, and excrement are unceremoniously lumped together and disposed of in this near-future world of late late capitalism. It is perhaps Oryx's pragmatism and dispassionate acceptance that lives are discarded, and rivers are most useful as conduits for garbage, dead babies, and excrement that is most poignant.

In this context of the exploitation and the abuse of the earth, animals, and other humans, then, the desire of the misanthropic, brilliant scientist Crake to wipe

out the human species and begin again with something he designed to be better is somewhat understandable. Jayne Glover, in her article "Human/Nature: Ecological Philosophy in Margaret Atwood's *Oryx and Crake,"* highlights some of the destructive aspects of scientific "advancements" in the high-tech era, as well as the multiple ethical problems they pose. She notes that "it is in many ways the environment in which the scientist Crake lives that triggers his desire to create a group of genetically modified people in a postmodern remaking of the Frankenstein story" (51-52). Human activity in the novel is precipitating environmental catastrophes, such as global warming, and the natural world has been reduced to "instrument or object" (Glover 52), or, in more ecofeminist terms, the instrumentalist paradigm. Glover asserts that, given this context, Crake strives for a "pre-lapsarian world" (55). What he is involved in, however, is a highly engineered project, involving genetic modification, though he is working towards a more harmonious relationship between people and nature, by modifying human characteristics—biological and social—to create a less aggressive and more ecological people.

In her analysis of the novel, Glover identifies the central concern of *Oryx and Crake* as the "role of science in an ecologically devastated world" (54). Many other critics also point to the ethical questions about science that the novel seems to raise; for example, Susan Squier describes in *Oryx and Crake* "a brilliant bestiary involuntarily unleashed by proprietary bioengineering (pigoons, rakunks, snats, and wolvogs) [and] a powerful meditation on how education that separates scientific and aesthetic ways of knowing produces ignorance and a wounded world" (1155). The university Crake attends is the Watson-Crick Institute, named for the scientists

Francis Crick and James Watson, who claimed the discovery of the nature of DNA. As Coral Ann Howells notes, the novel was published very pointedly, on February 28, 2003, the fiftieth anniversary of the day Watson and Crick, two Cambridge University scientists, announced that they had discovered the "secret of life." Thus, I believe Atwood asks for her novel to be read as a meditation on science and particularly genetic engineering.

Glover imagines the Pleeblands and the compounds as two separate entities, and interprets one as a place of privilege and science, and the other as the polluted and crime-ridden, poor. Although she argues against assigning one as utopian and another as dystopian—noting for example that the compound becomes a prison for Jimmy's mother, and Jimmy comes to find the pleeblands exciting (54)—she cites the electric golf carts and water-storing rocks in the compounds and contrasts them to the Pleeblands that seem to represent "the very cities of today that ecological philosophers critique because of their sexist, capitalist, and environmentally unsound practices" (54). I would argue that the Pleeblands and Compounds are inherently connected. Within the compounds residents are abused as test subjects in scientific experiments, as they are outside, and prostitution continues, only under the institutionalized guise of things like "student services." Thus the Compounds only seem to be morally superior or safer. The Pleeblands Glover describes as sexist, capitalist, and environmentally unsound are no more so than the Compounds whose high-tech science has emerged from years of industrialization that polluted the Pleeblands. In fact, the Pleeblands can be seen as creations of the Compounds, a location for unwanted people and waste, the conflation of underprivileged people and

pollution that is the basis of environmental racism.[97] The Pleeblands also reinscribe the power of the compounds for, as with any more traditional city walls, they

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[97] "Environmental racism" is the placement of poor and non-white communities besides toxic environments or pollution. In Canada, a notorious example of environmental racism is Africville, where a black community faced the dangerous side-effects from industrialization without ever having access to the technological benefits. Africville was a community of black immigrants, settled by former slaves from the United States, who came as refugees to Nova Scotia in 1812 (Carvery, Vincer). As the neighboring city of Halifax expanded during its industrial boom, its population doubled between 1851 and 1915 and began to encroach upon Africville (Carvery). In the 1850s railroad tracks were laid through Africville, expropriating the land such development necessitated. In 1858 the City of Halifax relocated its sewage disposal to the edge of Africville. In the 1870s its leaders built an Infectious Diseases Hospital beside the neighboring Black community, and later a Trachoma Hospital in 1905, both of which were not wanted in the city because of the risks of infection to the broader populations. These buildings were followed by a string of other undesirable developments. Irvine Carvery, who was president of the Africville Genealogy Society when it negotiated an apology and settlement from the Mayor of Halifax in 2010, reported that "the city [of Halifax] moved the large open city dump, labeled a health menace by the city council and resisted by residents in other areas, to a site just 100 metres from the westernmost group of Africville homes" (Carvery n.p.). Even as the residents of Africville suffered from the environmental pollution created as a byproduct of industrialization, they were simultaneously denied access to

circumvent the perimeter of law and order. Like the "vultures and wild beasts" that are imagined to be outside the city and beset the body of Marlowe's Jew of Malta once he's tossed over the walls, the Pleeblands similarly represents danger and wilderness, and something the citizens safely inside the Compounds are intended to fear (though industrial wastelands rather than untouched nature are what constitute "wild" in the world of *Oryx and Crake*). Thus, in the Compounds where pets are not safe to keep, the exterior is wild, native, Other, even "'mysterious and exciting'" (Glover 54), while the interior represents order, science, culture, Self.

Glover, like several other ecological theorists, draws a line between culture and nature—with science part of culture—and argues that this difference should not be used as the justification for instrumentalism (50). Many feminists, however, have

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technologies that might improve their own lives, according to the Africville Genealogy Society, which reports: "As a further insult to the residents, the area was refused by the City of Halifax basic utilities such as sanitary water, sewage, fire protection and street lights." After years of using the perimeter of Africville as a place to store the least desirable byproducts of urban development, in the 1960s, when the city needed more land, the residents of Africville were removed from their homes entirely and the community was razed to make way for "urban renewal" (Vincer). Andil Gosine and Cheryl Teelucksingh claim in their analysis of environmental racism in Canada, "the environmental racism experienced by Africville residents and the racism inherent in the eventual dislocation of Africville are not isolated events that affect an isolated community; rather, they epitomize an ongoing Canadian process of 'other-ing' and spatial control (Nelson, 2002)" (45).

argued the constructedness of a nature/culture divide and some, like Barbara Noske have done so by illustrating how non-human animals have culture, too, including language, and tool creation. Glover believes that Crake strives for a "pre-lapsarian world, without technology" (55), which would be an ironic indication that Crake had determined that technology and science were inherently flawed and culpable—ironic because of his highly engineered new people made possible through genetic modification.

The Crakers are designed to survive in the post-apocalyptic world in ways humans are unable to. Their adaptations are both social and biological. The genetic features instilled to assist their survival within a deteriorating environment include resilience to UV rays, tropical thermostats, and the ability to sustain themselves on a diet of their own excrement, if faced with a lack of food. There are also bio-social adaptations, for example, their mating practices: the Craker women go into heat only once every three years, and they signal a readiness to mate with pheromones and with blue genitalia; males perform a mating dance, waving their blue penises, and the female chooses multiple partners to ensure fertilization. Crucially, males turn blue through a system of rotation, and so sexual competition is minimized. Women are blue only when they are ready to mate, and ovulating. These adaptations are for social survival and harmony, intended to reduce competition and aggression, and to eliminate rape.[98] Thus, ingenious and amusing biological characteristics make the

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[98] Though they are biologically designed to mate with each other when they are blue, there is little personal choice involved in the mating, since the men become blue via rotation and women are required to take three partners. In fact we see that the

Crakers genetically resilient, and even less hostile to each other, and they also serve to capture the reader's attention.

Earl Ingersoll notes that Atwood was inspired to write the novel in Australia, where she was "deeply impressed by reminders of how indigenous peoples had lived in close connection with their environment" (163), and these practices have clearly provided a model for the practices of the Crakers. Based on details from Atwood's own recent reflections on her initial vision for the Crakers during a stay in Arnhem Land, Australia ("Margaret Atwood's Trilogy"), the Indigenous community she is likely to have drawn inspiration from are the Amurdak people. Atwood describes walking around the sacred site of Mount Borradaile and discovering a place that had natural air-conditioning, food and shelter:

> We visited pillared caves hollowed out by the sea long ago, naturally air-conditioned by cool flow-through breezes even on the hottest days; we sampled bush tucker, the edible plants that abounded in the area if you knew what to look for; we caught barramundi, those curious fish that change sex from male to female once they reach a certain size.
>
> […] It was an Edenic place. Food and shelter were provided; as for clothing, you wouldn't need much of that, as it was always warm. What were the drawbacks? Sea crocodiles - you'd have to be wary of those. Also mosquitoes: it seems the original inhabitants combated them at night by using pieces of

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Crakers are capable of unintentional rape in the third book in the trilogy, *MaddAddam,* when they believe a human woman, Amanda, "smells" blue and three of them mate with and impregnate her despite attempts to stop them.

smouldering termite nest as a smudge. Bad for their lungs, perhaps, but it would have kept the pesky creatures at bay. (Atwood "Margaret Atwood's Trilogy")

Here it is clear Atwood began to imagine the possibility of life in harmony with nature,[99] using what was naturally provided to survive. In the final novel of the trilogy, *MaddAddam,* as the MaddAddamites contemplate why Crake wanted to wipe out humans, one character suggests Crake saw the Crakes as "Indigenous," in the sense that they were intended as a solution to ecological destruction, and also in contrast to the "murderous" humans, who are instead aligned with the Conquistadors:

> "Why did he want the human race to go extinct?"
>
> "Maybe he was just very, very messed up," says Manatee.
>
> "For the sake of argument, and to do him justice, he might have thought that everything else was," says Tamaraw. "What with the biosphere being depleted and the temperature skyrocketing."
>
> "And if the Crakers were his solution, he'd have known he'd need to protect them from the likes of us, with our aggressive if not murderous ways," says Ivory Bill.
>
> […]

[99] In *MaddAddam* it is revealed that the Crakers can communicate with other animals, specifically the pigoons, and they are able to convey messages between these transgenic creatures and humans. This makes it clear to MaddAddamites and readers alike, not only the Crakers' abilities, but the pigoons', who clearly also use a form of language, and, it's suggested, are likely more intelligent animals than humans.

> "He'd have seen the Crakers as indigenous people, no doubt," says Ivory Bill. "And *Homo sapiens sapiens* as the greedy, rapacious Conquistadors. And, in some respects…" (140)

In *Oryx and Crake,* it's also clear that Snowman thinks of them as Indigenous people. In one scene Snowman is overheard by three Craker children as he wishes on a star, and as he begins to explain who he's talking to, he summons up memories from a passage in a book that gives instructions for "*dealing with indigenous peoples*," and to "*respect their traditions and confine your explanations to simple concepts that can be understood within the context of their belief systems*" (97, emphasis in original).

In *Oryx and Crake,* and even the trilogy as a whole, what's less foregrounded than the Craker's ability to survive in nature is how the Crakers have also been *taught* how to survive. There is a brief passage in the novel in which Jimmy asks Crake about what the Crakers are being taught, and Crake responds that it is mostly botany and zoology, and what he summarizes as "what not to eat and what could bite. And what not to hurt" (309). This suggests not a "pre-lapsarian world" without technology, as Glover asserts, but a world that will include scientific knowledge, and technologies of a different kind (remembering that technology has encompassed natural technologies such as fire—something the Crakers use—and not only refers to Western technoscience). Though Crake mentions it almost as an afterthought, he lists the Crakers' scientific instruction as including, "what not to hurt." This points to a different kind of science and technology that will not repeat the violence of its current iterations. It is also a crucial element in the development of the new people as what Plumwood terms "ecological selves."

"What not to hurt," in fact, encompasses the natural world around them, and ensures they are not the destructive and exploitative creatures humans, on the whole, were. We see their care for nature on multiple occasions, and their spiritual connections to other creatures: for example they utter blessings and prayers for forgiveness over the dead fish they are obliged to bring Snowman once a week; they also avoid eating animals themselves. For some vegetarianism or contextual vegetarianism (eating meat only under necessary circumstances and in the absence of alternative food sources) is an essential part of ecofeminism, and, as Greta Gaard notes, "to date vegetarian ecofeminism has been explicitly articulated through the works of scholars and activists such as Carol Adams, Norma Benney, Lynda Birke, Deane Curtin, Josephine Donovan, Greta Gaard, Lori Gruen, Ronnie Zoe Hawkins, Marti Kheel, Brian Luke, Jim Mason, and Deborah Slicer" (118). Vegetarianism is also a practice of eating lower on the food chain that can be advocated from an environmental perspective, as it was in Francis Lappé Moore's 1965 treatise *Diet for a Small Planet.* Thus, the Crakers demonstrate an ecofeminist alternative to the grotesque meat industry that was one of the most disturbing, instrumentalist degradations of life in the society that came before. The Crakers also offer an alternative to the violence of capitalism and patriarchy, through practices that connect them to nature and re-inscribe Indigenous relationships. Atwood reveals:

> One of the questions the novel grapples with is: how would human beings have to be altered so that they would avoid the major problems that bedevil us today? Thus were born the Crakers - bio-engineered to have built-in sunblock and insect repellent, equipped with self-healing purring capabilities, and

> designed to be seasonal maters so they will never suffer from sexual jealousy. No agriculture is needed by them, as they are totally vegetarian and can eat leaves; no money is required, as there is nothing they have to buy or exchange; they will wage no wars, as they have no need for territory that they have to acquire or defend from invasion. (Atwood "Margaret Atwood's Trilogy")

Thus, the lack of property and capitalism, along with the built-in bug-spray, is part of the solution. What the Crakers have been taught, I shall argue, are re-embedded Indigenous scientific literacies and traditional ecological knowledge that readily align with ecofeminist doctrines.

A primary way that we know the Crakers are taught traditional ecological knowledge and Indigenous science is by considering not only their practices, but also their teacher. Despite a community of brilliant scientists and potential instructors with degrees in any given subject, Crake chooses Oryx. She is a woman with no formal education, who learned to write only by trading sex for instruction; yet, rather than select an accredited expert, or teach his creations himself, Crake has specialists brief Oryx at the start of each day, but appoints her for the important role of teacher. Oryx seldom shares much about her past, and even refuses to confirm or deny what Jimmy believes he has learned about her—once saying to him, "You have a lot of pictures in your head, Jimmy. Where did you get them? Why do you think they are pictures of me?" (114). Yet, what we can piece together of her life precludes any formal education in botany or zoology. Therefore, we must deduce that Oryx's special knowledge was informally learned as a child, in the village, before she was

sold. The knowledge she provides to the Crakers must be non-Western, traditional ecological knowledge and science learned amidst the kind of farming and nature not found within the compounds.

A New Kind of Last Man

After Oryx is dead, Snowman serves as a kind of reluctant yet caring overseer of the Crakers. Dejected, lonely, and frequently depressed, he is grumpy (sometimes telling them to leave him alone) but nevertheless benevolent. When they turn up artifacts from life before the plague, Snowman lets them know whether they are dangerous or safe, warning them about "booby traps from the past." Although he is initially a begrudging caretaker, perhaps reluctantly fulfilling what seemed at the time a hypothetical promise to Oryx, he becomes a "Self-in-Relation" as he comes to care more for the Crakers than his own wellbeing, and offers care without hope to benefit from it, beyond a fish a week. As in *Brown Girl in the Ring,* the narrator of *Oryx and Crake* likewise comes to cast off his self-absorption and the toxic influences of the capitalist society, and to instead embrace caring relationships and community. The difference in Snowman's case is that the community of survivors is of a different species.

In fact, Snowman poses a possibility for a new ecofeminist iteration on a traditionally individualistic science fiction trope: the "Last Man" protagonist. Beginning with Mary Shelley's *The Last Man* in 1826, numerous apocalyptic science fiction stories have been told from the perspective of the "Last Man," including, perhaps most popularly, Richard Matheson's 1954 novel *I Am Legend*, which has seen a series of film adaptations (in 1964 as *The Last Man on Earth*, in 1971 as *The*

Omega Man, and in 2007 under its original title as *I am Legend*). Many more involve a small band of survivors (the father son duo in Cormac McCarthy's *The Road,* and the small Californian community struggling for survival in Kim Stanley Robinson's *The Wild Shore: Three Californias*, for example). Earl G. Ingersoll, in his analysis of *Oryx and Crake,* also suggests Snowman "may be the most recent in a long line of fictional characters representing The Last Man," and "draws on the recent obsession in popular culture with The Survivor" (163). However, though Snowman is possibly the lone human survivor after a pandemic plague, he is not alone. Where Last Man fiction previously focused on the survival of humans (beyond the isolated friendships of particular and usually domesticated animals, for example the dog in *I Am Legend*), Snowman's battle for survival extends to his young, non-human charges, whose survival, at points, he seems more invested in than his own. At the end of the novel, when he discovers there have been other men on the beach with guns, his mind races and he's unable to sleep, but all his thoughts are for the safety of the Crakers (365-66). He determines he will go to meet the armed strangers in an attempt at "presenting the Crakers to them in the proper light" (366). Even as he considers "he might not be coming back," from this "mission," he worries only about how best to leave the Crakers in his absence—whether he can give them something comforting to remember, instruct them to take noisy sticks (guns) and throw them into the ocean, or warn them about rape and slavery, concepts they won't understand (366-67). Thus, Snowman is the ultimate ecological Self-in-Relation because his community—unlike the traditional Last Man—has expanded to the non-human characters and world around him.

Perhaps Snowman, and even the reader, should not necessarily hope for the survival of the human race. Rather than being excited by the prospect of not being the last human, when Snowman hears of others, he's full of fear for the Crakers. Also, from an ecological view, eliminating the human population, along with their violent ways of interacting with the world, is not a tragedy, and can only be dystopian from an anthropocentric perspective. That is to say, given the depiction of human society before the "plague" or "flood," and its catastrophic impact upon the rest of the natural world, for non-human nature, the wiping out of human neighbors is likely their best hope for survival for the rest of earth's living things.

Conclusion: Communal Survival Through Re-Embedded Indigenous Scientific Literacies

Both *Oryx and Crake* and *Brown Girl in the Ring* depict brutal and uncaring capitalist societies that devastate humans and non-humans alike. They also suggest that the knowledge needed for the future is traditional ecological knowledge or Re-embedded Indigenous scientific literacy. These knowledges and the practices of care fundamentally undermine the hyper-individualism of the capitalist worlds imagined by the writers.

The scientists in these novels are not isolated geniuses in labs (attaining breakthroughs like Frankenstein's reanimation or the Time Traveler's machine for the fourth dimension), but rather their science is rooted in community practice and shared ecological science. The teachers of re-embedded Indigenous scientific literacy in these texts are Gros-Jeanne, in Hopkinson's novel, and Oryx in Atwood's. Both are untraditional scientists, and unlikely foci for science fiction novels, for both are

women—and non-western, women of color at that. In line with the less heroic and individual scientist, neither is the protagonist, and neither lives to the end of their respective plot. The important survival in these texts is that of the community and the broader world, rather than the individual. Thus Gros-Jeanne and Oryx are important because they teach the necessary ecological knowledges to the next generation, or in Oryx's case the "next"[100] species.

Though Atwood's novel is read as a meditation on scientific advancement, critics have focused on the science they recognize as such, that takes place in the labs and creates memorable and horrific new creatures, and even the Crakers, themselves. What's often elided is the knowledge of the Crakers, and the naming of it as science, as is the case with the bush medicine and conjuring Gros-Jeanne practices. What is created by an appreciation of alternative science in these novels—be it conjuring or Indigenous knowledge of plants and animals—is a model for ecofeminist science and technology, and a more inclusive idea of science, and even science fiction as a genre. Nalo Hopkinson has lamented that "African cultures have been made into consumers of technology, not its creators, and Western technology at that. How then are black people to feel a buy-in to science fiction?" (Rutledge "Speaking in Tongues"). These novels offer a challenge to the idea that science and technology are the exclusive domain of Western industrial society, and that they are inherently hostile to nature. In

[100] The Crakers are intended, at the time of Oryx's interaction with them, to be the survivors, and to replace humans on the earth. In reality, their existence is not subsequent to humans, for, by the end of *Oryx and Crake*, we know that some humans have survived Crake's plague.

fact, these works of science fiction suggest that what we need are Indigenous scientific literacies and greater connections to our community and nature if we are to survive the apocalypse.

Conclusion: To the Futures

Science fiction lends itself to questions of survival, invoking as it does imagined futures, and particularly apocalyptic ones. It also lends itself to considering the non-human world, for the genre proliferated with aliens, talking creatures, and beings we can only imagine. Furthermore, as the interdependence of human and non-human survival has become increasingly clear in recent decades, so questions of survival in science fiction, as elsewhere, have become communal ones rather than individual.

In the novels considered here, frequently the protagonists or significant characters do not personally survive. Gros-Jeanne is murdered in *Brown Girl in the Ring*, the title figures of Oryx and Crake are dead by the *start* of the novel, and by the end of the trilogy the narrator Snowman, as well as the narrators of the other books, will be dead, too. We don't know what happens to Offred in *The Handmaid's Tale*, whether she survives or not, but the Historical Notes at the end of the novel, written from a time long past that of the main plot, frame it so that all the characters we've met must have been dead for many years. Even in Vonarburg's and Gotlieb's texts, which refrain from killing off the protagonists, the focus for survival is decidedly upon the community.

Women's science fiction writing, as I have argued, focuses upon the community and next generations as part of what Lisa Yaszek identified as maternalist politics. In this way domestic life—and its loss—have been central sites of intervention for maternalist politics and ecofeminist critiques. Concerns about how the environment will affect the family, and in particular children, are expressed in

these novels that also engage with the long history of interest in reproduction that has been part of feminist and traditional science fiction alike.

In Chapter 1, I consider the environmental iterations of maternalist politics in women's science fiction, along with the recurring depictions and critiques of patriarchal attempts to control women's reproductive bodies. Patriarchal challenges to mothering, and to possibilities of caring, are also posited as part of these dystopian visions. In Chapter 2 I identify how narrators and protagonists might break free from the tethers of colonial and patriarchal violence by telling the story from the perspective of female scientists, the *objects* of scientific studies, postcolonial travelers, and aliens. From these different perspectives I identify how different narratives can be told and objectivity and processes of Othering challenged. Finally, Chapter 3 considers the tools for survival, the science of the future, and how they might not look like images of futuristic science and technology that have too often gone hand in hand with the destruction of the environment.

There are several beginnings of future directions within this study. In particular, had the project been larger, I would like to have included in my analysis science fiction by First Nation writers in Canada. Given the recurring cultural narratives of the "Indian" as dead, in the past, and removed from technology, I believe Indigenous science fiction is an exciting development that challenges notions about native peoples and cultures. In addition, Vonarburg suggests the possibilities of crossing animal-human boundaries, Gotlieb destabilizes human-animal hierarchies with her animal and alien characters, and Atwood experiments with the transgenic, including, in the final novel of her MaddAddam trilogy (published two months before

this dissertation was submitted), Craker-human hybrids. All of these characters and themes suggest to me exciting future directions for study that would engage with animal studies and the post-human.

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