

“Evolution Takes Love:” Tracing Some Themes of the Solarpunk Genre

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Abstract

This project aims at examining some of the core themes and concerns of Solarpunk, a newly emerging genre. Placing Solarpunk in contrast to one of its nearest literary predecessors, Cyberpunk, I work to unify the disparate definitions of the Solarpunk genre, while examining the ways in which it departs from its Cyberpunk roots while retaining a radical critical mode. By mapping and defining some of Solarpunk's primary concerns in this way, this project aims to set the groundwork for additional critical work on the Solarpunk genre, providing a foundation from which other scholars may work.

Throughout the thesis I work primarily with the four English language Solarpunk anthologies, Solarpunk: Ecological and Fantastical Stories in a Sustainable World, Wings of Renewal: A Solarpunk Dragons Anthology, Sunvault: Stories of Solarpunk and Eco-Speculation, and Glass and Gardens: Solarpunk Summers.

In Chapter One, I examine the interrelationship of social ecology, technological progress, and social progress with questions of community and society, in order to demonstrate the ways in which Solarpunk promotes its ideal, social ecology inspired future.

In Chapter Two, I build on the generic interest in progress in order to examine Solarpunk's optimistic treatment of the posthuman in relation to questions of physiological and capitalist consumption, and fears over the loss of humanity.

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Introduction: Background and Definitions

Solarpunk, an emerging non-Western literary genre of speculative science fiction, is hopeful. It seeks to reshape the future, which in both fictional portrayals and contemporary thought is increasingly pessimistic, towards a more optimistic, post-utopian ideal. Solarpunk stories tend to portray societies struggling towards, or attaining, idealized worlds, fighting against bigotry and capitalism, with equal focus on human social progress¹ and environmental justice. Solarpunk asks how humans can prevent environmental destruction, revamp or replace capitalism, and live in balance with our environment and with each other, by focusing on ideas of “ingenuity, generativity, independence and community” (Flynn). In order to document some key themes of this emerging genre, this project will examine several short stories drawn from four English language Solarpunk anthologies (primarily North American), *Solarpunk: Ecological and Fantastical Stories in a Sustainable World* (2012), *Wings of Renewal: A Solarpunk Dragons Anthology* (2015), *Sunvault: Stories of Solarpunk and Eco-Speculation* (2017), and *Glass and Gardens: Solarpunk Summers* (2018). I chose the short stories for my analysis not only because I believe them to be representative of the anthologies, but also because of the ways that they represent Solarpunk’s interest in what I have found to be some of its central concerns: progress, community, posthumanism and consumption. The anthologies themselves were chosen because of their ease of access to new readers of Solarpunk; they provide collections of Solarpunk stories in single volumes that are expressly labelled as being Solarpunk. While focusing on these anthologies does mean limiting the scope of this project by setting aside the large body of non-anthologized Solarpunk fiction, including much of the non-Western Solarpunk fiction, it also provides a clearer lens for the

¹ While the term ‘progress’ is highly fraught, evoking capitalist and colonial overtones, I use it here and throughout the project in a more optimistic fashion, attempting to recategorize a fraught term in a more anti-capitalist, Solarpunk mode.

project, while focusing the examination on the Solarpunk literature that is most easily accessible to readers new to the genre.

While Solarpunk could be qualified as a subgenre of science fiction, the status of other ‘punk’ literature as genres, suggests that Solarpunk also deserves the term genre. Due to Solarpunk’s relative newness, I will situate it in terms of two existing ‘punk’ genres, Steampunk and Cyberpunk. While a larger discussion of Solarpunk’s relationship with afro-futurist and cli-fi literature, along with other ‘punk’ genres, would provide a more complete background for the genre, due to scale, this project is looking to provide a base for understanding the genre, and not a complete literary genealogy. Solarpunk, as a term, was first coined in 2008 by an anonymous blogger, who proposed “a new literary genre: Solarpunk” (“From Steampunk to Solarpunk”). The blogger defines Solarpunk in relation to Steampunk, suggesting that while both “conflate modern technology with older technology,” Solarpunk’s interest in those older forms would be “driven by modern world economics” (“From Steampunk to Solarpunk”). The larger difference between the two, they suggest, is that “solarpunk ideas, and solarpunk technologies need not remain imaginary” (“From Steampunk to Solarpunk”). They suggest that a Solarpunk world is an attainable one, and, further, one that we should strive for.

Given that Steampunk is “a genre of science fiction with a historical setting in the nineteenth century characterized by technologies extrapolated from the science of that era, but which were not invented at that time” (“Steampunk” *The Oxford Dictionary of Science Fiction*), whereas Solarpunk concerns itself with “modern technology,” (“From Steampunk to Solarpunk”) the suggestion that Solarpunk comes from Steampunk is worth further consideration. Steampunk’s extrapolated technologies often take the form of “steam-powered machinery rather than advanced technology,” and the genre is responsible for inspiring “a style of design and fashion that combines historical elements with anachronistic technological features” (“Steampunk” *Oxford Dictionary of*

English). Although Solarpunk is more interested in technological progress, rather than unnecessary technological atavism, or the fetishization of a past time and place, the two genres do share some themes and tropes. For example, both Solarpunk and Steampunk feature broad, bright vistas, along with an aesthetic focus that often borders on the fantastical and whimsical. Indeed, the two genres both often also slip into fantasy, rather than pure science fiction, as, for example, the *Wings of Renewal* anthology, which is filled with magic and dragons. Similarly, both genres are often set in alternate realities or parallel universes, in order to explore alternate histories, or to imagine how our world might have looked with that aforementioned magic, or with alternative technologies. However, while Steampunk does “connote social-temporal uneasiness,” this uneasiness usually leads to the “promotion of ‘lines of escape,’” rather than strict social commentary (Herschmann) and drives towards “quasi-reactionary tendencies” (Flynn), in contrast to Solarpunk’s explicit modes of reasoned social commentary and critique. As such, while Steampunk is the suggested origin point of Solarpunk, Cyberpunk may be the more relevant genre to examine as an inspiration and origin point.

I make this suggestion not only because of Cyberpunk and Solarpunk’s shared themes and tropes, but because Solarpunk takes up much of Cyberpunk’s lost critical edge, while incorporating the ethics, awareness, and sensibilities of the twenty-first century. While the two may be aesthetically divergent, Cyberpunk was once a highly critical genre, although it has been increasingly co-opted by the very engines of capitalism that it once critiqued. Cyberpunk’s “hard-boiled detective formulas [...] gothic horror [...] and [...] cop formulas” (McCaffery, Introduction 14-15), along with its grim and claustrophobic narratives seem at odds with the more optimistic vistas of Solarpunk. However, it is Cyberpunk’s roots in critique, roots in “the realms of [...] pop culture [...] such as [...] dada and punk rock” (McCaffery, Introduction 12), and its concern with the “technological milieu” (McCaffery, Introduction 14) that influenced postmodern art in the latter

half of the twentieth century, that make it a better fit for comparison than Steampunk. Indeed, Solarpunk and Cyberpunk share this concern with prevalent sociocultural concerns of their contemporary era, though they approach it in very different ways. Additionally, Cyberpunk, unlike Steampunk, almost exclusively imagines a future projected and extrapolated from our present, a feature that much of Solarpunk shares (though Solarpunk often takes that extrapolation further than Cyberpunk does). These shared modes of extrapolation, prediction, and critique suggest that Cyberpunk is most relevant as a foil for Solarpunk. This is especially true in light of the fact that Solarpunk stories often directly respond to and critique dystopian Cyberpunk literature and post-Cyberpunk² literature.

The literary conversation between Solarpunk's hopeful and Cyberpunk's defeatist attitudes draws on Cyberpunk's established generic identity. While Solarpunk is still developing, Cyberpunk is a well-developed genre, enough so as to produce texts stuck in relentless mimesis of its own tropes. *The Oxford Dictionary of Literary Terms* defines Cyberpunk as

a phase of American science fiction in the 1980s and 1990s [...] By contrast with earlier mainstream science fiction, which commonly implied a utopian confidence in technological progress, cyberpunk fiction is influenced by the gloomier world of hard-boiled detective fiction and by *film noir* thrillers; it foresees a near future in which sinister multinational corporations dominate the 'cyberspace' [...] upon which an impoverished metropolitan populace depends. In a broader sense, the term refers to a larger body of work [...] in which the interpenetration of human and technological or electronic realms, in androids or in 'virtual' reality, is taken as the basis of fictional speculation, usually dystopian.

("Cyberpunk" *The Oxford Dictionary of Literary Terms*)

² "referring to science fiction that employs many of the themes associated with cyberpunk, especially the effects of highly advanced computer technologies on societies, but generally lacking the alienation and dystopianism characteristic of cyberpunk" ("post-Cyberpunk" *The Oxford Dictionary of Science Fiction*).

Cyberpunk is characterized by bleak dystopias and troublingly omnipresent technology, whether it takes the form of a rigidly controlled “cyberspace” or fears around the blurring of human and machine. Larry McCaffery supports this idea in the introduction to *Storming the Reality Studio*, suggesting that “these developments in technology [...] require some radical rethinking of several of the basic paradigms [...] through which Western Europeans have viewed themselves since the time of the ancient Greeks” (McCaffery, Introduction 7). When binaries such “male/female [...] artifice/nature [...]and] human/inhuman” (McCaffery, Introduction 7) break down, it becomes terrifying and monstrous—this can be seen in *Neuromancer*’s descriptions of Molly Millions, with “twin mirrors” (Gibson 32) for eyes, and “four-centimetre scalpel blades” (Gibson 30) in her hands. However, a lurid sexual fascination with the female body pervades the genre—hence Molly Millions, the femme fatale ‘razorgirls’ (Gibson 32), and the oft-found hypersexualization of women in cyberpunk. Rather than simply making this boundary of human/technology a site of the uncannily inhuman, Cyberpunk often writes “one kind of alterity for another” (Cohen 10), adding a question of illicit sexuality onto a question about humanity—and, as Jeffrey Jerome Cohen suggests in “Monster Culture (Seven Theses),” “the monster also attracts” (Cohen 16) serving as a locus for “potent escapist fantasies” (Cohen 17). In this way, Cyberpunk casts this breaking down of binaries as both horrifying and alluring—and as such, the female body that is most often the site of these changes becomes an object of fetish.

Cyberpunk, and its radical critique of capitalism, are defined by a fraught relationship with technology, focalized through a “lawless sub culture” (“Cyberpunk” *A Dictionary of the Internet*) that exists in conflict with, or under the thumb of, the oppressive autocratic rule of “sinister multinational corporations” (“Cyberpunk” *The Oxford Dictionary of Literary Terms*) and their capitalist dystopia. The “[dominance] by computer technology” (“Cyberpunk” *A Dictionary of the Internet*) has, in recent media, come with concerns over vengeful AIs (such as in the 2004 *I, Robot*,

the 2014 *Ex Machina*, or the *Matrix* franchise), a loss of humanity due to body modification or robotic prosthetics (such as in the *Shadowrun*, *Cyberpunk 2077*, *Deus Ex*, and *Ghost in the Shell* media franchises), and ontological fears around the nature of reality (such as in *The Matrix* franchise). The default visual is the “claustrophobic [...] over-abundance of images and information, mixture of Asian and American, glittery high tech and refuse strewn lowlife” of *Blade Runner* and *Neuromancer* (Kadrey and McCaffery 25), wherein greenery and the environment are traded for sprawling, dense metropolises and vast industrial wastelands.

However, while Cyberpunk originally existed as a critique of the late-stage capitalism of the twentieth century, the popularity of its aesthetic has led to it becoming a mass-market product; in that transition, Cyberpunk has been consumed and co-opted by the corporatocratic capitalism that it originally challenged. While McCaffery’s introduction to *Storming the Reality Studio* was written almost thirty years ago, his suggestion that Cyberpunk has a tendency to draw on other genres remains true in contemporary science fiction. His claim that critics see “Cyberpunk’s appropriation of devices and materials associated with other genres [...] as exhibiting its superficiality and collective failure of imagination” (McCaffery, Introduction 14-15) is likewise still true. However, more and more Cyberpunk is merely appropriating devices and materials from within the genre itself. This “[blind] mimicking [of] the successful patterns of their counterparts” (McCaffery, Introduction 13) leads to the problematic state of “directly [feeding] the ideological processes that reproduce the very subject positions required by the political or economic structures of the hegemonic order itself” (Moylan xvii); leads to a replication of systemic oppression and violence within the text. Tom Moylan suggests in *Scraps of the Untainted Sky* that Cyberpunk’s tendency to cannibalize and recycle itself led it into the state of “one dimensional extrapolations, or simple adventures [that] never get beyond the perspectives allowed and encouraged by mainstream society” (Moylan xvii). The stories told by Cyberpunk narratives have not changed at the same

pace as twenty-first century society, with many of the “successful patterns” (McCaffery, Introduction 13) being holdovers from the start of the genre. Instead, newer media capitalizes on the highly popular aesthetic of Cyberpunk without taking a critical viewpoint, and rather than encouraging resistance or challenging the reader to think about the world in a new way, contemporary Cyberpunk instead promotes an escape into that same virtual world that earlier stories feared. Rather than suggesting resistance to a dystopian future, contemporary Cyberpunk often reinforces the idea that our current dystopian corporate culture will only become more powerful, and that resistance, at best, comes in those small “lawless sub cultures” (“Cyberpunk” *A Dictionary of the Internet*). Worse, contemporary Cyberpunk media often reinforces “positions of privilege and hatred” (Moylan xvii) due to its transition to a mass-media trope. Cyberpunk trends have been “so thoroughly commodified and so often repackaged [...] that they have been effectively stripped of the radical potential for resisting oppressive capitalism to which they might once have aspired” (Jellerson and Tobeck 1-2).

Perhaps this stripping of radical potential comes from Cyberpunk’s inability to move beyond its origins in “the terrors of the twentieth century” (Moylan xi). If Cyberpunk dystopian narrative is a product of the twentieth century’s “postmodern culture” (McCaffery, Introduction 1) and its desire to emulate the “breakdown of genre distinctions” (McCaffery, Introduction 14), then its loss of critical edge in the twenty-first century could be due to changing social concerns, and exacerbated by the over-commodification and replication of the genre’s tropes. In contrast to Cyberpunk’s twentieth century outlook, Solarpunk, with its interest in environmental and social justice, comes from the twenty-first century and its radical potential remains current.

However, Solarpunk’s status as rooted in the twenty-first century does not make it any easier to define—instead, its relative newness makes it much harder to pin down. It is both a newer genre with little critical examination, and according to Jay Springett, an early critical commentator

of Solarpunk, still exists more as “a movement in speculative fiction, art, fashion and activism” (Springett) than as a literary genre. While Solarpunk is now starting to enter the larger cultural consciousness, it has only just started to do so over the past year—prior to 2019, discussion of the genre was mostly limited to niche groups on social media sites such as Tumblr, Facebook, or independent blogs. While Solarpunk shares its roots with Cyberpunk, dating back to the counter-cultural and feminist science fiction of the 1960s and 1970s, it rejects much of the fatalism and techno-pessimism that has infected contemporary Cyberpunk, instead returning to the “utopian confidence in technological progress” (“Cyberpunk” *The Oxford Dictionary of Literary Terms*) of earlier science fiction. Drawing inspiration from cli-fi, post-colonial, afro-futurist, and other ‘punk’ genres not listed (such as Biopunk, Oceanpunk, and Skypunk), Solarpunk optimistically explores questions of gender and sexuality, race and colonialism, environmental and ecological concerns, and the value of capitalism as a societal system, alongside a focus on social ecology.

Solarpunk, as a genre, is indebted to Murray Bookchin’s ideas of social ecology and anarchism. Solarpunk commentators, such as the Solarpunk Anarchist Facebook page, cite Bookchin as an inspiration and guide for Solarpunks. While we cannot tell how explicit his influence has been on Solarpunk fiction, we can see ways in which the model provided by Bookchin’s social ecology and anarchist thought resonate. According to Bookchin, “social ecology is based on the conviction that nearly all of our present ecological problems originate in deep-seated social problems” (Bookchin, *Social Ecology and Communalism* 19). For Solarpunk, social ecology is about finding an “ecological holism” (Bookchin, *Ecology of Freedom* 3), achieving a careful balance between humanity (free of those “deep-seated social problems”) and the nature of which humans are a part. Social ecology informs Solarpunk’s attitudes towards technological progress, and its approval of (perhaps even a desire for), a controlled and ordered nature as a part

of that careful balance. By viewing the role of humans as that of “a supportive” species, rather than as a “dominant” one (Bookchin, *Social Ecology and Communalism* 21), one that is responsible for using its role “as flexible, highly intelligent primates” (Bookchin, *Social Ecology and Communalism* 29) to “complement nonhuman beings [...] to produce a richer, creative, and developmental whole” (Bookchin, *Social Ecology and Communalism* 21), Solarpunk approves of a carefully moderated nature. This carefully moderated nature is expressed through the idea of “complementarity:” that humanity’s “role in the natural world [is] as creative, supportive, and deeply appreciative of the well-being of nonhuman life” (Bookchin, *Social Ecology and Communalism* 20-21).

However, social ecology is impossible without the accompanying social progress. Bookchin’s claim that “an environmentalistic technocracy is hierarchy draped in green garments” (Bookchin, *Ecology of Freedom* 314) resonates throughout Solarpunk, with several stories discussed in this thesis expressing the same idea—that Solarpunk technology is pointless, or even dangerous, in the hands of capitalists or fascists. Finally, Solarpunk views the “ecologically oriented society” as one that *is* compatible with “material pleasure and ease,” rather than needing to be strictly “regressive [with] a strong emphasis [...] on primitivism, austerity and denial” (Bookchin, *Social Ecology and Communalism* 96-97). While Solarpunk does not dismiss the value of a more permacultural or pastoral lifestyle, as discussed in Chapter One in reference to the story “Caught Root” (*Glass and Gardens*),³ Solarpunk rejects the idea that that is the only way, or best way, forward. With Solarpunk’s interest in progress of all kinds, abandoning technology for a more pastoral mode is a personal choice, rather than a societal imperative.

³ And found in other stories not discussed in this project, such as Mindi Briar’s “Refuge” (*Wings of Renewal*) or Holly Schofield’s “The Call of the World” (*Glass and Gardens*).

This interest in a highly developed, modern world that retains an ecological focus can be seen in Solarpunk's first anthology, the Brazilian *Solarpunk: Ecological and Fantastical Stories in a Sustainable World*, which was created to "write stories in self-sustaining fictional civilizations [set in] greener and more inspiring futures" (Ulibarri, Preface 1). "After all," Lodi-Ribeiro, the editor, said, "I was feeling rather bored with all those old dystopian plots" (qtd. in Ulibarri, Preface 1). Sarena Ulibarri, in the preface to the English language edition of *Solarpunk*, credits this "weariness with dystopian plots, coupled with a growing awareness of climate change" with Solarpunk's recent rise (Ulibarri, Preface 1).

The first Solarpunk anthology contains stories "far less utopian and pastoral than much of the English-language solarpunk" (Ulibarri, Preface 2), which can perhaps be attributed to the newness of the genre. However, *Solarpunk*'s less optimistic approach could also come from the genre's non-Western origins, and the anthology's Brazilian origins. As Ulibarri points out, while the Brazilian government may be interested in sustainable industry, it is not associated with "liberalism and left-wing ideology" (Ulibarri, Preface 3), which is in contrast to the ways that North American thought tends to associate green technology with left-wing political ideologies, as demonstrated in much of cli-fi. This separation of "liberalism" and environmentally conscious policy (such a focus on renewable energies, reforestation, and reducing carbon footprints) could explain the omnipresence of green capitalism in the anthology. These short stories thus "defy the notion that sustainable = utopian" (Ulibarri, Preface 3) in an act of both warning and resistance.

In spite of the grim nature of many of the stories in *Solarpunk*, Solarpunk as a genre is about hope (in *Solarpunk*, by presenting the possibility for change). Ulibarri suggests that "the 'solar' in solarpunk has come to represent not only the ecological aspect of this budding genre, but also the idea of brightness and hope" (Ulibarri, Preface 2). In the foreword to *Wings of Renewal*, the first English language Solarpunk anthology, Claudia Arsenault and Brenda J Pierson write that

Solarpunk is about hope—that defiant hope is “the very heart of it” (Arsenault and Pierson, “Foreword” np). Solarpunk refuses the defeatist attitude often taken on by Cyberpunk, denying that “the big fish will always eat the small one” and instead looking at how existing and near-future technologies would look in “a world where humanity overcame eco-disasters, mega corporations, and dystopian governments” (Arsenault and Pierson, “Foreword” np). By taking up the techno-optimism of earlier utopian science fiction novels (such as Marge Piercy’s *Woman on the Edge of Time*, or the world of Whileaway in Joanna Russ’ *The Female Man*), Solarpunk consciously rejects the growing fatalism that has infected mainstream English science fiction for the last several decades, such as that in Cyberpunk.

The introduction to *Sunvault* adds yet more to this growing definition of Solarpunk—the intensely socio-political side of the genre. While Cyberpunk owes much of its roots to the punk movement, Solarpunk draws on “currently emerging movements in society and culture such as the green movement, the Black Lives Matter movement, and certain aspects of Occupy Wall Street” (Dincher 7) in its goals. Solarpunk explicitly imagines “a more optimistic future in a more just world” (Dincher 7), one where “humanity has found a way to be responsible with its environment” (Dincher 8). In the editor’s note, Phoebe Wagner and Bronte Christopher Wieland suggest that the genre “emphasizes innovative interaction with both our communities and our environment; socio-environmental thought and creation [...] inspire the solarpunk attitude” (Wagner and Wieland, Editor’s Note 9).

Sarena Ulibarri returns to the critical Solarpunk stage in the introduction to *Glass and Gardens*, calling Solarpunk “optimistic, environmentally-conscious science fiction” (Ulibarri, Introduction 1). She suggests that, while Solarpunk is still struggling to define itself, Solarpunk stories must “touch on environmental issues and/or climate change, and they [have] to have an overall optimistic tone” (Ulibarri, Introduction 1). Further, she suggests that Solarpunk features

“adaptation and compromise rather than destruction and conquest, [...] empathy and cooperation over greed and competition” (Ulibarri, Introduction 2).

Considering these definitions, I argue that Solarpunk is a subset of science fiction that is interested in, and of interest to, environmentalism, with an inherently socio-political motive. While Solarpunk stories can be either post-utopian or post-dystopian, all Solarpunk stories are inherently optimistic, looking towards a brighter future marked by human cooperation and unity. While the lawless subcultures and cruel corporatocratic societies of Cyberpunk may still feature, the now commonplace defeatist attitude and environmental dystopias are replaced by an optimistic approach to environmental stability or rejuvenation brought about by responsible uses of technology. Cyberpunk’s ontological questioning of the role of technology in human evolution, and whether it will lead to a loss of humanity, is replaced by techno-optimism, a desire to see humanity surpass its own limitations, and a belief that technology is the route by which human beings can achieve that goal.

Moylan’s suggestion that Cyberpunk is “a cultural manifestation of [a twenty-first century] broad-scale yet radically diverse alliance politics” (Moylan xv) now tends to ring false in light of the mimesis of the “hegemonic order” (Moylan xvii) that much of contemporary, twenty-first century Cyberpunk perpetuates. Solarpunk, however, demands this cultural unity with its hopeful premise built on the idea of community, cooperation and acceptance—it presents the hope that, through cooperation human beings can make its ideals a reality for all in the real world. While Ulibarri suggests that it is the inclusion of an optimistic tone and an interest in eco-criticism that defines Solarpunk, I would add that an interest in comprehensive social justice and an interest in the progress necessary to see justice done are equally integral components of Solarpunk. Adam Flynn, one of the first North American Solarpunk thinkers, suggests that “infrastructure as a form

of resistance” (Flynn) is also key to the definition of Solarpunk, and that these facets combine to give the genre its ‘punk’ status.

The premise of community that Solarpunk is built on tends to refer to a small, coherent group of individuals that interact with each other as a social organism that is smaller and more decentralized than a city. It is also used to define geographic and social boundaries that are nonetheless porous. These small communities are dedicated to creating “local resistance” (Flynn) in opposition to the dominant social hierarchies and hegemonies. While there are larger discussions around the nature and definition of community, and the role of community in Solarpunk, this project views community as a linked group of interdependent individuals who can rely on each other for support and aid, and are linked not only by shared values, perspectives, and geographical location, but by affection and support as fellow living beings.

This transition towards smaller, decentralized communities is part of the social progress that is necessary in Solarpunk. While progress is an incredibly fraught term in criticism, being discussed by feminist, postcolonial and environmentalist critics (to name a few) with a distinctly negative connotation, Solarpunk’s interest in progress is, perhaps, the key component of the genre. I would argue that Solarpunk views progress as a careful and measured advance guided by its principles of social justice and social ecology. For the purpose of this project, then, progress will be used to mean advancement—evolution in a given field towards the stated goal. In line with that, this project argues that Solarpunk views progress as something beneficial—not the capitalist “growth for the sake of growth” mantra, but instead a continual natural evolution. A progress away from capitalism and centralization, a progress towards the kinds of societies portrayed in the stories, and a kind of social progress towards acceptance and unity are the kinds of progress championed by Solarpunk. However, even this progress can be problematic; Solarpunk is, in spite of the ambivalence with which it treats much of its subjects, often righteous in its dedication to its

ideologies. This can render it dismissive of other perspectives that disagree with its particular views of progress, views inspired by social ecology and communalism, where environmental and social justice concerns have been addressed. While progress is an incredibly fraught term in criticism, Solarpunk attempts to step into that dialogue, and deploy an optimistic and nuanced use of science fiction's vision of progress. With its interest in social justice, and anti-colonial perspectives, Solarpunk denies capitalist, colonialist, and oppressive stances of ethical and moral progress, instead aiming for a cooperative definition of progress that leads towards an ever-changing, social-ecology inspired, “dynamic *unity of diversity*” (Bookchin, *Ecology of Freedom* 24, emphasis original). In light of this, technological progress for Solarpunk means advancing technology to better allow for a more efficient and low-footprint lifestyle and society, at the same time as repairing the environmental damage that humans have already done, all while still respecting and allowing for traditional ways of life. Social progress means moving away from capitalism and hierarchy, and towards a caring, decentralized system of interlinked communities, while, again, leaving room for alternate kinds of social organizations and groupings. Social progress also involves creating a conception of our world which includes all life as having value, not as a product, but as a living being.

Solarpunk also demands physical progress—an evolution of the human body and mind. While this posthuman agenda is tied up with questions of stability, autonomy, and community, it is ultimately about progression towards surpassing limits, whether those limits are bodily, or environmental. To draw on Vincent Miller's discussion of posthumanism in *Understanding Digital Culture*, Solarpunk looks “critically at the relationship between technology and the human” in order to discuss “potential changes in the human body” rendered through “technology and technoscience” (Miller 210). Solarpunk, specifically, imagines that a posthuman evolution of the human species, either through cybernetics and implants, through genetic manipulation, or through

communion with alien minds and bodies, is a liberatory project, designed and pursued to overcome the inherent limits of our bodies. These limits could be anything from aging, to being born as the wrong sex,⁴ to being unable to withstand the rigours of space travel to inhospitable planets. This extension of the human body also entails a broadening of what counts as human communities, with Solarpunk's interest in the ways that human culture may change through interactions with alien minds (whether extraterrestrial, AI, or trees) coming to the forefront. This cultural change is just as posthuman as a physical evolution, in that the definition and lived experience of humanity will change.

Solarpunk's stance "that human advancement will occur through technological augmentation and even the replacement of the fragile human body by more durable forms" (Miller 215) is connected to its roots in social ecology. Rather than viewing such changes as terrifying and monstrous, like Cyberpunk does, Solarpunk sees this as the natural next stage in our evolution. Bookchin states that "evolution [renders] an organism more adaptable to new environmental challenges [...] and that better equips living beings (specifically human beings) to *alter* their environment to meet their own needs" (Bookchin, *Social Ecology and Communalism* 24). Solarpunk asks, if it is natural for human beings to "*alter* the natural world" (Bookchin, *Social Ecology and Communalism* 29) to suit the needs of human beings, how is it any less natural to alter human beings to suit the needs of the environment, or to suit human needs? If human beings are unable to alter the environment to "meet their own needs," then it follows that it is human beings that must be altered instead, an ethos discussed in Chapter Two.

⁴ Transitioning is not necessarily a post-human endeavour, and my intent here is not to imply that it is. Instead, my intent is to imply that Solarpunk sees transitioning—a liberatory restructuring or recasting of the human body—as being an inherently human endeavour. As such, as this kind of surgery or hormone therapy is acceptable, other ways of reshaping and altering the human body are equally acceptable in the pursuit of overcoming the physical limits of the human body.

Chapter Two also discusses the ways in which the posthuman intersects with consumption. Consumption has become a key word in discussions of late stage capitalism, so much so that the term ‘consumer culture’ makes explicit reference to it. This project, as well as Solarpunk as a whole, are interested in ideas of consumption, as part of Solarpunk’s critique of, and resistance against, capitalism. There are two kinds of consumption at play in this thesis: physiological and capitalist. By physiological (or physical) consumption, I mean the physical necessity that is eating food. The larger problem that Solarpunk often turns to is what happens when physiological consumption becomes conflated with, or overcome by, capitalist consumption: the consumption of goods. The assignment of values to the act of acquiring and using products, and the drive to acquire and use (up) those products, leads to an insidious cycle of continuous acquisition. By focusing on the consumption of goods and products (which can include people), capitalist consumption often leads to displays of conspicuous consumption, or over-consumption of goods and resources. Part of Solarpunk’s need for progress is to combat this consumption.

Solarpunk’s generic obsession with progress combines with its post-Cyberpunk sensibilities and grounding in social ecology in order to situate it as firmly post-utopian. Solarpunk synthesizes its main argument by combining twenty-first century social views with the techno-optimism of post-Cyberpunk and the environmental justice of social ecology. This post-utopian genre aims not for the teleological end of time envisioned by much utopian literature, but at an ideal, ever evolving humanity and human society that can only come with a dismissal of the “teleological narrative of history which culminates in either millennium or apocalypse” (Gomel 2). Stagnation is as much the enemy in Solarpunk as capitalism or bigotry, with social and technological stagnation viewed as equally dangerous options. To clarify, Solarpunk is not in favour of unrestrained growth; aggressive and irresponsible mass consumption is one of the things that Solarpunk is trying to progress away from.

Ongoing human progress is a necessity in Solarpunk, however, because while there is an ideal future society, that ideal can never be reached. The ideal will change as the world and humanity do; similarly, reaching the end of history in a utopian sense would mean an end to progress. As such, Solarpunk remains distinctly post-utopian, envisioning a world where the concept of the end of history has been destabilized and replaced by an ever expanding vision of the future. Solarpunk's optimism aims at an ongoing evolution of technology, society, and humanity, in order to approach the Solarpunk ideal.

In Chapter One I examine the ways in which Solarpunk approaches social and technological progress, with a focus on the ways that progress interacts with community. While progress towards the ideal Solarpunk social-ecology society is placed over communal peace in the stories examined, that progress should not create social discord or injustices as an end result. If the end result of progress is disunity or oppression, then it should instead be opposed. In a broader application of that idea, technological progress cannot come before social progress, or else it can become a tool of oppression.

Building on the premise that technological progress that creates disunity and danger should not be pursued, Chapter Two examines several stories that portray worlds that are endangered by post-humanist ideas when society lacks a Solarpunk ethos; while post-human evolution may still be necessary for survival, it can create as many problems as it solves if the society is unprepared or still fundamentally flawed. However, these stories are not a dismissal of post-human evolution, but rather, a suggestion that this kind of human evolutionary progress needs to be accompanied by the matching social progress.

Part of the need for posthuman evolution and social progress comes from Solarpunk's concerns over consumption. Humanity's nature as intrinsically consumptive is presented as a flaw, with critiques of the notion that to be human is to consume or be consumed. As such, fears and

concerns around consumption are at the forefront in many of the stories discussed. This comes with additional fears over the nature of capitalist progress being consumptive; Solarpunk progress aims to be generative and universal, rather than exploitative and cannibalistic. Physical consumption and capitalist consumption come together in the stories presented, representing the need for both physical and social progress.

Chapter One: Progress and Community

Julia K. Patt's "Caught Root" is the first story in the *Glass and Gardens* anthology, helping to set the tone for the anthology as a whole. Fittingly, it portrays both the advanced, techno-optimist perspective (glass) and the more pastoral or permaculture perspective (gardens) that are implied in the anthology's title, and that make up Solarpunk's ideology. "Caught Root" also portrays the importance of both community and technology in Solarpunk, and the interplay between the two. The two modes of glass and gardens are represented in the story by Doctors Bari Khadir and Ewan Orkney. Ewan Orkney is from the futuristic "well-funded" city of Hillside, where "shining towers reach for the blue sky" (Patt 3). Bari Khadir represents New-Ur, a "low-tech" city "born from the very rock, all adobe and stucco and low-sitting buildings" (Patt 3). Both cities seek "to reimagine civilization" (Patt 4), championing the progress that is so key to Solarpunk, but seek to do so in very different ways. Bari accuses Hillside of not caring "about searching our past for solutions," and while Ewan corrects Bari on this, saying that Hillside *does* incorporate "lessons and methods from every culture," he admits that Hillside is not "overly burdened by sentimentality" (Patt 5). This conversation continues with a discussion of automation, with Bari critiquing it as distancing and inhuman, while Ewan suggests that its merits lie in allowing greater personal autonomy for the workers; the workers can "choose their tasks more freely, can devote more time to study, creativity" (Patt 6). The larger contrast between these different modes can be easily encapsulated in this argument; that technology can alienate "the work and the workers," but can also allow for "bettering [...] society through innovation" (Patt 6).

This story can be used to set the stage for much of Solarpunk's larger discussions of progress and community. Here, two modes of progress are on display: technological and social. Ewan serves as a "diplomat" (Patt 4) between the two cities, trying to improve relations, and fight the culture of distrust. Social progress, that of creating a culture of trust and cooperation in order to

better “reimagine civilization” (Patt 4), is at the heart of the narrative. Technological progress is, while less immediate, still throughout the narrative, with carefully cultured plants being grafted and crossed in order to better suit the environments of the two cities.

While Ewan and Bari argue over which direction the social and technological progress of humanity should take—whether they should focus on “reclaimed and reused” or “recycled, unblemished, new-looking” materials; whether they should need “extra tech” or not (Patt 5)—there is no question of whether or not continued progress is necessary. Even with New-Ur’s less technologically advanced lifestyle, Bari admits the need for “another talented botanist [...] willing to experiment” (Patt 9) with their crops. At the same time, Bari’s sister Safiya will serve as emissary to Hillside, while Ewan stays at New-Ur, furthering the cooperation and social progress between the two groups. These two foci, of technological and social progress, resonate throughout the texts discussed in this chapter. To reiterate, Solarpunk does not view all progress as positive, and it is only that progress which matches its overall social goals that is championed.

Social progress in “Caught Root” is portrayed as a movement towards a greater unity between two distinct communities. However, even within the separate cities, the idea of community is ever present as a key part of the reimagined civilizations. Not only does “everyone [take] part in everything” (Patt 8), but both cities are built in a “circular configuration” of “concentric rings [of living spaces] interspersed with lush gardens and communal spaces” (Patt 5). Community, and the porousness of social boundaries due to a trusting and integrated community, are key both to both cities, and to Solarpunk’s broader ideas of progress. Ewan’s mission is to break down these boundaries between the two cities; to replace the “distrust” with a free exchange of ideas (Patt 4). This drive towards a more fully integrated community—or at least towards one more harmonious and cooperative—can be seen not only in “Caught Root,” but throughout the Solarpunk anthologies.

These two tenets (progress and community) perhaps come from Solarpunk's roots in social ecology. Clear lines can be drawn from the techno-optimism and communalism of Bookchin's ideas to the Solarpunk genre. Unlike contemporary science fiction and cyberpunk, technology is not "imbued with a sinister life of its own" (White, *Bookchin* 21), but instead is something "liberatory" (White, *Bookchin* 21 emphasis original); something filled with "possibilities for new ecological and micro technologies" (White, *Bookchin* 21). Indeed, I would agree with Bookchin, and Damian White (in his *Bookchin, : A Critical Appraisal*), that a "blanket rejection [of technology] is just as simplistic as the optimism that prevailed in earlier decades" (White, *Bookchin* 21); that, while it has its place in criticism, "eco-luddism" is counter-productive in the real world, with "a wholesale discarding of advanced technologies" running counter to the goals of "a further development of technology along ecological principles" (White, *Bookchin* 136). Solarpunk's techno-optimism can be seen here, with even societies like New-Ur that eschew unnecessary technology still carefully moderating and controlling their natural environment, cross-breeding and altering plants in order to provide more appetizing and hardier crops.

"Caught Root" ends with Ewan staying in New-Ur, while Safiya travels to Hillside as New-Ur's emissary. This promise of continued cooperation, mirrored in a blossoming relationship between Ewan and Bari, represents a third, mutually inclusive path. Solarpunk, more broadly, tends to favour this third path, where technology is produced and developed, but where its use is up to the individual; where humans retain a connection to work and the land, while simultaneously using automated systems to reduce the number of working hours necessary. This heavy integration of technology and natural systems reflects Solarpunk's ideological debt to Murray Bookchin's theories, and can be seen in the tenets of social ecology, which claim that "society and nature are not inherently antithetical" (Bookchin, *Ecology of Freedom* 342); that humanity's "seeming acts of 'defilement'" of nature (when humanity "cultivates food, pastures animals, removes trees and

plants” [Bookchin, *Ecology of Freedom* 342]) “may enhance nature’s fecundity rather than diminish it” (Bookchin, *Ecology of Freedom* 342).

Shel Graves’ “Watch Out, Red Crusher!” portrays this kind of human society that enhances and protects nature, while still using technology. Graves’ story is about the ‘utopian’ community of Aberdonia, where there are farmers, “forest protectors” and “ocean protectors” (Graves 58) all alongside advanced nanotechnology. “Watch Out, Red Crusher!” seems to portray a society somewhere between New-Ur and Hillside, with both its solar-panel-esque solar nanites and more pastoral community and structures. In spite of this seemingly utopian community, however, “Watch Out, Red Crusher!” demonstrates some of Solarpunk’s issues with utopian thinking. Rather than approaching change and social progress, like the two cities in “Caught Root,” “Watch Out, Red Crusher!” portrays a far more rigid society, one that resists the necessary social change. This society (Aberdonia) focuses on community, placing the peace of the community and its ecologically-centered ideology (in contrast to “the uncivilized Freeway” [Graves 53]) above all. As the story progresses, Irwin, a young boy with violent anger issues, is banished from the village by the protagonist Andee, in spite of Andee’s affection for, understanding of, and even commiseration with, him and his plight.

While many people in the community see it as an ideal one, it is not; not only because of the smothering sameness of the community that affects the main characters, Alex and Irwin, but because of the stagnation on display. Rather than work to remove the side effect of the Solar Pact (“solar nanites that Aberdonia injected into the cells of all its citizens” [Graves 53]), either by improving the technology, or seeing to the social problems caused by it, the Aberdonians are content to just live out their ‘utopian’ lives.

While Andee spends much of the story discussing her affection for Irwin, and her own struggles with the community—the way that her generation was never given a choice whether or not to accept the Solar Pact—she ultimately flares with anger, coming to the defense of her teacher, Madame Morell, and banishing Irwin from Aberdonia for his violence. Her declaration that “You [Irwin] can’t be here. [Violence is] not who we are” (Graves 68) not only shows her devotion to the town, but also to unity, putting aside her own doubts and affection in favour of maintaining that peaceful unity. However, Andee herself also struggles with finding a place in the community, as her “shade” (Graves 53), a side effect of the solar nanites, causes her depression to be visibly broadcast, leading her to fear exile due to societal rejection. While she ultimately finds a stable shade, it is now “sumac,” a colour “unacceptable” and “wrong” (Graves 68) in the eyes of the community, though her teacher accepts and lauds her. Even though this new sumac shade risks Andee facing exile too, she places the needs of the community and of others before herself, channeling her anger to become the “fiery sun” (Graves 68) that Madame Morell needed to protect her from Irwin. Throughout the story, Andee struggles to come to terms with the demands and trials of the utopian Aberdonia. Much of her anger, and her connection with Irwin, come from her confrontations with the flaws in Aberdonia—the ostracization and judgement caused by having a ‘wrong’ shade, and the fact that, for the Council, “it’s easier to exile people” (Graves 64) than to make the necessary social progress to give those who are different, whether angry or depressed, a place within the society.

In this way, “Watch Out, Red Crusher!” explores not only the need for continuing social progress, even in a technologically advanced society, but also the tensions between autonomy and community inherent in the works of Solarpunk’s critical inspirations (such as Murray Bookchin), and the tensions between technological and social progress. In his paper “Murray Bookchin and the Domination of Nature,” Giorel Curran states that “A persistent paradox in the social ecologist

advocacy of community is the fact that the very mechanisms that act to hold community together [...] are also the mechanisms [...] that can impinge on autonomy” (Curran 68). “Watch Out, Red Crusher!” seems to resolve this tension simply when Andee places the good of the community over her feelings for Irwin; as doing so jeopardizes the security of her place in the community, it could be read as a declaration that, even when it is a difficult choice to make, the community always comes first. However, assuming this resolution would mean ignoring Andee’s very real misgivings about the community—and, would mean ignoring the dangers inherent in her being ostracized from the community for fighting to defend it. Indeed, the story acknowledges the unsettling nature of Aberdonia’s homogeneity; after all, the narrow “social law” and near totalitarianism of the “standardization” (Bookchin, *Ecology of Freedom* 23) enforced by Aberdonia’s Elders at first cast Irwin as a kind of rebellious hero. This is the kind of “totalitarian [...] wholeness” (Bookchin, *Ecology of Freedom* 24) that Bookchin speaks against; so, rather than simply saying that community comes first, this story is suggesting that while community may be paramount, the refusal by the Elders to acknowledge differences is highly problematic—as is the fear-mongering and bullying created by people calling Irwin a “Red Crusher.” Instead, this story makes it clear that additional social progress is needed, while highlighting the issues with untested technological progress. It is, after all, the Solar Pact that both “[helps] power the community, providing electricity, running water, and warming the algae production ponds” (Graves 53) and creates the solar shade as an unintentional side effect, which is the cause of this ostracization. With technological progress having created new social problems, social progress is necessary in creating “a dynamic *unity of diversity*” (Bookchin, *Ecology of Freedom* 24, emphasis original) within the community. And, if the community is truly to embrace that unity of diversity, then it needs to follow through on the claim not to “shun people for being different” (Graves 62), rather than returning to ostracization and othering when people fail to comply over time. While Irwin’s

violence may be as much of a threat as the fearful intolerance of the Elders and other citizens in the story, Irwin's violence may never have reached the point that it did if the other Aberdonians had not worked so hard to isolate and ostracize him for his difference.

The claim that Aberdonians “don't shun people for being different” (Graves 62) is both challenged and affirmed by Madame Morell's experience. The Elders view her as a “charlatan” (Graves 53), and her classes are viewed as “weird and ‘inauthentic’” (Graves 58). In spite of this, Madame Morell is not seen as presenting a danger to the community, and so is allowed some measure of autonomy within the collective. This individual autonomy does not come before the community, however, as Madame Morell would have been “cast out” (Graves 55) for failing to follow its ordinances, and if she had not accepted the Solar Pact. While Madame Morell is tolerated in spite of her differences, she remains somewhat an outsider in the community, even while working to help others fit in.

This prioritization of community and group over individual autonomy—and the progress towards an integrated community—can be seen in other recent Solarpunk stories as well, though some navigate this balance differently, with more or less restrictive versions of it: Megan Reynolds “Petrichor” (*Wings of Renewal*) sees the protagonist Elena encouraged (but not forced) by her aunt to “offer to work for [the woman she steals from]” (Reynolds 53), “the typical punishment for theft” (Reynolds 54); Stefani Cox's “Firewall” (*Sunvault*) features “two teenagers fulfilling their community justice agreements” (Cox 40) by helping to maintain the wall that protects the city-state of Los Angeles from wildfires, and in Nick Woods' “Thirstlands” (*Sunvault*), the narrator Graham agrees to give the city access to his private well, in spite of the risk of being left at the mercy of “the soaring costs of privatised water” (Woods 178) and the “buggered up [...] thirst center” of his brain (Woods 177).

While “Watch Out, Red Crusher!” portrays a village that is primarily in need of social progress, many Solarpunk stories, such as Gregory Scheckler’s “Grow, Give, Repeat” (*Glass and Gardens*), portray societies that are in need of both social and technological progress. “Grow, Give, Repeat” is a story about a young girl named Alex, her oldest friend (a “robotic doll, Miss Lasagna” [Scheckler 201]), her human friend, Chuckles, and her pet chickens. More than that, though, it is a story about how Alex learns to place communal needs over her own desires as she works to create a sustainable environment for the genetically engineered “planimals” (Scheckler 203) (brainless cubes of meat and plant flesh called Blockies) that her family grows.

Alex creates the major conflict in the story when she selfishly attempts to steal back her chickens—which had been “relocated” for the good of the community, “due to immediate public health concerns” (Scheckler 205) to the “city farming facility” (Scheckler 206). Angry at what she sees as a theft of her friends, and inspired by a TV show, Alex breaks into the farm facility that night, and steals her chickens back, only to cause a car crash, injuring Chuckles, killing some of the chickens, and “smashing [...] the city farm’s storage tanks” (Scheckler 208). Having been the one to partially cause the problem, Alex decides to “reassign [her] schoolwork as service to the city farm” (Scheckler 209), trying to “fix the water” before “the whole system fails” (Scheckler 209).

While her struggles in the story frustrate her, Alex is also driven by her failure, and the inequality exposed by the conflict, to try and change the world for the better, pursuing work she believes to be ethically right. Frustrated by both her failure and her short-sightedness, and wracked by guilt at the destruction she has caused, Alex begins to draw “maps of all of the farm’s systems,” trying to find the “greater efficiencies” that would allow for publicly kept planimals (Scheckler 210), that she sees as a truly ethical food source. As her actions spark protest and unrest in the community, along with violent radical action designed to destroy individually kept planimals and further incense the debate, Alex works to try to restore peace, while simultaneously facing the need

to cull many infected chickens. With the responsibility of “informing the other families” affected by the cull, Alex struggles to come to terms with who is “good or bad anymore” (Scheckler 214), especially after protesters sabotage Chuckles’ home-farm with “a fast-acting fungus” (Scheckler 213) in an attempt “to make things worse” for everyone (Scheckler 213-214). This understanding is further complicated by the divisive nature of the genetically engineered Blockies, with “a pro-Natural clique” (Graves 214) refusing the idea of Blockies. While Alex struggles to identify who among the protesters is good or bad (a simplistic reduction of complicated social problems that makes sense when remembering that she is still a child), she herself has a firm moral compass. Alex is kind and caring; when she has to assist in the euthanization and culling of the diseased chickens, she “apologize[s] to each” (Scheckler 212) as she does so. She does not, however, find the same sadness when “Mom kill[s] the first planimal” (Scheckler 212). Perhaps it is because ‘Doc’ was killed for the purpose of food, rather than out of a necessity “to save the flock” (Scheckler 212). However, this assumption fails under scrutiny, as Alex understands the necessity of killing the chickens. Perhaps it is because of her guilt in helping to spread the infection by rupturing the tanks. Or perhaps it is because the planimal “had no brain and no pain” (Scheckler 212). This suggestion is expanded on when Alex and her mom discuss that “it’s a lot easier than the chickens [...] and less work to raise [planimals]. And cheaper. And fewer germs” (Scheckler 213). At the end of this discussion, Alex decides that “It’s nicer to [...] not kill a chicken when you can grow a Blockie. Chickens think [...] Blockies are part plant, have no significant brain, and feel little to no pain” (Scheckler 213). According to Alex, an existence that doesn’t harm others is the ideal. With technological progress and advances that allow for cheap, efficient, and accessible food that doesn’t involve the killing of animals, “Grow, Give, Repeat” portrays a more ethical food source.

However, in spite of Alex's belief that the Blockies are an ethical food source, her support of the Blockies could be seen as a threat to the community; the "anti-Blockies, a pro-Natural clique" (Scheckler 214) protest the usage of planimals. While the story ultimately sides with Alex, the concerns over the ethics of planimals are not fully addressed. The protesters, while spurred to violence by fear and civil unrest, are no different from Alex in standing up for what they believe to be the most efficacious and ethical solution, a narrative ambivalence that matches the two paths forward depicted in "Caught Root." Further problematizing Alex's support of the Blockies, her actions cause large amounts of civil unrest, with fears over the chicken cull causing tensions to rise until a street fight breaks out outside the city farm. When her father confronts her over her involvement in the fight, she turns his pessimism back on him, insisting that there *is* an "easy way out of these tensions": "Grow safe food. Give it to people. And then do it again. Grow. Give. Repeat" (Scheckler 215). While Alex's actions are causing tensions in the community, they are driven by a desire for the social and technological progress that will allow her to achieve that optimistic ideal of "Grow. Give. Repeat" (Scheckler 215). Building on her earlier designs for the city farm, and inspired by the chaos and fear she saw in the protesters, Alex refines her designs, preparing for something "much bigger" (Scheckler 220) than the contest for free planimals that she had originally been thinking about. Finally, after having developed methods for "over 80% efficiency with planimals, chickens, and people" (Scheckler 220), Alex publishes her designs and plans via "a website and a free book" (Scheckler 220). When Alex incidentally wins the contest, she asks to give the prize to Chuckles' family, instead, because of the harm she had caused them. After all, as she says, it is not about the contest anymore. It is about "everyone in the community" (Scheckler 221); about "[solving] world-wide problems. Little by little" (Scheckler 222); it is about "Grow, Give, Repeat."

While I believe that “Grow, Give, Repeat” does portray a viable model for Solarpunks, Kenneth Farver argues in his paper “Negotiating the Boundaries of Solarpunk Literature in Environmental Justice” that Scheckler’s story is problematic as a Solarpunk model. Kenneth Farver is one of the few scholars critically publishing on Solarpunk literature, and argues in his paper that “Grow, Give, Repeat” is an ultimately flawed Solarpunk story, and one that is not useful as an example of the positive progress that Solarpunk champions and environmental justice requires. While the focus on efficiency within the story supports Farver’s claims that it is heavily influenced by capitalist thought, and depicts a non-ideal society, it is one that is still attempting to produce a system of environmental justice. However, Farver suggests that the story, ultimately, presents a “case study for analyzing these needless hurdles in producing a system of environmental justice under capitalism” (Farver 16), while still arguing that it ultimately is less useful due to having a “bourgeois understanding of justice” (Farver 15). I would disagree, suggesting that, while the resolution of “Grow, Give, Repeat” comes from one individual’s actions (Alex), perhaps almost imitating the standard loner-hero of Cyberpunk in her struggle against the community and her “distrust of the public sphere” (Farver 14), the clear uncertainty with which the story treats much of the subject matter suggests a deeper reading is necessary. While there is clear division in the community, the alternative perspectives are not dismissed, but rather acknowledged to be products of a flawed system, just as Alex’s struggles are equally products of that system. Further, Alex's actions in "Grow, Give, Repeat" can be read as the need to struggle against adversity and these problematic prevailing societal conditions in order to help bring about a better, Solarpunk future—and the suggested distrust of the public sphere comes more from an naive desire to keep her chickens at home than out of any deep distrust of the system.

Further complicating Farver’s reading of “Grow, Give, Repeat” as a piece of writing with “a bourgeois understanding of justice and materiality” (Farver 15), Alex does not undertake her

task alone, finding a small community of allies in Miss Lasagna, her parents, Mr. Hank, the other farm workers, and Dr. Corvalier, in spite of the ways in which the community at large rejects her; none of these characters, save Dr. Corvalier, could be said to be bourgeois. And, while Farver suggests that the city farm is upheld by "undemocratic imposed social orders" (Farver 17), it is in fact upheld by "the law" (Scheckler 206). However, even if we assume that the law is the "undemocratic imposed social order" that Farver is talking about, there is little evidence of the community's ability to keep individually kept chickens free of disease; Farver's claim that if the community just worked together they "could [feed everyone] with the resources they already have!" (Farver 17) comes across as naive in the face of the specific world depicted in the story. In this scenario, while the individual citizens may not want to have their chickens at the city farm, keeping them independently would in fact be worse for many of the citizens, as more chickens would be lost to disease, "fast-acting fungus" attacks (Scheckler 212) could still be made, and people like Mrs. Mousaka, an elderly woman unable to cook, might not have meals brought to her by the city's "food service" (Scheckler 217).

That said, Farver does acknowledge that it is the overarching social system in place in "Grow, Give, Repeat"—capitalism—that fuels this communal unrest and contributes to the lack of food. In spite of that, the insistence that there are no redeeming features in the story beyond it being "a great piece for reading as entertainment" (Farver 18) rings hollow, as does Farver's claim that Alex is "socially pressured" into being "exploited without pay for her labour" (Farver 16). While her mother suggests that Alex help out at the farm, doing so without reward—merely because it is necessary for the good of the community—would be the ideal in a communitist Solarpunk setting. Even if there were a reward on offer, Alex instead wants something "much bigger" (Scheckler 219): "the end of world hunger" (Scheckler 222). As evidence of this, when she does receive a reward, in the form of the Blockies contest grand prize, she gives it away to

Chuckles, in order to help repair the damaged interpersonal bonds in the community. While the story may be set in an imperfect world—one featuring a capitalist economic and social structure—it depicts the characters working towards both technological and social progress, in spite of societal resistance to their efforts, and without reward beyond reaching that better future. Rather than presenting “visionaries of a sustainable, equitable, and non-oppressive future” with an example of “how not to structure community-based struggles” (Farver 18), “Grow, Give, Repeat” instead provides an example of how, even when the larger community may be firmly rooted in selfish and capitalist modes of behaviour, independent or group action can bring about positive social progress.

“Grow, Give, Repeat” is, at its core, about progress. While Farver may dismiss it as being simply a vision of a capitalist world, the story itself deploys anti-capitalist rhetoric, implying that there needs to be progress on both the technological front, in allowing for higher efficiency systems that allow for either better dissemination of food, or increased local production, and on the social level, in a transition towards a more communal, anti-capitalist structure—in addition to a broader social acceptance of the technologies that are currently necessary for survival,⁵ such as planimals. Dr. Nancy Corvalier says that she runs her company, Blockie Technologies, as a non-profit, and works hard to keep “all of [their] ideas freely available worldwide” (Scheckler 216). She explains her reasoning behind this as “we know we can’t all afford everything. We’re not the rich ones who can buy their way out of trouble. We have to use our wits” (Scheckler 216). Farver correctly identifies that a more communalist society would allow for an easier solution to the issues presented in the story; progress towards that very society is being suggested by the story. By

⁵ While in an ideal world, the technology of planimals, and the ethics questions that they raise would, perhaps, not be necessary, “Grow, Give, Repeat” portrays planimals as an ethically viable stop-gap measure, until the larger inequalities inherent in a capitalist society can be addressed.

working towards that progress, by including Chuckles' family in the resolution, and freely offering her information about higher farming efficiencies, Alex channels that Solarpunk impulse. And, while the story displays a dissonant clash between Alex's desire for progress, and social unity within the community, this too shows the necessity of her actions; the community will never have a more unified approach, and will never make the social and technological progress necessary, if nobody attempts to make it. In this case, while progress may create social problems (like the solar nanites in "Watch Out, Red Crusher!"), "Grow, Give, Repeat" suggests that the progress that Alex is championing will ultimately solve more problems than it creates; and, as Farver says, some of the problems created by Alex's actions would be resolved in a world without a capitalist system, another piece of social progress that Alex and Dr. Corvalier are working towards in the story. And, more importantly, as can be seen again and again in Solarpunk stories, progress does not always come without a cost. While some costs, especially those in human life, are too high to pay, social costs and individual costs are worth paying, in the name of progressing towards the techno-optimist, communalist ideal.

"Caught Root," "Watch Out, Red Crusher!" and "Grow, Give, Repeat" all primarily engage with questions of social progress, using technological progress either as a secondary focus, or as a lens through which to better discuss the social issues at hand. All three are also set in the more distant future, and focus on smaller communities. These next three stories, by contrast, are set in the past, near future, and an alternate reality, with a more global scale. Rather than focusing on the strictly communalist perspective of Solarpunk that I have so far been engaging with, these stories gesture at the broader implications of pursuing Solarpunk action in the world, at what a society fully embracing a Solarpunk viewpoint might look like, and at the dangers of Solarpunk technology in the hands of bigots and fascists.

The cost of progress on a larger scale can be seen in T. X. Watson's "The Boston Hearth Project" (*Sunvault*), where one of the main characters is under "house arrest until 2025 [for the next three years]" (Watson 25) due to her participation in the titular project, an effort to effect social progress by reclaiming technological progress from the elite. "The Boston Hearth Project" is written in the form of a college entrance essay, and tells the story of Andie Freeman. Andie is a young, non-binary e-sports star who participates in the Boston Hearth Project, an anarchist action designed to claim "the Hale Center, a Smart Hotel for the rich" (Watson 16) and turn it into "a house for the city's homeless" (Watson 16). Through teamwork, and an effective application of technology and science, Andie and their team disconnect the building from external control, and non-violently evict the security guard, before filling it with the city's homeless. The team then continues to defend the building against police reprisal using the same smart-tech that was designed to make the Hale Center a luxury hotel. They "held the building against an active siege for 49 days" while trying to secure official recognition (Watson 24), which they eventually do, an action which inspires "New York and Portland" to "turn over building projects to activists for fear of facing another hostile takeover" (Watson 24). While Andie acknowledges the dangers of participation in the project, stating the necessity of "protecting each other from the state" (Watson 25) for fear of reprisal, they also acknowledge the value of "collective action," that through the unity of the team, they are able to reclaim a space from the rich, for the use of the destitute, and are able to create enough pressure to threaten other cities into complying with the demands of activists.

Here, the form of a personal essay combines with the desire to combat the threat of capitalism in order to apply the lens of absolute rightness to Andie's actions, dismissing both the repercussions of threatening cities into turning buildings over to anarchist groups, and much of the narrative ambivalence that comes through in other Solarpunk stories. However, Andie is careful to make clear that this social and moral progress is necessary, that the costs of threatening other cities

are negligible compared to the threat that non-action, and the continued societal violence, poses to the homeless of those cities. In this way, “The Boston Hearth Project” not only functions as a story, but also as a call to arms by a fellow activist. The story’s form as a ‘truthful’ recounting of a successful collective anarchist action can serve as inspiration and encouragement to others, while reminding the reader that this kind of social progress is necessary, even at the potential cost of facing jail time—because the alternative to pursuing this social progress is letting rich capitalists collect more money, while the community suffers.

While Solarpunk places the need for social progress over that of social unity, and accepts many of the costs of pursuing that social progress, there are limits to what costs can be paid, as can be seen in Daniel I. Dutra’s “Gary Johnson” (*Solarpunk*). “Gary Johnson” tells the story of two scientists, Father Roberto Landell de Moura and James Paulsen, and their experiments in first “bioelectrography” (Dutra 141) and then in the conversion of an object or being’s soul into pure energy. As the story progresses, Paulsen and Moura clash over a “moral objection”—Paulsen wishes to convert the souls of human beings into electricity, which Father Moura understandably finds unconscionable (Dutra 143). When the white supremacist Paulsen suggests “that blacks were perfect for this purpose,” Moura flies into a rage, and demands that his colleague return to the United States immediately (Dutra 143-144). Years later, Father Moura is sent “a premonition” by God (Dutra 146) of “a metropolis of unparalleled grandeur, with skyscrapers whose end you just couldn’t see, walkways connecting the buildings with each other and lanes suspended for [cars] that traversed the bowels of the buildings” (Dutra 148). While Father Moura is stunned by the glory of this God-sent vision of the future, his awe turns to horror when he realizes that the city is powered by the extracted souls of black men, sentenced to soul extraction for the lightest of crimes—that “humanity had been reduced to fuel” (Dutra 149). Rather than allow this future to come to pass, Father Moura murders his former colleague, who had been independently pursuing

the research, and destroys all the material related to the project. While there is potential for huge leaps in technological progress, as even the souls of inanimate objects can be extracted for power, the social progress necessary to prevent the oppressive usage of the technology is unfeasible within the story; as such, that technological progress must be fought against at all costs. “Gary Johnson” takes a firm and explicit stance that is echoed throughout *Solarpunk*, from “Boston Hearth Project” to “In the Hearts of Dragons” to “New Siberia,” that progress and development must not come at the cost of morals. While technological and social progress may be paramount, and may sometimes win the clash with community, they do not justify a cost in human life—if a cost is being paid in human life, then there is no social progress. And, as will be discussed further in Chapter Two, technological progress without equivalent social progress only widens the gap between those with and without resources; worse, technological progress in the hands of green capitalists and tyrants is horribly dangerous.

In contrast to “Grow, Give, Repeat” and “The Boston Hearth Project” where social growth needs to do away with late-stage capitalism, and in contrast to “Gary Johnson” where clean energy comes at a horrible cost, Antonio Luiz M. Costa presents a world both seemingly without the issues of late stage capitalism and without an energy crisis in his “Once Upon a Time in a World” (*Solarpunk*). Costa depicts an alternate universe where European colonialism, and the European industrial revolution seemingly never happened. Instead, the rest of the world, headed by Brazil, seems to have led the charge into the future, with a manned Mars-mission (contributed to by “Brazil [...] Eastasia [...] Ethiopia [...] Afrasia [...] India [...] Oceania [...] Eurasia [Costa 87]) having happened in the early twentieth century. The technology in this world is superb and ubiquitous, with the main character Pagu using a visor that functions as a combination Augmented Reality system/smartphone/etc. that she can control “with the blink of an eye” (Costa 83). “Once Upon a Time in a World” features an eclectic cast: Pagu and Guira, the young newscaster and news

technician team who the story is crystallized through; Tina Modotti, here a newscaster; Tina's lover, George Orwell, is a crotchety old reporter who seems to mimic the Old Man of *1984* in his mannerisms and complaints (quoting him directly at least once); Filippo Marinetti, now the Fuhrer of the "Futurist Party" (Costa 104); and Adolf Hitler, Benito Mussolini, Francisco Franco, Salgado, Ezra Pound, and Martin Heidegger, soldiers in Marinetti's 'revolutionary' army. All of these characters are collected around the opening of the "Intirana" (Costa 96) a new kind of nuclear fusion reactor that will reshape the way that energy creation works, and provide enough energy that space can be freed up for "reforestation, tourism, whatever [communities] want" (Costa 98).

While this world is not without discontent and disaster—the shadow of "the Great War" (Costa 86) looms in the recent past, and the action of the story revolves around a terrorist attack by Marinetti's Futurist Party—the world's present seems rather idyllic. Green energy is omnipresent, and the new fusion reactor will further revolutionize the energy industry, allowing for the vast solar fields that cover the countryside to be reforested. Even the terrorists arrive in a freighter "typical of its time," a vessel "combining [...] millennia-old oars and sails with the last word in technology. In addition to three rigid mobile sails that were also solar panels, it had twelve fins configured to rise and fall with the waves and to move hydraulic machines" (Costa 88), a combination of cutting edge technology and age-old designs such as that seen in "Caught Root," where viable technologies are not discarded for the sake of the new. While the narrative is dominated by the clash between the fascist terrorists and the better world, Costa still takes the time to ensure that the reader is aware of just how much better this world is. After the Great War, there were "UN resolutions [that] increasingly restricted the use of fossil fuels [...] and also of nuclear [fission] energy" (Costa 92). Pagu at one point questions the need for the "uniform and oppressive vulgarity of solar panels and wind turbines that turned magnificent landscapes in [sic] ugly things to behold" (Costa 92), suggesting that the "virtuality of how the world would be if fossil fuels continued to be

used [...] glaciers melting, hurricane multiplication, hunger from droughts and floods [etc]” is “exaggerated” (Costa 93), with Europeans claiming that it is done for the sake of depriving Eurasia “of their technological independence” (Costa 93). Her more science-oriented business partner, Guira, corrects her, citing “Professor Lacerda de Moura,” an expert in the field who is even “more anarchist” than Pagu (Costa 93).

While the action of the story and the crux of its argument come with the pleasure of watching Pagu and Orwell punch Nazis, the first half is far more cerebral, focusing on the clash between anarchist and socialist ideologies. Pagu and Orwell, fittingly, are anarchists, believing in the independence of individual communities, and a separation from the larger governmental systems imposed by the Brazilian technocrats. This is supported by their UN’s policy of decentralization, of “making local governments more autonomous and self-reliant” (Costa 97). This Solarpunk tenet is echoed in later stories, with numerous city-states or independent villages forming the locales and backdrops of the action, rather than nations. While Pagu and Orwell speak in favour of anarchism, the Brazilian technocracy is trying to impose a more socialist regime, as with the creation of the new fusion reactors, control will swing back to their government.

This discussion, and its return at the end of the story, model the proper way to stage a debate between different views of what shape progress should take. It is then immediately contrasted with the incorrect way when the Futurist party launches its violent attack on the Intirana unveiling. In an attempt to showcase that their coup has potential, and in order to “begin the crisis that will lead to World War II” (Costa 107), the Futurist Fascists try to destroy the reactor by using the press team as hostages to get close enough. However, while the fascists are distracted by the pursuing police forces Pagu and Orwell blind Hitler with a modified projector and steal his weapon; the two then proceed to gun down the remaining “futurists,” and save the other hostages. The story resolves with Pagu, Guira, Tina and Orwell receiving the “Golden Stars of Union of

Nations heroes,” and Orwell being promised an “opportunity to speak on behalf of anarchism” at the ceremony (Costa 113), reminding us that even though the government wishes for a more centralized socialist world, they have no desire to crush peaceful explorations of alternate modes. The story ends with the revelation that the date is October 24th, 1929, and instead of the start of the Great Depression, the date marks the defeat of fascism, and the beginning of a new era of peace and prosperity. Here we see the ideal model further exemplified with the peaceful discussion between Orwell and the technocratic government. This model is, of course, only possible if both sides are willing to talk; if one has already resorted to violence, like the Futurist Party, or “Watch Out, Red Crusher!”’s Irwin, then “Once Upon a Time in a World” suggests that swift expulsion from the collective, in whatever form it takes, is the proper course of action.

“Once Upon a Time in a World,” in many ways, is the near opposite of “Watch Out, Red Crusher!” in that it portrays a world where stagnation does not seem to exist. While the world could be said to be a techno-environmental utopia, with the energy crisis ‘solved,’ and humanity able to operate a manned Mars mission, the scientists of “Once Upon a Time in a World” continue to innovate, producing the Intirana so that the space given over to solar and wind farms can be returned to a more natural state. And, while there seems to be a powerful technocracy in control, they are not opposed to the social progress that could come from a rise in anarchist belief and behaviour. This desire for continual progress aligns “Once Upon a Time in a World” most closely with “Caught Root;” both portray societies that strive for continued change. Both societies are working towards finding new social systems that work better for all involved. And both societies allow people choice—whether to live in Hillside or New-Ur, or whether to be anarchist or socialist. While “Once Upon a Time in a World” does not represent the more pastoral or perma-culture approach of New-Ur, the *option* for that kind of lifestyle is supposedly being created through the

new reactor, which will allow for the shrinkage of the urban sprawl necessary for the currently used solar farms.

“Once Upon a Time in a World”’s desire for continual progress—for continual social and technological evolution—portrays the ideal Solarpunk approach to a futuristic society, one that is built on both “a healthy interdependence” (Bookchin, *Social Ecology and Communalism* 49) while maintaining a “sense of ecological direction” and “ethical meaning [...] to its projects” (Bookchin, *Ecology of Freedom* 345). Solarpunk stories do not portray worlds where progress comes without a cost, but rather worlds where the costs to progress are navigated and addressed. When the cost affects the quality or integrity of one’s identity as human, however, the story becomes one that is interested in questions of posthumanism. Solarpunk sees the posthuman—human evolutionary progress—whether technologically or biologically prompted, as part of that same overriding mandate of continual progress, as part of Solarpunk’s battle against stagnation. Chapter Two will examine Solarpunk’s post-humanist agenda, while also exploring the ways in which the posthuman connects to questions of interstellar colonialism and space travel, and how both navigate fears around physiological and capitalist consumption.

Chapter Two: Posthuman and Post-Earth Solarpunk

Part of Solarpunk's generic obsession with progress comes from concerns over humanity's future; specifically that humanity's current social and physiological forms are inherently consumptive and destructive, rather than generative. While physical consumption is a necessity for all living things, humanity's tendency to over-indulge and consume recklessly is highly problematic, and when combined with the capitalist consumption inherent to capitalism's "buy or die" imperative (White, "Post-Industrial" 73), human consumption in both its capitalist and physiological forms becomes dangerous. Humanity's consumptive and destructive nature is more likely to lead to stagnation than to growth—or will lead to damaging capitalist 'growth for the sake of growth,' rather than the technological and social innovation that Solarpunk demands. This idea of humanity as consumptive is a pervasive one, seeing as even at the base level, humans must eat other living things in order to survive. Solarpunk's drive to eschew or temper our consumption on a societal level is matched by the drive to reduce the individual human's need to consume, whether by producing more sustainable farming methods (reducing the impact that consumption has on the land) or by supplementing or replacing a solid diet with one of solar energy.

This drive to reduce consumption often comes to the forefront in Solarpunk stories about post-human evolution or post-Earth societies. With the post-human, this interest appears in the form of hopeful imaginings of what human could look like if we manage to leave behind the need for destructive consumption at an individual level. And with the post-Earth, it appears in the form of dire warnings about, and concerns over, unsustainable human destruction and consumption of planetary resources at the societal level. Both modes do, however, retain an interest in the other kind of consumption—physical or capitalist—as, without a change to both modes of human consumption, progress viewed as necessary by Solarpunk cannot be achieved. The interest in social and technological progress, then, has its natural conclusion in the reshaping of humanity to a form

that is generative rather than destructive, eschewing stagnation in favour of a continual growth, progress, and evolution towards ever-more Solarpunk ideals.

Solarpunk's post-humanist drive sees humans evolving through genetic manipulation or cybernetic augmentation, and is one shared with Cyberpunk; cybernetic limbs and fraught questions of the 'humanity' of AIs or body-less humans have riddled the Cyberpunk genre from the start. Contemporary Cyberpunk, however, tends to view post-humanist ideas as "profane" (Hall), where "the disembodied consciousness [...] is seen as transgression rather than liberation as was the case in earlier cyberpunk narratives" (Magerstadt 85). While *Neuromancer* is broadly dismissive of the "body [as] meat" (Gibson 6), Solarpunk marks a return to much of the techno-optimism in other early Cyberpunk. Indeed, while there has been a critical change in post-humanist discussion, with critics suggesting that "this relationship [between humanity and technology] does not always need to be feared" (Magerstadt 8), other, contemporary cyberpunk stories explicitly disagree. Take, for example, the upcoming blockbuster videogame *Cyberpunk 2077*, where utilizing body-mods may lower your "empathy," eventually leading to "cyberpsychosis" (a kind of modification-induced insanity and implant addiction) (Bailey). And, even if you keep your sanity in spite of the modifications, you have rendered your body "*profanum*:" have lowered your "humanity level" (Hall).

In contrast, Solarpunk makes it explicit that the more optimistic view of bio-tech or genetically-engineered versions of humanity are, while still fraught and requiring careful navigation, the natural next step in our evolution—now self-guided. Vincent Miller suggests in his book *Understanding Digital Culture* that "technologies are not 'inhuman' or apart from humanness, but are things integrated into people's plans, projects and desires [...that] the body is the source of technology, not separate from it, nor the subject of it" (Miller 219). Solarpunk, in agreement with Miller's suggestion, portrays post-humanist bio-tech bodies as an optimistic re-

imagining of a humanity that can break the barriers imposed on us by our physical limits, the damage we have done to the planet, and uncertainties of birth or accident. While Solarpunk does feature robotics—such as in the story “Summer Project,” where the young protagonist Jaci builds a prosthetic leg for a dragon fleeing poachers—it primarily focuses on the idea of genetic engineering as a means to reshape the human body, either to the design of the inhabitant, or in order to survive the changes that Earth will undergo due to the environmental damage inflicted by human greed and capitalist progress. Ultimately, Solarpunk sees post-humanist body modification as a liberating endeavour; the bodily changes undergone by the characters discussed in this chapter generally allow them to live healthier, happier, and less destructive lives.

Solarpunk heartily embraces the notion “that human advancement will occur through technological augmentation and even the replacement of the fragile human body by more durable forms” (Miller 215). The belief that humanity’s evolution must be self guided—and that that evolution will come through the use of technology—suffuses the genre. And, while much of this comes with a focus on genetic engineering, rather than cybernetics, the ideas remain—the human body will change and be replaced by the bodies fit for the world that we have created. Solarpunk does not, however, champion eschewing the human body, but merely a change in that body’s *form*. This firm belief in the value of technology in post-humanist evolution can perhaps be linked back to Solarpunk’s relationship to social ecology, and the belief that human tool usage is natural; that “evolution [renders] an organism more adaptable to new environmental challenges [...] and that better equips living beings (specifically human beings) to *alter* their environment to meet their own needs” (Bookchin, *Social Ecology* 24). If the needs of humanity cannot be met by the limits of the human body, then the “natural evolution” (Bookchin, *Ecology of Freedom* 315) of humanity would be to surpass that body, through the use of our tools and technology—altering not the environment, but ourselves.

Looking at this potential post-human future, then, Solarpunk asks the question of what happens if humans fail to curb our consumptive nature—or, regardless of whether we succeed or fail, what happens when we move into deep space exploration? Post-Earth and the post-human are intrinsically linked; if humanity is to travel beyond the Earth, we must be willing to change our definition of humanity, in large part by changing the ways that we consume (in order to prevent the colonial, imperialist, and exploitative modes from being replicated in space travel). This includes both the physical definition of humanity, if change and evolution are necessary for our destinations or for travel itself, and the societal definition of humanity, as contact with alien species will alter the ways that humanity has to act and engage, both with itself and with others. This combination between post-Earth and post-human comes to the fore in that stories of space travel almost always involve either a change to human bodies (such as in Santiago Belluco’s “The Death of Pax,” discussed in this chapter, or in Daniel José Older’s “Dust”⁶) or involve a necessary psycho-social communion with another species (such as in Stephanie Wagner’s “In The Hearts of Dragons” and Blake Jessop’s “New Siberia,” discussed in this chapter, or Mindi Briar’s “Refuge”).

While “Watch Out, Red Crusher!” looks at the idea of the human body modified to take advantage of the sun through their injected solar nanites, the focus of the story is on the needed social progress, using the technology as a means to discuss it more easily. Three of the stories I discuss in this chapter—“Sun in the Heart” by Roberta Spindler, “When Kingdoms Collide” by Telmo Marçal, and “Solar Child” by Camille Meyers—take the idea of the photosynthetic human further, making it their main focus, with humans able to photosynthesize directly, either through implanted technology, genetic engineering, or by “grafts” and surgery (Marçal 53). Despite their

⁶ For a longer, novel-length examination of post-humanist, Solarpunk space travel, Emma Newman’s novel *Planetfall* is particularly Solarpunk in both ethos and story, with many of the concerns and questions raised echoing those of Solarpunk. While an analysis of this novel is beyond the scope of this project, a deeper reading of the ways in which *Planetfall*’s characters, village, space travel, and post-humanist themes align with Solarpunk modes would be highly productive.

thematic similarities, the three stories provide very different views on human photosynthesis, with “When Kingdoms Collide” painting a dystopian picture of capitalist exploitation of the process, “Sun in the Heart” painting a picture of a privilege of the elite, and “Solar Child” examining the resistance that such genetic modification might face—and what costs may be paid when pursuing the necessary science.

“When Kingdoms Collide” is a gritty noir-esque tale of a hard-boiled government operative. It is also the least optimistic of these three stories, portraying both a failed technological human evolution and a failed society. Additional progress is needed in both realms—in the form of improved technology, and radical social change—but the dominant social structures (the government) keep these failures obscured in order to sell the image of post-human progress as being viable and perfect. This failure of the society to produce a viable technology, and a viable social state, means that even though post-humanism is on display in this story, it is ultimately futile—green technologies in the hands of green capitalism is not the kind of progress that Solarpunk wants; worse, the government is merely interested in stagnation, preserving what has been developed, without making any progress towards the future.

This results in the world presented in “When Kingdoms Collide” being a very dystopian one, with the technology itself presented as nonviable. The “Clorophyll [sic] people” of Lisbon are humans who have undergone “transfusions, injections and radiation doses” (Marçal 55) in order to be able to photosynthesize; the unnamed narrator suggests that they do so to escape “this eternal crisis” (Marçal 54). Scarcity in the story seems to have reached an all-time high, with starvation a fear common enough to necessitate the creation of the ‘greenies.’ The narrator critiques the greenies for their affluence and enjoyment of life, saying “everyone here is living a shitty life, eating oatmeal and bathing in cold water, while those gentlemen bask in the sun, far from the madding crowd, drinking juices and taking a healthy shit” (Marçal 51). The comparison between

the ‘have’ greenies and the ‘have not’ humans is repeated throughout the text, the contrast between the two different groups made clear not only in their habits of consumption and affluence, but also in their stark physical differences. When the narrator visits a greenhouse that relies on sexualization of its “flowers” (greenie servers) (Marçal 54), he describes the greenies there as “very green, very thin” (Marçal 54), something that contrasts with his own physique that needs to be made “slim” and “dried out as a straw” for his disguise assignment (Marçal 55). This comparison, of the lucky greenies and luckless humans, is flipped when it comes to aging; the narrator’s boss “looks at least as old as he really is,” and expresses a vivacity and desire to “live until two hundred years old, work until one hundred, and fuck all the women [he] can until one hundred and fifty” (Marçal 54). In comparison, one of the greenies that the narrator later encounters “was fifty-five” but “looked like an unburied skeleton” (Marçal 59). He comments on “the pitiful state of the fellas just a few years into the procedure” (Marçal 62), suggesting that “clorophyllization [sic]” (Marçal 54) will ultimately prove to be unsustainable for humanity due to the effects the process has on aging.

The crisis in the story seems to come from the tensions between the two groups. These tensions between groups flare in ugly racialized ways: the insulting nicknames aimed at both populations (“Kale Leaves” [Marçal 49], “Asparagus Sauce” [Marçal 50], and “Watermelon Heads” [Marçal 52] for greenies; “Eat’n’Shit” [Marçal 58] for humans); the “segregation” (Marçal 49) of the two populations; and the violence threatened by angry crowds outside the “São Bento Palace” (Marçal 52). While this tension is somewhat reduced by the “The Special Charter for the Clorophylled [sic] People’s Colonies,” which sees the voluntary segregation of “anyone who was ready to live without ingesting solid food [...] from the rest of society” (Marçal 52), the tensions still continue, as there are those, like the narrator’s girlfriend Rita, who are trying to afford the surgeries and grafts necessary. As “admiration for the solar beings [...] started to lose its appeal”

(Marçal 51), violent acts continued to rise, culminating in the narrator's planned violent and indiscriminate killing spree of "Kale Leaves [...] men, women, children, old people" (Marçal 62).

The deep ambivalence with which Solarpunk often approaches its subjects can be seen in "When Kingdoms Collide;" while posthuman evolution is, at times, portrayed as positive in this story, with many of the greenies enjoying their new bodies, the loss of humanity is also met with horror. While this is partially due to the failure of the technology, which leads to extreme rapid aging, it is also due to the greed and destructive nature of the elite humans who can afford to undergo the process. The story soon descends into a sordid tale of cannibalism; when the narrator finds "the most common of kitchens" (Marçal 58) in the "ghetto" (Marçal 53) of the greenies, he is immediately put on edge; when he "[opens] the door of the industrial freezer" and finds his girlfriend inside, "her body chopped to bits" (Marçal 58), he realizes that the greenies have been eating people. His horror at this is greeted by the explanation that, even though the Greenies don't need to eat "we like it [...] we enjoy all the pleasures of life" (Marçal 59). In "When Kingdoms Collide," humanity's figurative and literal hunger and consumption cause not only the crisis of scarcity that prompts the creation of the greenies, but also beget further violence, in the narrator's killing spree. The selfish consumerism of the elite destroys the chance for social progress, or for true technological progress, and leaves the narrator wishing that the "powerhouse" nuclear fission reactors were "working at full capacity" (Marçal 62), so as to have prevented the rise of the greenies, without realizing that the social problems will remain regardless of the specific technologies in use—or that fission reactors would not be the salvation he seeks. In the "chlorophyllization [sic]" (Marçal 54) process, humanity seems to have lost something vital—a sentiment that will be repeated in "Sun in the Heart" (*Solarpunk*). The 'pure' humans in the story retain their vitality, in direct contrast to the greenies who seem impotent and weak, with the narrator able to easily overpower the "carnivore plants" (Marçal 60), even though they are armed.

While the technology itself is flawed in “When Kingdoms Collide,” leading to that deep ambivalence, the greater horror comes from the human failures and greed within the text. The possibly utopian community of greenies is plagued by the cannibals, by racism and hatred, and by governmental bias; the narrator is horrified when he realizes that “those goons were all in cahoots [...] they [the government] were going to hide the crimes to protect the scheme of the colonies” (Marçal 61). On the opposite side of this argument, though, is the narrator’s boss, who claims that “this is a war between civilization and barbarity” (Marçal 61). While the story ends with the narrator’s killing spree, the story itself condemns his actions—while neither he, nor his boss, are sympathetic characters, his boss, at least, seems to come out ahead in the story, fighting for “civilization” (Marçal 61), i.e., the status quo. However, that definition of civilization, itself, is rotten. The entire world of the story is one that stinks of stagnation, with the need for additional progress in the posthuman technology hidden by the government, and those who have a stake in the colonies. Without the necessary social and technological progress, the post-human evolution in “When Kingdoms Collide” is doomed to fail, leading only to more acts of violence. However, by placing the narrator’s girlfriend, Rita, as perhaps the only likeable character in the story, as someone who is trying to achieve the “clorophyllization [sic]” (Marçal 54) process, “When Kingdoms Collide” does not dismiss the posthuman utterly. Instead, the suggestion remains that, while the posthuman is an ideal towards which to strive, there needs to be continual social and technological progress to allow for such an evolution.

“Sun in the Heart” also portrays a world torn by scarcity, but one that is more optimistic and hopeful than that of “When Kingdoms Collide,” while still retaining a question of the value of Solarpunk technology without a Solarpunk morality. In “Sun in the Heart,” a couple, Lúcio and Laura, worry about their son Élio, a seven year old recovering from leukemia treatments, and about

to undergo a surgery to receive solar tattoos. However, this surgery is worrying to the couple, as Élio might not survive. Caught in uncertainty over their son's fate, Lúcio ends up reminiscing about the state of the world. While the story opens with an idyllic image—that of the couple waking up together and letting “the sunshine bathe their naked bodies” (Spindler 190), charging their solar tattoos for the “full hour of sunbathing” (Spindler 190)—it quickly reveals an underlying tension. After taking “one of the oldest solar-powered Brazilian trains” (Spindler 192) to the hospital, Lúcio wanders off while his son is being prepared for the surgery. He quickly becomes embroiled in his fears that, even though the solar implants—made up of “nanomachines that could reverse the harmful effects of the sun's rays on the human body, preventing them from causing burns and tumours” (Spindler 193)—have saved humanity from the disaster caused by overactive solar flares, that salvation has come at the cost of their humanity. He remarks to Laura that, even though, as a child, he used to love peaches more than anything “today, even if I try hard, I can't remember the taste of peaches” (Spindler 195). While he has gained the ability to “[live] longer and almost never [get] sick” (Spindler 194), he wonders whether that makes him inhuman—whether losing the memory of peaches is worth it. This raises the question of consumption in a different light; if consumption and destruction are so integral to humanity, does losing the ability to physically consume mean losing one's humanity? At the same time, these fears over lost humanity are coupled with a social commentary about the governmental solar implant program, and the nature of capitalist consumption. A wry comment that the inventor of the tattoos saw “*all that squalor [as] just a good opportunity to make some profit*” (Spindler 194) is the first suggestion that the solar implants need to be purchased; as the story of Laura's childhood is told, it becomes obvious that the solar implants are necessary for survival in this world, literalizing the “buy or die” (White, “Post-Industrial” 73) mantra, with a refusal or inability to engage in capitalist consumption leading to death. We learn that Laura's brother died when a solar flare shorted out implants across

the world. Because Laura's family did not have "the money to pay for two implants" due to their "financial troubles" (Spindler 196), they chose to save Laura, leaving her younger brother to die. Lúcio is understandably horrified at this, and at "the government's unfair implant policy" where "many people were left to die for not being able to afford the surgery" (Spindler 196). However, Laura, now a member of Lúcio's "rich" family (Spindler 197), shames Lúcio for his anger, telling him that his desire for "the world to be a fairer place" (Spindler 196-197) is "weird" (Spindler 196), guiltling him into "[ignoring] his own convictions" (Spindler 197) and simply accepting the world as it is, rather than pursuing any of the social change that would have saved Laura's brother.

Lúcio's perspective is problematic, as he wishes for a Solarpunk-esque destruction of inequality, and creation of social support systems, without wanting the Solarpunk technological and human changes Lúcio abhors the exploitative society that he lives in, and wishes for a less socially exploitative and destructive social mode—wishes to do away with the need for capitalist consumption. At the same time, to face the lack of physiological consumption seems to be a step too far for him. Lúcio represents, in some ways, the difference between Solarpunk and genres like cli-fi. While he desires Solarpunk's progress, he sees the idea of changing the human body as "*profanum*" (Hall), to the point where he wonders whether allowing Élio to undergo the surgery is the right thing. To him, losing the ability to consume meaning losing "a part" of himself (Spindler 195). While he wishes for part of the progress that Solarpunk envisions, he only wants the parts of that progress that he views as convenient; the human body must remain sacrosanct. This mirrors the fears over lost vitality in "When Kingdoms Collide;" while here humans have lost none of their vitality, they have still lost something integral to Lúcio's definition of humanity.

Lúcio's disgust helps forward the ways in which Solarpunk technology—such as nanites that allow for humans to live almost twice as long, without disease or the need to eat—does not necessarily mean a Solarpunk world. The dystopian nature of a hyper-capitalist state letting those

die who cannot afford healthcare—or the presumably inordinately expensive or unavailable food, based on the reference to Élio’s “watery porridge” (Spindler 190)—is on clear display here, with greed and self-interest preventing attempts to create social change. Laura’s bourgeoisie attitude of aggressively ignoring problems that she has the money to ignore is horrific, reinforcing the need for a Solarpunk system of morality, in addition to, or in advance of, Solarpunk technologies.

However, the story does not overly critique Laura. Indeed, she is largely sympathetic, having lost her brother due to that capitalist greed, and having to face her son’s possibly fatal surgery alone, while Lúcio broods. Her reasons for not wanting to pursue social change are clear, as she sees the death of her brother as “in the past” (Spindler 197). In the present, she does not “want any trouble” (Spindler 197), wanting instead to focus on her family.

In spite of the ambivalence around posthuman evolution in the text, “Sun in the Heart” eventually comes to the conclusion that it is not only necessary, but beneficial. Laura ultimately seems to settle the matter, at least in the narration, when she tells Lúcio that his concerns over losing his humanity are “childish” (Spindler 197). And, worse, they are pointless; Laura reminds him that humans can not “go back to what we were before,” with the implants being their “only salvation,” rather than “something evil” (Spindler 198). Instead, his musings on the ethics of post-humanism, and whether or not ‘losing’ their humanity is worth the gains, are only serving to harm Laura and Élio. Instead, this changing definition of humanity should be embraced.

While the perspectives are muddied and unclear, with neither Laura nor Lúcio being entirely sympathetic and in the right in their beliefs, the story does make it clear that the implants, that post-humanist technologies, are not a threat to human civilization. While it does not utterly dismiss Lúcio’s perspective, allowing his concerns over lost humanity to linger as “something [that] still didn’t seem right” (Spindler 200), it comes down on the side of posthuman evolution, with Élio receiving his implant. Rather than posthumanism being the threat, then, it is the self-

interest and fear of those like Laura, the greed of the corporations and governments, and the paralyzing doubt of those like Lúcio that are the causes of the dangers and deaths in the story.

“Solar Child” presents a different vision of the photosynthetic human. Rather than the utterly dystopian future imagined by “When Kingdoms Collide,” or the hopeful, if problem-filled future of “Sun in the Heart,” “Solar Child” portrays a world caught between past and present, one where humans can photosynthesize through symbiosis with smaller organisms. Additionally, “Solar Child” sets aside the primary focus on consumption and human hunger that has run through the previous two stories (though still briefly critiques capitalist consumption). Rather than looking at the ways that humans consume others, “Solar Child” presents a world where, through unity with other organisms, humanity can begin to eschew its need for physiological consumption. However, fear of change and fear of the unknown stand in the way of this evolutionary progress, with the religious zealotry of the Revelationers resisting the genetic engineering and post-humanist evolution that is necessary if humans are to set aside their destructive, consumptive nature.

The protagonist, Jamie, works at the “Photobio Research Station” (Meyers 187), which had engineered the Solarsaurus, a “living, solar-powered transportation, whose fuel and waste was sustainable” (Meyers 185). This is in line with the tenets of the group, who believe that “humanity [needs] to rely on assisted evolution through genetic modification to cope with the altered Earth” (Meyers 186); a belief that is, as mentioned, shared with post-humanist thought, and much of Solarpunk. This altered Earth is also the focus of the antagonists of the story, the Revelationers. Described as religious zealots, the Revelationers “spew their doctrine about how the spreading desertification, coastal flooding, and rising infertility and defects was retribution for trespassing in God’s territory of the genome” (Meyers 186). The conflict becomes abundantly clear: the past, represented by the violent, militarized Revelationers and their anti-scientific agenda is trying to

destroy any chance of a future, represented by the Photobio lab. Prior to the start of the story, the Revelationers launched a terror attack against the station, with “artillery” and “huge explosions” (Meyers 186).

Jamie is worried that the Revelationers’ violent attacks will only escalate if they were to discover the Photobio lab’s newest project: a small girl named Ella, “the first photosapien” (Meyers 189). In order to secure the funding necessary to protect both the lab, and the future of humanity, Jamie entertains a visit from an investor, Fernanda Harrison, “CEO of Progressive Energy Inc., known for her cutthroat bargaining and philanthropy to climate refugees” (Meyers 188). Impressed by the photosapien technology, Fernanda agrees to donate to the lab in the form of “adoption fees” (Meyers 192) in exchange for being allowed to adopt one of the photosapien children from the second generation. While Jamie regrets the necessity of the transactional nature of the adoption, she accepts that it *is* a necessity—both for the additional funding that will allow them to develop the project in greater safety, and to begin the dissemination of photosapiens across the world. At the same time, this critique of capitalist consumption, this time of child-as-product, and the necessity of transactions in a capitalist society, hints at the necessity of social progress beyond just a resolution with the Revelationers. While capitalist consumption cannot yet be set aside, unlike physiological consumption, it is something that must eventually be challenged, and defeated, if this kind of situation is to be avoided in the future.

While capitalism is a looming spectre to be defeated, “Solar Child” presents a more optimistic world, one where, again, humans can transition to a generative mode. The photosynthesis in “Solar Child” works by a symbiotic relationship that removes killing from the equation: “the host animals [...] provide shelter, transportation, and protection for their photosynthesizing partner. In return, the little green cells gift a bit of glucose, food essentially, straight into the bloodstream of their host” (Meyers 189). While “Ella still needs to eat” she does

not need “as much as a normal human” (Meyers 189), allowing for conservation of food and resources. Additionally, the world itself is portrayed as a more hopeful one than the worlds portrayed by “When Kingdoms Collide” and “Sun in the Heart.” When giving Fernanda a tour, Jamie describes the Photobio labs, saying that they are “almost entirely self-sufficient, growing our own food in biodomes and running entirely on solar power,” to which Fernanda replies “as one would expect in this day and age” (Meyers 188). The optimistic future presented by the possibility of photosapiens and a world where self-sufficient industry is the norm come together to paint a picture of hope, in spite of the violence of extremists.

The Revelationers mark the second time that anti-GMO activists function as the villain in the stories discussed in this thesis, alongside the anti-Blockie protesters from “Grow, Give, Repeat.” However, unlike the protesters in “Grow, Give, Repeat,” the Revelationers are violent extremists, willing to commit militarized terror attacks on unarmed research stations in pursuit of their goals. While Solarpunk is not opposed to the idea of the dangers of unrestrained, or even misguided progress—and, as seen in “Caught Root,” those who do not wish to engage in Solarpunk’s ideas of technological progress are not forced to⁷—the Revelationers are portrayed as reprehensible in the story, because of their disregard for life. The Solarpunk stories that depict resistance to overarching forms always do so through peaceful, non-violent resistance, unless the opposition has already resorted to violence and murder. Here, the fear of genetic modification of the Revelationers, and their destructive, anti-productive credo are clear and present threats, not

⁷ And, interestingly, a sinister corporation deploys a GMO bio-weapon to destroy and demonize a group of peaceful protesters in Romeu Martin’s “Breaking News!” (*Solarpunk*), showing that not every pro-GMO group in Solarpunk needs to be good; the idea, however, echoes that of much of the first *Solarpunk* anthology, that Solarpunk technology is useless, flawed, or outright dangerous without a Solarpunk social ideology, and in the hands of green capitalists and eco-fascists. For a more in-depth analysis of the way that “Breaking News!” critiques green capitalism see Kenneth Farver’s “Negotiating the Boundaries of Solarpunk Literature in Environmental Justice.”

only to the researchers at the Photobio Lab, but to society as a whole—the story suggests that if the Revelationers succeed in their violence, humanity’s eventual extinction will be guaranteed.

While all three stories discuss the possibility of photosynthetic humans, they do so from different directions. “When Kingdoms Collide” takes a cynical stance, viewing the technology as useless to a fundamentally flawed humanity, as the flaws with the technology will never be solved while social issues persist. “Sun in the Heart” views the technology as ideal, but portrays human greed and selfishness as crippling to any chances of further social progress, whether that self-interest comes in the form of concerns over lost humanity, or in a desire to live a quiet life. While there may be some distant hope for a revolution in “Sun in the Heart,” at the same time the story makes it clear that those who can afford to rebel refuse to, while those who would rebel are crippled by a lack of nutrition, and horrific solar-flare induced cancers. And, that those who would rebel are forced by the system to climb the social ranks until they no longer need to rebel, or die.

By contrast, “Solar Child” portrays optimistic humans struggling with external resistance and imperfect technology (rather than totally replacing the need for food, as in “When Kingdoms Collide” and “Sun in the Heart,” the photosynthetic humans of “Solar Child” merely supplement their nutritional intake with photosynthesis). “Solar Child” also shows the happiest world; while the Earth may be struggling with “spreading desertification, coastal flooding, and rising infertility and defects” (Meyers 186), it is still one capable of progress towards the Solarpunk ideal. The opposition to this post-human evolutionary progress is not, as in the other two stories, capitalism, or sinister agents within the government—it is a sect of radical religious terrorists who lack government support and so *must* resort to terror attacks if they wish to push their flawed and dangerous ideology and agenda. This progression in the same idea, from *Solarpunk* to *Sunvault* can be attributed to the evolution of Solarpunk. As the anthologies moved from primarily Brazilian writers to primarily North American writers, they a more socially optimistic tone (possibly for the

reasons suggested earlier). Rather than following in the footsteps of Cyberpunk, and portraying only some (if any, in Cyberpunk's case) positive changes with largely dystopian societies that seem to render any further change impossible, Solarpunk moved towards hopeful stories. This matches a proposed alternate name for the genre/name for a similar genre, "Hopepunk"—Solarpunk has evolved to stand for hopeful science fiction that, while it may portray damaged worlds, post-apocalyptic cities, or other flawed utopian societies, almost always ends with a suggestion that the larger society is moving in a positive direction.

Often, that positive direction is towards not only a post-humanist future, but a post-Earth one. *Star Trek: The Original Series* begins its introduction with the words "space, the final frontier" (Roddenberry). While *Star Trek* portrays a social utopia with its Federation, one that is, in many ways, a Solarpunk ideal, its focus is on "the voyages of the starship *Enterprise*" (Roddenberry). This fascination with interplanetary exploration dates back to the earliest science fiction stories; Solarpunk, while mainly focusing on terrestrial concerns, follows this tradition and steps into space, and steps further than the Solar System-centric depictions of space travel in Cyberpunk. Solarpunk differs from these prior genres and stories, though, in the ways in which it brings its post-humanist ideas to bear. While there are some Solarpunk stories that feature space travel without human evolution, it is far more common to see space travel only be feasible through a mental, bodily, or social communion with alien life. Rather than *Star Trek*'s Borg, who embody that sinister "totalitarian [...] wholeness" (Bookchin, *Ecology of Freedom* 24), the fear of the human form rendered "*profanum*" (Hall) through union with technology, and who embody the human fear of consumption—of losing our humanity by being the thing consumed—Solarpunk views post-humanist evolution as a necessity for a post-Earth humanity. And, while *Star Trek* and other science fiction stories might feature a social collective that invites humans and aliens together

equally, they often retain humanity's biological, physical, and mental integrity, with the breaching of those boundaries left to villains or truly alien others, or done to portray the supremacy of unaltered humanity (as explored in Manuela Neuwirth's "'Absolute Alterity'? The Alien Animal, the Human Alien, and the Limits of Posthumanism in *Star Trek*"). Solarpunk is more interested in the ways in which an alien other might change the ways in which humanity sees itself.

While humanity's body, or self concept may alter, and its autonomy as a species may be diluted through reliance on another species, the importance of a Solarpunk outlook does not change or lessen. Indeed, while the stories discussed in this chapter may travel beyond the bounds of the Solar System, they are always careful to bring Solarpunk morality with them, refusing the imperialist and colonial methods that have been, and continue to be, so damaging on Earth.

Stephanie Wagner's "In the Hearts of Dragons" tells the story of a Dragonship, a kind of living colony ship designed for "hyperspace" (Wagner 26) travel, and for setting up "land-side communities" (Wagner 27) upon arrival in a new system. Dragonships also serve as mobile colonies, contrasted with those same "land-side communities" (Wagner 27) that they help to create. The collective effort of "fifty years and most of the scientists on Earth" (Wagner 27-28), the Dragonships are marvels of engineering, sentient spaceships that can travel between the stars with the help of their "bondmate" (Wagner 23), a human chosen by the dragon through a telepathic connection that allows the two to "fly the ship together" (Wagner 24)—or, framed another way, humans can only efficiently travel through the stars with the freely given help of a Dragonship. Through this unity, the Dragonships are able to navigate the voids between habitable systems—and a forced connection is impossible, with the face of the antagonistic megacorp, Alan Russell, being engulfed "in a fiery column" (Wagner 36) when he tries to take control using a "neurotech interface headset" (Wagner 35).

Alan Russell, the primary villain, is a neurobiologist in favour of “negotiations with ExoCorp Delta,” a spacefaring mega-corporation that “[gets] their resources by exploiting most of their people [...through...] indentured servitude” (Wagner 27). Alan’s determination to open these negotiations—to deliver Dragonship and hyperspace technology to the corp—comes from his Darwinian philosophy that “the strong will always rise to overcome the weak, sooner or later [...] if someone is really smarter and stronger, they deserve their power. If you can’t hold on to what you have, then you deserve to lose it” (Wagner 36). While Alan is ultimately defeated by the sentient Dragonship as he tries to enslave it, his actions cost the previous pilot her life, and almost killed the entire ship and crew in the process.

“In the Hearts of Dragons” is careful to cast Alan’s actions—his “cold-blooded murder” (Wagner 36) of the former pilot, and endangerment of the crew—as irredeemably evil. His drive to “make sure [he’s] not one of the weak” (Wagner 36) at the cost of those around him, at the cost of the freedom of the sentient Dragonship, and at the cost of the community, mirrors that of the mega-corps themselves, and their tendency to exploit their people through indentured servitude. Here, we see the threat to the community explicitly cast as capitalist, selfish ideologies, on both an individual, and societal scale, as ExoCorp Delta will militarize the Dragonships “with real weapons” and begin an aggressive campaign to expand its influence (Wagner 35)

While the story is unclear on the details, it mentions that the megacorp had “splintered” (Wagner 26), and that it is a “dying relic” (Wagner 36), unable “to reunify” (Wagner 26) without hyperspace technology. Additionally, it implies that Earth, and the other mega-corps, refuse to trade with ExoCorp Delta, denying it the capitalist consumption it needs. The failure of the spacefaring megacorporations is contrasted with the success of Earth—the existence of faster-than-light hyperspace technology, the ability to create sentient Dragonships, and the flourishing of a diverse populace in an environmentally stable world shown in the story. While ExoCorp may be aiming for

a seemingly Solarpunk ideal of ‘unification,’ that goal will only lead to more exploitation, more planetary “cannibalizing” on the part of ExoCorp (Wagner 27), rather than the true valuing of unity and community that Solarpunk champions. It is that true unity that allowed for the creation of the Dragonships, through the collaboration of “most of the scientists on Earth” (Wagner 27). Instead, ExoCorp Delta would be forced to continue its destruction and acquisition of other fragments of the splintered megacorp, turning on and consuming itself and its own resources, without others to consume its products.

Indeed, the corporate mode is anathema to the successful communities shown in the Dragonships—not only in the threat that Alan poses to those aboard the Dragonship, but also in the false allure of the American Capitalist dream. Alan says that “the people [of the mega-corps] who are actually motivated to work hard and improve themselves have good lives” (Wagner 27)—this neo-liberal ideology places the violence done by the corporation on the backs of those who simply ‘aren’t motivated’ enough to succeed.

Ultimately, “In the Hearts of Dragons” portrays a clash between two modes: the consumptive, cannibalistic mode of Darwinian capitalism, and the cooperative, collectivist mode of Solarpunk. ExoCorp Delta is exploitative and destructive, relying on the indentured servitude of their workers, and willing to enslave or destroy anything that gets in their way, as seen through Alan’s actions. ExoCorp Delta’s colonial “cannibalizing” (Wagner 27) is doomed to fail, leading to additional stagnation, and violence, rather than the progress and growth emblemized by the Dragonships. Alan, and by extension ExoCorp Delta, wish to preserve this cannibalistic consumption of resources and bodies, relying on the survival of the most violent rather than cooperation like the people of Earth. While an alliance between Earth and ExoCorp Delta might allow Earth to “expand [...] land-side communities, build more ships, breed more Dragons”

(Wagner 27), it comes at the cost of spreading this vision of corporatized cannibalism across the stars.

“In the Hearts of Dragons” presents a future where social and technological progress have already been achieved. While the vision is one of symbiosis and cooperation, both between the people of Earth, and between humans and Dragonships, the focus of the story is on maintaining that social progress—not allowing a regression into the modes of capitalism consumption championed by the megacorps. Blake Jessop’s “New Siberia” and Santiago Belluco’s “The Death of Pax” take a slightly different stance on the post-Earth story, portraying a human society that still needs to undergo social progress, while navigating a newfound symbiosis with alien lifeforms.

Both “The Death of Pax” and “New Siberia” portray a post-first contact scenario, where humans have become accustomed to the idea of non-human life, and are beginning to navigate the ways in which humanity may change socially or physically due to its interactions with these new species. However, the two paint very different pictures of humanity. “New Siberia” shows a humanity struggling on the edge of destruction; the main character Nadezhda has “travelled between the stars to settle” on the planet Arkhangelsk, home to the “Naga” in order to save humanity (Jessop 152). The story portrays a world post-Earth, humanity having already “killed” it (Jessop 152) and fled to the stars. Upon arriving at Arkhangelsk, rather than “turning this world into another Plymouth Rock, humanity petitioned” (Jessop 154), asking the Naga for a chance to survive. This petitioning comes from having “learned this much conquering the Earth; we must do right or nothing at all” (Jessop 154). Now, human and Nagan must work together to create the colony of New Siberia. While humans share technology like “manna from heaven” (Jessop 157), it is the Nagan who are able to navigate and understand the world, the story opening with Amphisbaina (a Nagan) saving Nadezhda from “drowning in silica” (Jessop 151) and later

detecting a storm before “all the technology in the spiral arm” (Jessop 156) could. And, just as “Amphisbaina teaches [Nadezhda] to survive” (Jessop 154), Nadezhda saves the mesothermic Amphisbaina when the storm catches the Naga and breaks her suit heater.

“New Siberia” presents a wiser, more mature humanity exploring a more optimistic future, in spite of the trials humanity will face from destroying the Earth. At the same time, “New Siberia” contains a warning against scarcity and planned obsolescence—“With more time we might have done better” Nadezhda says, but “our Bolthole Drives could only work once” (Jessop 153). While this technological failure is what leads to the growth of unity between Naga and human, the learned humbleness of petitioning for planetary asylum, it is explained in the same passage as the death of Earth. Nadezhda explains that “it is hard to admit you’ve killed a planet [...] the shame erodes you, even if it was your ancestors who did the damage, who taxed you without your consent and brought you into their collapsing biosphere to die” (Jessop 153). While this eco-critical perspective is limited and subordinated to Nadezhda’s and Amphisbaina’s friendship and struggle for survival against a sudden sandstorm, it nonetheless echoes through the text. Nadezhda repeatedly compares Arkhangelsk to Eden—but this Eden is “a desert planet” (Jessop 153), not the Biblical paradise on Earth. In doing so, Jessop reminds us of what humanity has forever lost while “conquering the Earth” (Jessop 154). This reminder is tied to the discussion of physiological consumption: the “spare, precise,” and mesothermic Nagan who “never so much as contemplated pillaging their world” (Jessop 154) are contrasted with the “gross” (Jessop 153) eating habits of humans—and by proxy, their destruction of Earth. And, even “New Siberia’s” humanity is not perfect: “doomsayers and hawks [...] suggested that [humans] had an avian’s right to kill snakes” upon the arrival of the colony ship at Arkhangelsk (Jessop 154). The story ends both on an optimistic note and a final warning; while the threatening sandstorm breaks, freeing the two women to continue their work of maintaining solar panels, Nadezhda is last seen “[digging] around

for something to eat” (Jessop 160). While the immediate threat to humanity seems to have been lost with the Earth, the threats inherent in human nature remain: the physiological and capitalist consumption that led them to destroy a planet, and which might yet push them to take more and more from the Naga’s world. While humanity seems to have found a viable solution, the story still retains a warning about the threat of the darker side of human nature.

While the consumptive nature of humans clashes with the Nagans’ “spare” and “precise” nature, it is also what allows Amphisbaina to survive with her suit heater broken; Nadezhda’s exothermic body heats Amphisbaina. Symbiosis, then, between the human need to consume and the Nagan way of life is necessary to survive in this new environment. However, in spite of the fact that this hunger saves Amphisbaina, it remains a dangerous undertone throughout the story; if it cannot be moderated (with the help of the Nagan), then it will destroy the “new Eden” as surely as it did the old. Even the Eden metaphor that is drawn through the story resonates with the dangers of human consumption, hunger and desire. In this new Eden, however, the temptation comes from within, not without, to give in to the “avian’s right to kill” (Jessop 154) and take and consume whatever they desire from the Nagan peoples. If there is to be any kind of lasting peace on Arkhangelsk, and any kind of future for humanity, “New Siberia” warns that humans must grow beyond destruction and consumption on a societal level, before it is too late. By casting physiological consumption as positive, due to its ability to save Amphisbaina’s life, “New Siberia” places the capitalist consumption that destroyed the Earth as even more dangerous in contrast. While physiological consumption may be natural, and even helpful, there are no redeeming qualities to acquisitive, destructive, capitalist consumption.

“The Death of Pax” takes a different stance on both consumption, and symbiosis with an alien species. Rather than the social symbiosis that “New Siberia” portrays, “The Death of Pax”

adopts a transformative, post-human stance to symbiosis, envisioning a humanity physically evolved by its contact with an alien species, one that is able to, rather than move beyond consumption, alter the consumption to something generative. “The Death of Pax” shows a human civilization in the throes of its failures: a humanity greedy for the “Gendo bio-fusion” (Belluco 74) technology that could revolutionize the energy industry, in spite of the close-minded “genetic engineering bans implemented back in the Sol system [Solar System]” (Belluco 76), a humanity that the alien Gendo, find “sickening” and “darkly comical” (Belluco 78). The narrator is Sanjit, a failed scientist from the orbital research station built to study a planet inhabited by the space-faring Gendo.

The alien Gendo are massive, with Pax’s “fifty-kilometer long shell” (Belluco 71) being on the smaller end of their possible sizes—and each body serves as a kind of mobile city. While the Gendo are massive creatures, their bodies serve as hives and homes to “billions [...] trillions, maybe” of smaller symbionts (Belluco 73). While Sanjit is one, added to the collective by his “Handy Worm” symbiont (Belluco 72), the rest are other sentient alien creatures (such as Sanjit’s friend Oquail), crafted first “well before conception” (Belluco 73) by previously-grown engineers, and then by themselves, guiding their own evolution through genetic manipulation. All of these symbionts are linked together, able to sense Pax’s presence, and each other’s. And, when Pax begins “retracting” his presence as he dies, it causes the symbionts physical suffering and weakness (Belluco 75). The symbionts are able to communicate with both Pax and each other through this connection, and work in harmony to serve the needs of the collective.

The symbionts, and their engineered existences, render further the explicit stance “The Death of Pax” takes on the necessity of posthuman evolution, and its belief that the dismissal of such a possibility is foolish, short-sighted, and damning. When Sanjit learns that Pax is dying (due to an inability to “support any more growth” [Belluco 78], a literal biological stagnation), Sanjit

informs the orbital research station. Shortly thereafter, his former manager, Alina, arrives to pressure him into obtaining the bio-fusion technology. Without sympathy for the alien Pax, Alina demands that Sanjit “do [his] fucking job” and try and worm the secrets of bio-fusion out of Pax—and when Sanjit refuses, she risks his death in a “foolish attempt to draw Pax’s attention” (Belluco 75). While the disregard for Sanjit’s health and disrespect towards the dying Pax is chastised, Alina does not act without cause. “The rest of the Gendo refuse to interact with [humanity]” (Belluco 77), meaning that if Pax dies without giving Sanjit bio-fusion, humanity will forever lose access to that resource. Pax explains, however, that it is humanity’s “genetic provincialism” (Belluco 78)—as evidenced by the genetic engineering ban—that prevents them from gaining the bio-fusion technology. Not only is Pax forbidden by the rest of his species from giving that information and technology to humanity, but he states that humans “have neither the ability to understand [the technologies] nor the industrial capacity needed for their construction” (Belluco 78). Without the ability to modify their own genetics and move beyond what they are, Pax declares humanity to be “darkly comical” to the Gendo, if not outright horrifying, in their biological primitivism.

However, rather than doom humanity to this biological primitivism, Pax reaffirms his symbiotic relationship with Sanjit by offering the former researcher the potential for posthuman evolution. With Pax’s death, Sanjit will have two choices; to return to humanity, as the alien symbiont inside him that allows him to live on the alien world “will wither and die” (Belluco 79), or to accept a new symbiont. This new symbiont is a “seeder Worm,” one capable of producing “a second generation of Worms [...] that other humans will be able to contract with” (Belluco 79). These Worm symbionts will “allow some measure of self-modification [...] will give humanity some preliminary tools with which to modify [its] own biology and properly accelerate [its] advancement” (Belluco 79). Pax neither forces this choice on Sanjit, nor can Sanjit force this choice on others. Instead, those who wish to surpass the limits of the human form, and move past

the ‘genetic provincialism’ that characterizes humanity, may choose to accept a Worm from Sanjit. Sanjit initially balks at this proposal, struggling not only with the idea of change and a lost humanity, but with “social constructions of gender” (Belluco 79), a concern that Pax anticipates. However, once Sanjit accepts this contract, his hesitation is overcome. He rejects the idea that he will lose his humanity, imagining instead that the Sol system, with its “fossilized traditions,” will be left behind “as humanity carries on” among the stars (Belluco 83). And, he rejects the oftentimes fixed binaries of gender identity, feeling “more than ever before like [his] mother’s son” as his new worm is busy “knitting a womb in [his] abdomen” (Belluco 83).

In order to take this Seeder Worm into his body, Sanjit must consume it—but it is more optimistic than the consumption examined so far, being transformative and generative, and is found through symbiosis with an alien lifeform. While it “slither[s] down [his] throat with unexpected ease,” it leaves a “cut on [his] esophageal lining” (Belluco 82) in order to escape his digestive tract. While this act of consumption does result in the destruction of Sanjit’s other symbiont, it is, ultimately, more generative than destructive. Not only does this consumption enable Sanjit’s transformation, but it will also allow him to produce more symbionts through his “alien motherhood” (Belluco 83). Sanjit’s transformative consumption of the worm suggests that humanity’s consumption can become a strength, rather than a threat, if we are able to properly moderate it, and use it to foster symbiosis with different forms of life. If humans are able to render our consumption generative, rather than destructive, then it will no longer be a concern—an ability seen through the Gendo’s biofusion, which allows for “blood richer than concentrated uranium” (Belluco 76).

Nowhere in the anthologies is Solarpunk’s post-humanist agenda explored more clearly than in “The Death of Pax.” Here, Sanjit’s planned transformation into “alien motherhood” (Belluco 83) comes with a hope for the human race—it is only by guiding their own evolution that

humans can move beyond their limits, and it is only through genetic manipulation that humans can truly begin to explore the stars, and join the interstellar community alongside the Gendo.

The difference between the failed humanity in “The Death of Pax” and the hopeful humanity in “New Siberia” can be easily explained. “New Siberia” sees humanity working towards a Solarpunk society and eco-friendly Solarpunk technology through unity with the indigenous alien Naga. In contrast, “The Death of Pax” quickly makes clear that it is not humanity who are the exemplary Solarpunk civilization, but instead the alien Gendo, and that humankind, as a whole, has no interest in the necessary Solarpunk progress. However, through communion with the Gendo, Sanjit will be able to help humanity move past its stagnation and genetic provincialism—leaving behind the “fossilized traditions” of the Sol system (Belluco 83). While humanity’s current greed and stagnation are not Solarpunk, with Pax’s help, they may be able to move towards something new; towards a post-human and post-Earth Solarpunk ideal.

Solarpunk suggests that if humans are going to be able to maintain the ideals of progress and community discussed in Chapter One, then they need to be able to address their nature as consumptive, both physiologically and socially. While this could be achieved through post-humanist evolution, it could also be achieved through symbiosis with alien cultures that don’t have the same drive to consume, or that can alter the way that the human drive functions. Or, as in “The Death if Pax,” it could be achieved through both. At the same time, additional social progress is necessary to overcome the societal drive to consume that is a key component of capitalism; not only the excessive consumption of material goods, but the drive simply to expand in order to enable further expansion. While the societal stagnation of capitalism is dangerous, and technological stagnation can lead to the kinds of disasters seen in “When Kingdoms Collide,” for Solarpunk, biological stagnation is just as damaging. And, by embracing that post-human

evolution, by embracing symbiosis with alien life and cultures, humans will be able to overcome their limits, whether bodily, societal, or planetary.

Conclusion: Moving Forwards

Camille Meyers' "Solar Child" (*Sunvault*) ends with the protagonist Jamie telling her adopted daughter that "our evolution takes love" (Meyers 194). This idea, that human physical, technological, and social evolution requires love and care, resonates throughout the Solarpunk genre. Love⁸ for our fellow humans, and love for the world are at the core of social ecology and communalism, with both seeing the biological imperative "to care for and love [our] own kind" (Bookchin, *Ecology of Freedom* 318) as being at the heart of humanity—though Solarpunk would suggest that, rather than caring for and loving our own kind, we should have a more universal love.

This love, perhaps, is what sets Solarpunk apart from Cyberpunk. While both Cyberpunk and Solarpunk are critical modes, filled with revolutionary ideas and anti-capitalist sentiment, Cyberpunk is ultimately pessimistic. It is pessimistic in its view of the future, pessimistic in its view of the nature of humanity, and pessimistic in its view of the future's mutability. This makes "the idea of brightness and hope" (Ulibarri, Preface 2) at the core of Solarpunk all the more radical. Bookchin said of his own work that it was "the *unity* of [his] views—their ecological holism, not merely their individual components—that gave them a radical thrust" (Bookchin, *Ecology of Freedom* 3). Solarpunk is in much the same realm, with the *unity* of its disparate themes—resistance, posthumanism, progress both social and technological, social ecology and communalism, social justice, anti-colonialism, and, most of all, relentless hope—marking its importance as a genre. By stepping away from the pessimism of Cyberpunk, while synthesizing the techno-optimism and utopianism of even earlier modes of science fiction (such as the eco-feminist utopias) with a twenty-first century viewpoint of social concerns and techno-optimist post-humanist thought, Solarpunk has created something new. Its broad scope allows it to be a versatile

⁸ Love is here used to mean affection for, respect for, acknowledgment of, and understanding of, the thing that is loved.

and appealing genre, while its status as genre fiction allows it to more easily disseminate these ideas and ethics than pure theory would.

And, indeed, its status as fiction is contributing to its rising popularity, and to the rising popularity of the Solarpunk lifestyle. With mentions in mainstream media outlets such as the BBC (Ortiz), and a growing number of smaller independent blogs and internet journals, Solarpunk as a genre is growing in the public awareness. As such, acknowledging the literary genre, and mapping its themes and politics, is a key project at this time. I hope that my project might lay the groundwork for future critical projects about the genre, and projects that might delve more deeply than I have had space to do here into Solarpunk's engagement with gender, sexuality, race and colonialism.

Solarpunk's ecological agenda, grounded in social ecology and posthumanist ideals, is controversial; some theorists, such as Robyn Eckersly, suggest that "enlist[ing] the aid of computers and the latest biotechnology and step[ping] up selective breeding of plants and animals" is "arrogant" and "self-serving" (qtd. in White, *Bookchin* 119). Solarpunk would disagree, standing in "defence [sic] of human stewardship" (White, *Bookchin* 119), and while its often anthropocentric viewpoint can clash with the drive to protect naturally occurring environments and ecosystems, Solarpunk champions human stewardship in favour of achieving a sustainable environment that is able to survive the damages already done by humanity. While this may mean setting aside the "biocentric egalitarianism" that Eckersley suggests (qtd. in White, *Bookchin* 119), Solarpunks would argue that the modes pursued *do* "offer the widest realm of freedom to all life forms" (Eckersley, qtd. in White, *Bookchin* 119)—at least in light of the damage already done by humanity and the need to repair that damage. I would argue that, while Solarpunk can be problematic, it acknowledges and addresses "ecological realities" (White, *Bookchin* 120), whether human-caused or otherwise, in favour of an anti-misanthropic worldview that, rather than

dismissing humanity as flawed, dangerous, or unnatural, embraces human propensity for technological progress, tool usage, and problem solving.

Moving from this understanding of Solarpunk as intensely interested in ongoing progress, dedicated to preventing harmful social, ethical, and technological stagnation, what is next for Solarpunk and its critics? There are, perhaps, two main ways forwards: looking at texts that claim to be, or are categorized as, Solarpunk, and looking at borderline texts, those that are supposedly part of another genre, but share many thematic concerns with Solarpunk. While Nnedi Okorafor's *Zahrah, the Windseeker* is afro-futurist, not Solarpunk, many would categorize it as such (Solar Punk), due to its portrayal of the unity of technology and nature, in spite of the fact that it predates the first usage of the term "Solarpunk" by several years. *Zahrah's* use of myth, folklore, and culture from western Africa combines with the optimistic adventure story to present a world that maintains a small-scale village economy while having a diverse culture, advanced technologies, and a broader perspective of a unified humanity.

On the other end of the spectrum, Annalee Newitz's *Autonomous* can be read as having a fairly standard dystopian post-Cyberpunk arc; however, it can also be read as being Solarpunk. *Autonomous's* interest in human body modification and evolution, the pirate Jack's resolution to continue her fight against the corporations, and the robot Paladin's expected future of helping to build the Mars colony with her partner all gesture at the same kind of hopeful social and technological progress that Solarpunk is interested in. A Solarpunk analysis may focus further on the instances of community that are on display throughout the novel, all of which seem to be accepting, progressive, and revolutionary in their own ways, while living in harmony with the environment. A Solarpunk reading may also highlight the ways in which *Autonomous* portrays a world where environmental disasters seem to have been largely averted, with renewable energy

and biodegradable technology being omnipresent, while still highlighting the dangers of green capitalism.

A third possible path would be to examine texts like Emma Newman's *Planetfall*, which fall somewhere in between, foregoing the Cyberpunk genre's pessimism and tropes, but not explicitly identifying as Solarpunk. However, *Planetfall*'s small colony village set on a distant world beneath "God's city" (Newman 14) exemplifies a highly Solarpunk ethos, with the village striving to have as small a footprint on this alien planet as possible, while engaging in a close-knit, social dynamic that, while fraught with problems, tries to emulate the communitarian model. The novel's interests in the post-human and symbiosis are reflected in a rival group of colonists, who survive due to alien gut worms that help them digest, as well as the posthuman transformation of the main character which occurs at the end of the novel.

These multiple avenues for critics, who could also take a more environmental justice stance, following Kenneth Farver's example, make sense in light of Solarpunk's broad scope and disparate authorship. But in spite of this disparate authorship, Solarpunk remains aggressively hopeful. Its desire for progress is matched by a desire for inclusion and a "dynamic *unity of diversity*" (Bookchin, *Ecology of Freedom* 24, emphasis original) that is both evolving over time and rigid enough to deny subversion. The definition of the genre is also evolving as more creators produce Solarpunk content, and the discussion of the genre expands. And, with the rising interest in green capitalism, Solarpunk's opposing voice is more valuable than ever. By demonstrating the ways in which a Solarpunk and ecocentric technology or worldview is useless or even dangerous without a Solarpunk society, Solarpunk reminds readers that social progress is the more important of the two—that humanity does not need to succeed at the cost of other humans. While there are many possible futures for humanity, it is only those that are pursued with love—where love, and care for our fellow humans, for the environment, and for our future are of primary importance—

that can be allowed to succeed. And it is that hope, that vision of a better future, and that faith in humanity, that makes Solarpunk what it is. As humanity changes, whether socially or physically, to meet the demands of the changing Earth, and as new technological advances allow for both a greater control over our bodies, and for a closer communion with technology, that hope will be key.

Works Cited

- Arsenault, Claudia and Brenda J. Pierson. Foreword. *Wings of Renewal: A Solarpunk Dragon Anthology*, edited by Claudia Arsenault and Brenda J. Pierson, 2015, np.
- Arsenault, Claudia and Brenda J. Pierson. *Wings of Renewal: A Solarpunk Dragon Anthology*. 2015.
- Bailey, Dustin. "Cyberpunk 2077 implants may have side effects." *PCGames*, 15 June, 2018, <https://www.pcgamesn.com/cyberpunk-2077/cyberpunk-2077-cyberpsychosis>. Accessed 12 July, 2019.
- Belluco, Santiago. "The Death of Pax." *Sunvault: Stories of Solarpunk and Eco-Speculation*, edited by Phoebe Wagner and Brontë Christopher Wieland, Upper Rubber Boot, 2017, pp. 71-84.
- Bookchin, Murray. *Ecology of Freedom*. Revised Ed, Black Rose Books, 1991.
- Bookchin, Murray. *Social Ecology and Communalism*. Edited by Eirik Eiglad. AK Press, 2007.
- Briar, Mindi. "Refuge." *Wings of Renewal: A Solarpunk Dragon Anthology*, edited by Claudia Arsenault and Brenda J. Pierson, 2015, pp. 157-178.
- Carr, C. B. "Summer Project." *Wings of Renewal: A Solarpunk Dragon Anthology*, edited by Claudia Arsenault and Brenda J. Pierson, 2015, pp. 1-20.
- Cohen, Jeffrey Jerome. "Monster Culture (Seven Theses)." *Monster Theory*, edited by Jeffrey Jerome Cohen, University of Minnesota Press, 1996, pp 3-25.
- Costa, Antonio Luiz M. C. "Once Upon a Time in a World." *Solarpunk: Ecological and Fantastical Stories in a Sustainable World*, edited by Gerson Lodi-Ribeiro, World Weaver Press, 2018, pp. 83-115.
- Cox, Stefani. "Fyrewall." *Glass and Gardens: Solarpunk Summers*, edited by Sarena Ulibarri, World Weaver Press, 2018, pp. 40-52.
- Curran, Giorel. "Murray Bookchin and the Domination of Nature." *Critical review of International Social and Political Philosophy*, June 1999, 2(2), p. 59-94.
- "Cyberpunk." *A Dictionary of the Internet*, edited by Darrel Ince, 3rd ed., Oxford UP, 2018.
- "Cyberpunk." *The Oxford Dictionary of Literary Terms*, edited by Chris Baldick, 4th ed., Oxford UP, 2015.

- Dincher, Andrew. Foreword: On the Origins of Solarpunk. *Sunvault: Stories of Solarpunk and Eco-Speculation*, edited by Phoebe Wagner and Brontë Christopher Wieland, Upper Rubber Boot, 2017, pp. 7-8.
- Dutra, Daniel I. "Gary Johnson." *Solarpunk: Ecological and Fantastical Stories in a Sustainable World*, edited by Gerson Lodi-Ribeiro, World Weaver Press, 2018, pp. 131-153.
- Eckersley, Robyn. "Divining Evolution: The ecological ethics of Murray Bookchin." *Environmental Ethics*, vol. 11, no. 2, Summer 1989, np. quoted in White, Damian F. *Bookchin, A Critical Appraisal*. Pluto Press, 2008.
- Farver, Kenneth. "Negotiating the Boundaries of Solarpunk Literature in Environmental Justice." 2019. Western Washington University, Honors Program Senior Projects.
- Flynn, Adam. "Solarpunk: Notes toward a manifesto." *Hieroglyph*, 4 September 2014, <https://hieroglyph.asu.edu/2014/09/solarpunk-notes-toward-a-manifesto/>. Accessed 4 August 2019.
- "From Steampunk to Solarpunk." *Republic of the Bees*, 27 May, 2008, <https://republicofthebees.wordpress.com/2008/05/27/from-steampunk-to-solarpunk/>. Accessed 15 September 2018.
- Gibson, William. *Neuromancer*. 1984. Gollancz, 2016.
- Gomel, Elana. "Recycled Dystopias: Cyberpunk and the End of History" *Arts*, vol. 7, no. 3, September 2018, np.
- Graves, Shel. "Watch Out, Red Crusher!" *Glass and Gardens: Solarpunk Summers*, edited by Sarena Ulibarri, World Weaver Press, 2018, pp. 53-68.
- Hall, Charlie. "Cyberpunk 2077 will include full nudity for a very important reason." *Polygon*, 22 June, 2018, <https://www.polygon.com/e3/2018/6/15/17468232/cyberpunk-2077-nudity-transhumanism>. Accessed 12 July, 2019.
- Herschmann, Micael Maiolino, Everly Pegoraro and Cinta SanMartin Fernandes. "Steampunk and retrofuturism: results of contemporary social-temporal concerns." *Comunicação, Mídia e Consumo*, vol. 10, no. 2, 2013, np.
- Jellerson, Donald and Janine Tobeck. "Caring about the Past, Present and Future" *Arts*, vol. 7, no. 4, December 2018.

- Jessop, Blake. "New Siberia." *Glass and Gardens: Solarpunk Summers*, edited by Sarena Ulibarri, World Weaver Press, 2018, pp. 151-160.
- Kadrey, Richard, and Larry McCaffery. "Cyberpunk 101: A Schematic Guide to *Storming the Reality Studio*." *Storming the Reality Studio*, edited by Larry McCaffery, Duke UP, 1991, pp 17-29.
- Lodi-Ribeiro, Gerson, editor. *Solarpunk: Ecological and Fantastical Stories in a Sustainable World*. 2012. Translated by Fábio Fernandes, World Weaver Press, 2018
- Magerstadt, Sylvie. *Body, Soul and Cyberspace in Contemporary Science Fiction Cinema*. Palgrave Macmillan, 2014.
- Marçal, Telmo. "When Kingdoms Collide." *Solarpunk: Ecological and Fantastical Stories in a Sustainable World*, edited by Gerson Lodi-Ribeiro, World Weaver Press, 2018, pp. 49-63.
- McCaffery, Larry. Introduction: The Desert of the Real. *Storming the Reality Studio*, edited by Larry McCaffery, Duke UP, 1991, pp 1-16.
- Meyers, Camille. "Solar Child." *Sunvault: Stories of Solarpunk and Eco-Speculation*, edited by Phoebe Wagner and Brontë Christopher Wieland, Upper Rubber Boot, 2017, pp. 185-194.
- Miller, Vincent. "The Body and Information Technology." *Understanding Digital Culture*. Sage, 2011.
- Moylan, Tom. "Preface." *Scraps of the Untainted Sky*, edited by Tom Moylan. Westview Press, 2000, pp xi-xix.
- Neuwirth, Manuela. "'Absolute Alterity'? The Alien Animal, the Human Alien, and the Limits of Posthumanism in *Star Trek*." *European Journal of American Studies*, vol. 13, no. 1, 2018, np.
- Newitz, Annalee. *Autonomous*. Tor, 2017.
- Newman, Emma. *Planetfall*. New American Library, 2015.
- Okorafor-Mbachu, Nnedi. *Zahrah, the Windseeker*. Graphia, 2005.
- Older, Daniel José. "Dust." *Sunvault: Stories of Solarpunk and Eco-Speculation*, edited by Phoebe Wagner and Brontë Christopher Wieland, Upper Rubber Boot, 2017, pp. 58-70.

- Ortiz, Diego Arguedas. "How science fiction helps readers understand climate change." *BBC*, 15 January, 2019, <http://www.bbc.com/culture/story/20190110-how-science-fiction-helps-readers-understand-climate-change>. Accessed 19 January, 2019.
- Patt, Julia K. "Caught Root." *Glass and Gardens: Solarpunk Summers*, edited by Sarena Ulibarri, World Weaver Press, 2018, pp. 3-9.
- "Post-Cyberpunk" *The Oxford Dictionary of Science Fiction*, edited by Jeff Prucher, Oxford UP, 2007.
- Reynolds, Megan. "Petrichor." *Wings of Renewal: A Solarpunk Dragon Anthology*, edited by Claudia Arsenault and Brenda J. Pierson, 2015, pp. 51-82.
- Roddenberry, Gene, creator. *Star Trek: The Original Series*. Desilu Productions, 1966.
- Scheckler, Gregory. "Grow, Give, Repeat." *Glass and Gardens: Solarpunk Summers*, edited by Sarena Ulibarri, World Weaver Press, 2018, pp. 201-223.
- Schofield, Holly. "The Call of the World." *Glass and Gardens: Solarpunk Summers*, edited by Sarena Ulibarri, World Weaver Press, 2018, pp. 69-83.
- "Solar Punk" *TVTropes*, <https://tvtropes.org/pmwiki/pmwiki.php/Main/SolarPunk>. Accessed 20 September 2018
- Spindler, Roberta. "Sun in the Heart." *Solarpunk: Ecological and Fantastical Stories in a Sustainable World*, edited by Gerson Lodi-Ribeiro, World Weaver Press, 2018, pp. 189-201.
- Springett, Jay. "Solarpunk: A Reference Guide." *Medium*. V6, 26 Sept. 2017, medium.com/solarpunks/solarpunk-a-reference-guide-8bcf18871965. Accessed 22 Oct. 2017.
- "Steampunk" *The Oxford Dictionary of Science Fiction*, edited by Jeff Prucher, Oxford UP, 2007.
- "Steampunk" *Oxford Dictionary of English*, edited by Angus Stevenson, 3rd ed., Oxford UP, 2015.
- Ulibarri, Sarena. Introduction. *Glass and Gardens: Solarpunk Summers*, edited by Sarena Ulibarri, World Weaver Press, 2018, pp. 1-2.

Ulibarri, Sarena. Preface. *Solarpunk: Ecological and Fantastical Stories in a Sustainable World*, edited by Gerson Lodi-Ribeiro, World Weaver Press, 2018, pp. 1-3.

Ulibarri, Sarena, editor. *Glass and Gardens: Solarpunk Summers*. World Weaver Press, 2018.

Wagner, Stephanie. "In the Hearts of Dragons." *Wings of Renewal: A Solarpunk Dragon Anthology*, edited by Claudia Arsenault and Brenda J. Pierson, 2015, pp. 21-38.

Wagner, Phoebe and Brontë Christopher Wieland, editors. *Sunvault: Stories of Solarpunk and Eco-Speculation*. Upper Rubber Boot, 2017.

Wagner, Phoebe and Brontë Christopher Wieland. Editor's Note. *Sunvault: Stories of Solarpunk and Eco-Speculation*, edited by Phoebe Wagner and Brontë Christopher Wieland, Upper Rubber Boot, 2017, pp. 9-10.

Watson, T. X. "The Boston Hearth Project." *Sunvault: Stories of Solarpunk and Eco-Speculation*, edited by Phoebe Wagner and Brontë Christopher Wieland, Upper Rubber Boot, 2017, pp. 14-25.

White, Damian F. *Bookchin, A Critical Appraisal*. Pluto Press, 2008.

White, Damian F. "Post-Industrial Possibilities and Urban Social Ecologies: Bookchin's Legacy." *Capitalism Nature Socialism*, March 2008, 19(1), p. 67-81.

Wood, Nick. "Thirstlands." *Sunvault: Stories of Solarpunk and Eco-Speculation*, edited by Phoebe Wagner and Brontë Christopher Wieland, Upper Rubber Boot, 2017, pp. 175-184.