

SIMON C. ESTOK 

Racist Orientalism, Technology, Gender, and Food in *The Windup Girl*: Notes on Detachment and Division¹

Introduction

Estrangement, food, technology, militarization, race, gender, and environment are mutually imbricated topics in the terrifying trajectory Paolo Bacigalupi's *The Windup Girl* envisions for humanity. Bacigalupi implies that there are no technological quick-fixes for the complex social and environmental problems humanity faces. The narrative sexism and racism of the novel, however, does not seem a promising conduit toward human unity or to connectedness with the environment, and the genetic determinism of the novel is dangerously essentialist: it is not very progressive thinking, and it maintains boundaries that keep people apart. Indeed, *The Windup Girl* reiterates rather than challenges many of the patriarchal values of the hero genre—for instance, the violence of the hero, the racist Orientalism, the sexual fetishization and abuse of Asian women, and so on stand unchallenged. Charting a trajectory of our failures to understand connections between violence against women, on the one hand, and violence toward the environment, on the other, *The Windup Girl* does provocatively envision just how bad strife and division can become (significant because alienation is vital to the global capitalism driving much of the plot of

ISLE: *Interdisciplinary Studies in Literature and Environment* 00.0 (2021), pp. 1–21
doi:10.1093/isle/isab061

© The Author(s) 2021. Published by Oxford University Press on behalf of the Association for the Study of Literature and Environment. All rights reserved.

For permissions, please email: journals.permissions@oup.com

this novel), but it does so through tropes that need to be challenged. This does not mean ignoring the work that the novel does, its insights on food, and its understandings of current failures and their trajectories. The novel shows that capitalist-driven gene technologies (centered on the ever-problematical matter of food production) offer promises of control (of food sources, of the environment, and of people), but as with so much else in *The Windup Girl*, the roots of the problems remain unaddressed: as there is no real challenging of racism or sexism,² neither does Bacigalupi question how food habits (such as meat-eating) play a central role in climate crises. While the novel does effectively challenge capitalist neocolonialism, its failures to challenge other unsustainable ideologies draws the ethical blind spots of the contemporary world into 23rd century Thailand, as if 200 years will have taught us nothing. The resulting scale of loss and disconnection—which we have gotten a sample through Covid-19—is staggering in the novel. Narrating all of this is similarly staggering in its complexity, but Bacigalupi does it skillfully enough to show that it is not only the crises but also the human responses to them that perhaps we need to worry about. The warning is a timely one: notwithstanding the ways that technologies seem to bring into reality Marshall McLuhan's notion of a "global village,"³ it is very clear in *The Windup Girl* that technologies that are supposed to solve social and environmental problems are tearing people apart (a disconnection and estrangement that are on both a personal and global level), but the novel's participation in sexist and racist Orientalism⁴ unwittingly and unproductively adds to the vision of horrors awaiting humanity.

Racist and Sexist Orientalism

Jungyoun Kim has argued persuasively on the novel's blatant sexism and racism and about how "the politics of representation in Bacigalupi's novel are suspect in their construction of Orientalist and sexist stereotypes as a frame" (566): she explains that "Bacigalupi's use of an 'exotic' setting discloses the Orientalist perspective . . . [and that] a particular Asian tradition, that of the geisha, is appropriated in the image of the windup girl, revealing Western fantasies of Asian women" (569). Kim describes the relentless exoticizing of Asia and the essentializing of "the East" in *The Windup Girl* and situates the novel within a context that is clearly anti-Asian and Asiaphobic:

[its] depictions of Thais, Chinese, and Japanese are consistently based on historically, politically, and socially prevalent Western images of the Orient. The narrative writes Thailand as politically corrupt, sexually promiscuous,

and entrepreneurially “incompetent” (14), while Thais “simply lack the spirit of entrepreneurship” (132) . . . [Bacigalupi] emphasizes . . . stereotypes of racial and ethnic prejudice. (571)

Kim wrestles with questions about the racial and gender politics of representation and the Orientalist and sexist stereotypes that seem to be involved in the novel’s critique of genetic modification and food transformation technologies. Part of the argument here is about the importance of identity, of who speaks for whom. Although Bacigalupi effectively exposes the dangers of mass produced genetically modified food and the transformation of food into industrial products by Western-based multinational agri-corporations, setting the novel in Asia and reproducing Western fantasies and stereotypes of Asia seem to run counter to the overall thematic thrust of the novel. While the novel does, as Kim argues, succeed in showing how “the dangerous and uncertain future of food transformations is entangled with racial and gender matters in the novel” (566), the novel is in some important ways compromised by the stereotypes it deploys. On the surface, the novel seems radical in the ways that it triangulates gender, war, and environment, but it is disturbingly orthodox in its core understandings—disturbing because these conservative frames encourage strife.

Among the most disturbing passages in the novel are the two explicit rape scenes—one early, one later. The entire plot hinges on these scenes, but it is unfathomable why Bacigalupi opts to present them in so much detail. These scenes appear more as torture porn than as being necessary, with the narrator, under Bacigalupi’s hand, delighting in describing the sexual abuse of Emiko, the titular “windup girl.” Such detail goes well beyond narrative necessity and is outright offensive, and exculpating authors for the behaviors of their narrators seems to participate in a silencing of resistance that is endemic to patriarchies. At the end of the lingering descriptions of the first rape of Emiko, we are told that “she comes” (43); however, we know that she is betrayed by her own body, which “performs just as it was designed [to do]” (43). The narrative’s voyeuristic pleasure in its own pornographic production really goes against feminist thinking and is out-and-out counterproductive in terms of connecting and bringing people together. What it shows is that the narrative itself stands against Emiko. She is alone, without even narrative sympathy behind her. Bacigalupi constructs her as a non-relational being, a victim of her own genes—engineered to please men. He reiterates sexist patriarchal thinking in refusing to acknowledge that, as Carol Gilligan and Naomi Snider explain in *Why Does Patriarchy Persist?*, “by nature, we are relational beings, born with

a voice—the ability to communicate our experience—and with the desire to engage responsively with others” (9). Emiko is *not* a relational being in the world Bacigalupi constructs. She is torn from her own self, betrayed by her own body, the property of men and their desires, obliged “to comply with the forces that justify men’s violence and women’s silence” (4). The “detachment, including the experience of leaving one’s body that is common among rape survivors” of which Gilligan and Snider speak (138), is written into Emiko’s constitution, “as her body betrays her” (Bacigalupi 43). Another windup explains, “It is in our genes. We seek to obey. To have others direct us. It is a necessity. As important as water for a fish. It is the water we swim in” (329). Emiko tells Anderson, “My body is not mine” (Bacigalupi 201).⁵ The problem, however, is that it is hers and that she is separated from it, her spirit from her corporeal reality, her mind from her body, “her soul . . . [entangled with and] emerging from within the strangling strands of her engineered DNA” (202). The result of this estrangement from her body is “that her soul wars with itself” (202). Significantly, the only option open to “windup girls” is a military one,⁶ since their template is the basic military one (a fact of which Emiko is unaware but which explains her hidden fighting skills and strength). Almost but not quite human,⁷ windups end up merely the property and tools of the human community (of men, in particular), but isolated and not part of that community.

While the novel seems to do something radical and liberating (after and as a result of the second rape) by giving Emiko agency and volition, it is important to consider that this volition is, by the logic of genetic materialism that the novel follows, hardwired. Critics have suggested, however, that Bacigalupi is doing something radical with race in this novel. Adam Trexler, for instance, notes that “too often, white, virile Americans are the heroes of science fiction novels, but *The Windup Girl* demands examination from other points of view” (212), and, indeed, though the novel begins with a focus on a white, virile, presumably American man, the narrative upsets our expectations through Emiko, the hero, if there is a hero here. But there are several problems with this part of Trexler’s recuperative reading: firstly, it does not properly address violence. This is odd because violence is a large part of what makes heroic white males heroic in fiction; the novel does not challenge this violence, and Emiko only comes into her own through her sudden almost psychotic violence (and it is precisely this violence that leads to the social and military crises in the novel); secondly, Emiko is clearly a racist and sexist stereotype; and thirdly, the idea of enhanced women as a nexus for conversations about ethical conflicts within bioengineering is nothing new, and women’s bodies

and subjectivities have long been the conduit for conflict and conversation, long the materials causing and trophied by war. Helen of Troy comes to mind, but more recently, there is the 2014 film *Lucy*.

A brief comparison of *Lucy* and *The Windup Girl* is productive here. *Lucy* is a 24-year-old American woman living and studying in Taipei (why Taipei?), and she is sort of raped—four packets of CPH4⁸ are forced into her (sewn into her abdomen), they seep into her blood, and she gets astonishingly enhanced physical and mental capabilities. An army of Korean gangsters (why Korean?) storm the Val-de-Grâce, a military hospital in Paris, where *Lucy* is having the packets removed. It is hard not to see the similarities between *The Windup Girl* and *Lucy*. Emiko and *Lucy* are both sort of engineered women: Emiko is astonishingly quick, *Lucy* is increasingly god-like in her abilities, and neither are properly human. There is a long history of dehumanizing women in patriarchies. At any rate, men chase both of these women in the respective stories—specifically, military men who like to tamper with nature and genes. Both narratives are set in Asia. Both narratives, astonishingly, seem to empower a unique woman but really fail to address questions about sexism that actually enable the narratives themselves. Both narratives had a unique opportunity to connect gender and war but failed. It is not a connection that was lost on the Swedish Nobel committee in 2018.

Gendered and Environmentalized Violence

Although the 2018 Nobel Peace Prize formally recognized that as long as there is war, there will be sexual abuse and rape, the failing of the Nobel committee, like the failing of *The Windup Girl* and *Lucy*, was in its inability to make that very necessary final ethical connection between conceptualizing nature and women in the same terms: violence against the environment is inextricable from violence toward women,⁹ and at the very moment of the Nobel committee taking its bold step, BBC Earth was running its “Extreme Weather” series that states in every single episode in some variation the theme that “Mother Nature is a real foe when you anger her.” At some point, we need to wonder about legislation regarding this issue. If it is illegal to use racist slurs, sexist language, ethnic stereotypes, and language that incites violence in mainstream media, then might we not also wonder how it is possible that the use of language that mobilizes sexist, anthropomorphic, and clearly ecophobic metaphors of a malevolent nature remains beyond the pale of legislative discussion?¹⁰ The metaphors are counterproductive and simply not going to help make our environmental crises any better; on the contrary, such sentiments (although they may sell well)

are simply perpetuating the idea that nature (and women) should be controlled. It is the kind of language that separates people rather than brings them together. It is the kind of language that causes war rather than reconciliation. It is the kind of language that freely indulges in the sexist ecophobia that has produced the kinds of troubles we currently face, both in terms of gender and in terms of environment. Where is the attention to the ways in which language about climate issues promotes interpersonal as well as geopolitical strife and disconnection? Our climate troubles will invariably lead to further geopolitical conflict, and there is trouble in both the absence of attention to ecophobic discourse (and its involvements with race and gender) and in the failure to address racist Western narratives that envision Asia as the site or source of global strife and conflict.¹¹

Militarism

Geopolitical division and conflict certainly are vital to nationalist narratives, just as disconnection and estrangement are fundamental to capitalist control of people and the natural world. Capitalism does not recognize what Erich Auerbach identified as the “completely different conditions of life” (321) that characterize geographical and temporal difference; rather, control, management, and effacing of difference are the goals. Robert P. Marzec discusses the origins of these goals in his compelling *Militarizing the Environment: Climate Change and the Security State*:

[D]evelopments in the formal sciences [,] ... which sought to emancipate human beings from their dependence on chance, brought about a form of securitization that changed the understanding of Nature from an entity on which one depended into an entity that posed a threat. The “natural world” became associated with the threatening ideas of contingency, risk, and endangerment, and “freedom” became an idea that involved the act of becoming *independent* from these conditions. From the standpoint of these formalist theories, the environment had to be subdued—securitized—for humans to obtain their independence. (20)

What we are talking about here are fantasies of control. Ecophobia breeds fantasies of control, and these fantasies become reality. The “independence” from the environment that the sciences promise is, of course, a myth: like every other species on the planet, we live in the environment and are subject to it—and when its systems become

unstable as a result of our activities, we experience those instabilities. Experience of those instabilities reminds us that the notion of independence is a myth. *The Windup Girl* lives in that myth and fantasizes about controlling the natural world down to the most minute, genetic levels—all in the service of capitalism.

Whatever else disappears in the various forms of systemic collapse that Bacigalupi imagines in *The Windup Girl*, the core needs of global capitalism are not among them. One of these core needs is the alienation of people from their physical world. In 1848, Karl Marx and Friedrich Engels discussed capitalism's detachment of people from place as follows: "the need of a constantly expanding market for its products chases the bourgeoisie over the whole surface of the globe. It must nestle everywhere, settle everywhere, establish connections everywhere" (476). This loss of what Yi-Fu Tuan calls "the human being's affective ties with the material environments" (93) creates an estrangement of people from social spaces proper. Divorced from a connection with the places that produce and distribute the commodities, the people are irrelevant, and it is the disconnected places themselves that come to matter. Toward the end of *The Windup Girl*, Kanya, about to open the seed vault and yield control of food production to representatives of the multi-national AgriGen Company, complains that "it is not the city, it is the people that matter. What is the good of a city if the people are enslaved?" (Bacigalupi 378). This 23rd century observation is an echo of a question we heard some 2,700 years earlier (circa 500 BCE) by Sicinius, whom Shakespeare represents in *Coriolanus*: "What is the city but the people?" (3.1.241). The answer—to those who wield power both in *Coriolanus* and in *The Windup Girl*—is simple: people don't matter. The more disconnected from each other, the better. One of the ironies of the novel is that in imagining the profound disconnections and estrangements that are so threatening, the narrative has at its center a core requirement of human (and indeed all) life, something that brings people together and connects us with the rest of the living world—namely, food.

Food Technologies and Carnivorism

The Windup Girl takes food as a central focus and shows a potential trajectory of 21st century food trends. It "plots the trajectory," as Patrick Murphy succinctly explains, "of global biotech industrial agribusiness as they are implemented following the collapse of the global economy and the precipitous decline of carbon-based energy production" (69). What the novel shows, however, is that the business-as-usual model does continue, wrought with failures, and two solid centuries from

now is still in the ring—not quite the failure Murphy describes. Yet, the technology *is* failing humanity. Young-hyun Lee has recently argued precisely this point:

Although technology has helped humanity in many ways, we have come to a stage where advanced technology—especially that of genetically engineered foods and animals—is quickening our downfall, as Bacigalupi represents in *The Windup Girl*, which looks with great focus at the transformation of food and animals in the twenty-third century. (585)

Nothing is exempt from the intimate prying of genetic technologies in this novel. Vegetable, animal, human: all are subject to genetic engineering. The entire food system of the novel is anchored in genetic interference; but it seems (to me, at any rate) that the technologies are the least of the issue in the novel and that it is the ethics of the entire food system that is at the root of the problems, ethics that tear people away from the sources and meanings of food. As I argued in *The Ecophobia Hypothesis*, “the world food economy is horrendously bad on many levels” and is “based in inequitable systems that rely on the subjection of animals, land, and people” (94). It relies on various forms of subjugation, ecophobia, speciesism, and racism “that are the ethical *sine qua non* of the world food economy” (ibid). Building on this argument, Lee explains that “Contemporary agribusiness pursuits of unfettered GMO production are clearly important problems today, and the current trajectory of these problems could easily lead to the nightmares pictured in *The Windup Girl*. The novel offers dire warnings for contemporary society” (587). Lee goes on to explain that “food transformation technologies regard living entities as properties or commodities, and this can bring about catastrophic and fatal consequences” (ibid). Among these is—in addition to the alienation of people from each other, from food sources and meanings, and from history—the radical uncertainty of the results of genetic interference. Murphy explains that although food technology in *The Windup Girl* “is based on genetic science, it denies the insights of the ecological science of which genetics should form only a subdiscipline, because corporations are not actually interested in systemic understanding but only commodification, which emphasizes the separate and discrete over the connected and the related” (78). There is no way to predict the long-term results of genetic fiddling, but disconnection and estrangement are certain, written into the genes of capitalist thinking and commodification. The scale of possible disconnection and estrangement is difficult for our minds to embrace.

Scalar Issues

It is really only when we begin to assess the scale of our effect on the world (and the magnitude of the results that we will have to cope with) that we can understand the scale of the losses that we face. Since the Covid-19 pandemic began, many issues about scale and survival have, perhaps, become more pronounced in the popular imagination. Among the remarkable things that happened in 2020, for instance, was the global response to a perceived common threat. This is significant because it calls into question our sense of our own exceptionalism: our responses to danger are natural. When danger appears, a flock of birds takes flight, a school of fish flees, a colony of mudskippers retreat to their holes, and people stay at home—we are not all that different from other animals, and our sense of exceptionalism is illusory. Our responses to Covid-19 have been—to use a word that I have heard more in the past year than in the past forty years—*unprecedented*. Certainly, the time has come for the alternative energies that we have been perfecting. Certainly, we are at a critical point in history, and world leaders will either attempt to return things to the way that they were (the apparent goal of the defeated Trump Administration) or will use the chances offered by Covid-19 and keep up the “unprecedented changes” that even in 2019 seemed impossible to achieve. But these changes will not stop climate change: it took the fully forested earth 380 million years to sequester the carbon from which we have drawn approximately fifty percent since the Industrial Revolution, and this enormous amount of carbon *remains* in the atmosphere doing its work of keeping in energy from the sun—warming the earth, in other words. We need to understand this, and we need to prepare for what is coming, and a large part of what is coming has less to do with pathogens or climate change than with our reactions to these things.

To see the effects of the scale of responses to Covid-19—the empty airports and hazmat flight attendants, the empty playgrounds and eerie schoolyards, the bankruptcies and the proximity of social turbulence and chaos—is soul-numbing and staggering. What is problematical (with Covid-19, with climate change, with the trajectory of our effects on the natural world) is the sheer scale of things. Scholars have sought to address scalar issues in a variety of ways: Timothy Morton with “hyperobjects;” Rob Nixon with “slow violence;” Dipesh Chakrabarty with “species history;” and Paul Crutzen and Eugene Stoermer with the notion of the “Anthropocene.” We are, perhaps, experiencing a mere fraction of what is to come: *The Windup Girl* images more of the scalar issues of our future.

For Scott Selisker, scale is centrally important in *The Windup Girl*, and he sees Bacigalupi as resolving some of the problems of scale through his use of GMOs: “*The Windup Girl* inventively enables readers to relate to the very small spatial scales and the long temporal scales at which the genome and its effects are most visible” (518). We mourn our separation from pasts (and their geographies), pasts to which we cannot return. This nostalgia and “solastalgia”—a “place-based distress in the face of the lived experience of profound environment change” (Albrecht 12)—constitute what E. Ann Kaplan describes as “pretrauma,” a condition in which “people unconsciously suffer from an immobilizing anticipatory anxiety about the future” (xix). Andrew Hageman usefully explains that

the novel compels the reader to approach the extreme difficulties involved in imagining how and why the concepts of “Nature,” the “human being,” and ecologically sustainable capitalism must be disassembled to discontinue the indefinite reproduction of ecologically devastating attitudes and actions. (284)

In the world Bacigalupi describes, however, like the world of *Jurassic Park*, separation from the past through extinctions is negotiable—indeed, negotiable in ways that are only possible in sci-fi, a point Hageman makes well:

as a genre science fiction is well positioned to contribute to social conversations about the role of technology in possible ecological futures. . . . within science fiction, as well as literature more broadly, *The Windup Girl* represents a new and sophisticated engagement with ecology, technology, and geopolitics. What differentiates Bacigalupi’s novel is that it approaches key concepts underwriting the ecological crises in the novel and outside of it with an uncompromising speculative vision that brings their inherent contradictions distinctly into view. Among these concepts, one of the most fundamental is the belief that capitalism can readily be retrofitted into a sustainable economic system with greater profit margins than the current version. The narrative brings to light structural contradictions within this concept. Specifically, Bacigalupi remaps global capitalist geopolitics, interrogates the future of the nation-state in the face of transnational corporations, and explores the dynamic

between capitalist commerce and ecological sustainability. (284)

Even so, as we read the novel, our fear of what is to come is visceral. We have a lot to lose, and Kaplan's pretrauma is very real. For Kaplan, "future time is a major theme, along with thinking through the meanings and cultural work (including that pertaining to race and gender) that dystopian pretrauma imaginaries perform in our newly terrorized historical era" (4). It is an unrelenting future that Bacigalupi offers, one that says as much about current Western anxieties toward Asia as they do about our current climate trajectories—after all, the novel offers the militarization and sexual objectification of a genetically engineered Japanese woman in a Southeast Asian country (Thailand), not a genetically engineered white man in Alaska.

Food, Connectedness, and Dis-integration

There is much about this novel that is confirmational in how it reiterates sexist and racist stereotypes, but, equally, there is no denying the plain facts that, as Murphy explains, "Bacigalupi . . . is careful not to replicate the kind of feel-good closure that dominates Hollywood films and television miniseries" (79) and that ultimately "local resistance thwarts corporate neo-colonialism and wild variability outmaneuvers commodification and globalization" (69) in *The Windup Girl*. Similarly, for Hageman,

The Windup Girl takes place in an economic and historical interstice in which the modes of production have drastically shifted in response to the scarcity of petroleum such that the previous owners of the means of production must reassert their position of control. This transitional process makes visible economic and ecological contradictions in tactile and often horrific ways. Among the most significant insights to emerge from Bacigalupi's portrayal of this interstice is the way devastating ecological consequences recursively result from and drive global economic changes. (283)

Bacigalupi's is a plausible history written in the future tense. If it is hopeful in its resistance toward corporate neocolonialism, however, such hope seems to have little basis in the history of our species.¹² The food problems that the novel addresses are hardly new and are certainly not unique to the 23rd century.

Being at the center of Bacigalupi's imaging of the fractured world of our future (which is really a magnification of our current world and its

problems), food dominates the pervading consciousness of the novel, and even the ways that scholars have analyzed the novel are at times interwoven with metaphors of eating. Mengtian Sun's "Imagining Globalization in Paolo Bacigalupi's *The Windup Girl* and Chen Qiufan's *The Waste Tide*," for instance, states that

In the future imagined in *The Windup Girl*, humanity suffers from food-shortage crises, agricultural plagues, and ecological disasters such as the rising sea level that threatens to devour Bangkok—the central stage of the story—while nation-states are broken apart by large transnational agri-corporations that then dominate the world's ecopolitics. (290-1)

Sun tags the fracturing, the food and agricultural plague crises, and the sea that threatens to *devour* Bangkok. The novel ends in with war and flooding, one result being, as Hageman nicely puts it, "such extensive fractures that they can no longer be hidden or ignored" (298), the other offering hope:

With previous ideologies swept away, at least temporarily, the future to come at the end of *The Windup Girl* will be figured and formed collectively. And this collective will be, like an ecosystem, constituted by diverse subjectivities intimately and inextricably in contact with each other. (300)

Hageman's reading is fabulously insightful, for it recognizes the togetherness and interaction that Rutger Bregman discusses in his "hopeful history" of humanity: "Our spirits yearn for connection just as our bodies hunger for food" (72), and the co-location of food and connection here is important.

The centrality of food to the novel certainly mirrors the centrality of food in the current crises that are ripping the world apart as I write. Similarly, although food is present in the novel, carnivorousism is hardly under critique. Again, this is an echo of the current world. Indeed, one of the many things that is missing from all of the news about the coronavirus pandemic is the centrality of meat in the origins and initial spread of the pathogen (see [fig. 1](#)). As with the swine flu and the avian flu (and their lethal subtypes), meat is the core origin of the Covid-19 pandemic, the *sine qua non* of human vulnerability to the death and unprecedented changes that the pathogen offers.¹³ And yet, somehow, mainstream media and its personalities just don't seem to get it, just don't seem to register that the pathogen found its way to humans through merchants of live and dead animals in filthy "wet markets."¹⁴



Fig. 1 Pandemics Come from Meat. Richmond, British Columbia. October 2020. Photo by Simon Estok.

Similarly, the Intergovernmental Panel on Climate Change (IPCC) has said relatively little about meat.

When the IPCC released its report in Incheon, South Korea at its 48th Session in 2018, the news was not good. Perhaps in an effort not to alienate people and cause divisions, the Report mentioned food only

once (in passing) and meat not at all. The Report said that we have until 2030 to change things and that things are going to fall apart after that. The Report explained that “Global net emissions of carbon dioxide would need to fall by 45% from 2010 levels by 2030 and reach ‘net zero’ around 2050 in order to keep the warming around 1.5 degrees Celsius. Lowering emissions to this degree would require widespread changes in energy, industry, buildings, transportation and cities,” the report stated. Again, though, human activities since the Industrial Revolution have released about half of the carbon that it took a fully forested earth 380 million years to sequester, and it is simply not mathematically plausible to imagine that going net-zero will re-sequester the 910 gigatons of CO₂ we have let loose. It is “possible with the laws of chemistry and physics to limit global warming to 1.5 degrees C,” said Jim Skea, co-chair of IPCC Working Group III: “But doing so would require unprecedented changes.”¹⁵ It is worth reiterating that even with such changes, the greenhouse gases currently in the atmosphere will remain there a long time and will themselves cause “unprecedented changes.” And are we even capable of making unprecedented changes? Certainly, Covid-19 has shown us that we are *indeed* capable of such changes, but no change we can make at this point will be sufficient. We are dis-integrating—being ripped apart—under the effects of our own actions at a time when we need most to be united and together. Shackled to the effects of our own actions, we are inextricable from the environment upon which we depend and from those with whom we are at strife.

Conclusions

The complexity of our situation—being torn apart, yet being utterly entangled in our material realities—presents its own problems. Frederick Buell offers a compelling analysis of “the discursive sources for the new clustering of imaginative challenges and potentials for novelists and filmmakers—ones now urging them to try to turn a confluence of different discursive histories (specifically environmental-political, environmental-theoretical, geological, sociological, cultural and literary histories) into narrative” (Buell 261-2). Among the things that Buell notes is that Bacigalupi narrativizes neither a slow descent into oblivion nor a scenario where the “world [ends] abruptly, as [in] old fashioned apocalypses” (261); rather, *The Windup Girl* offers a continuing sense of what Buell calls “hyperexuberance” (281)—with genetic technologies running amok, “hypercapitalism” (262) out of control, all of the norms that we know today shattered, and yet, all of this somehow being the daily reality, the new norm. It is a world with

new enemies and subsequent disasters, and Bacigalupi is careful to stress not so much climate change but rather the effects of *responses to* climate change as the threats—a point not lost on Lee and Buell. Lee warns in her reading of the novel that “the possibilities of violent effects [of GM technologies] are very real” (588); For Buell, “today’s visionary new technologies [that] run rampant *are* the new disasters, not the solutions” (274). If there is a paradigmatic break from the past that has resulted in qualitatively and systemically different conditions of life (perhaps what Auerbach means), then perhaps it is in how we perceive the threats to our well-being—specifically to our well-being as social creatures with intimate and complicated relations. Our experience (on-going, as I write) of Covid-19 again clearly sheds important light here, with the “social distancing” (recommended to curb the spread of Covid-19) producing social isolation (and there will undoubtedly be a lot of research on the matter in the weeks and months and years to come); but one thing is clear at this point: the global response to the pandemic (while necessary and inevitable) is itself terrifying.¹⁶ The pathogen, clearly, is not what is causing the global financial meltdown,¹⁷ the social unease and hysteria, or the lack of connection and togetherness that we are starting to experience; rather, our responses to the pathogen are causing problems.¹⁸ It seems that we can deal with virtually anything—except, perhaps, our own responses. I have been arguing firstly that the warning Bacigalupi offers—and it is a timely one—is that our current relationships with each other and with the natural environment and our current trajectory could lead us to a very bad place where the intended solutions only rip us yet further from each other and from the natural world and secondly that we need to be critical of the text itself: it may be doing more harm than good because the racist Orientalism of the narrative really only contributes to the gloominess of our future.

Ultimately, it may not be derogated environments that pose the greatest threat to humanity’s future. We may be more dangerous to ourselves than anything else is. Bacigalupi shows us a world two hundred years in the future where many of the problems we face today (social and environmental) remain, but enhanced. Some of these issues are reproduced by the narrative itself, and *The Windup Girl* flatly fails to challenge sexism, racism, essentialist thinking, and carnivorousness; yet, the novel does consistently show the strife and division that follows from these issues. This estrangement occurs on many levels—corporeal, with Emiko not a part of her own body; inter-personal, with characters in competition against each other; and national, with wars and militarization. The novel challenges capitalism and neocolonialism,

and while this is a good start, it is not enough balm for the spirit that yearns for connection, togetherness, and unity.

NOTES

1. An earlier substantially different version of this paper appears as “Detachment and Division: Militarization, Geography, and Gender in *The Windup Girl!*” in *Mushroom Clouds: Ecological Approaches to Militarization and the Environment in East Asia*. The writing and revision of this article was framed by two periods of quarantine, both of which I reference at different points below because they are relevant to the discussion.

2. The whole notion that the novel participates in racist and sexist Orientalism has become more meaningful and timely since the original submission of this article, with mainstream media attention to anti-Asian racism and violence becoming more pronounced than ever in the Spring of 2021. Although this coverage has been—to cite Connie Chung—“miserably late” (Benveniste), the racism and violence are by no means new. While it is certainly true that Bacigalupi represents a deeply and entirely racist world and clearly shows the tragic and devastating consequences of that racism, there is in the narrative voice of the novel itself what I identify a “racist Orientalism,” a topic that is clearly central to this article. Racist Orientalism and anti-Asian sentiments are often absent in discussions about race in the West, and, as I write, are only *now* receiving widespread media attention (see, for instance, the CNN article about violence toward Asian women in America, Kaur). This racism is very much at the core of the novel but is not under critique in any way; rather, it is a narrative necessity in the novel. Making such a claim about a well-established and much-loved novel is obviously subject to the same kind of resistance critics faced when claiming that Conrad’s *Heart of Darkness* is at core a racist text. Perhaps now, however (given the clear awareness developing in the US to racism against Asians at the moment), the observations in this article will seem less radical and unacceptable than they might have seemed, say, a year earlier than publication.

3. Canadian media theorist Marshall McLuhan defined the “global village” as an effect of electronic media and their capacity to bring people together: “The new electronic interdependence recreates the world in the image of a global village” (31). McLuhan was writing many years before the internet. During the 2020 Spring semester, as the Covid-19 pandemic gathered force, all of the students in my graduate class attended from different time zones; shoppers became reluctant to go to real stores and increasingly ordered everything online, things that often arrived on the same day; and military bodies continued to target sites remotely from thousands of miles away. These are aspects of the global village.

4. I use the term “Orientalism” in explicit recognition of Edward Said’s claim that “the relationship between Occident and Orient is a relationship of power, of domination, of varying degrees of a complex hegemony” (5).

5. The genetic materialism that determines all possibilities for action and identity here looks an awful lot like old-fashioned essentialism.

6. It seems in some ways that war is the only understandable solution to problems in the patriarchal mind. When I worked at Liberation Books in Winnipeg in the 80s, one of my co-workers wore a button which read “War is menstruation envy.” Perhaps it was right.

7. One is reminded here of Homi Bhabha’s discussion of colonial subjectivity, of the “recognizable Other, as a subject of a difference that is almost the same, but not quite” (86, *emphasis in original*).

8. CPH4 (also known as 6-carboxytetrahydropterin synthase) is an enzyme that in this science fiction narrative increases brain function.

9. The 2018 Nobel Peace Prize went to Denis Mukwege and Nadia Murad for their work against the use of sexual violence as a military weapon. The Peace Prize committee might also have noted (even in passing) the intersections and links between violence against women and violence against the environment and how the work of Mukwege and Murad potentially gives greater visibility to environmental violence in addition to sexual violence. There has been much important work done theorizing connections between violence against women and violence against the environment by scholars such as Greta Gaard, Maria Mies, Val Plumwood, Vandana Shiva, and Stacy Alaimo.

10. For a long time, I thought I was the only person having such thoughts, thoughts for which I recall having been mocked and rebuked at conferences because my suggestions seemed “to throb with the beat of the Thought Police.” Doubting myself, I thought that perhaps these rebukes might have had merit, but several months after submitting the first version of this article, PETA (People for the Ethical Treatment of Animals) put out a call urging “dictionaries to ban derogatory, speciesist definitions of animals or label them as such” (PETA). Perhaps indeed we do need laws to make us more mindful of the language that we use. Granted, it may have seemed a radical idea in the past, but the idea is reasonable.

11. Donald Trump’s constant referencing of Covid-19 alternately as the “China Virus,” the “Chinese Virus,” the “Wuhan Virus,” and “Kung Flu” is clearly a part of this disturbing racist trend.

12. I write these words whilst in quarantine in Vancouver because of Covid-19, a pandemic that like so many others in our history has roots in our unsustainable eating habits. Yet, still there is reluctance to hold people who eat meat accountable for the human and nonhuman suffering and death that their diet supports. The trend toward veganism in mainstream American culture paradoxically expresses rather than addresses this reluctance. It is no secret that the remarkable recent success of veggie burgers (such as the Impossible Whopper and Beyond Meat products) is owing in large part to the facts that “the packaging for these products don’t include veggie or vegan anywhere on them” (see Valinsky) and that the products are in the meat aisle rather than in the vegetable section. The distancing from vegetal realities is a clear marketing bonus, as the documentary film *The Game Changers* makes

plain: CNN's Daniel Gallan explains that "terms like veganism and vegetarianism are deliberately avoided." James Wilkes, one of the film's producers (himself a former UFC fighter) explains that there is a stigma attached to being vegan and that he, like many other people, see the vegan as (in his words), a "skinny, long-haired hippie—tree hugging, [and a person who] lives in a commune." The executive producers of *The Game Changers* are Arnold Schwarzenegger and Jackie Chan.

13. It is also important to remember that Covid-19, like the Black Death before it, is an environmental event. In his *Environmental History of Medieval Europe*, Richard Hoffmann explains that the Black Death was "the largest ecological and demographic event in pre-modern European history" (289). Citing Hoffmann, medievalist Shawn Normandin argues that the social effects of the pandemic—the disappearance of villages, the collapse of economies, changes in agricultural practices, and so on—had profound effects that we can, to some degree, chart in the literature of the time (see Normandin, esp. pp. 1–50). The Covid-19 pandemic is a meat-based environmental catastrophe.

14. Certainly, there has been *some* coverage of this in mainstream media, with articles recognizing "wet markets" as the source of Covid-19 (see Greenfield), understanding that the zoonotic leaping of viruses from animals to humans will continue at such places (see Davies), and calling for bans on markets with wild animals (see Boseley).

15. British Columbia is smoldering as I pen my revisions, the town of Lytton having broken Canada's heat record with a dizzying 47.9 degrees Celsius (118 degrees Fahrenheit) on June 29, 2021. The next day, much of the town was destroyed by a wildfire.

16. In quarantine in Seoul on July 1, 2021 as I go through my final readings of this article, I am monitored constantly through my phone and the app that I was required to download. Although I am double-vaccinated, with a negative pre-boarding PCR (polymerase chain reaction) Covid test, I was forced to take another (very painful nasal) test upon arriving. I receive phone calls at all hours confirming that I am quarantining at home with my phone. Text messages come at random times with a loud beeping noise alerting me to confirm my whereabouts and that my phone is disabled for any other function until I do so. Other alerts (twice daily) demand that I submit self-diagnoses. If I fail to comply to any of these things, I face fines, prison time, loss of my residency status, and deportation. The reach of the government up my nose and into my actions, the monitoring, the calls, the texts, the alerts: it all seems a little intrusive and intimidating, but the good of the many outweighs the good of the individual. Recognizing this does not make it any less terrifying to think of how far this can all go.

17. Cancer, for instance, took more than double the lives globally (4.5 million) in 2020 than Covid-19 (1.8 million).

18. I want to be pellucidly clear here that I am not suggesting that we ought to have taken a weaker course of action. Stricter, yes. Mandated use of masks, yes. Total lockdowns, yes. Our partial lockdowns and shutdowns, our stay-at-home orders, our mandated quarantines, and so on have saved untold

numbers of lives—but we could have done much better. At the same time, however, we are in no way prepared for what that (or for what we *have* done) means.

WORKS CITED

- Albrecht, Glenn. "'Solastalgia': A New Concept in Health and Identity." *Philosophy and Nature* 3 (2005): 45–50.
- Auerbach, Erich. *Mimesis: The Representations of Reality in Western Literature*. Trans. Willard R. Trask. Princeton UP, 1968.
- Bacigalupi, Paolo. *The Windup Girl. Night Shade*, 2006.
- Benveniste, Alexis. "Connie Chung: The Media is miserably Late Covering Anti-Asian Violence." *CNN*, 21 March 2021. <https://www.cnn.com/2021/03/21/media/asian-american-journalists-reliable/index.html>
- Bhabha, Homi. "Of Mimicry and Man: The Ambivalence of Colonial Discourse." *The Location of Culture*, Routledge, 1994. 85–92.
- Boseley, Sarah. "Calls for Global Ban on Wild Animal Markets Amid Coronavirus Outbreak." *The Guardian*. 24 January 2020: <https://www.theguardian.com/science/2020/jan/24/calls-for-global-ban-wild-animal-markets-amid-coronavirus-outbreak>
- Bregman, Rutger. *Humankind: A Hopeful History*. Trans. Elizabeth Manton and Erica Moore. Little Brown, 2020.
- Buell, Frederick. "Global Warming as Literary Narrative." *Philological Quarterly* 93.3 (June 2014): 261–94.
- Chakrabarty, Dipesh. "The Climate of History: Four Theses." *Critical Inquiry*, vol. 35, no. 2, 2009, pp. 197–222.
- Crutzen, Paul, and Eugene Stoermer. "The 'Anthropocene.'" *The International Geosphere–Biosphere Programme (IGBP) Newsletter*, no. 41 May 2000, pp. 17–18.
- Davies, Dave. "New Coronavirus 'Won't Be the Last' Outbreak to Move from Animal to Human." *Goats and Soda: Stories of Life in a Changing World*. NPR (National Public Radio). 5 February 2020: <https://www.npr.org/sections/goatsandsoda/2020/02/05/802938289/new-coronavirus-wont-be-the-last-outbreak-to-move-from-animal-to-human>
- Estok, Simon C. *The Ecophobia Hypothesis*. Routledge, 2018.
- Gallan, Daniel. "Macho Vegans: The Documentary that's Changing the Script on Plant-Based Diets." *CNN: Call to Earth*, 19 December 2019. <https://edition.cnn.com/2019/12/18/sport/game-changers-documentary-james-wilks-spt-intl/index.html>.
- Gilligan, Carol and Naomi Snider. *Why Does Patriarchy Persist?* Polity, 2018.
- Greenfield, Patrick. "Ban Wildlife Markets to Avert Pandemics, says UN Biodiversity Chief." *The Guardian*, 06 April 2020. <https://ban-live-animal-markets-pandemics-un-biodiversity-chief-age-of-extinction>
- Hageman, Andrew. "The Challenge of Imagining Ecological Futures: Paolo Bacigalupi's *The Windup Girl*." *Science Fiction Studies* 39 (2012): 283–303.

- Hoffmann, Richard C. *An Environmental History of Medieval Europe*. Cambridge UP, 2014.
- IPCC. "Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C Approved by Governments," 08 October 2018. <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>
- Kaplan, E. Ann. *Climate Trauma: Foreseeing the Future in Dystopian Film and Fiction*. Rutgers UP, 2016.
- Kaur, Harmeet. "Fetishized, Sexualized and Marginalized, Asian Women are Uniquely Vulnerable to Violence." *CNN*, 17 March 2021. <https://www.cnn.com/2021/03/17/us/asian-women-misogyny-spa-shootings-trnd/index.html>.
- Kim, Jungyoun. "The Problematic Representations of the Orient, Women, and Food Transformations In Paolo Bacigalupi's *The Windup Girl*." *Kritika Kultura* 33–34 (2019/2020): 570–83.
- Lee, Young-hyun. "Food Transformation Technology in Paolo Bacigalupi's *The Windup Girl* and What it Means for us." *Kritika Kultura* 33–34 (2019/2020): 584–99.
- Lucy*. Directed by Besson Luc, Universal Pictures, 2014.
- Marx, Karl and Friedrich Engels. "Manifesto of the Communist Party." *The Marx-Engels Reader*, Second Edition. Ed. Robert C. Tucker. Norton, 1978. 469–500.
- Marzec, Robert P. *Militarizing the Environment: Climate Change and the Security State*. U of Minnesota P, 2015.
- McLuhan, Marshall. *Understanding Media: the Extensions of Man*. U of Toronto P, 1962.
- Morton, Timothy. *Hyperobjects: Philosophy and Ecology after the End of the World*. U of Minnesota P, 2013.
- Murphy, Patrick D. "Buying Agriculture, Selling Starvation, and the Failure of Business-As-Usual in *The Windup Girl*." *Persuasive Aesthetic Ecocritical Praxis: Climate Change, Subsistence, and Questionable Futures*. Lexington, 2015. 69–80.
- Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Harvard UP, 2011.
- Normandin, Shawn. *Chaucerian Eco-poetics: Deconstructing Anthropocentrism in the Canterbury Tales*. Palgrave Macmillan, 2018.
- PETA. "Urge Dictionaries to Ban Derogatory, Speciesist Definitions of Animals or Label Them as Such." PETA, 27 January 2021. <https://www.peta.org/action/urge-dictionaries-remove-or-label-speciesist-slurs/>
- Said, Edward W. *Orientalism*. Vintage, 1978.
- Selisker, Scott. "'Stutter-Stop Flash-Bulb Strange': GMOs and the Aesthetics of Scale in Paolo Bacigalupi's *The Windup Girl*." *Science Fiction Studies* 42 (2015): 500–18.
- William, Shakespeare. *The Riverside Shakespeare*, Second Edition. Ed. G. Blakemore Evans and J. J. M.. Tobin Houghton Mifflin, 1997.

- Sun, Mengtian. "Imagining Globalization in Paolo Bacigalupi's *The Windup Girl* and Chen Qiufan's *The Waste Tide*." *Science Fiction Studies* 46 (2019): 289–306.
- The Game Changers*. Directed by Psihoyos Louie, ReFuel Productions, 2018.
- Trexler, Adam. *Anthropocene Fictions: The Novel in a Time of Climate Change*. U of Virginia P, 2015.
- Tuan, Yi-Fu. *Topophilia: A Study of Environmental Perception, Attitudes, and Values*. Columbia UP, 1974.
- Valinsky, Jordan. "Beyond Burgers are coming to Costco." *CNN Business*, 06 December 2019. <https://edition.cnn.com/2019/12/05/business/beyond-meat-costco/index.html>.