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Debris as Storied Matter: Ecological Violence of War in *A Tale for the Time Being*

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ABSTRACT

I examine details of the ecological violence of war in Ruth Ozeki's novel *A Tale for the Time Being*, positing that these seemingly peripheral details underscore the significant role of military imperialism in perpetuating environmental destruction, speciesism, and racist violence on indigenous people. During the Pacific War, pilots stationed in the Aleutian Islands use whales as bombing targets, exemplifying an anthropocentric perspective that regards non-human animals merely as instruments for human purposes. Ozeki demonstrates that through a cross-species collaboration between Callie and the whales, people formally ignorant of their violence on animals can be made to care about animals. In addition, both the Aleutian Islands and Okinawa are marked by militarized violence on both the indigenous people and the landscape. The environmental damage caused by military actions in World War II extends beyond the immediate impacts of combat. The Fukushima Daiichi nuclear disaster should be understood as a direct outcome of the nuclear industry established during World War II. Through depictions of the propaganda on nuclear energy, the massive displacement of local people after the nuclear fallout, and the uncontainable, far-reaching consequences of radiation contamination, Ruth Ozeki alerts readers to the destructive capabilities that both nuclear energy and nuclear weapons possess. Moreover, Ozeki's choice of Canada as the victim of radiation from Japan should not be seen as reinforcing the image of a "safe" Canada; instead it critiques Canada's role in global imperialism by revealing Canada's supply of uranium to the Manhattan Project and its continuous supply of oil to the US military.

KEYWORDS: ecocriticism, war, environment, Ruth Ozeki, speciesism

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In April 2021, US President Joe Biden ordered the complete withdrawal of around 3,000 US troops from Afghanistan. This decision marked the conclusion of the United States' most extended conflict, which began as a response to the terrorist attacks on September 11, 2001. In August, emboldened by the withdrawal of American troops, the Taliban took control of Afghanistan in a matter of few days. News reports on Afghanistan focus on the human and financial costs of the war, the US's political failure, and the ominous future for Afghanistan's thirty million people. Largely missing from these reports is any reference to the environmental consequences that thirty years of war has had on Afghanistan. The only comprehensive examination of Afghanistan's environmental devastation is documented in a 2003 report by the United Nations Environment Programme (UNEP) titled *Afghanistan: Post-Conflict Environmental Assessment.* This report has found that decades of warfare have left Afghanistan with over-drilled and contaminated water, dry wetlands, soil erosion, and depleted forest and woodland resources (UNEP 10-11). Although appalling, this level of environmental devastation is not exclusive to the Afghanistan War. During World War I, artillery bombardments decimated forests along the Western Front, transforming once-stable soil ecosystems into loose and unconsolidated sediment (Hupy 413). In World War II, combat activities directly destroyed over one hundred million acres of forest in French forests alone (414). In the Vietnam War, deliberate military strategies aimed at destroying Vietnam's forests resulted in an estimated 1.65 million hectares of forest being completely obliterated, leaving the bombed land resembling the barren surface of the moon (416). It is vital to acknowledge that war has long-lasting effects on ecological systems that extend beyond the duration of the actual combat.

War, in particular the Pacific War, looms large in Ruth Ozeki's third novel *A Tale for the Time Being* (2013).[1] The novel interweaves family and war histories. Ruth, a writer of Japanese heritage living on a remote island in British Columbia, stumbles upon Nao's diary that has washed up on the shore. Nao's diary reveals that her family has relocated from California to Tokyo following her father Haruki #2's dismissal from a Silicon Valley technology firm. The reason behind his layoff is connected to his persistent inquiries into the military applications of his interface. In Japan, Nao suffers intense bullying at the hands of her classmates. Following her father's attempted suicide, she is sent away to spend the summer with her great-grandmother, Jiko, who is a Buddhist nun living at a temple. Jiko's choice of becoming a nun is linked to the family's trauma in World War II: Jiko's only son, Haruki #1, was drafted against his will and died as a *kamikaze* pilot. On Ruth's side, her marriage to Oliver, whose family emigrated from Germany, is compared to an "axial alliance" (Ozeki, *Tale* 33). Her maternal family were interned during World War II, while his family were bombed in Stuttgart. Moreover, the central motif of the novel, plastics, doesn't become a significant presence until World War II. During the war, the military faced shortages of aluminum, brass, or rubber; so they turned to the plastic industry for substitutes. Military needs greatly stimulated the expansion of the plastics industry: in 1939, 213 million pounds of synthetic resins were produced in America; in 1941, during the first year of mobilization, production doubled to 428 million; a decade later, in 1951, production skyrocketed to 2.4 billion pounds (Meikle 125). This proliferation of plastics exemplifies how the impact of World War II seeps into everyday life, as captured by a headline in *Life* magazine: "War Makes Gimcrack Industry into Sober Producer of Prime Materials" (126).

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[1] In the paper that follows, I will use *A Tale* to refer to the full title of the novel.

Though World War II sets *A Tale* in motion, previous studies focus more on the human aspects of the war and less on its environmental repercussions. Daniel McKay, for instance, examines the novel's nuanced rendition of the Japanese *kamikaze* pilot (Haruki #1), a figure typically met with indifference or even misrepresentation in Anglophone fiction writing. He argues that *A Tale* employs an "aesthetic of trauma" that re-humanizes the *kamikaze* pilot, asserting that "the kamikaze pilot is rescued from oblivion and provided with instances in which the complexity of his motivations attains a significance simultaneously true unto itself and healing to the pained circumstances of the protagonist" (8). Through this perspective, McKay illustrates how *A Tale* not only restores the *kamikaze* pilot's agency but also weaves his narrative into a path of healing for the protagonist, Nao. Michelle N. Huang, for her part, anchors her analysis of *A Tale* in a framework of "ecologies of entanglement," which are "networks of circulation that diffuse the boundaries of the human by foregrounding the relationships between us and the world with which we interact, including the environment" (98). Huang uses the recurring imagery of garbage in *A Tale* to highlight marginalized histories of violence, including the internment of Japanese Americans in World War II, the historical hunting of whales to near extinction, and the formation of vast oceanic trash vortexes, and our duty to recover these suppressed histories. My work extends the current body of research by examining the environmental injustices committed by the US and Japanese military. *A Tale* demonstrates that an environmental lens can enhance our understandings of military imperialism, making visible its multifaceted impacts on human and non-human realms.

In *A Tale*, the ecological violence of war surfaces in easily overlooked details. Ozeki seems to suggest that the ecological violence of human military conflict is another piece of debris from the gyre, circulating in the margins of our perception. But at stake here is how the novel teaches about reincorporating debris into our life. Crucial to the recuperation of debris is to see it as "storied matter," an important conceptual tool of material ecocriticism, which "takes matter as a text, as a site of narrativity, a storied matter, a corporeal palimpsest in which stories are inscribed" (Iovino and Oppermann, "Theorizing" 451). In this framework, matter is interpreted and analyzed as the trace or record of cultural, political, economic, geological, and biological forces. If matter is storied in this way, "every material configuration, from bodies to their contexts of living, is 'telling,' and therefore can be the object of critical analysis aimed at discovering its stories, its material and discursive interplays" (Iovino and Oppermann, "Material Ecocriticism" 79). For Nancy Tuana, a close analysis of those struggling to stay afloat in Hurricane Katrina, who are mostly poor and/or disabled, reveals "a complex interaction between social structures—class, governmental emergency reactions, and so forth—and thousands of humans and nonhuman animals" (206). For Jeffrey J. Cohen, matter as insignificant as a pebble is still a perfect archive for stories:

> Most any pebble is replete with microfossils such as acritarchs, the cysts of ancient algae; many of our familiar rocks would not exist without the incorporation of organic material. As a recordation device stone yields tales of life's ubiquity. Stone forges relation, conjoining things in ways productive and perilous. (35)

With attention to neglect, to elision, and to erasure, storied matter gives rise to multiple and marginalized perspectives. In the novel, both the protagonist Ruth and the author Ozeki practice seeing matter as "storied." After picking up the freezer bag on shore, Ruth does not perceive it as trash but takes it upon herself to read, research, and find the stories embodied in the debris. The author Okezi explicitly calls for stories: “The tidal wave, observed, collapses into tiny particles, each one containing a story” (Ozeki, *Tale* 122). The extensive footnotes and appendixes provided in the novel attest to her efforts in making available these stories. Thus, by treating those details, however marginal, as “storied matter,” I aim to highlight the under-examined environmental toll of military imperialism. *A Tale* demonstrates that US and Japanese military imperialism significantly contributes to the perpetuation of environmental destruction, speciesism, and racial violence on indigenous populations.

As a major battlefield during the Pacific War, the Pacific Ocean is an important setting in *A Tale*. As Gay Hawkins asserts, “The value of the ocean lay not in its recreational or real estate possibilities, but in its potential as a site of elimination. Here was the ultimate natural resource for allowing waste to disappear, to be rendered invisible” (40). Since the ocean is perceived as vast and out-of-sight, thus capable of covering up “crimes,” ecological violence is committed frequently at sea but often goes unnoticed or effaced. One outrageous but barely known type of ecological violence at sea is the US military’s practice of using the sea as its dumping center. Between 1944 and 1970, the US military dumped approximately twenty-nine million kilograms of mustard gas and nerve agents, along with 454 tons of radioactive waste, into the ocean. These munitions contaminated the water, taking a serious toll on marine life (Mitchell 106). In *A Tale*, Ozeki brings to the fore stories of ecological violence committed at the sea.

As Ozeki’s character Ruth attempts to date the barnacle-encrusted plastic freezer bag that is found washed up, she reaches out to her friend Callie, a “marine biologist and environmental activist who ran the foreshore monitoring program on the island and did volunteer work for a marine mammal protection agency” (Ozeki, *Tale* 124). Callie often tells the story that she once received a half-million dollar check from a tourist on the cruise. She originally thought the check was a joke, but it turned out to be a genuine donation from a tourist who served as an American bomber pilot at an air base in the Aleutians, a chain of islands belonging to Alaska, during World War II. The veteran recounted to Callie,

> They used to fly out every day, looking for Japanese targets. Often, when they couldn’t locate an enemy vessel, or the weather conditions turned bad, they would be forced to abort their mission

> and fly back to base, but landing with a full payload was dangerous, so they would discharge their bombs into the sea. From the cockpit of the plane, they could see the large shadows of whales, moving below the surface of the water. From so high up, the whales looked small. They used them for target practice. (125)

Even in this apparently straightforward enumeration of what the narrator has done to the whales, the bloodiness of this slaughter (details such as whale corpses, the blood-stained sea) is omitted, thus contributing to the downplay of the violence. The veteran adds, "It was fun. . . . What did we know?" (125). The lightheartedness embodied in "fun" is representative of an anthropocentric perspective that regards non-human animals merely as instruments for human purposes. The rhetorical question "What did we know?" underlines a widespread ignorance about humans' violence on non-human animals. As Edmund Russell and Richard Tucker lament, rarely have humans considered non-human nature involved in combat as a soldier with rights and rarely have humans seen the ecological violence of war as "a central, distinctive element of humans' historically evolving relation to the natural world" (1). Writers such as Heinz Insu Fenkl try to cast light on the harm of warfare on non-human animals. In his novel *Memories of My Ghost Brother* (1997), Fenkl shows Koreans' awareness of the link between wars and the disappearance of tigers in Korea. One of the folktales that the protagonist's uncle tells is set "before the war when tigers still wandered in the forest" (Fenkl, *Memories* 197), implying that after the war with Japan broke out, tigers were no longer sighted in Korea. In his short story "Five Arrows" (2015) published in *The New Yorker*, Fenkl's character Big Uncle also laments the loss of the tigers, saying that "no one had seen one since the Japanese came" (Fenkl, "Five Arrows"). The bombed whales and the disappeared tigers are living beings that remind us that non-human bodies suffer too from militarized violence.

But how to make people recognize their violence on non-human animals? Ozeki shows a way that involves collaboration between humans and non-human animals. The veteran is uninterested in whales when he first boards the cruise. When Callie invites him to watch the whales, he declines derisively, "They're just whales" (Ozeki, *Tale* 124). Callie takes it upon herself to reach out to these uninterested tourists, so she lectures extensively about the whales' "complex communities and social behaviors, about their bubble nets and echolocation and the range of their emotions" (124) and plays "recordings of their vocalizations, illustrating their clicks and songs" (124-25). Her lecture moves the veteran to listen. Then a pod of whales come closer to the cruise, "treating them to a spectacular display of surfacing behaviors, breaching, spyhopping, lobtailing, and slapping" (125). The intention of "treating" human beings is attributed to the whales, which resists the conception of animals as having no intelligence, thus, inferior to human beings. The wide range of actions performed by the whales compels onlookers to recognize their "complex communities and social behaviors." The veteran finally steps up to watch the whales. At the end of the tour, he presents Callie with the check, seemingly as his delayed apology to the whales. If Callie does not educate tourists on the knowledge of whales and the whales do not come to the cruise to display, the veteran would not recognize their ecological crime; if this history is not recounted by the veteran, the ecological violence on whales would get lost. As such, Ozeki illustrates a way to make people care about other species: cross-species collaboration.

Further, the choice of the Aleutian Islands as the military base for the veteran is poignant: As Guy Beauregard points out, the Aleutian Islands, where the veteran was stationed, is a site of dispossession. The Indigenous Aleut population, with the exception of white settlers, were forced to relocate either to Japan or to the Alaska Panhandle in order to make way for the Japanese and American troops (Beauregard 102). As Dean Kohlhoff records, the US military's removal of Aleutians during the Pacific War was conducted in a hazardous and even inhumane way. In one evacuation site at Atka, the islander's eighty-three Aleuts were "evacuated while eating breakfast . . . and the eggs were still on the table—coffee in the cups. A lot of their personal clothing and stuff was still hanging in closets . . . and the village was declared off-limits for all but medical personnel" (Kohlhoff 70). Then the US Navy dispatched a demolition team to incinerate the entire village to ensure that no assets of value would be left behind for the Japanese (70). For those Aleuts living on Japanese occupied islands such as Attu, they were taken to Japan as prisoners of war (77).

I add that the stories archived in the Aleutian Islands are not only about the dispossession of indigenous people, but also about ecological damage. The Aleutian Islands suffered wide environmental damage from the intense militarization of the islands first by Japanese and then by American troops. In 1942, Japanese forces invaded Kiska and Attu Islands. They changed the whole landscape of the islands by setting up a large number of barracks, establishing both a submarine base and a sea plane base, and building up defenses such as barbed wires and underground bunkers in the hillsides. Under Japanese occupation, these two islands were also subject to heavy torpedoing from the US Navy and intense bombing from the US Air Force. Over the course of fourteen months, an astonishing total of six million pounds of bombs were unleashed upon the island of Kiska. Today, the landscape of the island is littered with the remnants of this intense bombardment, including damaged trucks, submarines, and numerous bomb craters (Spennemann et al.). These remains are the material proof that war is a blatant act of environmental destruction. The Aleutian Islands constitute a palimpsest in which stories of battle, dispossession, confinement, and environmental destruction are inscribed.

Another Pacific island that should been seen as a storied matter is Okinawa, where Haruki #1 joins the battle and eventually dies in combat. Okinawa is also marked by militarized violence on indigenous people and on the ecosystem. Haruki #1's secret French journal reveals his personal journey. He was a philosophy student at Tokyo University before being forcefully drafted into the Special Forces when Japan was losing in the war. Facing the inevitability of Japan's defeat, he chose to become a *kamikaze* pilot in the Battle of Okinawa. This decision was driven by the knowledge that his death in this role would secure a larger pension for his family, and it would provide him with a certain end, rather than the unpredictable nature of death on the battlefield. However, due to his deep antipathy for Japanese imperialism, he redirected his plane away from the US troops and crashed into the sea instead. Though his journal ends here without detailing the Battle of Okinawa, in the footnote, Ozeki makes available stories of brutalities committed in that battle:

> *Tetsu no Ame* (鉄の雨)—Typhoon of Steel (also Battle of Okinawa), which resulted in the highest number of casualties in the Pacific Theater during World War II. More than 100,000 Japanese troops were killed or captured, or committed suicide. Allied casualties numbered over 65,000. Somewhere between 42,000 and 150,000 Okinawan civilians were also killed or wounded, or committed suicide (between one-tenth and one-third of the indigenous Okinawan population). (*Tale* 353)

Embedded in this footnote are stories of colonization, militarization, displacement, and environmental damage. As noted by Ozeki, Japanese troops forced numerous indigenous families to commit suicide to avoid the shame of being captured by the enemy, demonstrating a profound disregard for the value of local lives. The varying casualty estimates, ranging from 42,000 to 150,000 (due to imprecise recording), may indicate the Japanese government's disregard for the indigenous population. This lack of consideration for the indigenous Okinawans exemplifies the Japanese empire's approach to its colony: in 1879, Japan annexed the indigenous Ryukyu Kingdom, which was located on the islands now known as Okinawa, and transformed it into a Japanese prefecture. The mainland Japanese authorities, who deemed themselves superior, imposed heavy taxes on the Okinawans, forced the adoption of mainland cultural practices, and suppressed the local languages and customs (Mitchell 56). During World War II, the Japanese military considered Okinawa expendable, viewing it as a means to slow down the Allies' advance toward Tokyo. They hoped that intense and bloody fighting on Okinawa would sway American public opinion against continuing the war (56). This military arrangement entailed the sacrifice of local people and land, culminating in the Battle of Okinawa, which is described as "both genocide and ecocide" (56). The battle resulted in massive civilian deaths and devastated the island's natural resources, including its agriculture, forests, and vital freshwater sources. Furthermore, the US military's use of two hundred thousand tons of heavy munitions during the conflict left a legacy of contamination; around 5% of these munitions did not explode. An estimated two thousand tons of unexploded ordnance still lingers beneath Okinawa, posing a threat that could take another seventy years to eliminate (57). These munitions also contain toxic chemicals such as trinitrotoluene and cyclonite, which will intoxicate Okinawa's environment in the long run (57). After the battle, piles of equipment prepared to invade Japan were left to rot on the island, earning Okinawa the title "the junk heap of the Pacific" (58). Even after World War II, the militarized violence against the indigenous people and the landscape persists. The 1952 Treaty of San Francisco allowed the US military to take control of Okinawan territory and its people. In the following twenty years of US occupation, local residents were forcibly displaced by the US military for its military bases and the landscape was severely damaged by waste oil, leaked fuel, detergents, and sewage from the military bases. Worse, Okinawa was made a storage for highly dangerous weapons such as America’s nuclear warheads and chemical weapons. Its sea became the dumping site for chemical materials and damaged ammunition (62-66). Despite Okinawa’s return to Japanese governance in 1972, the island still bears the burden of hosting about 70% of the US military bases in Japan, continuing the cycle of militarized violence against the indigenous people and their land.

The environmental damage caused by military actions in World War II extends beyond the immediate impacts of combat. The construction of nuclear facilities in the world’s most earthquake-prone archipelago can be viewed as an environmental disaster waiting to happen. When situated in the context of the legacy of World War II, nuclear energy cannot be simply understood as a civil energy industry; nor can it be viewed as a safe and controllable form of energy, in contrast to the demonic atomic bomb. Instead, critics such as Jessica Hurley underline the causal link between nuclear energy and nuclear weapons, arguing that nuclear energy is “a technology whose corporate uses are fully entangled with its military uses; an infrastructure that can redeem nothing, whose only disposition is to produce futurelessness for beings, ecosystems, and planets” (210).

The discovery of nuclear reactors’ ability to generate electricity is a by-product of bomb manufacturing processes during World War II. During the process of creating plutonium for nuclear weapons in nuclear reactors, scientists discovered that the substantial amount of heat generated could be utilized directly or converted into electricity. This “peaceful” use of atomic energy became an important means of maintaining America’s huge nuclear arsenal and for America to rehabilitate its image in the postwar era. In the early 1950s, President Dwight D. Eisenhower significantly increased the nuclear arsenal to reduce the expenses of the conventional armed forces. The problem with this expansion of “weapons of mass destruction” was that it made the United States look bad to both its citizens and the international community. Therefore, a key objective of the civil development of nuclear energy was to garner broader public support for America’s expanding nuclear arsenal (Hurley 205-06). In December 1953, President Eisenhower delivered the famous speech titled “Atoms for Peace” to the United Nations. He described nuclear energy as the antithesis of the demonic atomic bomb, which would “help us to move out of the dark chamber of horrors into the light, to find a way by which the minds of men, the hopes of men, the souls of men everywhere, can move forward towards peace and happiness and well-being" (Eisenhower, qtd. in Hurley 206). Hurley interrogates this attempted glamorization of nuclear energy, arguing instead that,

> What Atoms for Peace really offers, then, is a framework within which putting more resources into nuclear technology (which has never been separate from the military use of the atom) and exposing more people to the catastrophic dangers of that technology can be interpreted as redemptive-apocalyptic rather than as destructive-apocalyptic: nuclear power will bring a millennial future to pass and save our souls from nuclear bombs. (207)

The Atoms for Peace program is nothing other than an integral component of the US nuclear regime.

For American politicians, bringing nuclear power to Japan was even more urgent partially because of Cold War competition with the Soviet Union, but more because of America's desire to dispel its image of having dropped the first atomic bombs on Japan. By making Japan one of the early beneficiaries of atomic technology, the intention was to obscure the memory of the nuclear devastation at Hiroshima and Nagasaki and to bolster the United States' moral standing, which was crucial to its Cold War objectives (Hurley 208). Facing public resistance to nuclear weapons in Japan, the United States initiated "one of the biggest psychological operations of the Cold War" (207), enlisting Central Intelligence Agency (CIA)-trained journalists and politicians to champion the Atoms for Peace program in Japan. As public opposition waned, Japan's first nuclear power plant was constructed in 1966 by the British company General Electric Company (GEC). Subsequently, the Fukushima Daiichi reactors were built in 1970 by the American company General Electric, using a design that had already been flagged as potentially unsafe in the United States and on land that was originally occupied by the indigenous Emishi people before being colonized by the Japanese empire in the eighth century (204). On March 11, 2011, Japan experienced a catastrophic sequence of events: it was hit by the most powerful earthquake ever recorded in the country, followed by a tsunami that caused widespread destruction along the northeast coast of its main island, Honshü. This was compounded by a nuclear crisis, with the meltdown at the Fukushima Daiichi Nuclear Power Station. The stories told about the disaster should go beyond mismanagement, but include the complicity of the American government in creating this disaster. As Hurley contends, "the 3/11 meltdown was not a historical echo of the earlier atomic trauma but rather a direct consequence of American militarism and neocolonialism at Hiroshima and Nagasaki, during the Cold War, and into our present moment" (204).

Intriguingly, Ruth Ozeki alerts readers to the beautification of nuclear energy, the nuclear industry's lack of concern for the environment, and the destructive capabilities that both nuclear energy and nuclear weapons possess. To begin with, the term Fukushima translates to "Happy Island" (Ozeki, *Tale* 151). Prior to the catastrophic event, Fukushima is indeed regarded as a "happy place" (151). The novel zooms in on the banners that are hung in the main streets of nearby towns: "**NUCLEAR POWER IS ENERGY FOR A BRIGHTER FUTURE! THE CORRECT UNDERSTANDING OF NUCLEAR POWER LEADS TO A BETTER LIFE!**" (151). The use of capital letters, bold fonts, and exclamation marks emphasizes a naively optimistic attitude towards nuclear energy. The hyperbolic tone of these banners is highly reminiscent of the propaganda published in the 1950s on the *Yomiuri Shimbun*, a US-backed newspaper in Japan: the first of the articles lauding nuclear power was titled "Finally, the Sun Has Been Captured" (Johnston, qtd. in Mitchell 164). Thus, these banners encapsulate the propaganda that the United States has used to promote nuclear energy in Japan.

The Fukushima Daiichi disaster shatters this once naive optimism towards nuclear energy, laying bare its potential for lethality on par with that of nuclear weapons. First, the earthquake and tsunami turn homes of people living in Miyagi Prefecture into "a vast field of tsunami debris that stretches into the distance" (Ozeki, *Tale* 119). A character named Nojima recounts to a reporter his harrowing experience of watching his daughter, wife, and infant son being carried away by the floodwaters, while he himself was powerless to help. The smell of the aftermath, "a choking odor of rotting fish and flesh, buried in the wreckage" (119), saturates the air, forcing him to wear a face mask. Here, Ozeki leverages the powerful sense of smell to convey the extent of the destruction. As Hsuan L. Hsu argues, "Whereas vision preserves a sense of distance, smell calls forth feelings of vulnerability and terror at the specters of contagion and uncontrollable material intimacy" (126). The scent of catastrophe urges us to acknowledge the profound intimacy between the human body and the natural world, prompting us to confront the inherent vulnerability that arises from this intimacy.

This scene of devastation is tragic; but it alone is not adequate to reflect the long-time consequences of a nuclear fallout. Adding to the assault of natural forces, radiation renders the land inhabitable. Ozeki humanizes the plight of individuals displaced by the nuclear disaster by highlighting the disrupted life of an immigrant couple in British Columbia. To secure a translation of the Japanese letters, Ruth and Oliver journey to Campbell River, British Columbia in search of the owner of a sushi bar, who are originally from Okuma City in Fukushima Prefecture. The couple's plan to retire to Okuma City is disrupted as the nuclear fallout has turned the city into a radioactive wasteland. The hostess Kimi relates, "Okuma City wasn't very special. . . . But it was our hometown. Now nobody can live there" (Ozeki, *Tale* 248). The declaration "But it was our hometown" captures the trauma of being uprooted. Kimi goes on, "Our friends, family, everybody had to evacuate. Walk out of their homes. Leave everything behind. Not even time to wash the dishes" (248). What Kimi captures is the displacement, the haste, the life being drastically changed. The broken English grammar used by Kimi reflects her roots in Japan, a home to which she cannot return.

The consequences of the disaster are wide-ranging: beyond the displacement and disruption suffered by local residents, Ozeki makes it clear that the effects of radiation contamination can never be contained within national borders. One method employed by Tokyo Electric Power Company (TEPCO) to cool the reactors is to pump seawater into the reactor vessels. This method creates hundreds of tons of highly radioactive water each day, which should be contained and kept from leaking. However, an "Update Log of April 3" indicates "a crack, discovered in the side wall of a containment pit bellow Reactor #2" (Ozeki, *Tale* 210), which leaks radioactive water directly to the Pacific Ocean. This mysterious crack evokes the image of an active force, suggesting that the contaminated water resists being contained and breaches its confines. The leaking of contaminated water reveals the ultimate uncontrollability of nuclear substances, as cautioned by Hurley: "nuclear materials, unbounded and unbindable, constantly escape the infrastructures that seek to contain them" (205).

Ozeki highlights how human disregard for the environment worsens the situation: "On April 4, the Update Log reported that Tepco received permission from the Japanese government to release I1,500 tons of contaminated water into the Pacific Ocean. That much water is roughly equivalent to the contents of five Olympic swimming pools" (*Tale* 210). This is another blatant act of treating the sea as humans' waste disposal facility. Regarding the aftermath of this irresponsible handling of highly radioactive water, TEPCO severely downplays the harm of radiation, claiming,

> a member of the public, eating seaweed and seafood harvested from nearby the nuclear plant every day for a year, would receive an additional annual radiation dose of 0.6 millisieverts, well below the level that would be dangerous to human health. The company didn't estimate the consequences to the fish (210).

In this claim, TEPCO first limits the impacted geography to "nearby the nuclear plant," and the time scale to "a year," obfuscating the long-term consequences of radiation. Radiation contamination is a type of slow violence, defined by Rob Nixon as "a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all" (2). This means that radiation contamination is incremental, oftentimes taking its toll across a range of temporospatial scales. Second, TEPCO limits the impacted group to humans—"The company didn't estimate the consequences to the fish," concealing its violence on marine life. Its utter disregard for the well-being of nonhuman animals mirrors that of the veteran who used whales for target practice, making clear our entrenched human-centered perspective.

To counteract this downplay of harm, Ozeki provides a planetary reframing of the problem of radiation contamination, expanding the scale of radiation contamination to distant places and to other species. Despite being located thousands of miles from Japan, residents of Cortes Island are concerned about the possibility of being exposed to radiation originating from Japan. Chandini, a retired math teacher, wants Ruth to turn in Nao's freezer bag because it could be radioactive. The oyster farmer Blake is concerned about the impact on his livelihood: "It'll be a problem for the oysters" (Ozeki, *Tale* 155). Chandini adds, "Salmon, too. . . . All our food" (156). Another resident named Purity explains, "Cause it's in the air, too, and then it rains down and gets into the aquifer and like the whole, entire food chain, and then into our bodies and stuff" (156). Their conversation demonstrates a form of ecological awareness in which radiation is "enmeshed" with a staggeringly wide variety of other entities co-constructing each other: the ocean, air, the aquifer, sea life, the food chain, human beings. The quantifiers used by them such as "all" and "the whole, entire" emphasize the degree to which radiation is embedded in the circulation of the ecosystem. Describing this network of interrelated elements, Timothy Morton comes up with the metaphor of a "mesh," where "each point of the mesh is both the center and edge of a system of points, so there is no absolute center or edge" (29). In the mesh, there are no spatial boundaries or categorical distinctions; everything is interwoven with one another. Seen in this light, radiation contamination is "always 'here,' as well as 'there,' simultaneously local and global, personal and political, practical and philosophical" (Alaimo, *Bodily Natures* 15).

The character Purity also fears of getting "cancer" and "deformed babies" from radiation (Ozeki, *Tale* 156). These potential bodily diseases caused by radiation contamination evoke the trans-corporeal relationship between human bodies and the surrounding environment. "Trans-corporeality" is theorized by Stacy Alaimo as a "time-space where human corporeality, in all its material fleshiness, is inseparable from 'nature' or 'environment'" ("Trans-Corporeal Feminisms" 238). The prefix "trans-" emphasizes the interdependence of human bodies and the surrounding environment. Purity's fear of cancer demonstrates her awareness of how radioactive materials can spread across national and physical borders. The cancer mentioned here recalls another case of radiation-related cancer in Ozeki's first novel *My Year of Meats* (1998). Just as Nao and Ruth's lives in *A Tale* are influenced by World War II, the protagonist Jane Takagi-Little, a Japanese-American journalist filming a reality cooking show featuring American beef, is also impacted by this historical event. Her father, a former G.I., passes away prematurely from cancer, prompting her to reflect on the potential link between his illness and his military service in Hiroshima:

> Dad was a botanist with the army. They sent him to Japan as part of a team of scientists doing research in Hiroshima. They were kind of checking up on their handiwork—you know, looking at people and monstrose plant mutations—to see if we should drop

> an A-bomb on Korea. Dad died of cancer and I've always wondered whether there's some connection. (Ozeki, *My Year* 235)

The parallel portrayal of cancer resulting from nuclear plant fallout in *A Tale* and cancer caused by nuclear bombing in *My Year of Meats* highlights the destructive nature shared by nuclear energy and nuclear weapons, prompting a critical examination of the impact of nuclear technologies on society. Though *A Tale* and *My Year of Meats* do not detail the process of dying from cancer, Terry Tempest Williams's 1992 memoir *Refuge*, another book that makes clear the connections among cancer, radiation, and militarized violence, provides a first-person witness to the painful process. Williams's family live downwind from atomic tests conducted in the Nevada desert between 1951 and 1962. This exposure to radiation led to Williams's mother, grandmothers, and aunts each developing cancer, which ultimately caused their deaths after enduring significant suffering: "I watched beautiful women become bald as Cytoxan, cisplatin, and Adriamycin were injected into their veins. I held their foreheads as they vomited green-black bile, and I shot them with morphine when the pain became inhuman" (Williams 286). The heart-wrenching process described here makes visceral the brutal reality of radiation contamination and its devastating effects. The prevalent representations of radiation-caused cancer in literary works prompt us to attend to the reality that in the current nuclear age, we are inescapably brought into a trans-corporeal entanglement with nuclear materials.

My review of the military origin of nuclear energy adds other actors and vectors to the network of radiation imagined by Cortes islanders: World War II, US, Japan, nuclear weapons, Cold War geopolitics, moral concerns, propaganda, etc. Moreover, Ozeki's choice of Canada as the receiver of radiation invites entangling Canada in this network. But it is important to note Ozeki's textual clues that suggest Canada should not be positioned only as the victim of radiation contamination. In *A Tale*, outraged at the prevalent bully culture that leads to Nao's being bullied at school, Oliver leaves a memorable observation that places Canada under scrutiny: "Look at Guantánamo. . . . Look at Abu Ghraib. America's bad, but Canada's no better. People just going with the program, too scared to speak up" (Ozeki, *Tale* 130). As Beauregard argues, Oliver's characterization of Canada as "no better" than America entails that "a scrupulous engagement with Ozeki's novel must prise apart depictions of Canada as a presumed place of refuge" (107). Historically, it was Canada that supplied the Manhattan Project with the uranium needed to produce the nuclear bomb. In 1942, when the United Kingdom and the United States embarked on the joint venture to create an atomic bomb, Canada became a key player due to its readily accessible uranium resources and the only available facility on the continent for uranium refinement. At the request of the federal government, the uranium mine that had been closed in 1940 was reopened to supply material for the Manhattan Project. Recognizing the strategic importance of uranium in the wartime effort, the Canadian government took steps to both encourage and regulate its production (Hunter 329-30). After World War II, with the escalation of tensions and the competitive buildup of weapons between the United States and the Soviet Union, the United States increased its stockpile of nuclear weapons. During this period, Canada's role as a uranium supplier grew even more significant. The Canadian government not only continued its support but also expanded mining operations and increased the pace of uranium production to meet the rising American demand (331). Put into such context, radiation from Japan should not be seen as an alien invasion of a "safe" Canada; instead it is integral to Canada's nuclear complex built during World War II. The interconnected cycle of uranium described here parallels the concept of "karma" in Buddhism, where actions have consequences that reverberate through time: uranium was first mined in Canada and exported to the US during World War II for use in the construction of atomic bombs; atomic bombs were built, tested, and eventually dropped on Japan; Japan adopted nuclear energy under pressure from American military influence and propaganda; then the Fukushima Daiichi Nuclear Power Station melted down, leaking radiation back to Canada. Inserting Canada into this cycle makes clear Canada's involvement and responsibility within the military-nuclear industrial complex.

The image of toxicity traveling in a circle appears frequently in environmental novels. For example, in *Waste Tide,* the debut novel of Chinese sci-fi writer Chen Qiufan which centers on e-waste, Chen vividly depicts the enclosed circle plastics travel:

> It was said that the crushed plastic would then be melted down, cooled, formed into pellets to be sold to coastal factories, where they would be turned into cheap plastic products the bulk of which were exported to countries around the world so that everyone around the globe could benefit from the affordable "Made in China"

> merchandise; when those wares broke down or became stale, they turned into trash to be shipped back to China, and the cycle would begin again. (72)

These circles made visible by writers push readers to see the fundamental inseperability between exporters and importers: national boundary is nothing but an illusion in front of hyperobjects such as plastics or nuclear radiation.

Another environmental degradation on Canada's land in which the military plays a role is the Tar Sands. In the same discussion about bullying culture, Oliver links the Tar Sands to TEPCO: "Look at the Tar Sands. Just like Tepco. I fucking hate it" (Ozeki, *Tale* 130). This comparison is based on solid grounds. First, the military plays a significant, albeit often unseen, role in both the Tar Sands industry and nuclear energy. The tar sands refer to expansive oil fields and mines located in the Canadian province of Alberta. Amidst the "war on terror" involving the US and Canada, the tar sands industry in Alberta has emerged as a crucial source of abundant and secure energy resources for the Pentagon. Particularly during the period surrounding the American invasion of Iraq, when oil prices were escalating, the tar sands became a significant fuel source for the military (Huseman and Short 222-23). Consequently, military imperialism serves as the primary driver behind Canada's tar sands industry. *A Tale* alludes to this driving force through mentions of 9/11 and the subsequent US invasions of Afghanistan and Iraq, events that lead to Nao's father's second suicide attempt out of guilt for designing an interface that trivializes killing. Additionally, both the Tar Sands and TEPCO share a callous disregard for the environment. The tar sands industry largely encroaches upon the traditional lands of Native North Americans, displacing them and polluting the water, soil, and wildlife they rely on (223). The pursuit of war always comes at the expense of environmental health and the well-being of indigenous communities.

Centering on the debris as "storied matter," *A Tale for the Time Being* brings to light the under-recognized and under-examined ecological violence of wars which is intricately connected to other structures of injustice such as speciesism and racism. During the Pacific War, pilots stationed in the Aleutian Islands use whales as bombing targets, exemplifying an anthropocentric perspective that regards non-human animals merely as instruments for human purposes. Ozeki demonstrates that through a cross-species collaboration between Callie and the whales, people formally ignorant of their violence on animals can be made to care about animals. In addition, the Aleutian Islands are not only a place of dispossession, where Indigenous Aleut people are compelled to evacuate due to war, but also a location of environmental degradation from extensive militarization and bombing. Similarly, Okinawa, another Pacific island, bears the scars of militarized violence against its indigenous inhabitants and the ecosystem. The military origin of nuclear energy, coupled with the promotion and ultimate building of nuclear power in Japan, shows that the Fukushima Daiichi nuclear disaster should be seen as a direct consequence of the nuclear industry built during World War II. Through depictions of the propaganda on nuclear energy, the massive displacement of local people after the nuclear fallout, and the uncontainable, far-reaching consequences of radiation contamination, Ruth Ozeki critically examines the glamorization of nuclear energy, reveals the nuclear industry's negligent attitude towards the environment, and illustrates the destructive capabilities that nuclear energy and nuclear weapons have in common. Lastly, Ozeki's choice of Canada as the victim of radiation from Japan should not be seen as reinforcing the image of a "safe" Canada; instead it critiques Canada's role in global imperialism by shedding light on Canada's supply of uranium to the Manhattan Project and its continuous supply of oil to the US military.

While I am writing this paper, the Russo-Ukrainian War has been going on for half a year. The global bandwidth is flooded with images of bombed cities and ruined landscapes in Ukraine. Ozeki's novel thus becomes urgent and timely for its message on the environmental toll of wars.

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