

**ATOMIC FRONTIERS: HOW THE BOMB IS TRANSFORMING  
THE LITERATURES OF THE AMERICAN WEST**

by

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## **ABSTRACT**

The cultural interaction between nuclear technology and the American West was a two-way process. On one side, an elite brotherhood of scientists and engineers at Los Alamos incorporated the romance of the frontier into the nation's atomic origin story. On the other side, the mythical construct we call "the West" mutated and matured due to its entanglement with the nuclear cycle. Only recently has it become clear that the engineer left an indelible mark on the American West equal to or even greater than that left by the cowboy. However, the engineer and the cowboy were always twin figures in the western imagination, even if the engineer usually lurked in the cowboy's shadow. The links forged between these two symbols early in the twentieth century were deliberately co-opted into the national atomic story after the war. In response, a variety of western atomic discourses began to emerge that both resisted and interacted with national narratives. As nuclearism wrote itself into the West, the stories westerners tell about themselves and their history started to change. Although the focus of this research is on the atomic literatures and discourses of the West—including fiction, memoir, poetry, drama, and nature writing—this is a multidisciplinary project that incorporates an extensive amount of history as well as a bit of scientific theory in order to more fully explore how nuclearism contributed to the changing cultural constructions of wilderness and technology in the twentieth-century American West.

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## INTRODUCTION

In 1950, Henry Nash Smith published his now-classic analysis of western mythmaking, *Virgin Land*, in which he scolded western authors for their endless recycling of nineteenth-century cowboy clichés. From Leatherstocking to Deadwood Dick to Calamity Jane, the self-image of the American West seemed to have deteriorated into a caricature. Not only had western authors lost all literary credibility, Smith said, but their love affair with the outlaw hero who flouted society's rules and followed his own code could eventually have disastrous consequences on American politics.<sup>1</sup>

From our vantage point sixty years later, Smith's warning appears downright prophetic. During the following decades Americans did become increasingly captivated by the cult of frontier individualism, even as the nation became more and more entangled in global networks of capitalism, war, and environmental destruction. At the exact moment when the United States became a global super-power—a moment we can locate at the center of the twentieth century with the explosion of the first atomic bomb in the Sonoran Desert of New Mexico—our national story mutated into a particularly dangerous version of the frontier myth that invoked a western ethos of invasion and victimhood to justify violent retribution. The bomb “nationalized a sense of apocalyptic violence in the United States,” according to anthropologist Joseph Masco, so “anything can be done in the name of countering nuclear terror.”<sup>2</sup> What was once a local cultural phenomenon now has international impact as the U.S. asserts its economic and military dominance across

the planet. No longer just for entertainment purposes, the cultures and myths of the American West have become a global “generic system” in which a plethora of frontier ideologies are endlessly recycled without questioning.<sup>3</sup> Today, western scholars like Richard Slotkin, Patricia Nelson Limerick, and Valerie Kuletz are desperately trying to call the nation back from its self-imposed frontier captivity.<sup>4</sup> Other disciplines are joining the effort. In 2007, feminist Susan Faludi launched a sharp counter-offensive against the frontier myth in *The Terror Dream*, which explored the uncanny and disastrous return of the Wild West after 9/11, where heroic men once again had to save helpless (white) women from barbarian assault.<sup>5</sup> Perhaps the myth is destined to return again and again, like a zombie rising from the dead whenever we feel threatened. As Krista Comer noted in 1999, “America needs a new program of national self-definition more than it has since the American century began.”<sup>6</sup>

According to Richard Slotkin, however, the frontier myth has *always* been in the process of modification. Myth-ideological systems are forced to change, Slotkin says, when the material conditions surrounding them change and the explanatory powers of the system prove inadequate.<sup>7</sup> Thus we should assume the frontier myth is changing all around us, even if the outcome is not yet entirely visible.

My project expands on recent western scholarship by following the traces left by the atomic bomb on the western mythscape during the twentieth century, asserting as nuclearism gradually wove itself into the western landscapes, the mythical construct known as “the West” began to change. Although myth usually falls within the realm of literature, this is not strictly a work of literary criticism. The American West has a peculiar way of forcing literature and history together—a phenomenon that started in

1893 when Frederick Jackson Turner pronounced the physical frontier closed, ironically opening the *cultural* frontier to all sorts of speculation.<sup>8</sup> Historian Richard Etulain is particularly known for crossing borders between western literature and western history, which he combines into the single category of “storytelling” while still maintaining appropriate boundaries between fact and fiction.<sup>9</sup> My project tries to follow his example by setting history alongside literature, but I will add a third element to the mix: science. I would argue nearly any story of the twentieth-century American West must include science (as well as its shadow twin, technology) before we can really “know” the West. The intersection between the West and science is closest today in the discipline of environmental history, where scholars like Donald Worster and William Cronon are providing us with a more complete view of a region that has not ordinarily been viewed through the lens of science or technology.<sup>10</sup>

During the twentieth century—the “Atomic Century,” according to the Department of Energy—the American West played a profound role in what became a global nuclear science experiment, not just as one of many landscapes where the “treadmill of nuclear destruction” occurred, but also as a mindscape where nuclearism circulated in thought and discourse for the nation and the world.<sup>11</sup> Many scholars have discussed the influence of the American frontier on public perceptions of the atomic bomb. Peter Hales notes the “origin myth” of the atomic age was constructed in the West, and particularly at Los Alamos, where Manhattan Project residents re-enacted early American tropes about colonizers fleeing a corrupt and dangerous Europe in order to found a new utopian community in the wilderness.<sup>12</sup> Stanley Corkin has examined how western films and frontierism helped legitimize a Cold War discourse of containment that

justified America's reshaping of global politics.<sup>13</sup> John Beck notes Los Alamos became the site of "nuclearism's bildungsroman," leading to a West that is now "metaphorically and literally the arsenal, proving ground, and disposal site for American military-industrial power." Although the regional literatures of the American West might not undo the Cold War systems that continue to shape the globe, Beck believes they can at least provide a "counterhistory of U.S. hegemony."<sup>14</sup>

If the West changed the way we view the bomb, surely it must follow that the bomb changed the way we view the West. The atomic literatures examined here reflect the changing myths of the West by offering not just a "counterhistory" but also *countermyths* that challenge the most dangerous aspects of frontierism. The outcome of this nascent resistance is not yet clear. Such transitional moments in western myth-making have arisen before, only to be appropriated and incorporated by a more dominant culture.<sup>15</sup> The same thing could happen again—and perhaps is happening already—as the West's homegrown atomic discourses encounter larger forces.

Atomic literatures across the globe have certain commonalities. They tend to follow patterns of contradiction, tension, paradox, and irony. The greatest irony, according to John Whittier Treat, is that in the process of attacking all the signifiers of modernity, including progress, civilization, ethics, and even the cognitive self, atomic texts simultaneously undermine *themselves*. Ultimately, discourse itself is threatened by nuclearism.<sup>16</sup> Although the disconnect between language and reality has been a topic of philosophical thought for millennia, the twentieth century was the moment when humans discovered language failed altogether when trying to describe the horrors of Auschwitz and Hiroshima and Chernobyl and Rwanda.<sup>17</sup> Yet as Jacques Derrida suggests, the atomic

bomb thus far represents something of a success in the litany of twentieth-century horror stories, because the bomb functions almost entirely as discourse at this point, through treaty and negotiation and speculation. The moment the bomb escapes language and enters reality is the moment when language itself will vanish. Atomic discourse is one point of *différance* where we are finally forced to confront our past and our future lest we literally erase ourselves from existence.<sup>18</sup> Derrida's assertion has been met by a considerable amount of anxiety, as humans begin to wonder whether discourse represents an adequate response to the penultimate threat posed by nuclear technology.<sup>19</sup>

The American West constitutes just one node in a global web of atomic discourse, but a significant node nonetheless. The works discussed herein are texts about nuclearism written by and about the people and/or landscapes of the American West. To call these works "atomic westerns" would be misleading since it would connect them to a literary construct of the West that no longer exists. Rather these are regional literatures operating in a part-whole relationship, works created in a zone of cultural contact occurring both inside the zone as well as between zones.<sup>20</sup> Like traditional westerns, though, these are also *frontier literatures*, which Annette Kolodny defines as literatures about collisions between natives and newcomers, set against a physical terrain also undergoing change.<sup>21</sup> The reader should keep in mind "native" and "newcomer" might not appear in their traditional guises here, because nuclear technology injects a certain amount of disorder into social hierarchies as well as overturning primary identity constructs.

The atomic literatures of the American West take a variety of forms, but they generally exhibit a self-reflexivity that reverses the traditionally western dynamic of external threat. In these works, the bomb becomes a weapon targeting not just invading

enemies but also the domestic self. It's as if the gunslinger's pistol suddenly developed a mind of its own and pointed itself at its wielder's head. This represents a fundamental modification to the frontier myth, which has always attempted to maintain clear demarcations as well as uneasy compacts between victim and victimizer, native and immigrant, civilized and savage, weapon and target. The bomb is a third element that undoes those relationships. Furthermore, it is almost an *inherent* feature of atomic literatures to expose and undo our most closely guarded compacts, including the foundational compact between author and reader, just as the bomb itself has an inherent ability to expose and undo the mythical social compact between nation and citizen.<sup>22</sup> As we will see, the contradictions and ironies featured in atomic literatures often extend into the very architecture of these western texts, lurking at subconscious depths that cannot help but alter long-held myths, since myth functions best beyond the level of ordinary language and consciousness.<sup>23</sup>

Although this project focuses on the atomic literatures of the American West, I do not mean to suggest either the West or its literature consists solely of radioactive spaces and stories. Nor am I implying the American West was the only place on the planet where atomic technology has had a defining presence. However, the presence of nuclearism as a topic in western regionalist literatures has been increasing rather than decreasing. Nearly every text today that treats the American West as an ecological or postcolonial entity contains a nod to, or a direct comment on, the lingering presence of the atomic bomb on western landscapes and peoples. We might not yet be able to define western literature by asking "Has it got an atomic bomb in it?" in the same way Jerry

Mills famously defined southern literature by asking “Has it got a dead mule in it?” but we could be getting close to that point.<sup>24</sup>

Following the imperatives laid out by recent western scholars who have noted contemporary western regionalism is very much a nonwhite phenomenon, I will examine a broad array of texts comprising Anglo authors as well as Native Americans, Japanese Americans, Latinos, and Mormons (who are considered an ethnic, if not racial, other).<sup>25</sup> I will also include a wide range of genres extending far beyond fiction to include personal memoir, government rhetoric, religious discourse, science fiction, poetry, drama, mystery, and eco-literature. Along the way, I will define a few new subgenres such as the prewar “techno-western” and the western “atomic mystery.” In many cases, however, these literary works defy simple categorization. Terry Tempest Williams’ *Refuge*, for example, straddles multiple genres as a work of Mormon memoir feminist eco-lit.<sup>26</sup> Martin Cruz Smith’s *Stallion Gate* is a magical realist Native American eco-mystery as well as historical techno-fiction.<sup>27</sup> I clustered works together in ways allowing me to compare and contrast them, but the reader is reminded western literatures are neither as cohesive nor as discrete as they might appear here.

I have also deliberately selected authors who explore the full complexity of nuclearism in the American West. Too often when the stories of atomic testing or uranium mining or nuclear waste are told, two conflicting paradigms emerge: either pure victimhood is created from the ground up with little regard for complicity, or victimhood is dismissed from the top down with little regard for accountability. Downwinders tend to depict themselves as helpless victims of the military-industrial complex, forgetting they welcomed the economic benefits of that complex.<sup>28</sup> The nuclear industry tends to depict

Downwinders as ignorant and “hysterical,” forgetting the world’s best scientists have raised serious concerns over the risks of radioactivity.<sup>29</sup> In academic discourse, historians often depict mid-century westerners as poverty-stricken, unsophisticated, blind patriots who were especially vulnerable to the seductions of the military-industrial complex.<sup>30</sup> That narrative, of course, rests rather ironically on a foundation of western individualism, whereby everyone is responsible for their own misery and the system is never to blame, or as historian Richard White puts it, “It’s Your Misfortune and None of My Own.”<sup>31</sup> The literatures examined here tell a more complex story imagining the West as an always-already integral part of modern America, with inhabitants who are attempting to operate as agents of change within a social system. The best atomic literature recognizes a certain amount of complicity on the part of participants but searches for ways to escape the crushing hegemonies of the atomic system. Importantly, self-cognizance of atomic complicity operates against a number of tired western stereotypes like the Noble Savage, the Wilderness Ideal, and the Innocent Pioneer.

The twin issues of complicity and victimhood stand at the center of contemporary western studies. Patricia Nelson Limerick has noted westerners still view themselves as victims of external aggression without recognizing internal accountability. Blame is always attached to a variety of invading “others” and never to the (white) western self defending its borders.<sup>32</sup> Victimhood is simple and easy to embrace: it confirms the existence of an authentic self whose integrity has been damaged by hostile and foreign forces. But complicity is considerably more difficult because it implies a self who is continuously engaged in compromising its own integrity in order to survive. Gramsci’s examination of industrial-age hegemony is a study of complicity on the part of workers



who willingly embrace a system of power relations operating against their own best interests.<sup>33</sup> Postcolonial theory has also embraced a model of complicit self-transmutation through the discourse of hybridity, in which actors deliberately adopt and blend their native identities with those of the colonizer, without surrendering the possibility of simultaneous victimhood. In the context of the American West, the idea of “atomic complicity” invokes a similar dynamic of coexisting guilt and innocence that helps expose the contradictions of the frontier myth and warns westerners against their own transmutation and self-destruction.

The troubled relationship between atomic physics and the American West was firmly cemented by the time the Cold War started, but I begin my story much earlier, at the beginning of the twentieth century, when radioactivity was a new and exciting phenomenon promising a universe of possibilities. Readers will be surprised to learn the “First Lady” of western literature, Willa Cather, was seemingly well versed in the details of atomic physics when she embarked on her novelistic career in 1911. Chapter 1 presents a radical re-reading of Cather’s first novel, *Alexander’s Bridge*, as a story about the discovery of radium and the collapse of scientific tradition. Written during the era when atomic physics had already revolutionized science, *Alexander’s Bridge* represented a transitional moment between the old Newtonian universe and the new “Atomic Century” during which Cather’s beloved American West would be transformed into a network of nuclear and military landscapes. The uncertainties of atomic fission became a metaphor for Cather’s own identity questions, as she returned to her first novel ten years later and discussed her reasons for transitioning into a western writer. Just as the atom was shaped to fit the scientific status quo in the early part of the twentieth century, so too

did Cather have to shape herself to fit literary expectations. Her personal atomic identity process involved a complicit transmutation into something both old and new, a harbinger of how the American West would soon shape itself into an atomic cyborg that was, in the words of Ellen Meloy almost 100 years later, a “peculiar marriage between physics and desert.”

In Chapter 2, “Replicating the Engineer,” I explore the romantic figure of the engineer as he appeared in prewar serial newspaper literatures, through a short-lived subgenre I call the “techno-western.” These nationally syndicated stories, published in western newspapers during the 1920s and ‘30s, reflected a desire to be part of a thoroughly modern West where technology and wilderness could coexist. Close examination of the stories, as well as the real-world events upon which the stories were based, reveals newspaper syndicates deliberately provided their audiences with a certain vision of a technological West always more than, and better than, the East. Furthermore, in an era when reproduction and seriality played a foundational role in the print technologies of literature, these stories internalized an ethos of replication, so duplication, reiteration, forgery, and copying were the means by which western authenticity was willed into existence. With their focus on engineers, prewar techno-westerns tried to move the frontier myth into the modern era and away from cowboy nostalgia. Unfortunately, the wishful longing for a *perfectly engineered West* would operate against westerners after the war, when the new discipline of nuclear engineering seduced them with its economic and technological promises while covering them with radioactive fallout.

“Westernizing the Bomb” is the title of Chapter 3, which investigates the blending of frontier mythology and nuclear utopianism begun in Los Alamos during the Manhattan Project era, and continuing after the war in the newly atomic West. Continental bomb testing began at the Nevada Test Site in 1951. As early as 1953, concerns about radiation exposure were already being expressed by downwind residents throughout the West. In response, the Atomic Energy Commission drew upon the cultural legitimacy of the frontier myth to co-opt citizens into the testing project. In its public relations campaign, the AEC deliberately referenced the “Old West” in order to depict atomic testing as occurring harmlessly and seamlessly alongside traditional ranching and farming activities. Westerners themselves embraced this merger of narratives, which framed resistance as backward and anti-scientific. Much later, after classified documents began to be released in the early 1980s, various Downwinder groups began challenging government disclaimers in what one set of historians calls a “discursive rupture” to the prevailing official rhetoric.<sup>34</sup> Through oral history and personal memoir, Downwinders both resisted and explored their newly marginalized position in the modern nation-state, a position that suddenly seemed very similar to that of the Native Americans whom their own ancestors just a few generations earlier had brutally dispossessed and killed in the name of progress. What becomes very clear to these authors is atomic citizenship functions less like a social compact between nation and citizen and more like colonial dispossession and domination, or perhaps even *extermination*.

Chapter 4, “Mormon Fission,” examines the atomic literatures of one particular downwind group, the Utah Mormons, who at mid-century represented for the nation its newest opportunity to civilize the West. The atomic testing occurring in southern Nevada

during the 1950s seemed to reveal a White Native still living pure and whole at the heart of America—the primitive Mormon, a last remnant of the Old West. This Native must be assimilated and introduced to technology and modernity. Some Utahns were grateful to the Great American Father for providing jobs for them in the military-industrial complex, but others tried to bite the hand that fed them, bringing lawsuits against the government after it became clear the Nevada Test Site had spewed radioactivity across Utah farmlands and ranches, increasing the risk of childhood leukemia in southern Utah by seven-fold.<sup>35</sup> In their rush to self-assimilate, Mormon leaders tried to squash grassroots atomic resistance, which had the predictable side-effect of splitting the Mormon nuclear response in all sorts of directions: from accusation to denial, from conversion to apostasy, from economic greed to patriotic cheerleading. While the rest of the nation was imagining a primitive and integral Mormon community gently introduced to modernity by benevolent atomic scientists, the Mormons themselves—who were never as pre-modern as outsiders believed—were experiencing one of their fiercest internal debates ever. Because the church framed nuclear accommodation as an issue of faith, many Mormon Downwinders left the fold, some willingly and others not so much. The process of Mormon fission is depicted in its atomic literatures. Using metaphors of doubling and fracturing, a wide range of atomic doppelgaengers emerged so Mormons could take a good look at themselves in the harsh mirror of the Double. A shadowy antimyth had been lurking beneath the hive-mind of Mormonism all along. Unfortunately, the church refused to permit such self-examination, and most atomic resisters were officially and unofficially controlled, reprimanded, discredited, appropriated, or simply ignored.

In Chapter 5, “Atomic Mysteries,” I examine the idiosyncrasies of atomic mystery tales of the late twentieth century, which are significantly different from those written in the 1950s. In the early years, atomic mysteries followed a larger national narrative by which violent crime justified extreme retribution. By contrast, later atomic mysteries tend to employ characters who are at once detective/victim/villain. Sometimes what has to be proved in these novels is the very existence of a crime. These mysteries also refuse to answer all the readers’ questions, so the crime is never fully resolved, much as the original atomic “crime” can never be fully resolved. The genre of mystery seems to be an ideal vehicle through which to explore the identity crises that arise when citizens of varying sorts confront their problematic relationships with the nuclear state. Japanese Americans, for example, find it difficult to sort out political identities when they consider Hiroshima and Nagasaki alongside the internment camps. In the first installment of Naomi Hirahara’s *Mas Arai* mystery series, a gardener modeled after Hirahara’s father conducts an amateur murder investigation in the Los Angeles area. Hirahara’s protagonist is both an American citizen and a *hibakusha*, or bomb victim, having survived the atomic holocaust of Hiroshima and then returned to America afterward. There are several mysteries to resolve in this novel, reaching all the way back to Hiroshima. In the process, Hirahara explores many different incarnations of Japanese-American identity, victimhood, and complicity. Also discussed in this chapter is *Obasan*, a novel by Japanese-Canadian author Joy Kogawa, who was interned as a child during the war in a camp located in a frontier town in Canada. As an adult, Kogawa’s protagonist tries to learn the secret regarding her mother’s disappearance in Nagasaki during the war. But the quest takes on the aspects of an Inquisition, and she has to learn the difference between a

genuine search for understanding and a mere fixing of blame. The third text discussed here is Martin Cruz Smith's *Stallion Gate*, in which a Native American becomes thoroughly implicated in the mysteries of the Manhattan Project in World War II-era Los Alamos. Smith manages to keep his protagonist's guilt or innocence so well hidden the reader can never fully interpret this mystery.

Chapter 6, "Western Apocalypse," explores an important moment in western history, the day when the people of the American West woke up and found themselves intimately involved in the national project of nuclear warfare. At some point during the mid-twentieth century, westerners were unwittingly transformed from wilderness pioneers into weapons of mass destruction. That devastating moment of self-discovery is reflected in two very different texts from the early 1980s. The first is *Ender's Game*, a science fiction classic by Mormon novelist Orson Scott Card, who hails from Utah and wrote his award-winning novel during the exact era when Utah Mormons learned the atomic simulations they helped produce on the Nevada Test Site were spreading deadly amounts of radiation over their own families and across the nation. The second work is *Ceremony*, by Leslie Marmon Silko, a fictional account about the postwar recovery of a traumatized veteran from the Laguna Pueblo reservation in New Mexico, where uranium for Cold War bombs was mined. The protagonists of both novels suddenly discover their actions caused destruction from afar, making them unwitting weapons of mass destruction. Both protagonists have to deal with the guilt associated with that discovery. Both novels also impel readers to ask what constitutes complicity and how the complicit human destroyer can possibly earn redemption. In *Ceremony's* case, literary critics have sometimes re-inscribed the Myth of the Noble Savage onto the novel, such that Silko's

native protagonist must save white men from their own mistakes, thereby saving the entire world in the process. To avoid this impulse, my interpretation views Ender and Tayo as flawed and complicit heroes rather than as entirely innocent actors. Card constructs his story so readers can never fully access Ender's redemption process, but for *Ceremony*, a close reading reveals the mini-folktales appearing inside the larger narrative feature complicit, flawed agents and a self-awareness of personal accountability rather than pure victimhood. Ender and Tayo must first accept responsibility for their actions, even if those actions were unwitting, then they have to learn how to make amends as best they can, with the realization they can never fully erase the damage they caused. Ender, in particular, takes on the characteristics of a "fabulously textual" Derridean atomic bomb, functioning mainly through spoken and written discourse by the end of the novel. Tayo's discursive redemption takes a slightly different form, as he passively witnesses a "human sacrifice"—an event that highlights his own complicity.

In Chapter 7, the theme of "Atomic Cannibalism" subsumes three literary works which suggest systems of mass destruction must inevitably end in mass *self*-destruction. Carolyn See's *Golden Days* is an apocalyptic tale of excessive consumption in California before and after a nuclear holocaust. Her protagonist climbs the social ladder until she is at the very top, but soon the bombs fall, and her family is reduced to inhuman starvation and barbarism. Nevertheless, she adheres to California's New Age gospel of prosperity that "everything always works out more exquisitely than we ever planned!" Although critics have generally viewed the novel's ending in a positive light, I take a different approach by interpreting *Golden Days* as extreme satire belonging to the category of the grotesque. *Golden Days* implicates a whole slew of culprits in nuclear holocaust,

including discourse itself. The second novel considered in this chapter operates in a similar fashion. Tim O'Brien's *The Nuclear Age* is about a traumatized child of the 1950s who builds his own bomb shelters out of ping-pong tables, then grows into a traumatized draft-dodger of the 1960s, then into a traumatized father and husband during the Reagan era. The novel employs frontier mythology through the trope of "Custer's Last Stand," which William is forced to re-enact over and over in his lifetime. William ends up trapping himself and his family in an empty pit of myth, and while they eventually escape, their escape does not offer much hope. Although the protagonists in both these novels survive their own brand of nuclear holocaust, they end up knowingly surrendering to empty myths rather than resisting them, and so their victories are illusory at best. A more conclusive, but darker, escape from nuclearism is suggested in Rudolfo Anaya's *Bless Me, Ultima*, a seminal Chicano work not generally considered an atomic novel.

The final chapter, "Sea Monkeys and Cyborgs," considers two recent atomic eco-writers of the American West, Terry Tempest Williams and Ellen Meloy, as well as their iconoclastic precursor, Ed Abbey. Instead of a blank canvas where humans can finally enact their dreams of freedom, the Atomic West depicted by these eco-writers is a totalitarian system that threatens their bodies and their cognitive selves. These authors are juxtaposed against two postmodern theoretical constructs, namely system theory and posthumanism. System theory examines the dynamics of the parts vs. the whole, positing everything in the universe operates within collaborative relationships, as parts of adaptive, self-organizing systems that tend toward complexity. Posthumanism similarly posits modern humans are enmeshed inside technological systems created by themselves, making them cyborgs who are both subjects and objects of technology. In *Refuge*,



Williams compares her mother's death from breast cancer, which might have been caused by atomic testing, with the demise of a beloved bird refuge near the Great Salt Lake. As an individual participant in several hegemonic systems—the nation-state, the LDS church, the natural environment—Williams insists systems, whether human or natural, cannot survive unless the individual parts are protected and nurtured. When the parts are sacrificed, the whole might survive, but at tremendous cost. Similarly, in *Last Cheater's Waltz*, Meloy makes a pilgrimage to various atomic spaces in the American West and finds the West has been cyborgized into a strange and unnatural place, a postnatural West that turns its inhabitants into postnatural creatures. Ed Abbey's *Desert Solitaire* is perhaps the earliest literary exploration of the Atomic West, containing two drastically different river trips. In one trip, the traveler cannot escape his own incorporation into a totalitarian atomic eco-system, but in the other, Abbey moves in and out of the system to assert his own agency. System theorists and posthumanists alike insist their theories do not create totalitarian structures that suppress human agency, but these eco-writers might disagree. Escaping the atomic system is enormously difficult for all of them; the most they can hope for is a moment of cyborgian self-awareness that helps them accept the events overtaking them, or in Abbey's case, gives him a chance to offer a metaphorical middle finger.

When the people of the American West embraced the military-industrial complex, they would become complicit in their own atomic transmutation. Willa Cather was amazingly prescient when she began her novel-writing career at the start of the twentieth century with an exploration of the ways in which radioactivity collapses the foundations of authenticity and constructs complicit victims. A few decades later, westerners would

embrace the bomb in hopes of keeping their identities and their families intact, only to find themselves fundamentally altered and their landscapes transformed into military-industrial wastelands. Many westerners have dealt with that change exactly as the early atomic physicists did, by shoring up established theories and traditions, and trying to retro-fit new realities into old paradigms. But the writers examined here are constructing new paradigms for the West, ones that could influence westerners to move beyond old tropes of victimization and retribution, and into a more productive and self-aware future. Today the frontier myth remains important as one node in a vast rhizomatic web of discourse on its way to unknown destinations, or what Neil Campbell has called a “mobile genealogy of westness.”<sup>36</sup> In the Atomic West, as elsewhere, the ghostly absence of the frontier lingers in memory and in cultural production, quoting and re-quoting itself as an ever-present reminder of what has gone missing and what might arise in its place.

### Notes

1. Henry Nash Smith, *Virgin Land: The American West as Symbol and Myth* (Cambridge, Mass.: Harvard University Press, 1978 [1950]), 119-20, 259-60.
2. Joseph Masco, *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico* (Princeton, N.J.: Princeton Univ. Press, 2006), 334-35.
3. Neil Campbell, *The Rhizomatic West: Representing the American West in a Transnational, Global, Media Age* (Lincoln: Univ. of Nebraska Press, 2008), 152.
4. Richard Slotkin, *Gunfighter Nation: Myth of the Frontier in Twentieth-Century America* (Norman: University of Oklahoma Press, 1998 [1992]); Patricia Nelson Limerick, *The Legacy of Conquest: The Unbroken Past of the American West* (New York: W.W. Norton & Company, 1987); Valerie Kuletz, *The Tainted Desert: Environmental and Social Ruin in the American West* (New York: Routledge, 1998).
5. Susan Faludi, *The Terror Dream: Fear and Fantasy in Post-9/11 America* (New York: Metropolitan Books, 2007).

6. Krista Comer, *Landscapes of the New West: Gender and Geography in Contemporary Women's Writing* (Chapel Hill: Univ. of North Carolina Press, 1999), 7.
7. Slotkin, *Gunfighter Nation*, 110.
8. Frederick Jackson Turner, *The Frontier in American History* (New York: Dover Publications, 1996 [1920]). For a historiography on the uses of Turner's thesis over subsequent decades, see Michael P. Malone, "Beyond the Last Frontier: Toward a New Approach to Western American History," *Western Historical Quarterly* 20.4 (November 1989): 409-27; and William Cronon, "Revisiting the Vanishing Frontier: The Legacy of Frederick Jackson Turner," *Western Historical Quarterly* 18.2 (April 1987): 157-76.
9. Richard Etulain, "Western Stories for the Next Generation," *Western Historical Quarterly* 31.1 (Spring 2000): 4-23.
10. Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Oxford Univ. Press, 1992); William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton, 1991).
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12. Peter Hales, *Atomic Spaces: Living on the Manhattan Project* (Urbana, Ill.: Univ. of Illinois Press, 1997).
13. Stanley Corkin, *Cowboys as Cold Warriors: The Western and U.S. History* (Philadelphia, Pa.: Temple Univ. Press, 2004).
14. John Beck, *Dirty Wars: Landscape, Power, and Waste in Western American Literature* (Lincoln: Univ. of Nebraska Press, 2009), 1-17.
15. Slotkin, *Gunfighter Nation*; see also Slotkin's *The Fatal Environment: The Myth of the Frontier in the Age of Industrialization, 1800-1890* (Norman: Oklahoma Univ. Press, 1985) and *Regeneration through Violence: The Mythology of the American Frontier, 1600-1860* (Norman: Univ. of Oklahoma Press, 1973).
16. John Whittier Treat, *Writing Ground Zero: Japanese Literature and the Atomic Bomb* (Chicago: Univ. of Chicago Press, 1995), 69, 84.
17. For Theodor Adorno's famous proposition that it's barbaric to write poetry after Auschwitz, see "Cultural Criticism and Society," in Adorno, *Prisms*, trans. Samuel Wieber and Shierry Wieber. (Cambridge, Mass.: MIT Press, 1981 [1955]), 17-34.

18. Jacques Derrida, "No Apocalypse, Not Now (Full Speed Ahead, Seven Missiles, Seven Missives)," *Diacritics* 14 (Summer 1984): 23-31.
19. John Whittier Treat points out that Derrida very obviously overlooks the events in Hiroshima and Nagasaki in August 1945, not to mention the thousands of atomic "tests" that have occurred since then. As a result of Japan's unique nuclear heritage, Treat notes, its literary critics tend to view Hiroshima and Nagasaki not as events that assert the primacy of language, but rather as the opposite, something that casts doubt upon the integrity of the sign: "To think about 'atomic-bomb literature' is to be made acutely aware that 'literature' proceeds with the world not as its telos but as its fundamental condition" (Treat, *Writing Ground Zero*, 351-57).
20. Reed Way Dasenbrock, "Forms of Biculturalism in Southwestern Literature: The Work of Rudolfo Anaya and Leslie Marmon Silko," in *Leslie Marmon Silko's Ceremony: A Casebook*, ed. Allan Chavkin (New York: Oxford Univ. Press, 2002), 71-82.
21. Annette Kolodny, "Letting Go our Grand Obsessions: Notes Toward a new Literary History of the American Frontiers," *American Literature* 64.1 (March 1992): 1-18.
22. Paul Virilio and Sylvère Lotringer, *Pure War*, trans. Mark Polizzotti (New York: Columbia Univ., 1991 [1983]).
23. Claude Levi-Strauss, "The Structural Study of Myth," in *Structural Anthropology*, vol. 1 (New York: Basic Books, 1963 [1958]), 206-31.
24. Jerry Leath Mills, "Equine Gothic: The Dead Mule as a Generic Signifier in Southern Literature of the Twentieth Century," *The Southern Literary Journal* 29.1 (Fall 1996): 2-17.
25. Unfortunately I was unable to find any African-American atomic literatures about the American West. There are African-American westerns, and there are African-American atomic literatures, but as yet, the two categories have not met as fully as they have for other ethnic groups in the West. (See Blake Allmendinger, *Imagining the African American West* [Lincoln: Univ. of Nebraska Press, 2005]; Ken Cooper, "The Whiteness of the Bomb," in *Postmodern Apocalypse: Theory and Cultural Practice at the End*, ed. Richard Dellamora [Philadelphia: Univ. of Pennsylvania Press, 1995], 79-106; and Abby J. Kinchy, "African Americans in the Atomic Age: Postwar Perspectives on Race and the Bomb, 1945-1967," *Technology and Culture* 50 [April 2009]: 291-315). However, Allmendinger reads Ellison's *The Invisible Man* as "frontier" literature, and that novel was already well known for its obsession with apocalypse, perhaps even atomic apocalypse (R.W.B. Lewis, *Trials of the Word: Essays in American Literature and the Humanistic Tradition* [New Haven: Yale Univ. Press, 1965], 184-235).
26. Terry Tempest Williams, *Refuge: An Unnatural History of Family and Place* (New York: Vintage, 1992).

27. MartinCruz Smith, *Stallion Gate* (New York: Ballantine Books, 1986).
28. See the accounts gathered by Carole Gallagher, *American Ground Zero: The Secret Nuclear War* (Cambridge, Mass.: The MIT Press, 1993).
29. See, for example, Charles B. Meinhold et al., “A Brief History of Radiation,” *Los Alamos Science* 23.6 (1995): 116-23. Available online from the Federation of American Scientists, Project on Government Secrecy, at <http://www.fas.org/sgp/othergov/doe/lanl/00326631.pdf>; and Daniel Miles, *The Phantom Fallout-Induced Cancer Epidemic in Southwestern Utah: Downwinders Deluded and Waiting to Die* (Booksurge Publishing, 2009). Please note that the Miles book, although written by a physicist, was self-published and not subject to peer-review.
30. See Gerald D. Nash, *The American West Transformed: The Impact of the Second World War* (Lincoln: Univ. of Nebraska Press, 1990); Bruce Hevly and John Findlay, *The Atomic West* (Seattle: Univ. of Washington Press, 1998), 7-8; Barton C. Hacker, *Elements of Controversy: The Atomic Energy Commission and Radiation Safety in Nuclear Weapons Testing, 1947-1974* (Berkeley: University of California Press, 1994); Howard Ball, *Justice Downwind: America's Atomic Testing Program in the 1950s* (New York: Oxford University Press, 1986); Scot M. Matheson with Edward James Kee, *Out of Balance* (Salt Lake City: Peregrine Books, 1986); Philip L. Fradkin, *Fallout: An American Nuclear Tragedy* (Tucson: University of Arizona Press, 1989), 24.
31. Richard White, *'It's Your Misfortune and None of My Own': A New History of the American West* (Norman: Univ. of Oklahoma Press, 1993).
32. Limerick, *Legacy of Conquest*, 48.
33. Antonio Gramsci, *Prison Notebooks*, vols. 1-3, trans. Joseph A. Buttigieg (New York: Columbia Univ. Press, 2010 [1916-1935]).
34. William J. Kinsella and Jay Mullen, “Becoming Hanford Downwinders: Producing Community and Challenging Discursive Containment,” in *Nuclear Legacies: Communication, Controversy and the U.S. Nuclear Weapons Complex*, ed. Bryan C. Taylor et al. (Lanham, Md.: Lexington Books, 2007), 73-108.
35. Joseph L. Lyon et al., “Childhood Leukemias Associated with Fallout from Nuclear Testing,” *New England Journal of Medicine* 300 (February 22, 1979), 397-402. For Lyon's later congressional testimony on how he was forced by the National Health Institute to alter his numbers downward before being permitted to publish his research, see U.S. Congress, Senate Subcommittee on Appropriations, *Radioactive Fallout from Nuclear Testing at Nevada Test Site, 1950-1960*, 105<sup>th</sup> Congress, 1<sup>st</sup> Session, October 1, 1997.
36. Campbell, *The Rhizomatic West*, 8.

## CHAPTER 1

### ALEXANDER'S RADIOACTIVE BRIDGE: WILLA

### CATHER AND ATOMIC IDENTITY

### (RE)CONSTRUCTION

In Willa Cather's first novel, *Alexander's Bridge* (1912), the young engineer-protagonist is described by his former professor in striking terms, as "simply the most tremendous response to stimuli I have ever known."<sup>1</sup> While it is true Bartley Alexander falls under a woman's spell that threatens to derail his life, this description brings the reader up short. Seriously? A "tremendous response to stimuli"? Is Cather implying her engineer is like a Pavlovian dog? A frog hooked up to an electrical probe? A Venus fly trap that recoils when touched?

When interviewed by the *New York Evening Sun* later that year, Cather again described Bartley in terms sounding a bit strange to us today:

This is not the story of a bridge and how it was built, but of a man who built bridges. The bridge builder with whom this story is concerned began life a pagan, a crude force, with little respect for anything but youth and work and power. He married a woman of much more discriminating taste and much more clearly defined standards. He admires and believes in the social order of which she is really a part, though he has been only a participant. Just so long as his *ever kindling energy* exhibits itself only in his work everything goes well; but he runs the risk of encountering new emotional as well as new intellectual stimuli.<sup>2</sup>

Cather refers here to several distinct features of the modernist era: the new discipline of behavioral psychology ("emotional as well as...intellectual stimuli");

electricity (“power” and “energy”); social Darwinism (“social order”); aesthetic decadence (“pagan”); and, of course, civil engineering (“the bridge builder”). Most critics, though, have focused on Bartley as “*ever kindling energy*,” because Cather herself invites us to do so over and over in the novel. For example, Susan Rosowski describes Bartley by combining Cather’s historically situated language with the much later language of chaos theory: “Alexander is energy, a pagan force with the potential for either order or chaos.”<sup>3</sup>

However, when Cather calls Bartley “the most tremendous response to stimuli...ever known,” she is not making a vague metaphorical connection to energy in general; she is rather referencing a certain kind of energy that had exploded onto the international stage a few years before, namely *radium*. At the time when Cather wrote her first novel, radium was widely heralded as the most miraculous source of energy the world had ever seen. In 1903, British physicist Charles Vernon Boys was quoted in a *New York Times* article, where he characterized the discovery of radium as “transcending all others in their intrinsic importance and revolutionary possibilities.”<sup>4</sup> As nature’s own perpetual motion machine, radium and radioactivity promised to produce an unending supply of energy that was the answer to all the world’s problems. Furthermore, the massive amount of energy emitted by radium was assumed—in the early days—to be a response triggered by an unknown external stimulus, perhaps by cosmic rays.<sup>5</sup>

Radioactivity was first discovered by Henri Becquerel in 1896, who was trying to re-create Roentgen rays, or x-rays, using phosphorescent uranium instead of electricity. “Becquerel rays” or “uranic rays” did not cause much of a stir at first.<sup>6</sup> Within two years, however, Pierre and Marie Curie had isolated two new elements from uranium

pitchblende, polonium and radium, which displayed the properties of what they called “radio-activity.” (These elements, it turned out, were among many that generated themselves from the decaying uranium atom.) Radium proved particularly interesting: it was emitting enormous amounts of heat in proportion to its mass. On March 16, 1903, the Curies announced they had measured the equivalent of 100 calories per hour coming from a single gram of radium, with as yet no measurable loss over time.<sup>7</sup> The scientific community was astounded. These numbers were so high they were off the mathematical scale from anything previously encountered. The Curies’ results were soon confirmed by others. Radium appeared to be undergoing the most vigorous “*exothermic chemical reaction*” ever known.<sup>8</sup>

Radium was emitting so much heat one researcher estimated a sun made entirely of radium would give out a million times more heat than our sun currently does.<sup>9</sup> But where was it all coming from? One explanation proposed radium was “borrowing” energy from its surroundings.<sup>10</sup> Scientists had a difficult time accepting radioactivity could be an internal, subatomic process, because that seemed to contradict the well-established principle of the conservation of energy. Heat simply could not be produced out of nowhere. In fact, radioactivity created a veritable “energy crisis” in the early twentieth century by posing repeated challenges to both the first and second laws of thermodynamics.<sup>11</sup> Radioactivity also challenged basic theories of matter because it exhibited the same baffling particle-wave duality recently discovered in electricity. Together, the two phenomena—radioactivity and electricity—provided the first solid evidence the atom was not the smallest unit of matter, and suggested energy and matter might not be entirely different entities as scientific theory had long assumed they were.<sup>12</sup>



The final evidence would come slightly later, from Max Planck and Einstein, among others.<sup>13</sup>

One scientist writing for *The American Naturalist* in 1908 captured the early excitement over radioactivity:

It is probable that no scientific discovery, since the publication of Darwin's "Origin," has so revolutionized our conceptions of natural phenomena as has the discovery of radioactivity by Henri Becquerel, and of radium, by M. and Mme. Curie and Bemont. In the light of these epoch-making discoveries we have completely revised our concepts of the nature of matter and of electricity. The atom, the "undivided," has been shattered into fragments.<sup>14</sup>

As early as 1903 the popular press picked up on the story and began touting radium as the miracle energy of the day. Newspaper headlines rang with the news: Poverty could be eliminated! Space travel could finally take place! Perpetual motion machines might be possible! People around the world were captivated by radium. Radium was put into chocolates, candy, and alcoholic cocktails. There were glow-in-the-dark radium watches and radium clothing. *Harper's Weekly* printed a cartoon imagining humans endowed with super-powers due to radium. The 1904 St. Louis World's Fair ran twice-daily radium demonstrations. Radium lecturers toured the country, dragging small samples of radium with them. Doctors experimented with radium as a cure for all kinds of disease.<sup>15</sup> George Bernard Shaw noted in one of his plays in 1913 "the world has run raving mad on the subject of radium."<sup>16</sup> At a highly respectable research lab in Cambridge, England, one scientist actually claimed in 1905 he had managed to create life by injecting radium into a petri dish.<sup>17</sup> Radium became a pop-culture symbol for "life" and "health" during this era. Although its deadly effects were established early on, people could not be convinced radium was in fact dangerous.

When Willa Cather was writing *Alexander's Bridge* in 1911, radioactivity was still very much a revolutionary discovery that had caused what Marie Curie called a "profound astonishment" among both scientists and average citizens.<sup>18</sup> Writers like Cather were caught up in the scientific drama along with everyone else. Among several fictional works featuring radioactivity that appeared after 1898 was a sci-fi novel by H. G. Wells, *The World Set Free* (1914), which was the first literary text to imagine a world threatened by atomic bombs.<sup>19</sup> Wells got the idea from his friend, Frederick Soddy, one of the original radioactivity researchers. The novel would later inspire some of the Manhattan Project scientists, who invented the actual atomic bomb during World War II.<sup>20</sup> In 1909, Soddy had published a popular account of radium describing the multiple theoretical crises initially caused by radioactivity and how science had dealt with them.<sup>21</sup> In what would become a mantra of the twentieth century nuclear industry, he reassured the public radioactivity was an entirely "natural" form of energy. He neglected to mention the possibility of a super-weapon, and he also ignored the plethora of evidence that had already accumulated regarding radiation sicknesses and burns.<sup>22</sup>

By the time Soddy's highly popular book was in its third printing in 1911, Willa Cather had left her editing job at *McClure's* magazine to write her first novel, *Alexander's Bridge*, about a married engineer who has an affair with an actress, then dies when the bridge he designed collapses. On the surface, *AB* appears to be a rather simplistic Victorian morality tale based on an historical event, the 1907 collapse of the world's longest cantilever bridge while under construction in Quebec. Cather's story and style were so familiar H. L. Mencken accused her of imitating Edith Wharton, which he nevertheless insisted was "heartily praise"; *Alexander's Bridge* was a "very promising

piece of writing,” he added.<sup>23</sup> Yet Cather seems to have viewed the novel as a disaster that caused her to transform herself into something entirely different. She spent the next few years honing a sparse, modernist style of writing based in her experiences as a journalist but using the rural subject matter of her youth instead of the urban drawing rooms featured in her first novel. Along the way, she forced the eastern literati to expand their definition of “modernist” to include the vast reaches of the American West, a setting not previously acknowledged as modern. In 1913 the highly acclaimed *O Pioneers* appeared, followed shortly by *Song of the Lark* and *My Antonia*, then the Pulitzer-winning *One of Ours*. During the 1920s, Cather was at the top of her game, although her star would soon dim as a cynical literary urbanism reasserted itself during the 1930s.<sup>24</sup>

In 1922, due to Cather’s increasing popularity, a second edition of *Alexander’s Bridge* appeared, ten years after its initial publication. In the introduction to this edition, Cather implied her first novel had been a failure, which it was not.<sup>25</sup> She also gave self-deprecating instructions on how to read *AB* using what we might today call the *language of authenticity*. In particular, Cather claimed beginning writers will often disregard their “own material” and “deepest experience” in favor of “external stories” that “stimulate” them more than “the homely truths which have been about [them] from the cradle.”<sup>26</sup> *Alexander’s Bridge*, she asserted, was an imitation of her true self, while her subsequent works were the real thing, originals that somehow postdated the facsimile.

Over the years, critics have followed Cather’s lead, drawing on the 1922 introduction to support a widely accepted historical narrative in which Cather makes an abrupt move away from the urban Jamesian style of her first novel and toward more natural, native settings as well as toward more minimalist styles and forms.<sup>27</sup> This

account matches nicely with Cather's own story about her return to nativity, but it also ignores her later use of more sophisticated, urban themes in novels like *One of Ours* and *The Professor's House*. Few critics have questioned the story of self-revision Cather related in the 1922 introduction. We are still insisting *O Pioneers* was Cather's "authentic" novel, while *Alexander's Bridge* was a "monstrous organism."<sup>28</sup> Her "return to the soil" after the supposed failure of *Alexander's Bridge* was "a turn toward the writing of the self."<sup>29</sup> Since such statements inevitably provoke accusations of essentialism, some critics have adopted what might be considered a postcolonialist stance, arguing that Cather engaged in a strategic self-essentialization after *Alexander's Bridge*. By accepting the prevailing cultural imperative that female authors could only write about women and nature, Cather is said to have inserted herself into a male-dominated western narrative and then surreptitiously worked against the gender stereotypes that put her there in the first place.<sup>30</sup> In the short term, at least, this did prove to be a successful authorial strategy. Cather's new focus on her native West fortuitously coincided with the establishment of an American literary canon during the 1920s, to which Cather was added, then removed, and eventually added again.<sup>31</sup> If I might be permitted to simplify a bit, the story overwhelmingly told by literary critics goes like this: After the supposed fiasco of *Alexander's Bridge*, Cather returned to her native West and to her essential self, and that made her writing more authentically western and more authentically American.

Although Cather's personal western authenticity contributed to the construction of both America's literary authenticity and the authenticity of the American West, that same authenticity has been discovered dismantling itself inside Cather's texts. As Hermione

Lee has noted, the dualism and split selves and paradoxes recurring over and over in Cather's writing reveal an author who refused to be co-opted.<sup>32</sup> Nowhere was that refusal more evident than in "the thing not named," Cather's lesbianism, so it is not surprising questions regarding Cather's authenticity have thus far centered around gender and sexuality.<sup>33</sup> Curiously, Cather's identity as a western writer has only recently begun to be challenged.<sup>34</sup> We have generally assumed Cather based her western authorial persona on a fairly artless return to nativity, a stripping away of artifice rather than a layering thereof. After all, Cather herself claimed the process of writing *O Pioneers* involved no "arranging or inventing"; it was "spontaneous," like riding "through a familiar country on a horse that knew the way." Writing *Alexander's Bridge*, she said, was "like riding in a park, with someone not altogether congenial, to whom you had to be talking all the time."<sup>35</sup>

Cather's insistence on multiple occasions that her first novel was not an accurate representation of her real self should be seen for what it was: a literary strategy. Nathaniel Lewis has documented what he calls "the production of the real" among western writers, who, in order to survive in a predominately eastern literary world, deliberately based their work on realistic depictions of the West rather than on literary simulation and representation. But it was all a masquerade, Lewis says, a construction every bit as simulated as other literatures.<sup>36</sup> Thus, when Cather tells us she deliberately adopted a strategy of nativity after *Alexander's Bridge*, we ought to recognize her supposed western authenticity was perhaps not so authentic. Furthermore, I think she was fully aware of her own inauthenticity. As we will see, the 1922 introduction—while appearing on the surface to establish the validity of authenticity as a concept—actually helped highlight

the necessarily simulated nature of authenticity, not only through Cather's over-determined assertions but also through her more subtle choices of language and metaphor.

Several critics have recognized that *Alexander's Bridge* most obviously challenged at least one narrative of authenticity, namely the masculine "cult of engineering" which captivated the nation during the first two decades of the twentieth century.<sup>37</sup> Cecilia Tichi and Elizabeth Ammons have commented on Cather's supposed attack on the machine age in *Alexander's Bridge*. Whether one follows Tichi, who claims Cather "felt threatened" by engineers, or Ammons, who says even more strongly Cather was "horrified" by the cyborg who was Bartley Alexander, this is certainly a plausible interpretation of the novel.<sup>38</sup> *Alexander's Bridge* does indeed appear to have paved the way for Cather to construct older, simpler, and more authentic narratives of western landscapes and peoples.

However, under its surface *AB* harbored a second, deeper layer of narrative that not only questioned the premises of machine culture, but also the premises of something far more basic, namely theoretical science. The hidden narrative might ultimately change how we read both Cather and this novel. It is my contention there were two "true" stories at work in *Alexander's Bridge*: 1) the external story about the 1907 bridge collapse, and 2) an underlying, internal story about the discovery of radioactivity. The relationship between the actual bridge disaster and Cather's text are well known.<sup>39</sup> In this chapter, I will focus on establishing the novel's connection to radioactivity and suggest a possible role the internal story might have played in Cather's personal construction of a western identity.

For those readers who remain skeptical that Cather's first novel had anything to do with the atomic age (and I presume many readers are on the verge of locking me up in the literary attic), let me preemptively note Cather was exposed to the science of radioactivity from very early on. In 1903, while she was at *McClure's*, the magazine published a lengthy, feature article on radioactivity.<sup>40</sup> However, that piece did not begin to cover the specific issues Cather inserted into *Alexander's Bridge*. Based on the evidence I have located in the novel itself, my guess is her source was the aforementioned work by Frederick Soddy, titled *The Interpretation of Radium*, which was first published in 1909 and had been excerpted in at least two *New York Times* articles before 1911, when Cather started writing her novel.<sup>41</sup> We know Cather had a deep and abiding interest in science since her childhood. Mary Ryder has demonstrated many of Cather's works were devoted to establishing an intimate relationship between theoretical science, art, and religion, with science as "the hope of our age."<sup>42</sup> Furthermore, it should not be too hard to believe Cather might have encoded a hidden narrative into her first novel; she lived, after all, in a time when symbolism and allusion were highly valued in literature. As Richard Millington notes, "American Victorian culture was a profoundly and characteristically *allegorical* culture, committed to grand narratives."<sup>43</sup> Jo Ann Middleton has discussed Cather's extensive use of codes in her literature, speculating Cather's purpose was to evoke an unconscious and intuitive response in readers without beating them over the head with a message.<sup>44</sup>

The exterior plot of *Alexander's Bridge* can be summarized quickly: Bartley Alexander is an American engineer (originally from the West) who designed a cantilever bridge in Canada that is under construction. His wife, Winifred, is also from Canada. The

couple lives in apparent domestic bliss in Boston, but one day, while on a business trip to London, Bartley re-connects with an old girlfriend, Hilda Burgoyne, whom he knew as a young man while studying engineering in Paris. Hilda is a popular actress with many admirers, although she is starting to get a bit “seedy.” She also has a French maid named Marie, who “worships” Bartley and blushes like a lover before ushering him into Hilda’s presence. Bartley soon finds himself traveling back and forth between his Boston wife and his London mistress. He tries unsuccessfully to break off the affair many times, but continues to vacillate between the two women. When his bridge finally collapses at the end of the book, killing Bartley along with sixty-eight workers, one question remains unanswered: Did he choose the wife or the actress?

The story references at many levels both the process of radioactivity—by which the atom disintegrates through divisions of itself—and the process by which scientific truth is re-constructed following the catastrophic collapse of older narratives. The fact that Bartley has two women in his life, one from Canada and the other from France, is highly significant. These were the exact two locations where the most important research on radioactivity occurred at the turn of the century. For about ten years, between 1898 and 1908, the scientific community was divided between two competing and plausible explanations for radioactivity. The first explanation came out of France, from the Curies, suggesting the radioactive process was triggered by an *external stimulus* acting upon the atom. The second explanation came out of Canada (from a set of British researchers) and asserted radioactivity was an *internal process*, by which the uranium atom transformed itself into new forms of matter and energy rather than being transformed by outside forces. The Canadian explanation eventually prevailed over the French one.<sup>45</sup>



The Curie story is well known. In 1903, Marie and Pierre Curie were already international celebrities when they were awarded the Nobel Prize for physics along with Henri Becquerel. At the beginning of their collaboration, in 1896, Pierre built a special machine called a piezo-electrometer used to measure the energy emitted by the so-called Becquerel rays. Marie busied herself separating out the specific elements in pitchblende that were emitting the rays. A flurry of research and publications ensued, vaulting the Curies to the top of a new field. For a period of about ten years, the question of whence radioactive elements derived their energy remained the subject of much theoretical debate, with Marie initially speculating the energy might come from an as yet unknown outside source, perhaps cosmic rays.<sup>46</sup> Just one year later, though, she suggested “radiation [might be] an emission of matter” from inside the atom itself.<sup>47</sup> This idea corresponded nicely with new atomic theories recently proposed by electricity researchers like J. J. Thomson, but Pierre seems to have pulled Marie back from the internal model because it was so radical. Subsequent papers out of France reverted to the more cautious external-stimulus hypothesis.<sup>48</sup>

The Canadian story is less familiar to us, but it was heavily publicized at the turn of the century. In 1903, two British scientists working at McGill University in Montreal, Quebec, proposed what came to be known as the internal transmutation theory of radioactivity. During a brief collaboration starting in 1900, Ernest Rutherford and Frederick Soddy, spring-boarding off the Curies and building on Rutherford’s earlier research on electrons, asserted radioactivity was not triggered by external forces, but was rather an internal process originating from inside the atom. Radium, they claimed, was spontaneously created as the uranium atom disintegrated. Rutherford and Soddy were

keenly aware their theory of spontaneous transmutation would make them sound like medieval alchemists who tried to change base elements like lead into precious ones like gold and silver. They worried the cognitive association with the word “transmutation” would prevent other scientists from accepting their findings—and they were right. The theory divided the scientific community. The debate over the source of atomic energy raged for several years, with some holdouts continuing to argue for an external source even into the 1920s. By 1909, though, most scientists had signed on to the Rutherford/Soddy transmutation theory.<sup>49</sup>

Cather wrote the radioactivity debate into *Alexander's Bridge*. Most obviously, she depicts Bartley hovering indecisively between two women, one originally from France and the other originally from Canada, just as the scientists hovered between the two theories. She also uses the language of the early radioactivity researchers throughout her text, not just when Bartley's former professor calls him “simply the most tremendous response to stimuli I have ever known,” but also in countless other places. As just one example, Bartley at a certain point starts to feel a little worn out, but then “in a flash he was free of it and leaped into an overwhelming consciousness of himself.”<sup>50</sup> This is the precise terminology that infused early accounts of radioactivity, as electricity helped make cathode rays and Becquerel rays briefly visible inside the scientists' instruments. In fact, a flashing and leaping of light became the most logical way to describe radioactivity in popular culture. Here is a 1904 description of the Crooke's tube, or spintharoscope, a simple electrometer containing small amounts of radium used by Rutherford in his work on electrons: “The instrument is taken into a darkened room, and the screen viewed through the lens, the appearance is that of a number of shooting stars which are

continually flashing forth, only to die away again. ... The flashes are most numerous in the middle of the screen, directly underneath the fragment of radium. Each flash is believed due to the impact of a single alpha ray.”<sup>51</sup> In 1909, Frederick Soddy would use this same language when describing the spintharoscope in his book, *The Interpretation of Radium*.<sup>52</sup> The spintharoscope was so popular by 1904 that it was purchased by the upper classes for use as “after dinner” entertainment and as a toy for children.<sup>53</sup> H. G. Wells wrote a spintharoscope into his sci-fi atomic story, *The World Set Free*, equating it with the sight of fireflies flashing in the night.<sup>54</sup>

Whatever radioactivity was, one thing seemed clear to the scientists: it changed quickly, disappearing in one spot and reappearing in another, making its exact nature difficult to pin down. The transitory nature of radioactive energy is reflected again and again in *Alexander’s Bridge*, which describes Bartley as “a natural force, certainly, but beyond that ... he was not anything very really, or for very long at a time.”<sup>55</sup> There was “no past, no future for Bartley; just the fiery moment. The only moment that ever was or will be in the world!”<sup>56</sup> Bartley’s inherent nature as a scientific phenomenon is emphasized by his former professor, who says, “It was as a powerfully equipped nature that I found [Bartley] interesting. ... *It has the fascination of a scientific discovery.*”<sup>57</sup>

While Cather’s narrative often describes Bartley in terms of machinery, that metaphor is dismissed by Bartley himself as too superficial:

He remembered how, when he was a little boy and his father called him in the morning, he used to *leap from his bed* into the full consciousness of himself. That consciousness was Life itself. Whatever took its place, action, reflection, the power of concentrated thought, *were only functions of a mechanism useful to society*; things that could be bought in the market. There was only one thing that had an absolute value for each individual, and it was just that original impulse, that *internal heat*, that feeling of one’s self in one’s own breast.<sup>58</sup>

Thus Bartley sees himself not as a mere machine “bought in the market,” but rather as something radiating an internal heat that is “Life itself.” This passage has been misinterpreted by those who view Bartley as a symbol of the machine age.<sup>59</sup> Clearly, the text rejects Bartley as technology and associates him instead with the far broader and more basic concept of theoretical science. The distinction, however, would not have been clear to the general public at the time, who tended to equate science with inventions and gadgets.

Bartley exhibits at least one additional property of radioactivity: his tremendous energy can be transferred to people around him, because as his former professor notes, “His old pupil always *stimulated* him at first, and then vastly wearied him.”<sup>60</sup> The phenomenon of secondary radioactivity was well known from the earliest days, and was in fact one of the most distinctive characteristics of uranium. The process was originally known as “excited radioactivity,” in which inert, nonradioactive materials became excited or “stimulated” by an external radioactive source.<sup>61</sup> (Today we would call this process “contamination” and we would not be quite so enthusiastic about it.) Thus there came to be two forms of radioactive energy: a primary one involved in a constant process of dismantling itself, but which had the power to create a secondary but equally transitory kind of energy, such as that transferred to Bartley’s former professor in *Alexander’s Bridge*.

Although they didn’t know it at first, early scientists had discovered yet another form of secondary radioactivity, namely the process by which offspring elements like radium spontaneously generated out of uranium. Radium, in fact, had an even stronger energy signature than its source element, leaving the scientists scrambling for

explanations. They used metaphors and analogies to describe this curious phenomenon for the public. Because radium originated from uranium, atoms were now said to have *parents* and *children*; they lived and survived and evolved across generations, exactly like biological specimens. Radium took on a life of its own in both scientific and popular literature, as it was increasingly associated with biology and evolution. It was called a powerful, even “monstrous,” offspring of uranium.<sup>62</sup> This is exactly the picture Cather paints in *Alexander’s Bridge*, where Bartley is depicted as having a second, shadowy self that threatens to subsume him, an offshoot apparently stronger than the original. He struggles with this idea: “I feel as if a second man had been grafted into me ... and he is fighting for his life at the cost of mine. That is his one activity: to grow strong. No creature ever wanted so much to live. Eventually, I suppose he will absorb me altogether.”<sup>63</sup>

Here was the atomic drama of the early twentieth century playing out inside Bartley’s head. Matter was supposed to be reducible to a series of basic, unchanging elements on the Periodic Table, but when researchers discovered that radium and polonium (not to mention more blasé elements like helium and lead) were generating themselves out of uranium, the legitimacy of the Periodic Table was questioned.<sup>64</sup> Similarly, when radium was found to be even more radioactive than its parent element, physicists began to doubt the universal validity of the law of conservation of energy, which stated energy is neither produced nor destroyed, but only converted from one state to another.<sup>65</sup> How could an offshoot be stronger than its parent element, without some sort of external input? And if uranium was constantly morphing into other, more powerful elements, how was it possible any uranium still existed on the planet? (The

answer to that question eventually involved a radical lengthening of the timeframes for subatomic processes and for the age of the earth.) Atomic transmutation was creating new entities even stronger than the original, but the first entity, uranium, was self-destructing in that process. One set of Russian researchers in 1903 actually called the process of radioactive decay “*incurable suicidal monomania*.”<sup>66</sup> They could have been describing Bartley Alexander.

Radioactivity thus simultaneously heralded the death of an original atomic self and promised immortality through transmutation. This contradictory impulse becomes an important feature of *Alexander's Bridge*, where Hilda operates as a sort of fountain of youth for Bartley. Bartley's desire for Hilda merges with a desire for his own immortality, so he can't be sure which of his two needs is stronger. In one scene, he takes a long, solitary walk while thinking about Hilda, but then finds he is walking “shoulder to shoulder with a shadowy companion... his own young self.”<sup>67</sup> Not only does Hilda help Bartley recover his youth, but when they are together, Bartley and Hilda are both sure they can never die.<sup>68</sup> In the minds of the public during this era, radium was associated with immortality. Radium was called a “fountain of youth”; it was added to toothpastes and hair tonics in a futile and dangerous attempt to repair teeth and grow hair back. Across the world, people lined up to bathe in radium-laced mineral waters to cure their diseases or simply for general health improvement. Men with fertility problems were urged to wear a bag of radium near their scrotum, with what one imagines must have been disastrous results.<sup>69</sup> One newspaper account even mentioned the (wildly exaggerated) possibility that radium might turn back “the hands of time.”<sup>70</sup>

By the time Cather wrote *Alexander's Bridge* in 1911, the scientific community had started to realize radium was dangerous.<sup>71</sup> When Pierre Curie was killed in a pedestrian-carriage accident in 1906, the *New York Times* reported both he and his wife were "ill from the effects of radium."<sup>72</sup> In *AB*, we are told Bartley will soon learn an important lesson: "for him this youth was the most dangerous of companions."<sup>73</sup> Scientists had already learned this lesson in a dramatic way. In 1901, Henri Becquerel unthinkingly carried a tube of radioactive barium around in his coat pocket for about six hours. Upon removing his coat and shirt, he found a burn on his skin in the exact oblong shape of the glass tube. After Pierre Curie deliberately reproduced the experiment on himself, he and Becquerel published a paper widely read even by popular audiences. Other researchers then conducted similar experiments with similar results.<sup>74</sup> Cather inserts the coat incident into *Alexander's Bridge*: On one of his ocean voyages, Bartley inexplicably has to tear his cloak off his body "as if something warm were actually clinging to him beneath it."<sup>75</sup> She also refers to the incident more obliquely at the end of the novel, when Winifred finds a letter hidden inside Bartley's jacket pocket at his time of death. Although the letter is no longer legible, it inexplicably carries the message that Bartley's mind "may for a long time have been sick within itself and bent upon its own destruction."<sup>76</sup> Like the uranium atom, Bartley seems to have been headed toward "suicidal monomania" all along.

The other characters in the novel also have identity issues. Bartley's wife, for example, is described from the beginning as if she exists in a haze: Professor Wilson watches a veiled woman enter Bartley's home and wonders, "Can that possibly have been Mrs. Alexander?"<sup>77</sup> We might well ask ourselves why it would *not* have been her

entering her own home; that question, however, is never answered. A few pages later we meet Bartley's pretentious and fake British friend, Maurice Mainhall, who "had preconceived ideas about everything, and his idea about Americans was they should be engineers or mechanics. He hated them when they presumed to be anything else."<sup>78</sup> Cather here casts suspicion on the identities of both Maurice and Bartley, as well as all Americans who presume to be anything other than technophiles (which might implicate Cather herself). We should also take especial note of Hilda, the consummate actress who is involved in her own strategies of authenticity, and whose comedic performance as a donkey girl is judged by an audience member as "a bit conscious tonight, for the first time. ...[W]e thought she seemed quite uncertain of herself. A little attack of nerves, perhaps."<sup>79</sup> Readers ought to wonder why Hilda the donkey girl, performing in an imitation of Shakespeare's *Midsummer Night's Dream*—which of course is a monumental treatise on inauthenticity—might be expected to give a natural and unconscious performance, as if she were engaged in "authentic" drama. The only truly whole character is Bartley's former professor, and even he loses his relevance by the end of the book.

Most importantly, though, Cather questions the integrity of scientific theory in this novel. The Rutherford/Soddy transmutation theory had seriously threatened some of the core principles of science.<sup>80</sup> When radioactivity became associated with transmutation and alchemy, a considerable amount of anxiety ensued among scientists, and that anxiety is reflected in Cather's text. Western alchemy had its roots in ancient Greece and Egypt, and Cather implicates both cultures via the Egyptian mummies at the British Museum and through Bartley's nominal association with Alexander the Great and Homer's *Iliad*.<sup>81</sup>



Alchemy becomes a metaphor for the questionable and illegitimate relationship between Bartley and Hilda. At one point, Bartley tells Hilda in a letter that two people like themselves can never be fully “welded” together because “the base one goes on being base, and the noble one noble, to the end.”<sup>82</sup> Here Cather combines the language of the engineer (“welded”) with the language of the medieval alchemists, who thought they could transform “base” elements like lead into “noble” ones like gold. That idea, of course, had long since been discredited, but at the time of Cather’s writing, scientists around the world were actually starting to reconsider the process of alchemy as integral to radioactivity.

If Cather hadn’t already read about alchemic radioactivity by the time she wrote the novel, she surely learned about it in a 1911 *New York Times* article titled “Alchemy, Long Scoffed at, Turns out to be True,” which summarized the most astounding parts of Frederick Soddy’s book, *The Interpretation of Radium*:

Uranium changes into radium... [and] radium under different circumstances turns into different things. If this is not [alchemic] transmutation, what is? Science is on the verge of an epoch-making discovery that may utterly revolutionize not only our ideas of chemistry, but perhaps of astronomy and geology, too, and, what is more important, may put in the hand of man the power to harness nature as was never dreamed of before, and change civilization to a fairy tale.<sup>83</sup>

As this article explained to the public, radioactivity involved elements of one kind mutating into different elements, producing a treasure in the form of fantastic amounts of energy—alchemy, in other words. Thus radioactivity wasn’t just an important scientific discovery; it also overturned the very foundations of modern scientific theory, which had long since abandoned alchemy. If elements refused to remain in their proper categories on the Periodic Table, what did that mean for the discipline of chemistry? If the atom was

no longer whole, but was spontaneously ejecting particles from its center, what would happen to established theories about matter? If energy could be produced from nowhere, were the laws of thermodynamics invalid? Suddenly science appeared to have been built on shaky ground, with many of its core principles threatened by disintegration just as the atom itself seemed to be.

Cather's most important symbol of disintegrating integrity is, of course, Alexander's cantilever bridge, which ultimately sheds its human particles in a cataclysmic collapse resembling both the internal decay of the uranium atom and the imminent collapse of scientific theory. In the story, a brief moment of panic ensues, followed by an attempt to deny the extent of the problem, then a sudden and spontaneous disintegration. Just before the bridge's collapse, Bartley inspects the structure, noting if he were to discover the foundational supports showing strain, "there was nothing to do but pull the whole structure down and begin over again." But not seeing any visible sign of weakness, he changes his mind: "It was hard to believe... that the whole great span was incurably disabled, was already as good as condemned, [simply] because something was out of line in the lower chord of the cantilever arm." Confident of its stability, Bartley walks onto the bridge just as it collapses, not from external forces but from *internal* ones: "the bridge had no impetus except from its own weight."<sup>84</sup>

Cather describes here the very process in which scientists had recently engaged: first, a certain panic that radioactivity might cause the foundations of science to collapse, followed by a retrenchment and an attempt to salvage the structural supports of established theory. That effort was described by Frederick Soddy in *The Interpretation of Radium*, where he hints at the theoretical chaos created by the discovery of radioactivity:

It would be idle to deny with regard to this [i.e., the apparently inexhaustible supplies of energy emanating from radium] that physical science was taken completely by surprise. Had anyone twelve years ago ventured to predict radium he would have been told simply that such a thing was not only wildly improbable, but opposed to all the established principles of matter and energy. So drastic an innovation was, it is true, unanticipated. Radium, however, is an undisputed fact today, and there is no question which would have triumphed in the conflict, had its existence conflicted with the established principles of science.<sup>85</sup>

After admitting the dangers radioactivity initially posed to the foundations of science, Soddy then reassures the public the foundation remains intact:

Some of the new facts we shall discuss in the lectures appeared at first, and may even yet appear to you, almost incredible, but that is only on account of the newness of the whole region to which they belong. ...Physics and chemistry remain almost unchanged where they were, and radioactivity, so far as it is concerned with the correctness of their principles has, as a matter of fact, given to the old laws and theories a fuller and truer significance than they had before. The extension of the old theories which has been rendered necessary has not been revolutionary in any destructive sense.<sup>86</sup>

Here we see scientific retrenchment warding off theoretical crisis. Specifically, the laws of thermodynamics were shored up in Soddy's account: "We have applied the teachings of the laboratory, our knowledge of the laws of energy and its conservation, and the impossibility of perpetual motion, without modification to the cosmos, only making allowance for its enormous scale."<sup>87</sup> Soddy further maintained the laws of matter were still relevant, even if the atom had been discovered changing into other elements. This was not a significant problem, he argued: astonishing though it might sound to his audience, radioactive transmutation lay entirely within the realm of established science; it was a normal process that occurs "imperturbably all around us."<sup>88</sup> Although radioactivity proved atoms are composed of much smaller particles, no substantive changes to theory were necessary: "it is best in the end to retain the old words 'atom' and 'element' in the

sense they have had since the time of Dalton rather than attempt to meddle with this traditional, and to scientific men, well-understood nomenclature. The atom of the chemist remains exactly what it was.”<sup>89</sup>

Soddy likewise defends the existing Periodic Table, noting the newly discovered elements derived from uranium would fit into the table by making a slight change in the way the elements were measured and categorized.<sup>90</sup> For those who wondered how science could have missed something so important for so many years, well, it was simply because these vast stores of energy had been hiding inert inside the atom all along: “So far from there being anything opposed to reason or probability in the view that the atom of the element contains a great and hitherto unknown store of energy, we see that if it possessed such a store we could not know of it until it changed, while the greater the store the more would it resist change from without, and therefore the less likely we should be to expect its existence.”<sup>91</sup> Soddy almost implies uranium atoms had never changed until the very moment when scientists noticed them changing, which of course was a strange thing to say, but such statements would become less strange when quantum theory began suggesting the very process of observation alters that which is being observed.<sup>92</sup>

From the standpoint of a literary critic, Soddy’s account provides insight into the construction of scientific consensus, which might be considered a form of collective disciplinary authentication.<sup>93</sup> I do not dispute here the factual nature of either Soddy’s account or scientific theory; rather, I wish to emphasize the way Soddy makes his claims. First, he describes the threat to theory initially posed by radioactivity, then he recounts how scientists were able to explain the data with only slight alterations to established

theory rather than creating drastically new theory. This was not the *only* way to deal with radioactivity. There were, of course, other ways. The chemists could have constructed an additional, separate Periodic Table for the radioactive elements, for example. What Soddy describes here, however, is a process of deliberately retrofitting new data into old paradigms. There would be plenty of occasions during subsequent decades when quantum physicists would work hard to fit new data to older theories, creating increasingly complex explanations for observed phenomena when a more radical alteration might have simplified things considerably. The aesthetically elegant “solar system model” of the atom (still used today at the grade-school level) was first proposed by Niels Bohr in 1913, but was soon replaced with a variety of alternative models by the end of the 1920s, none of which adequately explained or predicted the behavior of subatomic particles. One of the problems was scientists were still trying to align micro-level subatomic behavior with previously observed macro-phenomena in nature. Bohr’s later modification, known as the Copenhagen Interpretation, attempted to describe particle behavior according to mathematical probability but resulted in a whole new set of paradoxes. In the late 1940s, Richard Feynman finally solved a number of issues in quantum mechanics using pictorial diagrams representing very complex and abstract mathematical formulas. While Feynman’s diagrams are now a fundamental tool of physics, they were not immediately adopted because other scientists were competing for funding and recognition.<sup>94</sup>

Cather expresses a certain disappointment at the way radioactivity was tamed and retrofitted into traditional theory. She uses Professor Wilson to represent the residue of older scientific tradition that has perhaps outlasted its own usefulness. As a detached

scientific observer, it is Wilson who provides us throughout the text with our most reliable evidence regarding his former student, including the observation that Bartley was the “most tremendous response to stimuli” he had ever known. After Bartley’s death, Wilson says he now feels like “a sort of precious relic. But do you know, it made me feel awkward to be hanging about still.”<sup>95</sup>

It was true the heady, chaotic days of radioactivity were mostly over by this time. By 1913, the only issue left to resolve (or that *could* be resolved without quantum theory) was how to classify all the different radioactive elements on the Periodic Table.<sup>96</sup> Everything else seemed to have fallen into its assigned place. The radical notion of atomic transmutation had been accepted, and radioactivity had been categorized and mathematically contained. Most importantly, the new theories were not substantially different from the old ones. We get a sense of this finality in Soddy’s book, where he notes radium, which only a few years earlier had posed unanswerable questions for scientists, was no longer the mysterious and extraordinary substance it was once thought to be.<sup>97</sup> What Soddy couldn’t foresee, of course, was that quantum mechanics and relativity would soon have a very dramatic effect on scientific theory, leading to what might indeed be considered a catastrophic collapse of theory, just as Cather anticipated.

The role played by the formerly integral atom in the story of radioactivity is important because the uranium atom precipitates its own “death” through transmutation, producing slightly different versions of itself out of an older version. Radioactivity thus revealed to the general public the process by which both the atom and science itself were engaged in what we might call *complicit transmutation* and self-dismantling, followed by a reconstruction of supposed wholeness and authenticity. This process, of course, is

exactly what Cather herself engaged in after the publication of *Alexander's Bridge*. Her 1922 introduction dismantled her original novel and reconstructed her identity around a new and stronger narrative, in a pattern imitating the radioactive processes encoded within the original book. Significantly, she framed her experience in terms of *an external vs. internal conflict*: “That which is outside his [the author’s] deepest experience, which he observes and studies, often seems more vital than that which he knows well, because he regards it with all the excitement of discovery”<sup>98</sup> Internal experiences are not thrilling, she says, nor do they “*stimulate*” the writer at first. But with time, the internal process becomes more meaningful and the writer returns to his/her own familiar history—albeit with a certain sense of regret. In the final sentence, she writes, “About the *essential matter* of his [the author’s] story he cannot argue this way or that; he has seen it, has been enlightened about it in *flashes* that are as unreasoning, often as unreasonable, as life itself.”<sup>99</sup> Here again Cather uses the language of the early atomic physicists: “stimulate,” “the excitement of discovery,” “essential matter,” and “flashes” of enlightenment that defy rationality. The internal process wins the day over external triggers, just as it did with the science of radioactivity. By Cather’s own account, then, authorial authenticity is founded on a voluntary, complicit dismantling of the self, followed by a re-construction, which she subtly equates with the recent revolution in atomic physics, turning her personal journey into a sort of *atomic identity process*. It is fascinating to find Cather using the metaphor of radioactivity to develop an almost Baudrillardian construction of identity in her 1922 introduction, where she generates a powerful, secondary self on top of a not-so-original work she was in the process of deconstructing.

If authors “cannot argue this way or that,” then Cather also implies the transmutation process is inescapable, that it has a hegemonic power by which actors are naturally co-opted into a larger system. During Bartley’s train journey toward the endangered bridge in Canada (which involves a primitive fire-building scene explicitly connecting the story to the science of heat and energy), he has “the feeling of letting himself go with the crowd.” Once the bridge actually collapses, he becomes one of many workers thrown into the water, but “[h]e was not startled. It seemed to him that he had been through something of this sort before. There was nothing horrible about it. This, too, was life, and life was activity, just as it was in Boston or in London. He was himself, and there was something to be done; everything seemed natural.”<sup>100</sup> Bartley’s death is thus depicted as both inevitable and natural, which serves to counteract the coexisting sense of tragedy in the text. He becomes just one small part in a system of natural processes. Furthermore, death here is a creative process—“*something* to be done”—rather than *nothing* to be done. Bartley is not so much dying as he is transforming into another entity.

At this point, Bartley turns into a ghostly remnant inside the minds of his loved ones, and particularly his Canadian wife, Winifred, who freezes him within the walls of their home—“almost as if he were there,” the professor tells Hilda:

“In a way, he really is there. She never lets him go. It’s the most beautiful and dignified sorrow I’ve ever known. It’s so beautiful that it has its own compensations, I should think. Its very completeness is a compensation. It gives her *a fixed star* to steer by. She doesn’t drift. We sat there evening after evening in the quiet of that magically haunted room, and watched the sunset burn on the river, and felt him. Felt him with a difference of course.”

Hilda leaned forward, her elbow on her knee, her chin on her hand. “With a difference? Because of her, you mean?”



Wilson's brow wrinkled. "Something like that, yes. Of course, as time goes on, to her he becomes more and more their *simple personal relation*."<sup>101</sup>

Bartley has mutated into an offspring element, assuming his proper place on the Periodic Table of Winifred's mind as a slightly different, ghostly version of himself. In the last line above, Professor Wilson refers to the new relationship between Winifred and Bartley, as a "simple personal relation." We can better understand this phrase if we turn back to Soddy's book: what had previously been considered a radically uncanny process by which uranium transformed itself into something entirely different, namely radium, was ultimately reduced by scientists into a mathematical "relation" between the two elements. Soddy even calls that relation a "fixed ratio," precipitating Cather's "fixed star" metaphor.<sup>102</sup>

The story leaves us with a distinct sense of loss at what might have been, as if a revolution had almost occurred, but not quite. Cather invokes a feeling of *entrapment* rather than freedom. In the final lines of the novel, the professor notes Winifred "must feel how useless it would be to stir about, that she may as well sit still; that nothing can happen to her after Bartley." As for himself and Hilda, both are feeling tired and outdated. Wilson has just turned seventy, having survived all his scientific contemporaries. Hilda, in turn, admits she was "looking very seedy at the end of the season," adding, "Well, we must show wear at last, you know."<sup>103</sup> Bartley is trapped in Winifred's mind, Winifred is trapped in her grief, and Wilson and Hilda are trapped in a rapidly disappearing past. Ten years later, Cather in her 1922 introduction would describe her own hegemonic entrapment within the walls of tradition in slightly wistful and helpless terms: "then he [the writer] learns that it is not the adventure he sought but the

adventure that sought him. ...He has less and less power of choice about the moulding of it.”<sup>104</sup> Cather might have voluntarily participated in her own transmutation, but she was not entirely in control of that process. Something larger took over, something that couldn't be stopped, resulting in the creation of a new entity asserting its own claim to selfhood and authenticity, and overshadowing its parent. At the same time, Cather suggests such claims to authenticity are somewhat specious. If scientific theory has to be hastily re-constructed after a catastrophic collapse, then on what basis does science's claim to truth rest? And if Cather has deliberately participated in her own identity reconstruction, how stable is her own claim to authenticity? Readers are allowed to draw their own conclusions. From start to finish, Cather infused this novel with a story of constructed identity, and then she proceeded to re-construct *herself* as an Authentic Western Author. By equating her personal identity transformation with the events which transpired in the book and in the scientific community, Cather provided the merest of hints her new identity ought to be questioned.

The dismantling of the previously integral atom was one of many events leading to a more general questioning of tradition during the twentieth century. Recently scholars from both the sciences and the humanities have decided this cultural shift was not a linear process that originated with a specific scientific discovery or a single moment of aesthetic modernism, but represented a widespread paradigm change, or what Katherine Hayles calls an “ecology of ideas” that interacted and spread across disciplines during the course of the century.<sup>105</sup> When Cather deliberately dismantled her own identity and built a new and somewhat specious one from the debris, she was engaging in a dismantling of previously whole constructs, an activity that would become ever more familiar during the

latter half of the century, as chaos theory was introduced to the sciences and deconstruction became *de rigueur* in the humanities.

She could never have imagined it, of course, but Cather's beloved American West would also undergo an atomic identity reconstruction process during the coming century. The West not only became the physical venue for building the bomb, but it was also the cultural framework for *imagining* the bomb, as American frontier mythology merged with Cold War militarism. When western writers began to grapple with the changes that had occurred in the West, they discovered both complicit victims and hegemonic processes, just as Cather did. The West's nuclear transformation during the twentieth century can be traced through the regional literatures and texts we might call Willa Cather's "daughter elements." Before the West experienced its own atomic identity crisis, however, it first tried to adapt old paradigms to fit the new era. Chapter 2 explores the decades before World War II, when westerners adopted an uncritical attitude toward technologies of all kinds, deliberately overlooking accident and risk. Through the lens of serial literatures published in rural western newspapers during the 1920s and '30s, a new image of the West comes into focus—a thoroughly modern Progressive-era West that supposedly corrected all the technological problems of the East by embracing technology rather than critiquing it. The symbolic figure of the "engineer" appears in these stories again and again, replicating and multiplying himself across space and time. He represents a new and particularly western form of public-minded capitalism in which technology operates simultaneously for public good and for individual profit. After the war ended, after the West's role in the Manhattan Project was revealed, and even after atomic continental testing started, it must have been inconceivable for westerners to imagine

engineering and technology as harmful forces. That failure of imagination began with a unique and brief-lived iteration of the classic western tale: the prewar serial *techno-western*.

### Notes

1. Willa Cather, *Alexander's Bridge* (Mineola, New York: Dover Publications, Inc., 2002 [1912]), 4. Hereafter cited as *AB*.
2. "Explaining Her Novel: Alexander's Bridge Has Nothing to Do with Whist," *New York Sun*, May 25, 1912, the Willa Cather Archive, University of Nebraska-Lincoln. <http://cather.unl.edu>; emphasis added.
3. Susan J. Rosowski, *The Voyage Perilous: Willa Cather's Romanticism* (Lincoln: Univ. of Nebraska Press, 1986), 34.
4. "Says Radium is Modern Miracle," *New York Times*, September 27, 1903; [www.nytimes.com](http://www.nytimes.com).
5. Marie Curie "Rayons emis par les composes de l'uranium et du thorium," *Comptes Rendus de l'Academie des Sciences* 126 (1898): 1101. Academie des Sciences, [http://www.academie-sciences.fr/membres/in\\_memoriam/Curie/Curie\\_pdf/CR1898\\_p1101.pdf](http://www.academie-sciences.fr/membres/in_memoriam/Curie/Curie_pdf/CR1898_p1101.pdf).
6. Helge Kragh, *Quantum Generations: A History of Physics in the Twentieth Century* (Princeton, N.J.: Princeton Univ. Press, 1999).
7. Pierre Curie and Albert Laborde, "Sur la chaleur degage spontanement par les sels de radium," *Comptes Rendus de l'Academie des Sciences* 136 (1903): 673-675. Translated and reprinted in Alfred Romer, *The Discovery of Radioactivity and Transmutation* (New York: Dover, 1964), 167-69.
8. William Ramsay, *Elements and Electrons* (London: Harper Brothers, 1912), 154. The Internet Archive, <http://www.archive.org>.
9. Frederick Soddy, *The Interpretation of Radium: Being the Substance of Six Popular Experimental Lectures Delivered at the University of Glasgow, 1908* (New York: J. Murray, 1909). Complete text available from GoogleBooks, [www.books.google.com](http://www.books.google.com).
10. Pierre Curie and Marie Curie, "Sur les corps radio-actifs," *Comptes Rendus de l'Academie des Sciences* 134 (1902): 85-7. Translated and reprinted in Romer, *The Discovery of Radioactivity*, 121-23.

11. Abraham Pais, "Radioactivity's Two Early Puzzles." *Reviews of Modern Physics* 49.4 (October 1977): 925-38.
12. Helge Kragh, "The Origin of Radioactivity: From Solvable Problem to Unsolved Problem," *Archive for the History of Exact Sciences* 50.3-4 (Sept. 1997): 331-58.
13. Although Einstein published his article on special relativity in 1905, it was virtually ignored until about 1911. The importance of Planck's theories on energy quanta, first proposed in 1900, was also not recognized until the 1910s (Kragh, *Quantum Generations*).
14. Professor Charles Stuart Gager, "Some Physiological Effects of Radium Rays," *The American Naturalist* 42.504 (Dec. 1908): 761-78.
15. Carolyn Thomas de la Pena, "Radiomania," in *The Body Electric: How Strange Machines Built the Modern America* (New York: NYU Press, 2005), 171-212; see also Claudia Clark, *Radium Girls: Women and Industrial Health Reform, 1910-1935* (Chapel Hill: Univ. of North Carolina Press, 1997).
16. George Bernard Shaw, *The Doctor's Dilemma: Getting Married and the Shewing-up of Blanco Posne* (London: Brentano's, 1911), xxxii. GoogleBooks, [www.books.google.com](http://www.books.google.com).
17. Luis Campos, "The Birth of Living Radium," *Representations* 97 (Winter 2006): 1-27.
18. Marie Curie, *Traite de Radioactivite* (Paris: Gauthier-Villars, 1910), vol. 1, ch. 3. Internet Archive, Canadian Libraries, [archive.org/details/traitderadioac02curi](http://archive.org/details/traitderadioac02curi).
19. Herbert George Wells, *The World Set Free: A Story of Mankind* (New York: E.P. Dutton & Co., 1914). GoogleBooks, [www.books.google.com](http://www.books.google.com).
20. Richard E. Sclove, "From Alchemy to Atomic War: Frederick Soddy's 'Technology Assessment' of Atomic Energy, 1900-1915," *Science, Technology, and Human Values* 14.2 (Spring 1989): 163-94.
21. Soddy, *The Interpretation of Radium*.
22. In 1904 one of Thomas Edison's assistants became the first known U.S. death from radiation poisoning. He had been sent to France to procure nine vials of radium from the Curies to see if radium might be used in electric light bulbs. His research exposed him to high levels of radiation, and he died within a matter of months after beginning his experiments (National Research Council, *Health Risks from Exposure to Low Levels of Ionizing Radiation: BEIR VII – Phase 2* [Washington, D.C.: National Academies Press, 2006], 2; [nap.edu/openbook.php?isbn=030909156X](http://nap.edu/openbook.php?isbn=030909156X)). The tendency of radium to destroy living cells was precisely what made it useful in early medical treatments (Clark, *Radium Girls*). Frederick Soddy knew perfectly

well that radium was dangerous, yet he failed to include any warnings to the public in his book. This was not unusual among scientists of that era. Marie Curie also ignored the deadly effects of radiation poisoning, even while dying of it (Susan Quinn, *Marie Curie: A Life* [New York: Simon and Schuster, 1995]).

23. John J. Murphy, *Critical Essays on Willa Cather* (Boston, Mass.: G.K. Hall & Co., 1984), 96.
24. M. Catherine Downs, *Becoming Modern: Willa Cather's Journalism* (London: Associated University Presses, 1999).
25. James Woodress, *Willa Cather: A Literary Life* (Lincoln: Univ. of Nebraska Press, 1987). The Willa Cather Archive, University of Nebraska-Lincoln, [www.cather.unl.edu](http://www.cather.unl.edu).
26. *AB*, vi-viii.
27. For an early account of Cather's artistic transformation, see Katherine Anne Porter, "Critical Reflections on Willa Cather," afterword in Willa Cather, *The Troll Garden* (New York: New American Library, 1961). For a later analysis of James' influence on Cather, see Sharon O'Brien, *Willa Cather: The Emerging Voice* (New York: Oxford Univ. Press, 1987), 288-313.
28. Judith Fryer, *Felicitous Space: The Imaginative Structures of Edith Wharton and Willa Cather* (Chapel Hill: Univ. of North Carolina Press, 1986), 259.
29. Janis Stout, *Willa Cather: The Writer and Her World* (Charlottesville: Univ. of Virginia Press, 2000), 106.
30. Susan Rosowski, *Birthing a Nation: Gender, Creativity, and the West in American Literature* (Lincoln: Univ. of Nebraska Press, 1999); see also Elizabeth Ammons, *Conflicting Stories: American Women Writers at the Turn into the 20<sup>th</sup> Century* (New York: Oxford Univ. Press, 1992), ch. 8.
31. Sharon O'Brien, "Becoming Noncanonical: The Case against Willa Cather," *American Quarterly* 40.1 (March 1988): 110-26.
32. Hermione Lee, *Willa Cather: Double Lives* (New York: Pantheon Books, 1989).
33. Sharon O'Brien, "'The Thing Not Named': Willa Cather as a Lesbian Writer," *Signs* 9.4 (Summer 1984): 576-99; Eve Sedgwick, "Across Gender, Across Sexuality," *South Atlantic Quarterly* 88.1 (Winter 1989): 53-71; Marilee Lindeman, *Willa Cather: Queering America* (New York: Columbia Univ. Press, 1999).
34. William Handley suggests that Cather's goal was not to tell the truth about the West, but to tell about the need for fictions to be told about the West, which of course would point to a "simulated authenticity" at work in her literature, if not her

- life (Handley, "Willa Cather: The West Authentic, the West Divided," in *True West*, ed. William R. Handley and Nathaniel Lewis [Lincoln: University of Nebraska Press, 2007], 72-94). Other authors have also begun exploring Cather's deliberate crafting of her image, e.g., *Willa Cather as Cultural Icon*, vol. 7, *Cather Studies*, ed. Guy Reynolds (Lincoln: Univ. of Nebraska Press, 2007).
35. "My First Novels (There Were Two)," reprinted in *Willa Cather on Writing: Critical Studies on Writing as an Art* (Lincoln: Univ. of Nebraska Press, 1988 [1949]), 91-97.
  36. Nathaniel Lewis, *Unsettling the Literary West: Authenticity and Authorship* (Lincoln: Univ. of Nebraska Press, 2003), 7.
  37. See Thomas P. Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970* (Chicago: Univ. of Chicago Press, 1989); Edwin T. Layton, Jr., *The Revolt of the Engineers: Social Responsibility and the American Engineering Profession* (Baltimore, Md.: Johns Hopkins Univ. Press, 1971); and David F. Noble, *The Religion of Technology: The Divinity of Man and the Spirit of Invention* (New York: Penguin, 1999).
  38. Elizabeth Ammons, "The Engineer as Cultural Hero and Willa Cather's First Novel, *Alexander's Bridge*," *American Quarterly* 38.5 (Winter 1986): 746-60; Cecilia Tichi, *Shifting Gears: Technology, Literature, Culture in Modernist America* (Chapel Hill: Univ. of North Carolina Press, 1987).
  39. John P. Hinz, "The Real Alexander's Bridge," *American Literature* 21 (1950): 473-476.
  40. Cleveland Moffett, "The Wonders of Radium," *McClure's Magazine* 22.1 (Nov. 1903): 2-15.
  41. "Radium the Key to Other Realms," *New York Times*, July 10, 1909; and "Alchemy, Long Scoffed at, Turns out to be True," *New York Times*, Feb. 19, 1911; nytimes.com.
  42. Mary R. Ryder, "Ars Scientiae: Willa Cather and the Mission of Science," *Willa Cather Newsletter* 45.1 (Summer 2001): 11-16; see also Eileen T. Bender, "Pioneer or Gadgeteer: Bergsonian Metaphor in the Work of Willa Cather," *Midwest Quarterly* 28.1 (1986): 130-40.
  43. Richard H. Millington, "Willa Cather's American Modernism," in *The Cambridge Companion to Willa Cather*, ed. Marilee Lindemann (New York: Cambridge Univ. Press, 2005), 51-65; emphasis in original.
  44. Jo Ann Middleton, *Willa Cather's Modernism: A Study of Style and Technique* (Rutherford, N.J.: Fairleigh Dickinson Univ. Press, 1990).

45. Marjorie Malley, "The Discovery of Atomic Transmutation: Scientific Styles and Philosophies in France and Britain," *Isis* 70.2 (June 1979): 213-23.
46. Marie Curie, "Rayons emis."
47. Marie Curie, "Les rayons de Becquerel et le polonium," *Revue Generale des Sciences Pures et Appliquees* 10 (30 January 1899): 41-50. Biodiversity Heritage Library, biodiversitylibrary.org/item/41778#51.
48. Malley, "Discovery"; see also Kragh, "Origin of Radioactivity."
49. Malley, "Discovery"; see also Alfred Romer, *The Restless Atom* (New York: Doubleday, 1960).
50. *AB*, 44.
51. L. A. Levy and H. G. Willis, *Radium and Other Radio-active Elements: A Popular Account Treated Experimentally* (London: Percival Marshall, 1904), 50; Per F. Dahl, *Flash of the Cathode Rays: A History of J. J. Thomsen's Electron* (New York: Taylor and Francis, 1997), 66.
52. Soddy, *Interpretation of Radium*, 42.
53. Paul W. Frame, "William Crookes and the Turbulent Luminous Sea," Oak Ridge Associated Universities, <http://www.ornl.gov/PTP/articlesstories/spinstory.htm>. The "flashes of light" produced by the spintharoscope are also described in Soddy, *Interpretation of Radium*, 59-62.
54. Wells, *War of the Worlds*, 32.
55. *AB*, 8.
56. *AB*, 5.
57. *AB*, 9; emphasis added.
58. *AB*, 23; emphasis added.
59. Sharon O'Brien believes Cather uses this passage to define Bartley as "a mechanism useful to society" (*Emerging Voice*, 390). However, a closer reading shows that Cather is actually defining Bartley as "Life itself" and opposing him *against* "mechanism," insisting that Bartley's real self belongs more to the former than to the latter, i.e., to something more fundamental than technology or gadgetry.
60. *AB*, 7; emphasis added.
61. Both terms, stimulate and excite, were used in 1896 by Henri Becquerel, "Sur les radiations invisibles émises par les corps phosphorescent," *Comptes Rendus de*



*l'Academie des Sciences* 122 (1896): 501-503. English translation, Institute of High Energy and Physics (Russia), [web.ihep.su/dbserve/compas/src/becquerel96b/eng.pdf](http://web.ihep.su/dbserve/compas/src/becquerel96b/eng.pdf). Ernest Rutherford also called it “excited radioactivity” (“Radioactivity Produced in Substances by the Action of Thorium Compounds,” *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science* 5.49 [1900]: 161-62).

62. Campos, *Birth of Living Radium*, 22
63. *AB*, 60.
64. Alex Keller, *Infancy of Atomic Physics: Hercules in His Cradle* (New York: Oxford Univ. Press, 1983); see also Lawrence Badash, “The Suicidal Success of Radiochemistry,” *The British Journal for the History of Science* 12.3 (Nov. 1979): 245-256.
65. Pais, “Radioactivity’s Two Early Puzzles.”
66. D. M. Mendeleev, quoted in Kragh, “Origin of Radioactivity,” 334.
67. *AB*, 24.
68. *AB*, 54-55.
69. Barbara Goldsmith, *Obsessive Genius: The Inner World of Marie Curie* (New York: Norton, 2004), 119.
70. The *New York Times* article, “Alchemy, Long Scoffed at, Turns out to be True,” (Feb. 19, 1911) was a summary of Frederick Soddy’s book, *The Interpretation of Radium*. However, Soddy doesn’t actually discuss a reversal of time in his book; that probably came from the reporter. For accounts of radioactivity as a fountain of youth, see de la Pena, *Body Electric*; Goldsmith, *Obsessive Genius*; and Clark, *Radium Girls*.
71. David Harvie, “The Radium Century,” *Endeavour* 23 (1999): 100-105; see also, de la Pena, *Body Electric*, 171-212; Clark, *Radium Girls*; and Goldsmith, *Obsessive Genius*.
72. “Professor Curie Killed in a Paris Street,” *New York Times*, April 20, 1906: 11; [nytimes.com](http://nytimes.com).
73. *AB*, 24.
74. Richard Francis Mould, “The Discovery of Radium in 1898 by Maria Slodowska Curie (1867-1934) and Pierre Curie (1859-1906) with Commentary on Their Life and Times,” *The British Journal of Radiology* 71 (1998): 1229-54. British Journal of Radiology Archives, <http://bjr.birjournals.org>.

75. AB, 43.
76. AB, 75.
77. AB, 2.
78. AB, 13.
79. AB, 16-17.
80. Malley, "Discovery"; see also Romer, *The Discovery of Radioactivity*.
81. See Bernice Slote's "Introduction" to *Alexander's Bridge* (Lincoln: Univ. of Nebraska Press, 1977).
82. AB, 59.
83. "Alchemy."
84. AB, 70-72.
85. Soddy, *Interpretation of Radium*, 4.
86. Soddy, 5.
87. Soddy, 34.
88. Soddy, 98.
89. Soddy, 150.
90. Soddy, 207.
91. Soddy, 100-101.
92. Quantum physicist Erwin Schrödinger famously posited in 1935 that a cat locked inside a box was neither dead nor alive until an observer opened the box. The analogy was intended to point out the paradoxes of Niels Bohr's "Copenhagen Interpretation" when applied to macro-level natural phenomena (Helge Kragh, *Quantum Generations*).
93. In 1962, Harvard historian Thomas S. Kuhn published his now-classic examination of the construction of scientific theory, in which he maintained that change to theory occurs not through a gradual and linear progression of knowledge but rather through sudden "paradigm shifts" (*Structure of Scientific Revolutions* [Chicago: Univ. of Chicago Press, 1962]).

94. David Kaiser, *Drawing Theories Apart: The Dispersion of Feynman Diagrams in Postwar Physics* (Chicago: Univ. of Chicago Press, 2005). For additional examples of how established scientific theory initially resists change, and then gradually embraces it, see Naomi Oreskes, *The Rejection of Continental Drift: Theory and Method in American Earth Science* (New York: Oxford Univ. Press, 1999); and Peter Galison, *How Experiments End* (Chicago: Univ. of Chicago Press, 1987).
95. *AB*, 78.
96. Badash, "Suicidal Success."
97. Soddy, *Interpretation of Radium*, 231.
98. *AB*, vii.
99. *AB*, ix; emphasis added.
100. *AB*, 68-72.
101. *AB*, 79; emphasis added.
102. Soddy, *Interpretation of Radium*, 174, 171.
103. *AB*, 80, 78.
104. *AB*, viii.
105. Katherine Hayles, *Chaos Bound: Orderly Disorder in Contemporary Literature and Science* (Ithaca, N.Y.: Cornell Univ. Press, 1990), 185.

## CHAPTER 2

### REPLICATING THE ENGINEER: SERIAL TECHNO-WESTERNS IN THE PREWAR YEARS

Readers who embark on Richard Slotkin's exhaustive trilogy about the mythologies of the American West face a daunting challenge.<sup>1</sup> Slotkin's project encompasses more than 2,100 pages. He lays bare the vast, unrestrained replications of the frontier myth over time and across space, from seventeenth-century captivity narratives, through later mountain man tales, noble Indian romances, savage Indian combat stories, dime novel westerns, Buffalo Bill theater, B-western cinema, and Cold War cowboy politics.<sup>2</sup> It's impossible to come away from Slotkin with a simplistic view of what we today call "the western." Rather, one is forced to recognize the genre has assumed innumerable shapes and forms over the years, so many we almost can't fathom them. Oddly enough, cowboy individualism in America seems to have been constructed not on the aura of individual authors or original texts, but rather on a Bakhtinian heteroglossia of multiple, mass-produced replications and iterations.

Which leads us to this question: Is it possible the meaning of the frontier myth resides as much within its *multiplicities* as in its *content*? After all, as Meredith McGill points out, not only has American literature depended from the beginning on reproduction and imitation, but reprinting was also an inherent part of our culture, a

fundamental feature of democracy, a means by which we both resisted and enacted colonialism.<sup>3</sup> What does it really mean to create and dwell in an enormous, imagined community based on what Walter Benjamin calls the “simultaneous collective experience” of mass culture?<sup>4</sup> Under such conditions, is authenticity possible? Or does mass reproduction spawn something entirely different that can’t be contained within the authentic/inauthentic dialectic?

I have already suggested the story of the discovery of radium—the magical self-replicating energy source—carried a certain message about scientific theory that Willa Cather recognized and embedded into her first novel, *Alexander’s Bridge*. In that discussion I used early atomic narratives to challenge the category of “the authentic.” In this chapter, I will demonstrate how narratives about western technology also challenged the opposite category, “the inauthentic.” During the early twentieth century, the western was undergoing a process of transformation through a multiplicity of new media technologies, including syndicated newspaper serial fiction. As we will see, this particular variety of western fiction served a unique purpose, to distance western newspaper readers from tired old frontier stereotypes and instead promote a new vision of the West as a modern, technological paradise. The serial literature choices of Progressive-era westerners reflected their desire to correct the technological mistakes of the East, not by discarding technology but by enthusiastically embracing the most advanced elements of engineering culture. I will argue this previously under-recognized subgenre of western serial literature—what I call the prewar *techno-western*—helped legitimize postwar atomic testing in the American West and contributed to various forms of atomic narratives that would multiply across the western landscape by the end of the century.

Not only did this literature rely on technologies of mass reproduction to spread and propagate itself, but it also carried within its very structure what we might call an *ethos of replication*—a framework that glorified replication and constructed authenticity out of countless imitations.

My project, of course, participates in a much larger argument, one recently made by western revisionists like Nathaniel Lewis that western authenticity was always in crisis.<sup>5</sup> In fact, the sheer excesses of western myth ought to have told us this long ago. The repetitions of the frontier myth as recounted by Slotkin once and for all exposed the naked truth that our collective vision of the West was always more of a performance than a reality.<sup>6</sup> Furthermore, scholars have begun to recognize it was not the authentic West we desired all along, but rather the imitation.<sup>7</sup> Yet can the mythical frontier West accurately be called an “imitation”? When a copy has been deliberately willed into existence rather than mindlessly duplicated, can it be considered “inauthentic”? In other words, is it possible authenticity might arise from the process of replication? If so, how does that work?

Although it might appear in this chapter as if I am tossing around terms like “replication” and “reproduction” with little regard for nuance, I have tried to use these words with discrimination. Duplication, repetition, multiplication, representation, imitation—each carries a slightly different connotation that nevertheless places it in theoretical opposition to *authenticity*, which is associated with originality, uniqueness, newness. Authenticity as a concept has come under fire in the twentieth century. In his famous 1936 essay, “The Work of Art in the Age of Mechanical Reproduction,” Walter Benjamin grappled with the idea of authenticity, noting reproduction—particularly

through media such as film and photography—destroys any sacred “aura” authenticity once had, but does so through a deliberate process of re-construction whereby fragments (of scenes, of dialogue) are cobbled together into a new whole, a “word-salad” both produced and reproduced through copying and public distribution.<sup>8</sup> However, the argument over authenticity started long before Benjamin’s essay, with the advent of the industrial age in the mid-nineteenth century. Ever since machines began reproducing copies to feed the culture of mass consumption in western societies, much intellectual anxiety has ensued over our apparent loss of authenticity. It might have been the presence of industrial reproduction, including print technologies, which created the dialogue about authenticity to begin with.<sup>9</sup> In other words, authenticity was probably founded on imitation, and this simple fact might constitute one of the primary paradoxes of the modern age. The multilayered commitment to replication exhibited by and in the literatures of the American West was linked from the beginning to a worldview that privileged reproduction over originality even as it wrapped itself, Freudian style, in a veneer of individual autonomy. Nowhere is this more apparent than in the various manifestations of the frontier adventure tale.

John Cawelti has outlined the traditional western literary “formula,” which combines a landscape (the West) with a male hero (the mountain man or cowboy) and a plot involving confrontation between civilization and savagery.<sup>10</sup> Cawelti calls the hero of early westerns—including Cooper’s Leatherstocking or Forrester’s Nick of the Woods—an “extraordinary man whose double gifts of civilization and savagery make him able to confront and conquer the perils of the wilderness.”<sup>11</sup> However, by the late nineteenth century, the western adventure tale had devolved into the “adolescent

escapism” of the *Deadwood Dick* series that was largely about young-men-behaving-badly. The defining moment for the western, of course, was the publication of Owen Wister’s *The Virginian* in 1902, in which the “code of the West” leads to a moral regeneration of civilization through a system of male honor and vigilante justice emerging in the absence of institutional law. Different types of westerns evolved for different audiences, but many of them were based on the formulaic structure of *The Virginian*, with symbolic landscapes and violent acts of moral regeneration. Cawelti calls this version of the West “escapist fantasy” that could never become involved in “a meaningful dialectic with the urban industrial society of modern America.”<sup>12</sup>

Although the dominant tone of the genre prior to World War II (and well afterward) might be characterized as both *ante*-modern and *anti*-modern, there was a minor blip in the pattern, a small diversion seldom noticed. This brief moment in the evolution of the western pointed in a very different direction, toward modernity, rather than away from it. In 1916—four years after *Alexander’s Bridge* was published—a novel appeared on the nation’s bookstands, titled *Web of Steel*, which had a suspiciously familiar plot.<sup>13</sup> In this story, a cantilever bridge under construction in the East collapses due to faulty calculations by its engineer, killing 150 workmen. Unlike Cather’s earlier novel, in this telling the engineer’s son goes West and eventually redeems his own reputation as well as his father’s by salvaging a nearly disastrous dam project. Originally published by evangelical Christian publisher Fleming H. Revell, *Web of Steel* was almost simultaneously picked up by the Western Newspaper Union syndicate, and re-printed in shortened, serial form in a number of small-town western newspapers.<sup>14</sup> The story was written by a father-son team that included Reverend Cyrus Townsend Brady, who was an



Episcopal rector, journalist, historian, and prolific adventure writer, and Cyrus Jr., who was listed on the book's title page as a civil engineer. Cyrus Sr. was already well known for his nonfiction, and particularly his historical treatise on *Indian Fights and Fighters: The Soldier and the Sioux* (1904), in which he—among other things—made a somewhat controversial assertion that Custer's defeat at Little Big Horn was his own fault because he disobeyed orders from his superiors.<sup>15</sup> Brady was also a prolific contributor to various genres of popular fiction, including Civil War tales, South Seas adventures, and westerns. Several of his books and stories were turned into films by Vitagraph, the company which copied Edison's first film projector in 1896 and then began competing with him.<sup>16</sup> As might be expected from a popular turn-of-the-century author, Reverend Brady's stories were infused with racist, white Christian Protestant views, and he openly displayed a disdain for other cultures and religions in his writings, which helps explain why scholars today have virtually ignored him.<sup>17</sup>

In his preface to the 1916 edition of *Web of Steel*, Brady described his novel as “a book for men, about men, and written by men,” as well as “a book about a father and son written by a father and son.”<sup>18</sup> As an afterthought, he expressed hope that women would also find his work appealing, since women often determined the commercial success of a book. What helped him achieve his goal was the fact he had written into his plot a *romance*, making his story a perfect candidate for serialization by the newspaper syndication industry. Decades earlier, newspaper syndicates had appropriated the well-established serial fiction format of magazines and “story papers”—cheap, weekly publications in the mid-nineteenth century that contained only serial fiction and were marketed toward the working class.<sup>19</sup> The adoption of serial narrative by mainstream

newspapers was part of a spectacularly successful attempt on behalf of the American newspaper industry to increase its audience share by appealing to women and families, rather than just bourgeois men.<sup>20</sup>

Whether the western during this era could be categorized as literary realism or whether it belonged to the genre of domestic romanticism has been the subject of considerable debate.<sup>21</sup> Brady, at any rate, seems to cover all his bases. In his preface he places the novel in the realm of romance, denying *Web of Steel* was based on actual events or real people, yet simultaneously suggesting the story is realistic because it has a technological foundation: “The authors disavow any intention of picturing any engineers alive or dead, or any particular bridge or dam, in any particular locality. The whole thing is a work of the imagination *except the calculations of the engineer*, which are exact when not empiric.”<sup>22</sup> The last sentence is interesting, since Brady’s text does not include any mathematical calculations per se, although it does contain a few amateurish sketches that are supposed to resemble blueprints and maps. There is only the merest hint of arithmetic during passages about the bridge’s instability, when the “C-10-R” principal compression member is found to have a 1¾-inch camber, or deflection. However, throwing a simple number into the text does not constitute what I would call calculations. Despite Brady’s overt positioning of the novel in the realm of fiction, the preface is most certainly meant to reference the Real and the Masculine through the suggestion of technology. Brady also ties together the inauthentic (“the imagination”) with the authentic (“the calculations of the engineer”), leaving the reader with the impression this work falls into *both* categories. The fact that Brady was famous for fiction as well as nonfiction, and that this work was co-authored by his engineer son, who clearly

contributed to the technical tone and content in certain parts of the novel, merely adds to the effect. Although Brady was not a westerner, this kind of ambiguity has also been discovered at work in the regional literatures of the American West, where authors suggested their fiction was more real than other fiction because it was tied to the natural world, or in this case, the world of the engineer.<sup>23</sup> Significantly, the serialized version of Brady's novel included neither the preface nor the engineering diagrams, marking that version as less masculine and less technological, in what we can probably assume was a deliberate marketing strategy to play up the romance and thereby attract more female readers of small-town newspapers.

As we will see, the discrepancies between the national, novelized version of Brady's *Web of Steel* and the localized newspaper version distributed in the rural West are telling. The novelized version focused much more on the East and depicts a sophisticated East contrasted against a primitive West, while the version appearing in western newspapers minimized the eastern elements and glorified the West as a place where technology is finally done right. Syndicated newspaper editors were apparently very conscious of how western readers viewed themselves, and they edited this novel to emphasize the West as a technological space rather than a backwards frontier.

When *Web of Steel* was distributed as a serial in 1916-1917 and again in 1918, it became part of a short-lived pre-WWII subgenre of *techno-westerns*. These were fictional tales that relied on traditional western tropes of wilderness and conquest, but replaced nineteenth-century frontier settings and peoples with a twentieth-century West fully engaged in the project of modernization, especially through repeated references to technology and the figure of the engineer, particularly the civil engineer who is engaged

in building dams, bridges, mines, roads, and railroad tracks. Traditional cowboys played only bit parts in these stories. The genre was part of a national trend during the 1920s described by Cecilia Tichi that glorified engineers and technology. As evidence for this trend, Tichi uses several works of fiction written by western authors and/or set in the American West, including *Alexander's Bridge* (Cather, 1912), *The Winning of Barbara Worth* (Harold Bell Wright, 1911), *The Trail of the Lonesome Pine* (John Fox Jr., 1908), *The Iron Trail* (Rex Beach, 1913), and *The U.P. Trail* (Zane Gray, 1918).<sup>24</sup> Each of these works featured a protagonist who is an engineer. Peter Stanfield has similarly examined the role technology played in western films of the 1930s, which attempted to “accommodate both the past and the present” as the West confronted the impact of modernity and the social conflicts of the Great Depression.<sup>25</sup> As further evidence of this early trend to meld modern technology with the traditional West, a fascinating Gene Autry film appeared in 1935, in which a group of cowboys successfully protect their dude ranch from an evil Queen living in an underground kingdom. She throws an array of sci-fi technology at the cowboys, including aerial torpedoes, electrocution, and a radium death ray. The cowboys eventually triumph, saving the dude ranch at least for tourism purposes if not genuine ranching.<sup>26</sup> Thus the 1920s and ‘30s marked a moment of transition, when a new type of frontier myth was emerging, one that suggested a technologically modern West rather than a Wild West stuck forever in a nineteenth-century cowboy trope. However, after World War II, this short-lived innovative western type was essentially wiped out, as the national fantasy of the Old West reasserted itself. As we will see in the next chapter, the atomic bomb and the Cold War would play an important role in that process.

Despite the brief trend identified by Tichi, the image of a technologically modern West was not very popular among eastern readers, if we can judge by the contents of national magazine fiction in the 1920s, which was published almost solely on the East Coast. An analysis of some of the most popular magazines in the U.S. showed that between 1921 and 1930, fictional heroes were largely businessmen (31 percent) or other professionals (24 percent)—which would have included engineers—but stories tended to be set in towns (27 percent) and in the city (20 percent) as opposed to the country (16 percent) or the farm (7 percent).<sup>27</sup> In other words, as far as national serial literature was concerned, technology was confined to urban areas and only rarely wandered into the frontier.

In the West, though, things were a bit different. Stories appearing in western newspapers, where locals had more control over content, more often depicted a contemporaneous West populated by engineers, businessmen, and modern technology. Relying on newly created online digital databases of American newspapers, I have located fifteen syndicated serial novels disseminated by the Western Newspaper Union to small-town newspapers between 1916 and 1943 that used the modern West as a setting and featured an engineer as a main character.<sup>28</sup> These included civil engineers, electrical engineers, mining engineers, and hydraulic engineers. I did not count stories about railroad engineers, since by this time they would not have signified “modern” in quite the same way. There were many additional stories not included in my study that featured engineers as secondary characters. The twenty-seven-year span of these stories, distributed almost evenly across the decades, indicates the gear-and-girder culture may have lasted longer in the West than it did nationally. My conclusions are not merely

based on the plethora of stories that appeared in western newspapers during this era, but are also supported by other kinds of evidence, including content analyses of the texts themselves, comparisons between national and rural versions of the texts, and comparisons of the texts with the actual events upon which the stories were based.

The Progressive-era West was considerably more modern than easterners imagined it to be, according to historian Robert G. Athearn. Many western cities were more technologically advanced than were eastern cities, because the East was having considerable difficulty dismantling its aged infrastructures in order to accommodate new technologies.<sup>29</sup> Athearn tells us western cities at the turn of the century displayed all the signs of the new era with the latest in movie theaters, department stores, steam laundries, dance halls, libraries, banks, telegraph offices, telephones, post offices, police stations, fire departments, and paved main streets. While easterners were complaining about the rapidly disappearing Old West, westerners were busy cultivating a new West and a new self-image. In 1902, Athearn says, a Denver writer proudly proclaimed the West had modernized so much no one there was interested in reading the old “action” stories anymore (i.e., the Old West shoot-‘em-up dime novel adventures).<sup>30</sup>

It might seem like a self-evident deduction that westerners during the Progressive era would have preferred to read about themselves as technological *Wunderkinder* rather than as Wild West stereotypes, but literary critics often overlook the possibility of two conflicting images of the West before the war—an externally imposed one and an internal self-image. The western newspaper, a manifestation of that self-image, has been virtually ignored by scholars of western literature. When examining how westerners thought about themselves during this era, newspaper fiction is important because serial

narrative responds more to audience feedback than do other forms of literature.<sup>31</sup> With serial novels, local editors were able to pick and choose which stories to print, which ones to cut off mid-run, which authors to repeat, and which genres to emphasize, depending on reader reaction. There is little doubt prewar westerners were reading inexpensive newspaper fiction more than anything else. As indicated by numerous literacy studies during that era, rural Americans were consuming fiction found, first, in their newspapers, and second, in mail-order magazines. Farmers and ranchers had very few books on their shelves.<sup>32</sup> As had been the case throughout the nineteenth century, serial pulp fiction was the literature of choice for those at the lower end of the socioeconomic scale, which caused a considerable amount of anxiety among the educated elite, who felt such habits would lead to declining intelligence levels.<sup>33</sup>

As suggested earlier, serial newspaper fiction in the early twentieth century merely continued a longstanding American tradition of literary replication and reproduction, or what Meredith McGill calls a “Republican culture of reprinting.”<sup>34</sup> Although copyright laws were stricter by the end of the nineteenth century, both writers and publishers nevertheless found creative ways to reuse and/or appropriate material from other sources. By the mid-nineteenth century, publishers had developed the practice of releasing stories in more than one format, or reprinting the same story under many different titles. Successful serialized fiction might turn up later as a dime novel or as a published book.<sup>35</sup> This created a serialized form of professionalization, whereby new authors often made their reputations first in the lesser dime novel or “story paper” media, and then moved to book publishing. However, by the turn of the century, a reverse process was also operating for established authors like Cyrus Brady who sought to

maximize their profits by publishing the same story in several different formats. By the 1880s, nearly all the newspaper syndicates were reprinting novels in serial form. Once the media of radio and film were developed, even more money could be squeezed out of a single work. Authors like Jack London, Booth Tarkington, and Zane Grey all capitalized on their fame in this way.<sup>36</sup> By securing permission to distribute works in multiple formats, both publishers and authors benefitted, and many novels eventually reached larger audiences for less money. But the newspaper syndicates didn't take just *any* novel; they wanted ones that would appeal to a popular audience rather than a literary one. As we will see, there were reasons *Web of Steel* was chosen for re-printing in rural newspapers, while Cather's *Alexander's Bridge* was initially serialized through the more elite national magazine market.<sup>37</sup>

The writing process for the syndicated serial seems to have imitated mid-nineteenth century dime novels, which were literally conceived in assembly lines, with teams of girls assigned to clip interesting articles from newspapers that were passed farther down the line to other workers, who would convert the clippings into story outlines. Each outline was then sent to one of hundreds of authors on a list, who would churn out a novel based on a storyline created by multiple participants in what we might call *a novel factory*. Some dime novel authors reported writing an entire book within a twenty-four-hour period once they had been assigned a storyline. The author him/herself was never important; pseudonyms were freely employed, and editors had *carte blanche* to cut, add, or rewrite as they pleased.<sup>38</sup> By the time syndicated newspaper fiction arrived on the scene (c. 1880), authors enjoyed more influence in the conceptual process, but many of these stories seem to have used the same techniques as the dime novel factories, either



by relying on actual news events for plot outlines, as both Brady and Cather did, or by imitating and adapting the work of others, as both authors also seem to have done.<sup>39</sup> Scholars have noted serial narratives were uniquely suited to a culture of reproduction: They cultivated a self-replicating audience, ensured ongoing profits for a publisher as well as additional work for an author, and they helped promote and spread a variety of new media technologies—first mass-produced magazines, then syndicated newspapers, and on to radio, film, and television.<sup>40</sup> One can see seriality at work in today's internet, with its linked websites and endless spools of interactive commentary on the blogs. Seriality ensures the continuation not just of content and narratives, but also of the technology itself.

The replication ethos inherent to serial fiction was manifested in the technologies that created a marketable product out of those fictions. Turn-of-the-century print technologies maintained an industrial imperative for fast and easy reproduction with maximum flexibility and adaptation at all levels. Newspaper syndicates first arose during the Civil War, when a labor shortage forced small-town newspapers to begin purchasing pre-printed sheets of war news from larger newspapers to slip inside their own papers, creating a product known as “patent insides” still being used as late as 1929.<sup>41</sup> A variety of technologies quickly developed and were simultaneously employed by the syndicates to accommodate local preferences, budget concerns, and technological limits: besides patent insides, also known as readyprint, these technologies further included plate service (mass-produced stereotyped sheets of metal that could be sawed into pieces and re-assembled by local editors) and galley-proofs (to be type-set locally).<sup>42</sup> The integral partnership between serial narratives and new print technologies helped make newspapers

the most popular reading medium among Americans, eventually outstripping the magazine market. Around the turn of the century, large papers that had previously been devoted solely to hard news, like the *Chicago Tribune* and the *New York World*, began printing special Sunday editions featuring serial fiction, comics, and other material for women and families. They got the idea from “Sunday weeklies”—newspapers printed only on Sunday—which had been popular among women throughout the nineteenth century. Technological advances also reduced the cost of newspapers, so the number of newspapers in the U.S. and the number of subscribers increased exponentially between 1880 and 1930.<sup>43</sup> Women comprised the biggest audience gain for daily newspapers during this era, due to the broadening of content.<sup>44</sup> By the early 1930s, literacy studies showed 97 percent of Americans reading newspapers, 81 percent reading magazines, and only 26 percent reading books.<sup>45</sup> If we include other media like radio programs and short film series in the mix, we can readily assume early twentieth-century Americans were exposed through many sources to serial narrative and its accompanying ethos of reproduction.

In Cyrus Brady’s *Web of Steel*, serial reproduction and replication extend into the very architecture of the story. Certain passages and phrases are repeated numerous times in the text. For example, the (obviously Christian) assertion that the young engineer, Meade Jr., has “atoned for” or “made up for” or “redeemed”/“rehabilitated” his father’s sins—after he is critically injured while saving the western dam from collapsing—appears six times in the last twenty pages of the novel, with various characters repeating the idea again and again. Another excessively recurring moment is the rescue by Meade Jr. of his fiancé, Helen, who nearly falls off his bridge and into the river at the beginning

of the story. This passage is remembered and/or recited no less than eight times in the course of the novel.

Perhaps the most important element replicated in *Web of Steel* is the figure of the engineer. There are an astounding total of *eight* engineers in this story. Virtually *every male character* in this story turns out to be an engineer. Besides the original father-son team, Meade Sr. and Meade Jr., there are Curtis (chief engineer of the generic Bridge Company); Abbott (described both as a construction superintendent and a “resident engineer”); Shurtliff (a failed, has-been engineer who now works as a clerical assistant to Meade Sr.); Vandeventer (a kindly substitute engineer-mentor); Rodney (former Harvard classmate of Meade Jr. and current editor of the professional journal, *Engineering Times*); and Winters (also a former engineering classmate of Meade Jr. and currently a western ranch owner). Two additional “wanna-be” engineers also make an appearance: Dr. Severance (an elderly physician for the Bridge Co., described as “long enough in touch with engineering” to make judgments about the supposed stability of the bridge), and company owner, Colonel Illingworth (Helen’s father, a Civil War hero, and “enough of an engineer” to recognize technical problems when they arise). Since many of these characters serve other functions in the story—i.e., clerk, reporter, rancher, capitalist, etc.—one has to wonder why Brady felt the need to give them *all* engineering backgrounds. Engineers were reproduced and multiplied in this story, just like the novel itself would be reproduced in various print forms across the nation.

Other symbolic replications appear in the novel, including landscape features as well as man-made structures. Physical terrain from the first half of the novel is not just duplicated but multiplied in the second half, which helps link together the two disparate

worlds of East and West as well as giving the impression the West is always “more” than the East. In the eastern settings, Brady describes a river surrounded by hills, with the doomed bridge cutting across the landscape. Once the story moves into western spaces, these symbols multiply like an atomic chain reaction: no less than two natural rivers appear in the second half of the book, plus two additional man-made “rivers”—a dam spillway and a viaduct—creating an additional four rivers above and beyond the one in the eastern manifestation. There are also excessive numbers of hills or “mounds” described in the western half of the book, including the man-made mound that is the dam, a nearby Spanish Mesa, Baldwin’s Knob (a natural landscape feature), a “hog-back,” and an earthen dike built near the dam, making a total of five hilly features. Of course, the massive western dam is also meant to serve as a replication of the eastern bridge, since it is there where Meade Jr. rehabilitates his engineering reputation after the original bridge collapses. But the dam alone was not enough of a duplication for Brady; he has the very same construction company building another cantilever bridge downstream from the western dam, which is also endangered when the dam threatens to collapse, thus echoing the eastern bridge disaster from the first half of the book. Significantly, the western dam has the exact same number of workers—150—as were killed in the eastern bridge accident, not to mention the unspecified number of workers who are also working on the second, western bridge. That number, 150, was *exactly double* the number of workers who died in the real-life Quebec bridge collapse upon which this novel was based.

It would be a mistake to assume the replications in this novel were related to the peculiar properties of newspaper serialization, i.e., the necessity to remind an audience each week of what had happened during the previous installment. The serial version of

*Web of Steel* actually eliminated a considerable amount of replication from the original text, reducing the size of the novel by at least 50 percent, with most of the cutting occurring in the first half of the text—namely, that section which most faithfully mimicked the earlier *Alexander's Bridge*, with its eastern, urban setting. In the second half of the book, even passages consisting largely of western landscape description—which one might assume was peripheral to the plot—remained largely intact for the serial version. The important point here is the eastern book editors retained key elements that balanced and contrasted the sophisticated East against the western wilderness, while the editors at the Western Newspaper Union highlighted the West far more than the urban East. We might therefore assume the serial version was deliberately revised for its western audience in order to promote a certain vision of the West—namely that of a pristine wilderness in the process of being selectively modernized with bridges and dams in ways that would preserve the original frontier characteristics of the West. This was a recurring theme in the techno-western subgenre. It made stories infinitely more attractive to prewar westerners who wanted to believe they could indulge all their technological desires without destroying their wilderness heritage.

Another interesting replication occurs in this story, namely, the increasing abundance of textual evidence supporting Meade Jr.'s innocence. At first there seems to be only a single, vanished letter from son to father, warning about the faulty calculations. Then a second letter from Meade Sr. appears, along with a telegram to Colonel Illingworth, a sketch made for Helen, a letter to Rodney, various "secret" documents being held by Shurtliff, company papers held inside a safe, evidence contained within *Engineering News*, markings left behind on a desk blotter, etc. It is not enough to merely

rehabilitate Meade Jr.'s reputation, Brady also has to establish the son's innocence from the start through the multiplication of written evidence that eventually comes to light, thus connecting this novel to the ubiquitous detective and crime stories in the dime novel tradition.

This was an interesting literary strategy. For postmodernists, of course, the establishment of authenticity on the basis of über-representation suggests something other than mere replication is occurring, that perhaps the author is making a larger point about the concept of representation itself. Literary critics love nothing more than to discover moments in literary representation that represent representation. In the current context a discerning reader has to ask: Was Brady's duplication merely an indicator of bad writing techniques? Was he simply re-enacting a widespread nineteenth-century cultural penchant for endless copies? Was it a Freudian "repetition compulsion," whereby an ego tries to master the trauma of a repressed memory?<sup>46</sup> We have some clues to guide us. Early in the novelized version, Brady included an interesting passage deleted from the serialized version of *Web of Steel*. This passage appears amidst the narrator's musings about love as a recurring theme in life and literature. It explicitly references duplication:

Experience and observation have established the fact that the whorls on the thumbs of human hands differ in tracery as one star differeth from another star in glory, and that . . . [n]o thumb is like any other thumb that has ever complemented fingers since Adam first inspected his pickers and stealers. The Power that can stamp this infinite variety in the human skin has seen to it that *there are no duplications* in human temperaments. . . . The love story of every man and woman differs in some particular from that of every other man and woman. . . . Yet men who have loved many have observed the variation in specific and particular instances . . .<sup>47</sup>

Here we see Brady admitting his story is not unique, that it imitates other romances. Yet he insists it still has value because of its minor variations from those

stories. All thumbprints have whorls, but not all the whorls are the same, and it is those tiny differences that somehow attract us to the same old story, again and again, over and over. This was not an unsophisticated claim. No less an intellectual than Sören Kirkegaard made a similar argument more than fifty years earlier, which we will shortly discuss.

When Brady combined the familiarity of romance with the aura of western modernity, he made *Web of Steel* a perfect candidate for syndication by the Western Newspaper Union, which Cather's *Alexander's Bridge* was not. Brady made certain adjustments to the actual Quebec bridge collapse that guaranteed his story's appeal to modern western audiences. First, the mistakes made by Brady's engineers were not the result of corporate greed, as they were in Cather's story, but rather simple miscalculation. This helped to re-validate capitalism in the West, which both Cather and the "gear and girder" culture had critiqued. Second, because the older engineer refuses to listen to his son's warnings, the problem lies not with engineering, but rather with obsolete traditions that failed to yield to newer and better methodologies. Third, in Brady's story, the young engineer risks his own life to save the innocent families living below a dam, which was damaged not by capitalist corruption or mathematical error, but by the whims of God and nature—i.e., a freak thunderstorm that nearly overflows the unfinished dam.

Brady's validation of capitalism and technology are significant revisions of both Cather and the original bridge disaster. Living under impossibly arid conditions, most westerners of this era looked forward to the construction of dams and bridges that would bring irrigation water to their fields and permit the transportation of their products to larger marketplaces.<sup>48</sup> They did not want to think about engineering mistakes; such things

might happen in the corrupt East, but not in the pristine West. The positive ending of *Web of Steel* allowed western readers to feel good about technology and to incorporate it into their own version of the American Dream. They no longer had to view themselves as outdated, pastoral objects of eastern frontier desire. Brady's story reassured them modernity could fit seamlessly into the western landscape after all. Indeed, by rewriting or "correcting" Cather, Brady operates much like the engineer son in his story, who atones for his predecessor's mistakes.

*Web of Steel*, of course, was not operating merely in relation to Cather's story, but also in relation to the actual 1907 Quebec bridge collapse.<sup>49</sup> A short examination of the differences between the three accounts will further clarify the opposing narratives of Cather versus Brady versus the prevailing transnational discourse. In 1907, newspapers around the world reported the dramatic and catastrophic collapse of the world's longest cantilever bridge then under construction in Quebec, killing seventy-five workers. The bridge had been designed by a highly reputable American engineer, Theodore Cooper, who helped design the Hudson River Bridge, as well as many railroad bridges in the eastern U.S. The blame for the collapse was ultimately laid at the feet of Cooper, who had lengthened the center bridge span without considering the additional stresses that would be placed on other parts of the bridge. Two weeks before the collapse, Cooper was warned by one of his young protégés that two steel chords on a cantilever arm were bent, but not much was done other than to speculate how the defect might have happened. Increasingly alarmed, the protégé—who was supervising on site—finally wrote Cooper a letter and then went to visit him in New York City. At the younger engineer's urging, Cooper sent a telegram of warning to the company's headquarters, but not to the actual



bridge crew. Unfortunately, headquarters ignored the telegram and did not pass the message on to the construction site. That very afternoon, the bridge collapsed. After the mess was cleaned up, construction of the bridge began anew with considerable variations in the design. However, while raising the final center span in 1916—the same year Brady’s novel appeared—another accident occurred, and more people were killed. An entirely new center span then had to be built, with slight modifications, but the bridge was finally completed in 1917 and still stands today. The second collapse happened in September, *after* Brady’s story first began to be advertised in the nation’s newspapers in June, in what can only be called a weird reverberation of the twin disasters already written into the story.<sup>50</sup>

The first half of Brady’s novel follows the 1907 events much more closely than did Cather’s version, again operating to “correct” Cather’s version. Brady has his young engineer race from the bridge site to New York City, whereupon the father dispatches the urgent telegram that arrives too late. Cather, on the other hand, combined the two engineers into one figure, Bartley Alexander, who receives a telegram from the local construction supervisor, then races to the bridge site. Alexander arrives on time, inspects the bridge for himself, and decides it is safe. Only then does the bridge collapse, with him on it. By contrast, in both Brady’s account and the actual event, the engineer-designers were nowhere near the scene when their bridges collapsed. In the fictional accounts, though, the engineers are depicted as infinitely more concerned about safety issues than the real-life Theodore Cooper seems to have been. Cooper and another engineer were brought before a Canadian Commission and eventually judged responsible for the disaster. Cooper was particularly vilified for never actually visiting the bridge site once

construction started, and he was forced to retire in disgrace. Brady's senior engineer is similarly distant from the construction scene, but never gets the chance to retire because he immediately experiences a fatal heart attack, leaving his son to face the music. Interestingly, the *Engineering News* journal referenced by Brady in his story was a real publication that shortly after the Quebec accident declared Cooper blameless, not because of any factual evidence uncovered, but simply because a cantilever bridge of that size had never before been attempted. As far as the real-life professional world was concerned, accidents were simply the price society pays for experimentation and progress.<sup>51</sup> But in Brady's fictional account, the editor of *Engineering News*—Meade Jr.'s former classmate—places blame on the engineer father for ignoring his son's calculations. Thus Brady blames the older engineer, but not engineering as a profession. He also implies accidents can be prevented by younger, smarter engineers, which helped the public swallow the professional argument that risk was a necessary and acceptable part of progress. If engineers are generationally self-correcting, then accidents should eventually be eliminated if we just give them enough time and space to work. A risk-free technological wonderland lies just around the corner.

In stark contrast to both those accounts, Cather does not lay blame upon the bridge engineer/designer or on faulty engineering calculations; she has a crew member tell Alexander's wife, "Nobody blames him, Mrs. Alexander. If anyone is to blame, I'm afraid it's I. I should have stopped work before he came. ... According to all human calculations, it simply couldn't happen."<sup>52</sup> A few paragraphs later, the narrator says:

For Alexander death was an easy creditor. Fortune, which had smiled upon him consistently all his life, did not desert him in the end. His harshest critics did not doubt that, had he lived, he would have retrieved

himself. Even Lucius Wilson [Alexander's former professor and mentor] did not see in this accident the disaster he had once foretold.<sup>53</sup>

This was an important variation on the real accident. Cooper was widely blamed for the bridge collapse in the popular press and eventually by his own peers. If Cather's true goal in *Alexander's Bridge* was to discredit engineering and machine-age culture (as per Ammons and Tichi), she missed a good opportunity in the above passage. As I have noted, I do not believe that was Cather's intention; she was making a more complex argument about the collapse of scientific theory. Brady, on the other hand, was determined to promote technology, and particularly the latest advances in technology, and so the newer techniques of his young, Christlike engineer were depicted as superior to the outdated, mistaken methods of the older generation. Furthermore, Brady moved the latter half of his story to the West, where he could rewrite the outcome of the original disaster. The West became a self-correcting offshoot of the East, a reproduction better and more authentic than the original. Brady's novel was clearly a perfect candidate for serialization by the Western Newspaper Union in 1916, since this was an era when westerners wanted to think of themselves as the new and improved offspring of America.

Another of the serialized techno-westerns that attempted to rewrite actual events was *The Water Bearer* by J. Allan Dunn, distributed in 1924 by the Western Newspaper Union.<sup>54</sup> The novel was simultaneously published as a book by a New York firm, Dodd, Mead, and Company. Like Brady, Dunn was also a highly popular pulp fiction writer, with previous western titles like *Rimrock Trail* (1922, Bobbs Merrill) and *Turquoise Cañon* (1920, Doubleday).<sup>55</sup> In this story, a young civil engineer named Caleb Warner, hailing originally from New England, goes west where he solves the water problems of a California town named "Golden," a transparent pseudonym for San Francisco. The local

water company has already built one dam that flooded a nearby valley, displacing twelve ranching families, but the city needs more water for future development. Warner is able to locate a previously untapped water source, and he also invents a new technology that will permit water to flow toward the city. But he soon learns putting a reservoir in that location would flood the family ranch of his new girlfriend. Instead, he finds another valley for the reservoir, located on “useless” land he secretly buys with his own money. Drama ensues when an evil-twin engineer tries to steal the girlfriend’s land and sell it to the water company behind Warner’s back. Warner foils the plot, but in revenge his evil counterpart unleashes a flood that nearly drowns the hero. In this tale, it is the girl who saves the hero from death, at the risk of her own life. The villainous engineer runs away, but before he gets too far, he falls dead from the sheer force of his own fear and wickedness. The honest engineer makes a huge amount of money, gets the girl, saves the city, and gains a professional reputation for himself, leaving everyone happy, except his dead counterpart.

Dunn’s story was based on real-life events that occurred between 1908 and 1924, when a national furor erupted over plans to dam Hetch Hetchy Valley, which was a part of Yosemite National Park. The controversy pitted preservationists against conservationists and eventually launched the modern environmental movement. As early as 1901, the city of San Francisco tried to get a dam approved in Hetch Hetchy, but the Interior Department dragged its feet until the famous 1906 earthquake and fire exposed the city’s inadequate water systems. Support for the dam grew rapidly after that. However, there was a back story, rarely discussed in academic circles until recently, involving a capitalist struggle for power—a struggle strongly implied in Dunn’s fictional

version. As historian Robert Righter noted in a 2005 examination of Hetch Hetchy, the Sierra Club and John Muir joined in 1908 with the local Spring Valley Water Company to oppose the dam, while the Pacific Gas and Electric Company bankrolled certain members of Congress and persuaded them to vote in favor of the dam. It was an unusual alliance for the conservationists. The Sierra Club, of course, wanted to preserve Hetch Hetchy, while the Spring Valley Company merely wanted to shut out PG&E and preserve its water monopoly. There were three alternative dam sites that would have been cheaper, one of which today stores six times the amount of water Hetch Hetchy Reservoir does. But money and egos were involved, plus there was an opportunity to solve a unique technical problem by creating a gravity-operated water-delivery system, and this challenge fascinated the engineers, leading them to promote Hetch Hetchy over the other sites. In the end, Congress was persuaded and/or bribed, and the dam was built. It was a project of excesses, much bigger and more costly than necessary, and it provided far more power than the city could use, which raised difficult questions over the years regarding ownership and profit. Even though a federal law passed in 1913 mandated the dam's resources be publicly owned by the city, eventually PG&E acquired a private monopoly over San Francisco's power, while the city bought out the water company. Thus, one private monopoly was destroyed (the water company), but another grew exponentially (the power company), despite the Progressives' best efforts to establish the dam as a public resource.<sup>56</sup>

Dunn's story does not follow the events exactly, and the differences are significant. In his fictional account, there are indeed two thinly disguised companies, the Crystal Springs Water Company and the Golden Light and Power Company, along with a

group of other industrial bigwigs, who together form a powerful cartel that controls the city. The water and the power companies, however, are not competing in Dunn's version, but rather are working together. The true conflict in this story is not between the capitalists but between the "twin" engineers, Warner and Baxter, one heroic and the other deeply flawed and selfish. Baxter exhibits a certain urban, capitalist mentality connecting him to corporate greed; he is a slick operator who orchestrates some shady real estate deals in an attempt to get rich. By contrast, Warner's public-mindedness is constantly emphasized, especially his desire to promote the good of the many, even at the expense of the girl he loves: "What he was about was for the public weal; it outweighed private considerations, he told himself . . . Hermanos valley [the home of his girlfriend] was a private holding, yet, if public necessity demanded it for a dam site, public pressure, leading perhaps to legislative procedure, might insist upon condemnation proceedings."<sup>57</sup> Warner's brains and honesty, plus his Yankee skepticism, help him outwit both Baxter and the powerful business cartel that is viewed with suspicion throughout the story. When Warner makes money out of the deal—and he does make a great deal of money—it is depicted as a well deserved reward. Warner the true engineer shows America the way toward a new and improved capitalism. Indeed, this appears to be a *public-minded capitalism* rather than true free-market private enterprise.

Dunn's novel has been labeled as part of a genre George L. Henderson calls "rural realism," i.e., fiction that co-mingled capitalism with agriculture in pre-WWII California.<sup>58</sup> For Henderson, Warner operates not necessarily as an engineer, but as a capitalist figure who transforms the traditional agricultural landscape of California into a profit-making venture. I would argue the story is more complex. Warner reflects a

wishful merging of private and public interests in the westerner's imagination during the Progressive era. That imaginative merger has had long-lasting effects, as westerners today continue to combine a self-reliant, anti-government, market-oriented mindset with a paradoxical insistence that federal government should underwrite their economic development because it is for the common good.<sup>59</sup> Dunn's story reveals exactly how that contradiction works, namely through a public-minded capitalism that depends on the inherent moral rectitude of its practitioners rather than on federal regulation.

As these two novels suggest, the figure of the engineer played an important role in the creation of the western paradox of government-funded private enterprise, and specifically through numerous cultural depictions of a *perfectly engineered* West in the early part of the twentieth century. Although *The Water Bearer* does not contain as many engineers as Brady's novel, and hence might not be obviously centered around technology, there is an abundance of businessmen and no less than three doctors in Dunn's story. As such, this is a decidedly modern depiction of the West, although hints of the past remain in the old Spanish ruins abounding throughout the landscape, as well as in the faithful Mexican servants (who are explicitly associated with faithful black slaves on an antebellum plantation), and in paintings as ghostly references to a long-gone era. The novel is infused with signs of turn-of-the-century California culture; besides the Latino servants and place names, there are also references to Chinatown, ranches, vineyards, and a racially diverse artists' colony. But only once is Warner, the modern public-minded engineer, depicted in traditional western terms, when one of the Latino servants calls him a "caballero." In fact, it is the degenerate capitalist Baxter who more closely resembles a rough-and-tumble unshaven barroom cowboy with a drinking and gambling problem—

none of which gets painted in a positive light; Baxter is called “evil” and “el Diablo” at the end. Like *Web of Steel*, this story explicitly links itself with realism and modernity through technical descriptions of engineering methodology and equipment, but it simultaneously suggests the romance and moral virtues of the Old West have been preserved and merged with the new technological West.

Dunn’s story does not contain the sheer number of replications displayed in *Web of Steel*, but certain events are repeated here, with two physical fistfights taking place between the two engineers, two floods, and two near-drownings. There are also many duplications and multiplications of dams, valleys, rivers, mother figures, and little girls. However, the most interesting passage in *The Water Bearer* comes toward the end, when a female secretary, who is pregnant with Baxter’s illegitimate child, comes forward to reveal Baxter’s sinister plan, using carbon copies of forged documents. Three written pieces of evidence are introduced, none of which could be considered entirely legitimate on its own terms. In the first instance, the girlfriend’s elderly father was tricked into signing an option to sell his land to Baxter—but only for agricultural purposes, not for a dam or for development. Baxter, it is revealed, used that ill-gotten signature to forge a second document that eliminated the restrictions. But in a third twist, the secretary brings out a third, secret carbon copy of the forged document in order to prove Baxter’s crime. Interestingly, it is only through these three forgeries and copies that the truth is finally revealed. To emphasize the illegitimacy of the documents, the author explicitly connects the fake documents with the “fake” (illegitimate) child: When confronted with the documents, Baxter blusters, “I am as doubtful of the paternity of the child as she [the secretary] affects to be of the authenticity of the option. . . . Both those options are



genuine. I defy you to prove them otherwise.”<sup>60</sup> His assertion is quickly proved false, due to his own failure to change the date on the forged document.

Thus Baxter’s selfish scheming is eventually dismantled using carbon copies, forgeries, duplicate dates, and an illegitimate child (who operates as a twin to another adopted child in the story). This is the same ethos of replication we saw in *Web of Steel*, the same process upon which the authenticity of the frontier plot has relied over the decades. The under-layer of reproduction upon which reality rests in this story ultimately creates a Baudrillardian hyperreality. This is especially evident when Warner decides in the final paragraphs that the secondary site chosen for the dam is even better than the original site. Two creeks run through the second site, not just one, and the slope of the basin’s sides will drain better, plus the land will be cheaper. The second site is called Boca-Blanca (i.e., Hetch Hetchy). It was, of course, the *authentic* site all along.

Thus we find Dunn in 1924 re-writing the still-fresh and bitter Hetch Hetchy controversy, insisting the problems with location had all been resolved and all parties were happy, except for the greedy, selfish faux engineer. True engineers—the authentic “water bearers”—can always be trusted to find the best solutions because they have the public’s interest uppermost in their minds. They stand higher on the morality scale than do businessmen. Furthermore, their profits are well deserved because they have carefully considered all possible problems and have prepared well against the opposition. This theme corresponded closely with the prevailing “cult of the engineer” during the 1920s, as described by Thorstein Veblen, whose influential book *The Engineers and the Price System* (1921) depicted engineers as revolutionary populist symbols working on behalf of the people against decadent, elitist capitalists and politicians. The engineer, Veblen

asserted, would save the nation because he alone performed his work solely for the love of it, or for the love of public service. This was also the rationale behind efficiency movements like Taylorism and Fordism, which sought to re-engineer American labor to increase profit and productivity.

The American West and the “cult of the engineer” thus forged a perfect cultural partnership prior to World War II. The West was a natural manifestation of America’s authenticity—the “real” America, so to speak—and it functioned as an appropriate stage for the engineer’s own performance of authenticity. In many ways, the techno-western subgenre was simply the hybrid product of a give-and-take encounter between the traditional, frontier West and the urban, engineering culture of the progressive West. Like the larger frontier myth, the techno-western was heavily invested in paradoxical but simultaneous notions of wilderness primitivism and national progress—“Westward the course of Empire makes its way.” Also preserved was the archetypal American vision of the West as both utopia and tabula rasa, where humans could re-make their identities and repair the mistakes of older, more decadent societies. Familiar racial stereotypes and class divisions occurred in both the techno-western and the traditional western. There was even a certain nod to gunfighter culture in the techno-western, although the true engineer always manages to remain calm and logical when forced into a duel, which generally involves fists rather than guns or knives. In fact, I have yet to discover a single engineer-hero in these stories who has to murder his evil opponent, whether to save his woman or his dam. Superior intelligence and divine justice always win the day for the heroic western engineer.

Yet the techno-western resisted traditional frontier tropes in at least one very important way, namely through a deliberate suppression of the nostalgic, backward-looking farmer/rancher/cowboy who had long dominated the national vision of the West. When farmers and ranch workers appeared in the techno-western, they were aging and vanishing, just like Native Americans. Techno-western authors often depicted ranch owners and workers with nostalgic fondness, but in these stories, modernity and technology always triumph over outdated and sometimes even harmful traditions—as evidenced in *The Water Bearer*, where Betty’s rancher-father has to die before she can marry her young engineer, and in *Web of Steel*, where the older engineer refuses to adopt his son’s new mathematical formulas that could have saved his bridge from disaster.

Besides working against traditional western mythology, the techno-western also worked against certain assumptions of the Machine Age. We have already seen evidence these authors inserted into the technological western milieu what Aldo Leopold called a “land ethic,” albeit a problematic one. *The Water Bearer* specifically shows Warner searching for a dam site that would otherwise be useless for agricultural or ranching purposes, land consisting largely of gravel and inhabited by a single old man dying of tuberculosis—land deemed “worthless” by everyone else. Warner thus works hard to avoid any negative environmental or social consequences of his dam. Today we would roundly condemn his cognitive dissonance, but that kind of thinking was progressive enough in its day that it launched the modern environmental movement.<sup>61</sup> Even *Web of Steel*, which is filled with paeans to technology, spends an inordinate amount of textual space romanticizing western land as a source of rehabilitation and recovery for the

injured soul. Of course this is a familiar western trope to us now, but again, at that time it represented an important challenge to the prevailing gear-and-girder culture of the East.

The techno-western also promoted a specific view of femininity, a view that incorporated (white) women into the masculine cult of engineering and at the same time set them apart from men. In *The Water Bearer*, the thought of Betty's victimization by Baxter at first enrages Caleb and then helps him control himself: "He was furious enough, remembering Betty's white skin with the bruises on it, her torn garments, to beat Baxter to a pulp. . . . Only the one thought beat against the wrath that exulted already the idea of getting Baxter within reach of his hands, the remembrance that punishment must stop short of murder. There his New England sanity fought for restraint. He had won Betty—he must not lose her." Such gender and racial typecasting was only to be expected during this era, but then, a few paragraphs later, something startling happens: Betty becomes Caleb's true twin, his *hydro-engineering partner*, when she asks Caleb about a piece of jewelry he had given her (and she had returned in anger) depicting two fishes:

"I am the Water-Bearer," he [Caleb] said—he was a little inclined to vaunt in his triumphant [sic]. "You remember the sign of Aquarius?"

"You must give mine back again."

"I shall. The two fishes, joined together with a ribbon. Water creatures, Betty. You and I, in the same element, bound by love."<sup>62</sup>

The reader already suspected from an earlier passage that Betty was a secret engineer, because she told Caleb if she were a man, she would want to bring water to the "thirsty earth or to thirsty people. To make a city grow where none has been, or render dry lands fertile." The association of western women with engineering was widespread in the techno-western subgenre. Many of the stories described female characters who were

“efficient” (a key word for engineers), who adorned themselves simply, required little makeup, and placed no burdens upon their male partners, but of course were overwhelmingly feminine at the same time. One techno-western from 1934—by a female author—imagines a young woman who earns an engineering degree at college, but is unable to receive any credit for her achievements. In order to get away from her rich, famous engineer father, she goes West, dresses up like a man, and makes her own reputation by working harder than the men around her. Eventually her masquerade is uncovered, and she predictably relinquishes her job so she can get married—to another engineer, of course.<sup>63</sup> As further evidence of this trend toward a feminine engineering culture, publishers during this era were selling a multitude of serialized fictions aimed at girls with technological dreams—counterparts to the boy “Edisonade” novels—including the *Automobile Girls*, the *Girl Aviators*, and the *Radio Girls* series.<sup>64</sup> However, girls who actually did get engineering degrees probably had a hard time finding jobs. One 1936 nationally syndicated news article reported that Eleanor Allen, a graduate in mechanical engineering from Swarthmore (Pa.) College, could not find a position after employers took one “look at her blonde bobbed head.”<sup>65</sup> There is plenty more to be said about the relationships between gender, race, and technology in the techno-western, but that will have to wait for another day.

Perhaps the most striking contradiction between the two cultures of the techno-western and the engineer lies in the *excesses* of techno-western literature. The prime directive of engineering is efficiency. Yet the techno-western, with its countless replications and its underlying ethos of seriality and reproduction, failed abysmally at a deep, structural level to adhere to the engineer’s imperative to avoid waste. All forms of

mass culture rely on repetition and reproduction, of course, but this particular form—the techno-western—presented itself as a faithful rendering of both the real West and the real engineer. Why so much excess and inauthenticity? Why the compulsive replications and multiplications we have discovered in these texts? Why the explicit references to copies and fakes that operate to reveal truth and meaning?

Without delving too deeply into the ongoing and far-ranging critical dialectic of imitation vs. originality, let us note an intellectual crisis had occurred during the nineteenth-century, when the industrial revolution threatened to dissolve the “bourgeois-urban subject” into a “sequence of serial identities.”<sup>66</sup> Industrial-era intellectuals were forced to think for the first time about the underlying meaning behind the original and its copies. For the United States, arriving late to industrialism, the proliferation of a machine-age social order after the Civil War brought a profound change to American society. What had previously been a haphazard conglomerate of locally autonomous communities characterized by noncentralized systems of authority, suddenly gave way to a new trend toward large-scale regulation and hierarchy: “men were now thinking in terms of a complex social technology, of a mechanized and systematized factory.”<sup>67</sup> Increasing rates of immigration and urbanization led to a profound national anxiety as old ideas about individual autonomy crumbled under the perceived need for bureaucratic and social order.

The changes in the U.S. echoed those occurring decades earlier in Europe. Sören Kierkegaard’s seminal essay, *Repetition*, was written in 1843 and reflects a typical bourgeois anxiety about urbanization and the machine age. The essay takes the form of a deliberately serialized and disjointed pastiche of personal reflection, journalism, and

letters. In this work, a young man named—redundantly—Constantin Constantius takes the same walk through the streets of Berlin in an attempt to reproduce the same experience every day. To his immense frustration, he fails every time. Something is always different. The experience establishes there is no such thing as an exact copy even when one wills there to be, nor can one hold onto originality any longer than for a brief moment, thus disavowing the category of “copy” as well as the category of “original.” Kierkegaard suggests what is “real” about repetition is the process by which a so-called original is constantly transforming itself into a slightly different thing. For Kierkegaard, the imperfect copy and the fleeting original simultaneously generate a persistent anxiety as well as a creative transcendence. To prove that point, later intellectuals like Benjamin and Freud—imitating Baudelaire’s city-walking *flaneur*—conducted their own experiments in urban tourism, re-discovering both the differences and the samenesses of the experience. For Freud, of course, the resulting anxiety took the form of an uncanny *Unheimlichkeit*, while Benjamin similarly discovered a “homesickness at home” and began thinking about history as a series of disjointed, “unsuccessful reenactments,” or attempted repetitions of previous events.<sup>68</sup>

The following quote from Kierkegaard sheds more light on how repetition achieves a certain authenticity all its own:

...it takes courage to will repetition. ... he who wills repetition is a man, and the more emphatically he is able to realize it, the more profound a human being he is. But he who does not grasp that life is a repetition and that this is the beauty of life has pronounced his own verdict and deserves nothing better than what will happen to him anyway—he will perish. For hope is a beckoning fruit that does not satisfy; recollection is petty travel money that does not satisfy; but repetition is the daily bread that satisfies with blessing. ...Repetition—that is actuality and the earnestness of existence.<sup>69</sup>

When Kierkegaard says “it takes courage to will repetition,” he’s getting at something interesting: humans deliberately create copies even though self-identity depends on authenticity and originality. Indeed, repetition seems to be a fundamental feature of human identity. *Willed repetition* is thus not entirely inauthentic. Furthermore, there is something about repetition that satisfies our desires. Repetition is not simply a longing for sameness; it fills certain gaps. It is “the beauty of life,” and the “daily bread.” Repetition and desire are intimately linked in Kirkegaard’s description of human life.

Thus the replications appearing in the techno-western, and in the western more generally, are not simply bad writing or over-determined assertions of western legitimacy or the predictable manifestation of formulaic fiction. They invoke an aesthetic *process* of authentication, a privileging of mode over artifact, namely the mode of copying and reproduction over the artifact of an original work, exactly as Walter Benjamin would suggest almost 100 years later. The validity of replication as a creative process was asserted by yet another Benjamin, i.e., Benjamin Franklin, the founding father of American reprinting, when he claimed to have learned how to write by taking apart the sentences of others and pasting them back into new and slightly different forms. For Franklin, as for Kierkegaard, replication was the process by which originality and meaning arise.

However, replication—especially replication that is slightly different each time, as Kierkegaard’s urban walks proved to be—is also the process by which order can dissolve into uncanny disorder, and this engenders an understandable anxiety in the human psyche. Recently, chaos theorists have explored this paradox through *iteration*, a nonlinear mathematical function that uses the output of one calculation as input for the



next, performing the same operation over and over with slightly different inputs each time. This procedure produces lovely fractal designs on the computer. Iteration eventually leads to chaos, but also to order, by revealing a self-similarity between different scales of information: at every level, the fractal image repeats itself, so chaos exhibits a kind of order.<sup>70</sup> What iteration does is highlight the importance of initial uncertainties: small differences in initial conditions can lead to radically different outcomes, or chaos, as well as to deep structural patterns of order. As posthumanist Katherine Hayles notes, iteration ultimately makes clear that an authentic original was never very authentic to begin with.<sup>71</sup> We might also say the opposite, that *iteration exhibits a profound authenticity of its own*, through a kind of repetition that is not exactly reproduction.

The anxiety Kierkegaard described was engendered by the fact he could not create a perfect copy even when he tried. It was as if the copy had a mind of its own, replicating itself into disorder every time. Even if it had been possible to create a perfect copy, questions remained for Kierkegaard: Would the perfect, willed copy constitute an original (because it was authored through a deliberately constructive process) or would it constitute imitation (because it was an attempted reproduction of an earlier moment)? Was it meaning or non-meaning? Kierkegaard seems to suggest the only way to manage the inevitable anxiety arising from iteration is to submit oneself to the process and decide afterward what has meaning and what does not. Replication first, authenticity later. That, of course, was the very process invoked in the serial techno-westerns discussed here, where truth was eventually established on the basis of copies, forgeries, duplications,

multiplications, and representation. In other words, authenticity arises out of inauthenticity, not vice versa.

As a slightly imperfect iteration of earlier forms of western myth, the techno-western would contribute to atomic chaos in the postwar American West, even as it exhibited many of the same old frontier patterns. Chapter 3 examines how the Atomic Energy Commission during the 1950s invented a narrative about atomic engineering in the West that satisfied the desires of both easterners, who wanted to believe the frontier still existed, and westerners, who wanted to believe they were full participants in modernity. It wasn't simply a matter of the AEC imposing a certain narrative onto an innocent West; western media were complicit in the narrative and thereby unwittingly helped create the problems that soon arose. The next chapter examines more closely the desire of Cold War westerners to merge themselves with the atomic story, and what happened when they discovered their betrayal. Just like the plot of a serial techno-western, in which forgeries and duplications somehow operated to authenticate reality, so did the multiplications of secrets and lies eventually testify against themselves in the atomic West. It was too late, of course, to save the lives of thousands across the nation who may have died from radiation-induced cancers.<sup>72</sup> They too became part of a vast and mindless—but *deliberate*—replication process over which they had little control. Perhaps Kierkegaard did not foresee such inhuman monstrosity when he declared repetition is “the beauty of life,” but surely he sensed the dark possibilities when he wrote, “Who tricked me into this whole thing and leaves me standing here?”<sup>73</sup>

### Notes

1. Slotkin, *Regeneration through Violence* (1973); *The Fatal Environment* (1985); and *Gunfighter Nation* (1998).
2. Erastus Beadle's first "dime novel" in 1860 was a western that sold 65,000 copies within the first few months of publication. Westerns comprised perhaps three-fourths of the dime novel market (Daryl Jones, *The Dime Novel Western* [Bowling Green, Ohio: Bowling Green State University Popular Press, 1978]). Richard Slotkin also makes the argument in *Gunfighter Nation* that even the detective dime novels were essentially westerns in another guise. Similarly, Michael Denning argues that since literary genres are an artifact of the 1920s and 1930s, all the earlier dime novels ought to be considered related to each other (*Mechanic Accents: Dime Novels and Working-class Culture in America* [New York: Verso, 1987], 76-77). For a comprehensive analysis of how the western evolved through the media of dime novels and other formats, see Smith's canonical *Virgin Land* (1950).
3. Meredith McGill, *American Literature and the Culture of Reprinting, 1834-1853* (Philadelphia: Univ of Pennsylvania Press, 2003).
4. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," Marxists Internet Archive, [www.marxists.org](http://www.marxists.org).
5. Lewis, *Unsettling the Literary West*; see also Handley and Lewis, *True West*.
6. Campbell, *The Rhizomatic West*.
7. See, for example, Patricia Limerick's discussion regarding Disney's "Frontierland" (Limerick, *Something in the Soil: Legacies and Reckonings in the New West* [New York: Norton, 2000], 74-92).
8. Benjamin, "The Work of Art."
9. Miles Orvell, *The Real Thing: Imitation and Authenticity in American Culture, 1880-1940* (Chapel Hill: University of North Carolina Press, 1989).
10. John Cawelti, "The Western: A Look at the Evolution of a Formula," in *Adventure, Mystery, and Romance: Formula Stories as Art and Popular Culture* (Chicago, Ill.: Univ. of Chicago Press, 1977), 192-259.
11. Cawelti, "The Western," 199.
12. Cawelti, "The Western," 241.
13. Cyrus Townsend Brady, *Web of Steel* (Philadelphia, Pa.: Fleming H. Revell Co., 1916).

14. The Western Newspaper Union distributed material to small-town and rural newspapers across the nation, not merely in the West (Charles Johanningsmeier, *Fiction and the American Literary Marketplace: The Role of Newspaper Syndicates, 1860-1900* [New York: Cambridge University Press, 1997]). Each newspaper chose what material to print from the syndicate, and those choices are strong indicators of local tastes and preferences. The serial version of “Web of Steel” was published in 1916-1917 almost solely in western newspapers like *The Tomahawk* (Minnesota), *The North Platte (North Dakota) Tribune*, *The Red Cloud Chief* (Nebraska), and *The Tombstone (Arizona) Epitaph* (U.S. Library of Congress, National Endowment for the Humanities, *Chronicling America: Historic American Newspapers*, [www.chroniclingamerica.loc.gov](http://www.chroniclingamerica.loc.gov)). Partial installments of the story can also be found in the Winona Newspaper Project, Darrel W. Krueger Library, Winona State University, Winona, Minn.; <http://www.winona.edu/library/databases/winonanewspaperproject.htm>; and the Colorado Historic Newspapers Collection, Colorado State Library, Colorado Historical Society; [www.coloradohistoricnewspapers.org](http://www.coloradohistoricnewspapers.org). The story was also published in Utah in the *Wasatch Wave* (April 20-July 13, 1917) and the *Millard County Progress* (April 5- July 7, 1918). See Utah Digital Newspapers, Marriott Library, University of Utah; <http://digitalnewspapers.org/>.
  
15. This factoid was gleaned from an interesting conversation between Brady and one of his readers that appears in “Indian Fighters: Dr. Cyrus Townsend Brady Replies to Mr. Spears’ Remarks Touching His New Book,” *New York Times*, Feb. 11, 1905, BR92; [www.nytimes.com](http://www.nytimes.com). The entire text of *Indian Fights and Fighters* is available from GoogleBooks, [www.books.google.com](http://www.books.google.com).
  
16. This brief biographical information about Brady comes from Everett Bleiler, *The Checklist of Fantastic Literature* (Chicago: Shasta Publ., 1948), 59. For a list of works by Brady, see Geoffrey Dayton Smith, *American Fiction, 1901-1925: A Bibliography* (New York: Cambridge Univ. Press, 1997), 76-79.
  
17. One especially disturbing clip from Brady was disseminated by the A. N. Kellogg newspaper syndicate and excerpted from one of Brady’s columns in the May 1900 *Ladies Home Journal*. The *LHJ* column, in turn, was taken from Brady’s book, *Recollections of a Missionary in the Great West* (New York: C. Scribner’s Sons, 1900). In the excerpt, “Reverend” Brady describes an incident that supposedly occurred while he served as a young missionary in the “Great West,” where he met a “gypsy” woman whose baby had just died. After being implored to bless the dead baby so its soul could go to heaven, Brady finally tells the woman he can’t help her; she has “failed in her duty” as a mother because she didn’t bring the baby sooner, but “God would certainly accept her contrition.” He pats himself on the back for displaying such compassion. There is no indication regarding what kind of “gypsy” Brady was referring to, but the connection between racial and moral contamination should be obvious. (Brady, “A Gypsy Mother’s Anguish,” *The Bourbon [Kentucky] News*, June 26, 1900, 7; Kentuckiana Digital Library, Kentucky Virtual Library, <http://kdl.kyvl.org/newspapers.html>).

18. *Web of Steel*, 7.
19. Richard Malin Ohmann, *Selling Culture: Magazines, Markets, and Class at the Turn of the Century* (New York: Verso, 1996).
20. Johanningsmeier, *Fiction and the American Literary Marketplace*.
21. See James H. Maguire, "Settled In: Many Wests," and Michael T. Marsden and Jack Nachbar, "The Modern Popular Western: Radio, Television, Film and Print," both in the Western Literature Association's *A Literary History of the American West* (Fort Worth: Texas Christian Univ. Press, 1987), 319-325 and 1263-1282.
22. *Web of Steel*, 8.
23. See Lewis, *Unsettling the Literary West*.
24. Tichi, *Shifting Gears*.
25. Peter Stanfield, *Hollywood, Westerns, and the 1930s: The Lost Trail* (Exeter, U.K.: University of Exeter Press, 2001), 78.
26. *The Phantom Empire*, 1935, Mascot Pictures. See synopsis at "The Official Website for Gene Autry: America's Favorite Singing Cowboy," Gene Autry Entertainment, <http://www.autry.com/geneautry/motionpictures/filmography/phantomempire.html>.
27. Patricke Johns-Heine and Hans H. Gerth, "Values in Mass Periodical Fiction, 1921-1940," *The Public Opinion Quarterly* 13.1 (Spring 1949); 105-113.
28. Whenever possible, I have used the Utah Digital Newspaper database to locate the techno-western stories, because this database exhibits far fewer problems with its search features and is an accurate, reliable source for material that came from the Western Newspaper Union. The Utah Digital Newspaper Project is sponsored by the Marriott Library, University of Utah; <http://digitalnewspapers.org/>.
29. See, for example, William Cronon's description in *Nature's Metropolis* of the difficulties Chicago faced at the turn-of-the-century trying to retrofit its railroad-based landscape to accommodate the automobile.
30. Robert G. Athearn, *The Mythic West in Twentieth-Century America* (Lawrence: Univ. Press of Kansas, 1986), 162.
31. Michael Lund, *America's Continuing Story: An Introduction to Serial Fiction, 1850-1900* (Detroit: Wayne State Univ. Press, 1993).
32. E. L. Kirkpatrick, "Reading Interests of Farm Families," *Social Forces* 11.2 (Dec. 1932): 224-27.

33. B. Lamar Johnson, "Adult Reading Interests as Related to Sex and Marital Status," *The School Review* 40.1 (Jan. 1932): 33-43.
34. McGill, *American Literature and the Culture of Reprinting*.
35. Jones, *The Dime Novel Western*, 7.
36. Johanningsmeier, *Fiction and the American Literary Marketplace*, 207.
37. *AB* ran as a serial in *McClure's* magazine, where Cather worked as an editor, prior to its publication as a book. This, of course, followed the nineteenth-century pattern, by which unknown authors made their reputations first through the magazines or dime novels, then moved to book publishing. It also suggests that the urban setting of *AB* helped secure its placement in a national magazine, which (as noted previously) would have been more likely to publish urban stories than rural ones. Did Cather deliberately write an urban story for her first serialized novel in order to gain attention among the eastern literati? Did that then give her more flexibility as a book author later on? And who would have known better which trends were selling in various media than an experienced magazine editor like Cather?
38. Denning, *Mechanic Accents*, 17-26.
39. Cyrus Brady's reliance on newspaper clippings for inspiration has been confirmed by John H. Monnet, *The Battle of Beecher Island and the Indian War of 1867-1869* (Boulder: Univ. Press of Colorado, 1994), 199.
40. Roger Hagedorn, "Technology and Economic Exploitation: The Serial as a Form of Narrative Presentation," *Wide Angle* 10 (1988): 4-12.
41. We know that the Western Newspaper Union syndicate was still using patent insides in 1929 (although the technology was mostly outdated by then) from an old *Time* magazine article, "Business and Finance: Deals, Financing," *Time*, July 29, 1929; <http://www.time.com/time/magazine/article/0,9171,786083,00.html>.
42. Johanningsmeier, *Fiction and the American Literary Marketplace*.
43. Michael Schudson, *Discovering the News: A Social History of American Newspapers* (New York: Basic Books, 1978). See also Alfred McClung Lee, *The Daily Newspaper in America: The Evolution of a Social Instrument* (New York: Macmillan, 1947).
44. Johanningsmeier, *Fiction and the American Literary Marketplace*.
45. Johnson, "Adult Reading Interests."

46. Sigmund Freud, "Beyond the Pleasure Principle," in *The Standard Edition of The Complete Psychological Works of Sigmund Freud*, vol. 18, edited and translated by James Strachey et al. (New York: Hogarth Books, 1953), 7-64.
47. Brady, *Web of Steel*, 18-19.
48. Western engineering culture has been explored in Worster, *Rivers of Empire*.
49. Brady and Cather were not the only authors to use the Quebec bridge collapse as the subject of a novel. In 1909, Anna Chapin Ray published *The Bridge Builders* (Boston: Little, Brown, & Co.), which was about a love triangle between a nouveau-riche millionaire's daughter, an American author, and an engineer associated with the Quebec bridge. I have not included it here, although it does have a relationship with the American West, since the millionaire and his daughter are from Colorado and are redundantly named "West."
50. William D. Middleton, *The Bridge at Quebec* (Bloomington: Indiana University Press, 2001).
51. "The Quebec Disaster," *New York Times*, Sept. 5, 1907; <http://www.nytimes.com>.
52. *AB*, 73.
53. *AB*, 75.
54. Published in the *Millard (Utah) County Press*, May 28-Oct. 29, 192; nearly complete text in Utah Digital Newspapers Project. A more complete and earlier version of the novel can be found in the *Winona (Minnesota) Republican-Herald*, Nov. 7-Dec. 31, 1924, Winona Newspaper Project, <http://www.winona.edu/library/databases/winonanewspaperproject.htm>.
55. Smith, *American Fiction, 1901-1925*.
56. Robert W. Righter, *The Battle over Hetch Hetchy: America's Most Controversial Dam and the Birth of Modern Environmentalism* (New York: Oxford Univ. Press, 2005).
57. Dunn, "The Water Bearer," *Millard County Progress*, June 18, 1926, 5. Utah Digital Newspapers, <http://digitalnewspapers.org/>.
58. George L. Henderson, *California and the Fictions of Capital* [New York: Oxford Univ. Press, 1999].
59. Limerick, *The Legacy of Conquest*; Gerald D. Nash and Richard W. Etulain, eds., *The Twentieth-Century West: Historical Interpretations* (Albuquerque: Univ. of New Mexico Press, 1989); White, 'It's Your Misfortune.'

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69. Søren Kierkegaard, *Fear and Trembling/Repetition*, in vol. 6 of *Kierkegaard's Writings* (Princeton, N.J.: Princeton University, 1983 [1843]), 132-33.
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related cancers (National Cancer Institute, *Report on the Feasibility of a Study of the Health Consequences to the American Population from Nuclear Weapons Tests Conducted by the United States and Other Nations*, Department of Human Health Services and the Centers for Disease Control and Prevention, 2005; <http://www.cdc.gov/NCEH/radiation/fallout/default.htm>). The results of both studies were suppressed, the first one for years, before the U.S. government was finally forced to release them to the public. Another study estimates that the global nuclear complex has already produced over 400,000 cancer deaths worldwide (International Physicians for the Prevention of Nuclear War and the Institute for Energy and Environmental Research, *Radioactive Heaven and Earth: The Health and Environmental Effects of Nuclear Weapons Testing In, On, and Above the Earth* [New York: Apex Press, 1991]).

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## CHAPTER 3

### WESTERNIZING THE BOMB: COLD WAR TENSIONS BETWEEN OFFICIAL NARRATIVE AND CIVILIAN MEMOIR

In 1942, when atomic physicist J. Robert Oppenheimer and U.S. Army General Leslie M. Groves went searching for a place to locate a top-secret laboratory as part of what would become the infamous “Manhattan Project,” they chose a boys’ prep school in the mountains of New Mexico—a remote site in the western frontier, isolated from civilization and protected from prying eyes. Oppenheimer persuaded Groves to buy the site because “Oppie” owned a nearby ranch where he had spent happy times as a young man recovering from tuberculosis. The New Mexico wilderness was a place of romantic nostalgia for Oppenheimer, who once said physics and the desert were his “two great loves.”<sup>1</sup>

General Groves was likewise no stranger to western romance. In 1962, when he published his memoir about the Manhattan Project, *Now It Can Be Told*, Groves included the following passage at the very end of his account:

When I was a boy, I lived with my father at a number of the Army posts that had sprung up during the Indian wars throughout the western United States. There I came to know many of the old soldiers and scouts who had devoted their active lives to *winning the West*. And as I listened to the stories of their deeds, I grew somewhat dismayed, wondering what was left for me to do *now that the West was won*. I am sure that many others of my generation shared this feeling.

Yet those of us who saw the dawn of the Atomic Age that early morning at Alamogordo will never hold such doubts again. We know now that when man is willing to make the effort, he is capable of accomplishing virtually anything.<sup>2</sup>

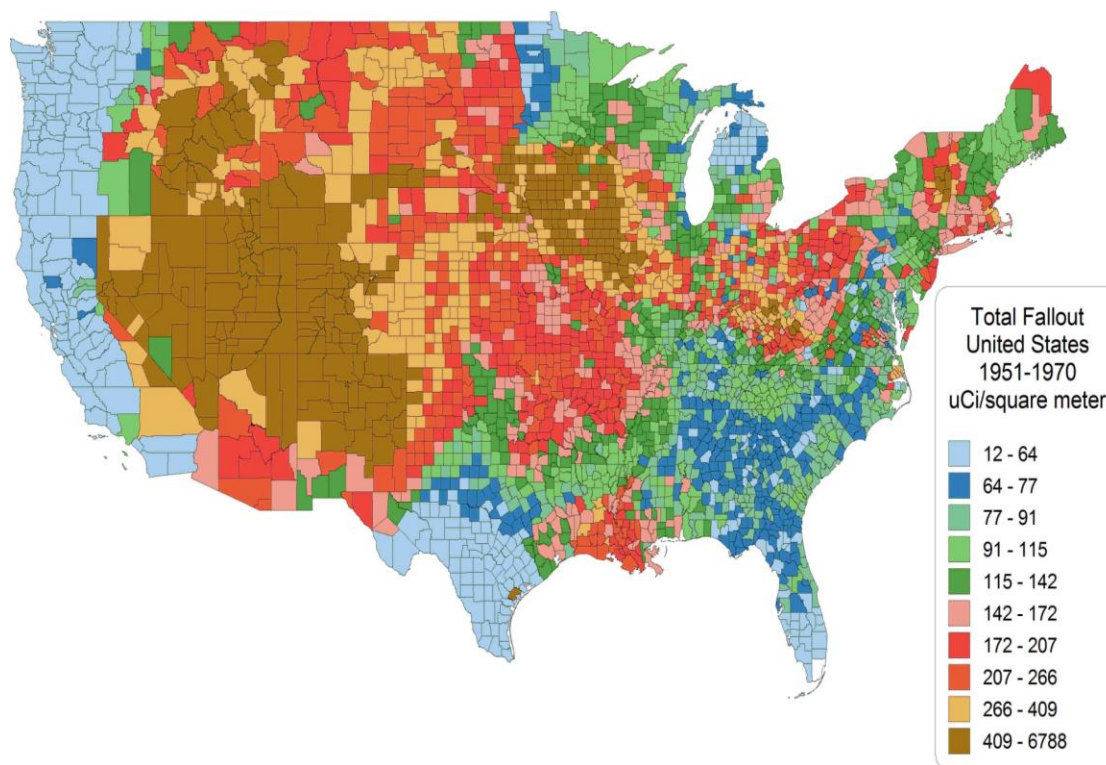
Thus Groves depicted the atomic bomb as a new way of “winning the West” for a generation of (white) men who felt they had missed out on something authentically American. This is a perverted version of the frontier myth, which Slotkin names “Regeneration through Violence.” Whereas an earlier version of the myth viewed nature through a pastoral lens of romance, regeneration, and rebirth, this version twisted the myth so civilized man could recover his lost potency by penetrating the wilderness and engaging in savage violence, or in this case, the development of a deadly weapon.<sup>3</sup> Groves was right to assume his feelings were shared by his colleagues. Cultural historian Peter Hales notes the bomb was intimately associated with the Wild West from its very beginnings, not just due to the geographical location of the Los Alamos lab, but also because military and scientific personnel had been deeply influenced by western narratives from childhood onward.<sup>4</sup> A number of the military officers in the Manhattan Project had attended the original Boys’ Ranch in their youths, where they engaged in masculinity rituals like sleeping naked in the snow and wearing nothing but shorts, shirts, and knee socks no matter how cold it got. The ranch’s prewar culture promoted a “masculine pantheism” that was common to most male institutions in America at the time.<sup>5</sup> After the ranch was purchased by the government for use as an atomic laboratory, the scientists—many of whom had come from sophisticated urban settings—hiked, rode horses, camped, and skied when they weren’t working on the bomb. Spartan conditions at the ranch during the war actually heightened the western aura.<sup>6</sup>

The bomb's physical origins in the American West played a relatively minor role in the "westernizing" of nuclearism when compared to the role played by culture. The mythical links forged between nuclear technology and frontierism have been well explored.<sup>7</sup> Stanley Corkin, for one, has established a solid connection between the Cold War and the Wild West's symbolic comeback in American film and literature during the 1950s, when the continental atomic testing program was in full swing at the Nevada Test Site.<sup>8</sup> During the 1960s, that connection would actually be mocked: Who can forget the image of Slim Pickens riding a nuclear missile through the sky in *Dr. Strangelove* (1964) as if he were participating in an atomic rodeo? The multiple atomic explosions occurring in the Nevada desert were an integral part of the process by which the nation sought to establish its identity in the face of an existential threat from the Soviet Union. As image after image of the Old West appeared on the nation's television and cinema screens, they reflected to America's collective gaze reproductions of what it most wanted to see: a frontier landscape untouched by the Cold War and the most deadly technology ever invented. Ironically, though, any fragments of the Old West that might still have existed were rapidly disappearing under the onslaught of the military-industrial complex and postwar suburbanization.<sup>9</sup> Before the war, the nation's mythmakers had promoted a frontier West where white men could roam free and win battles against barbarism and savagery, but an alternate West also haunted America, one where technology and wilderness coexisted harmoniously. Both visions would obscure reality after the war, as the West became ever more entangled in the nation's atomic projects.

Only in retrospect did westerners discover what it meant to live in an Atomic West, after independent medical research on radioactive fallout was published and secret

documents began to be uncovered in the 1980s. It's a familiar story by now. The Atomic Energy Commission kept many terrible secrets while assuring westerners atomic testing was *protecting* them from harm, not hurting them. After several decades of radiation exposure, westerners found their suspicions confirmed; deadly levels of radioactivity had been emanating all along from the Nevada Test Site and other nuclear facilities (Figure 1). Volumes have been written documenting the evidence.<sup>10</sup>

What hasn't been adequately covered is the full story of the public relations campaign carried out by the AEC so the military could continue testing bombs no matter the human consequences. Such is beyond the scope of this project. However, enough is known to make the following assertion: *The AEC deliberately incorporated the frontier myth into its public relations campaign in order to depict atomic testing as seamlessly and harmlessly meshing with the traditions of the American West.* Westerners might have been predisposed to accept the AEC's narrative because they already viewed the West as a technological utopia, a place where engineering and science were operating in tandem to *improve* the environment rather than harm it. But in their memoirs and oral histories, the West's "Downwinders" have noted time and again that atomic testing marked a turning point in their lives. The bomb introduced a devastating uncertainty and change to families that had lived for generations in the same place doing the same things. It disrupted long-standing origin stories and identity constructions in the West. As we will see, the bomb became the moment when some white westerners began to connect their own stories to those of Native Americans, whom their ancestors had colonized and murdered in the name of national security.



**Figure 1. Total radioactive fallout deposited in the U.S., 1951-1970** (Miller, *U.S. Atlas of Nuclear Fallout*; used with author's permission).

Even those who didn't make a direct connection to white colonialism in the Americas nevertheless understood atomic testing turned them into "expendable" assets to their own government. In Carole Gallagher's collection of Downwinder photographs and oral histories, westerners recount over and over their betrayal by government institutions and personnel: "The government doesn't give one red nickel for a life"; "I think the government killed my husband and ruined my life"; "How can they do that to their own people? They figure we're all dispensable"; "...I see what the government is doing to us, and on our behalf they are killing us for their own purposes"; "The leaders of the Department of Energy and Defense looked upon the people of southern Utah and Nevada as expendable"; "It's amazing to me that the government could lie that thoroughly... We

were really used”; “Government people I don’t trust anymore, I don’t trust them at all. It is organized crime, that’s what it is”; “...those people who are responsible for this are absolutely criminal. ... They done to us what the Russians couldn’t do”; “We’ve all lost loved ones, friends, and we’ve all been lied to and we’ve all been expendable.”<sup>11</sup>

Downwinder narratives like these have been categorized by eco-critic Laurence Buell as “toxic discourse,” a form of environmental rhetoric particularly concerned with contamination and social justice issues. Buell further notes the repetition exhibited in Downwinder discourse raises questions not just about environmental contamination, but also about the contamination of discourse itself. Where did the meme of “expendability” start? Did Downwinders influence media? Did the media in turn influence Downwinders? What other texts were involved in the construction of this discourse? Although the nuclear industry derogatorily calls such claims “mass hysteria,” a more complex reading would situate Downwinders within *a discourse of mass culture*, as discussed in Chapter 2, whereby a “simultaneous collective experience” multiplies and reproduces itself in a variety of ways and through a variety of media. As noted in that chapter, the ethos of replication generates a kind of *willed authenticity* that cannot be easily dismissed. In other words, environmental contamination creates a community of victims—or an “imagined community,” as Benedict Anderson would put it.<sup>12</sup> That’s not to say the danger is imagined, but rather the community is called into being by a “widely shared paradigm of cultural self-identification,” or a commonality based more on discourse than on physical contact.<sup>13</sup>

The Downwinders’ statements reveal that atomic testing in the American West triggered a fundamental rift in the relationship between government and citizen. The

modern nation-state was built on the idea of a social compact: state and citizen co-constitute each other, and are supposed to exist in a balance of power. The state and its people might even be said to be engaged in a constant game of Mutually Assured Destruction. If the state is destroyed, then so are the citizens; if the citizens are destroyed, then so is the state. Upon this compact rests modern society. But as French theorist Paul Virilio points out, nuclear technology undoes the compact, because in order to possess nuclear power a nation has to be willing from the very beginning to risk the lives of its citizens, not just its soldiers. And yet destroying citizens in the name of national security de-legitimizes the very purpose of the state. Nuclear technology thus results in *endocolonialism*—the national project of colonizing one’s own citizens. The real danger of the nuclear state, Virilio says, lies not in the possibility a bomb might explode at any minute and kill millions of people, but rather in the fact that the nuclear state destroys society itself.<sup>14</sup>

The fingerprints of endocolonialism are everywhere we look in the history of the postwar American West, and particularly in its nuclear history. Continental atomic testing in Nevada started in 1951, and things seemed to go swimmingly at first. But in 1953, one particular bomb—nicknamed “Dirty Harry,” due to the mess it spewed into the atmosphere—forced the AEC into defensive mode.<sup>15</sup> With the subsequent deaths of thousands of sheep and an apparent increase in childhood leukemia rates, southern Utahns began questioning the safety of the bombs. In response, a multimillion dollar government public relations campaign began. One historian says the “AEC shamelessly courted the press” in order to convince Americans of the need to build, test, and stockpile atomic weapons.<sup>16</sup> Even schoolchildren were targeted through the infamous “Duck and



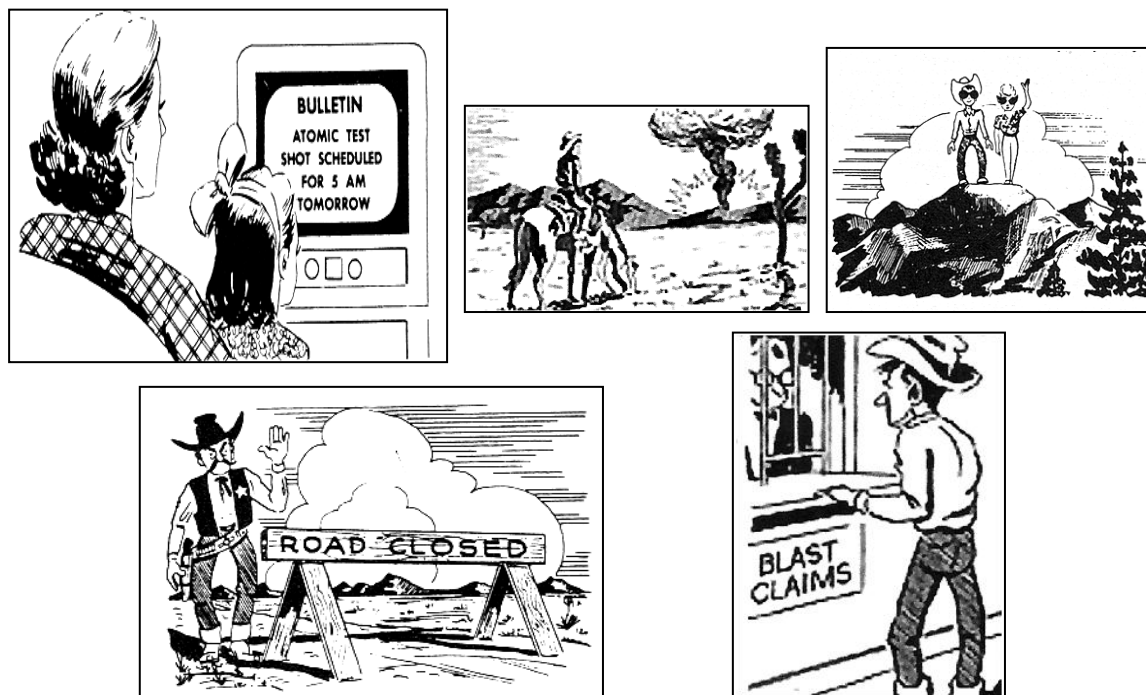
Cover” cartoon campaign, which advised them to hide under their desk in case of nuclear attack. A large part of the AEC’s efforts involved refuting and discrediting any scientists who criticized atomic testing, including their own experts in some cases.<sup>17</sup> Declassified documents later revealed government leaders embarked on a strategy designed to suppress the fears of an alarmed public rather than working to protect citizens. Eventually the AEC was forced to hide its own radiation data from other government agencies. The Public Health Service was co-opted into the AEC’s public relations campaign, when its role should have been that of watchdog.<sup>18</sup> After President Eisenhower began to question the safety of the atomic testing program, physicist Edward Teller assured him they would soon have a *fallout-free bomb* if they could just keep testing.<sup>19</sup>

As part of the P.R. campaign, AEC personnel began appearing on television and radio programs as well as speaking at county fairs in Utah, Nevada, and southern California.<sup>20</sup> The agency also created and distributed a variety of booklets, pamphlets, films, etc., to the public, all of which were designed to co-opt skeptical citizens into the project. The pamphlets are reminiscent of a B-grade sci-fi film in which aliens attempt to hypnotize humans by broadcasting robotic speeches at them:

You are in a very real sense active participants in the Nation’s atomic test program. You have been close observers of tests which have contributed greatly to building the defenses of our own country and of the free world.... You have accepted the inconvenience or the risk without fuss, without alarm, and without panic. Your cooperation has helped achieve an unusual record of safety.<sup>21</sup>

Also included in the pamphlets were cartoon illustrations, in which Utahns were depicted as frontier settlers enjoying the spectacle of atomic modernity from afar (Figure 2).

The use of cowboys, cowgirls, and even a sheriff to depict the citizens of southern Utah is noteworthy. Many Utahns reported being deeply offended by the simplistic



**Figure 2. Illustrations from 1955 AEC pamphlet, "Atomic Test Effects in the Nevada Test Site Region"** (government document available online from the Public Broadcasting System, "American Experience: The Atomic Age," [http://www.pbs.org/wgbh/amex/lasvegas/sfeature/sf\\_atomic\\_04.html](http://www.pbs.org/wgbh/amex/lasvegas/sfeature/sf_atomic_04.html)).

language used in the brochures, and by the AEC officials themselves, who made disparaging remarks about Utahns' intelligence levels.<sup>22</sup> Besides the overt condescension from the AEC, the nineteenth-century cowboy symbology was probably also implicitly offensive to Utahns. During my perusals of the archives of local newspapers from the 1910s onward, I have found little evidence to indicate Utahns viewed themselves as "cowboys" prior to the 1950s, either in editorial cartoons or in advertising.<sup>23</sup> The *farmer* was often used in self-depictions, but generally he was associated with modern technology such as the tractor or the combine. Although more research is needed, my sense is that, in Utah at least, the cowboy as a symbol had long gone the way of the dinosaur until Cold War television and cinema brought him back into fashion.<sup>24</sup>

That's not to say there weren't any cowboys left in the region. There were. Or at any rate, there were enough people who had grown up on farms and knew their way around cattle to be useful as cowboys of sorts. One of those people was Ken Case, the so-called "Atomic Cowboy," who was hired in 1954 as a "deputy sheriff" to drive cattle across the Nevada Test Site after the bomb blasts so scientists could determine the effects of radiation on livestock. Case became a sort of atomic Marlboro Man. The AEC utilized him in its public relations campaign to show western ranching was coexisting just fine with atomic engineering. Although Case was depicted as a cowboy, his immediate employer was the Reynolds Electrical and Engineering Company, a contractor for the AEC. Was Case a cowboy or an engineer or both? The lines blurred. But radioactive fallout did not respect such categories at any rate. In 1985, Case died of cancer, after having eleven surgeries to remove tumors and diseased organs from various parts of his body, including his intestines and spleen.<sup>25</sup> He was one of many Nevada Test Site workers who would eventually contract cancer and die.<sup>26</sup>

By the mid-1950s, Utahns began adopting the cowboy image projected onto them by both the AEC and the mass media. In 1955, a local newspaper began re-publishing in Green River, Utah, near Moab, where a uranium boom was occurring due to the AEC's growing demand for bomb materials.<sup>27</sup> The first issue of the newly re-invented *Green River Journal* is striking.<sup>28</sup> The masthead features a font style from the nineteenth century with various illustrations in the background, including western scenery (i.e., a waterfall and cliffs), pastoral farmland complete with grazing cows and a farmer's pickup truck, a tunnel in a hillside that is probably a uranium mine, and more visible signs of mining with large machinery and drills. In the far right corner is a symbol of the atom. The

masthead represents a mini-mural of American progress, proceeding from wilderness on the left, to the atomic bomb on the right (Figure 3). The merging of the Old West and New West occurs throughout the first issue, with a story about the new headquarters for the uranium industry juxtaposed next to a reprinted story from 1914 about a miner who broke his leg and had to be hauled 105 miles in a wagon for treatment. There are photos of both new construction in the town and an old pioneer-era waterwheel. A column titled “The Old Prospector Says,” features an unnamed columnist giving folksy western advice. An article about Butch Cassidy and his Robber’s Roost Hideout appears above an advertisement for Charlie Steen’s new Moab Drilling Company, boasting the latest diamond-core drills. (Steen was a geologist from Texas who became a millionaire in the 1950s after discovering uranium in Utah.) An advertisement from the Rio Grande railroad touting itself as “The energy for PROGRESS!” shows an old mustachioed miner waving his hat and pickaxe at a steam locomotive passing through an empty, desert landscape. Another ad from the Grand County Board of Commissioners promotes the region as the “Land of History and Future,” using symbols of the atom, a mining drill tower, and pioneer wagons heading toward both Green River and Moab. Thus the local editors of this boom-town newspaper deliberately connected their pioneer history with the national (and mythical) construct of the Old West, then merged it all with modern atomic technology, forging a new hybrid atomic frontier in the process. They were perfectly willing to use their history in this way, *as long as it also meant they were part of the new atomic story*. Local self-interests coincided nicely with national interests, for the time being.



**Figure 3. First issue of *The Green River (Utah) Journal*, July 21, 1955** (Utah Digital Newspapers, <http://digitalnewspapers.org>).

A similar process had occurred during the late nineteenth century, according to Richard Slotkin, when the frontier myth was adapted to suit the “ideological needs of the new industrial and corporate order.” Since the ideological underpinnings of frontierism were the same as those upon which capitalism rested, Slotkin says, the two systems meshed perfectly. Slotkin reads Twain’s *A Connecticut Yankee in King Arthur’s Court* (1889) as a “Last Stand” frontier myth that imagined class hierarchies, technology, and capitalism engaged in a tragic and inevitable process of mutual self-destruction.<sup>29</sup> But the rest of America ignored Twain’s cautionary tale and chose instead to use frontier individualism to rationalize the excesses of industrial society. Thus the frontier myth was already successfully incorporated into national narratives about progress and industry long before the Cold War began.<sup>30</sup> It was only one step farther for the AEC and the local editors of the *Green River Journal* to marry the Old West with atomic technology.

Prewar images of a perfectly engineered West that preserved wilderness and tradition also played a role in this transitional era. The AEC took full advantage of Utah’s desire to participate in modernity by trumpeting its heritage of small-town archetypal American communities. In 1955, a public relations film produced by the AEC featured actual residents of St. George, the closest Utah community downwind of the Nevada Test

Site, going about their business without fear of the bomb. The film was called *Atomic Tests in Nevada*. It opens with early-morning shots of dark, empty streets. The narrator calls the town “sleepy” and “deserted,” except for three iconic figures, the milkman, the policeman, and the gas station attendant, who are the only ones to witness the distant morning sky flashing like lightning from the bomb tests. The people of St. George look like zombies, mechanically shopping, cooking, cleaning, going to school and work. “It’s old stuff to St. George,” the narrator intones, “routine. They’ve seen a lot of them [i.e., bombs], ever since 1951. Nothing to get excited about anymore.”<sup>31</sup> The AEC’s message, of course, was pastoral western life remained unaffected by the atomic engineers who were making weapons of mass destruction in the desert. In the meantime, those same engineers were plastering St. George with fallout that was deliberately shifted away from California and what AEC officials called “civilization,” and toward Utah which they categorized as “wilderness.”<sup>32</sup> The citizens of St. George, though, were far from primitive savages inhabiting a wilderness; they were in fact slightly more educated than the rest of the nation and were expressing reasonable doubts about the testing, which was why the AEC made the film to begin with.<sup>33</sup>

The AEC’s effort to normalize the atomic bomb through westernization soon replicated itself in the national discourse. In 1955, a weekly television series called *Christopher Closeup* aired a fictional half-hour episode about a ranch family who routinely witnesses atomic tests near their home. Unfortunately, their little girl is diagnosed with a brain tumor. A friendly AEC man in a business suit arrives on the hacienda-style ranch and tries to convince the old rancher to permit a nuclear power plant to be built on his land, but the grandfather, a backward old curmudgeon, refuses because

he believes his granddaughter's tumor was caused by radiation. The old rancher then convinces the entire town to resist the power plant. Things turn around when the rancher receives a personal visit from a Congressman and a nuclear physicist, who convince him nuclear technology is good when controlled properly. "It will be one of the greatest blessings we've ever received," the physicist says. A government film (i.e., a film within the film) is then shown to the rancher, which teaches him a startling fact somehow unknown to him until now: radiation is being used to cure cancer, not cause it. The rancher then goes to the town council and tells them it is foolish to "put obstacles in the way of atomic research." They are persuaded within the space of about half a second, using a religious argument: "God made the atom...and God never made anything that was of itself [evil]." In fact, it is up to humans to control the forces God built into the atom; God has "entrusted" us with this tremendous power.<sup>34</sup>

With their folksy charm and comedic ignorance, the rancher and the townspeople seem to come straight out of an episode of *Bonanza*, although it would be another four years before that show appeared on television. As indicated, there is also a religious subtext to the story; the series was produced by the Catholic Church, as part of the Christopher (i.e., Christ-bearers) movement that tried to make Catholics look more like mainstream American Protestants.<sup>35</sup> Although religious denominations are never mentioned in the film, Americans of this era were obviously aware Utah was populated largely by Mormons, whose Christianity and citizenship had long been questioned (as had that of Catholics). Throughout the nineteenth century, and perhaps continuing into the twentieth century, Mormons had been viewed almost as a different race from white Protestant Americans.<sup>36</sup> The television show implied Utah Mormons were rural, ignorant,

irrational people who were afraid of the bomb, even “terrified,” and contrasted them against the well-dressed, educated, intellectual experts from the government. The Catholics who made the show were positioned on the side of science and rationality, of course. The backward (Mormon) townspeople were finally enlightened by government authority, presented through a nearly invisible Catholic framework.

Here we see a powerful narrative of atomic legitimacy created through multiple layers of political and religious hierarchy. The presumably Mormon rancher did not have to be convinced via a government film regarding the medical uses of radiation; his local doctor could have explained that to him. But the show’s Catholic producers imbedded within their own film a supposedly official state film, directed against a minority culture even farther down the social hierarchy than they were, all the while trying to subtly assert their own American legitimacy. It’s no wonder Utah Mormons were persuaded to accept atomic testing: resistance would have confirmed the prevailing national stereotype that they were ignorant, non-Christian, un-American, country hicks.<sup>37</sup> Mormons did not perceive themselves as such, and were anxious to overturn those stereotypes, just as the Catholics were anxious to overturn their own stereotypes.

It wasn’t just Mormons who were successfully co-opted into the nuclear process; inhabitants of other nuclear zones in the United States were equally tolerant of nuclear risk, and in some cases, never questioned the experts until the declassification process began in the early 1980s—a process that was partly the result of increasingly strenuous demands made by Utah’s politicians during the 1970s as well as public outrage after Pennsylvania’s Three Mile Island accident in 1979.<sup>38</sup> In the aftermath of Chernobyl in 1986, even more documents were released showing that scientists at the Manhattan



Project's plutonium plant in Hanford, Washington, had discharged various radioactive isotopes into the atmosphere during the Cold War years. These were not merely accidents; plenty of deliberate releases were also uncovered.<sup>39</sup> Nuclear waste had been carelessly buried around the plant so that it leaked and was traveling toward the Columbia River. In 1989, Hanford was declared an official EPA superfund site. Today, many residents of eastern Washington are convinced their cancers are connected to Hanford, although government officials have gone to great lengths to deny all links between cancer and radiation exposure.<sup>40</sup>

In the face of government denial regarding nuclear risk, Downwinders pushed back during the 1980s. One set of scholars claims the Downwinder movement led to a "discursive rupture" in scientific and official narrative when a "radical challenge to a prevailing culture of secrecy" within the nuclear industry began.<sup>41</sup> Downwinder groups began crafting a strategy of resistance, utilizing both scientific data (some of which was deliberately suppressed for decades by various government agencies) and their own autobiographical accounts. Cultural critic Raymond Williams described this kind of oppositional narrative-from-the-bottom as an integral part of the dynamic interrelations in any cultural process. Historical analysis must seek out such moments, Williams said, and pay attention to the disjunction created between the "residual" past and constantly "emergent" future. The dominant culture will try to incorporate both tradition and invention for its own benefit, but incorporating ever-emerging cultural practices or narratives is difficult and can create dissonance. Williams concluded, "no mode of production and therefore no dominant culture ever in reality includes or exhausts all

human practice, human energy, and human intention.” There must always be a cultural space for opposition, and that opposition will always be under attack.<sup>42</sup>

The nuclear case is a good example of how autobiography and oral history can present an effective challenge to official or dominant narratives and force new interpretations of data or new methodologies. Scholars over the last few decades have increasingly recognized the importance of testimony from people at the bottom rather than simply from people in power, as evidenced by the rise of oral history as a discipline. In 1948, the first university-based oral history program was created by historian Alan Nevins at Columbia University, and in 1967 a group of scholars began holding annual professional conferences.<sup>43</sup> As recording technologies became cheaper and more available, the practice of interviewing participants in historical events became more widespread. At the same time, questions were raised about the reliability of oral accounts, and a new awareness arose regarding the constructed nature of memory and the ways in which humans adapt the past to fit their present values and experiences.<sup>44</sup> Historians remained skeptical about oral history, but in 1989 the American Historical Association signaled tenuous approval when it created professional guidelines for the use of oral histories in historical research.<sup>45</sup> Today, scholars generally agree oral history can fill many knowledge gaps, especially when corroborated by other evidence, although debates persist regarding the best ways to integrate fallible memory with official documents and evidence, much of which has also been discovered to be fallible. Science historian Lillian Hoddeson uses the case of the atomic physicists at Los Alamos to demonstrate that an interplay between documentation and interviews—whereby document-based research is followed by interviews, which are followed by more archival research and even more

interviews—provided over time an increasingly stable account of events, or what she calls a “series of successively improved models of the history.”<sup>46</sup>

In the case of Downwinders, the effort to establish a “stable” account of events is still underway. Much of the documentary evidence remains missing or classified, and at least some of the public data is suspect, which makes the project even more complex and challenging. This is not unusual in the history of science. According to Ronald E. Doel, “historians of twentieth century science are increasingly aware of the limitations of written sources. Many no longer automatically ascribe a higher epistemological value to newspaper accounts, meeting minutes, memoirs, and published reports.”<sup>47</sup> Given the circumstances of atomic testing, where instances have been uncovered of deliberate distortion of fact by official sources, oral histories take on added importance. In the early 1990s, for example, the U.S. Congress forced the Department of Energy to investigate *itself*, resulting in the publication of an enormous 656-page volume on secret Cold War-era government-sponsored “human radiation experiments,” to be discussed later.<sup>48</sup> To augment sparse public records, several institutions have spent the last few decades gathering and archiving oral histories from Downwinders as well as from workers and personnel at various nuclear facilities (who sometimes also consider themselves Downwinders). Gonzaga University in Spokane maintains a collection of Hanford testimonies.<sup>49</sup> The University of Nevada at Las Vegas provides online transcripts of interviews from the Nevada Test Site and the surrounding areas.<sup>50</sup> Oral histories from the Navajo Uranium Miners were collected and published in 1996 and again in 2000 by Red Sun Press.<sup>51</sup>

Personal testimony has become an important method by which Downwinders have contradicted the official narratives of the nuclear industry and the U.S. military. Their testimony can take many different forms, including but not limited to oral history, autobiography, personal essay, memoir, and even internet blogs. There are subtle differences between all these forms of story-telling. Oral history consists of interviews initiated, guided, and recorded by scholars, and is thus subject to mediation at many points in the process, even when interviewers attempt to step out of the frame.<sup>52</sup> Autobiographies are generally written at the end of a life and cover one's entire life story from start to end; although they consist largely of memory, they are generally expected to incorporate historical fact and follow a chronological order. By contrast, personal essays and memoirs focus on specific events or aspects of one's life and give subjects considerably more flexibility than either oral history or autobiography, particularly regarding which memories will be revealed and how they will be revealed. Memoir, scholars largely agree, belongs more to the category of literature than history, since it participates in a deliberate construction of identity.<sup>53</sup> Memoir "bears witness" to a specific *version* of someone's life, turning the author into a character in the plot, making him/her both subject and object of the work.<sup>54</sup> Although good memoirists try to remain faithful to their own histories, memoir requires neither objectivity nor verification. Furthermore, it cannot easily be categorized as either fiction or nonfiction. Rather, it falls in the borderlands somewhere between the two genres, "complicating" both history and literature.<sup>55</sup>

Downwinder memoir poses particular problems, not just for scholars but also for the authors themselves. Because cancer has many triggers, Downwinders can never be

certain their specific illnesses were caused by radiation exposure.<sup>56</sup> (This is also the reason legal cases have rarely been successful.)<sup>57</sup> Merely to assert that one is a Downwinder leaves one vulnerable to condescension and criticism from some factions within the scientific community. Nevertheless, environmental “discourses of allegation” can sometimes derive moral force precisely from the fact research has been indeterminate.<sup>58</sup> Given the scientific unknowns involved in environmental risk, victims can respond to official denial by noting their statements cannot be disproved, or that risk must exist since accidents inevitably occur. Since Downwinder memoirs are so easily dismissed as fiction, authors gain credibility by acknowledging their internal doubts about their own stories and allowing readers to judge the truth for themselves. Some memoirists present scientific evidence in the hopes of convincing their audience; others merely suggest a possible connection between nuclear technology and the disruption of their lives. The scientific community often minimizes Downwinder claims through accusations of amateurism and sentimental hysteria, but it might be impossible for Downwinders to make their case in any other way. Literary critic John Whittier Treat has demonstrated the inherent impossibility of producing “pure documentary” of nuclear risk, since the experience of atomic victimhood can never be narrated without interpretation; even a firsthand witness goes beyond “merely telling.”<sup>59</sup> Literary critic Lisa Yoneyama uses the case of hibakusha victims in Japan to demonstrate how environmentally damaged narrators must walk a fine line between two contradictory impulses: factualization and allegorization. While the hibakusha often attempt to dispassionately factualize Hiroshima through their testimonies, other social forces try to construct Hiroshima as an allegory or metaphor in order to produce sentiment in an audience. The

two efforts undo each other. Remembering Hiroshima, like remembering atomic testing in the U.S., can simultaneously undermine and reinforce the credibility of victims.<sup>60</sup>

One memoir comes from Hanford Downwinder Teri Hein, who recounts her small farming community's experiences with cancer during the Cold War in eastern Washington. Hein's book, *Atomic Farmgirl: Growing up Right in the Wrong Place*, grew out of a two-week writing workshop spent under the tutelage of Utah Downwinder Terry Tempest Williams.<sup>61</sup> The memoir mixes classic Norman Rockwell-style imagery and humor with dark and tragic personal loss. The Hanford nuclear reservation lies less than 100 miles to the west of Hein's hometown. It was created in 1943 when the U.S. government deemed 670 square miles between the Grand Coulee and Bonneville Dams "valueless scab-land" and officially condemned it, forcing nearly 1500 residents to relocate. Nearly overnight, several farming communities disappeared, replaced by a top-secret government facility. Housing for scientists and workers was quickly erected on the site, and a new city was created for the express purpose of producing weapons-grade plutonium to build an atomic bomb.<sup>62</sup> Instead of shutting down after the war was over, Hanford expanded three times during the Cold War. Over the decades, the facility released large amounts of radioactive material into the air, soil, and water. The largest release occurred in the three-year period between 1944 and 1947, when about 685,000 curies of Iodine-131 was released. In 1949, 8,000 curies was released over a two-day period. (By contrast, Pennsylvania's Three Mile Island accident in 1979 discharged only 15-20 curies.)<sup>63</sup> The last of Hanford's three reactors was finally shut down in 1971, but fifty-three million gallons of high-level radioactive waste remain buried at the site.

Vitrification of that waste will not begin until 2019, and is estimated to extend at least into 2047.<sup>64</sup>

Like many atomic Downwinders, Hein keeps lists in her head of family members and neighbors who have died of cancer since the 1950s. She records their stories in her memoir, interwoven between pastoral accounts of rural county fairs and church socials. Hein's father was a farmer who spent his life working outdoors. In 1951, he was diagnosed with thyroid cancer at the age of thirty-one. Doctors removed not only his thyroid, but also parts of his jugular vein which left him alive but significantly weakened. Fifteen years later, he suffered a brain hemorrhage forcing him to sell the farm that had belonged to his family for generations. Hein calls him a "survivor of the Cold War." Hein's mother and three sisters also suffer from thyroid cancer; she was the only member of her family to escape. Seven out of eight families living in her area, Hangman Creek, were struck by leukemia, brain tumors, and other forms of cancer. Hein's experiences were not unusual for eastern Washington. Another Hanford Downwinder, Wanda Berg, called her area in Republic, Washington, "Death Mile" when testifying before Congress because every family living there had been affected by cancer.<sup>65</sup>

In her memoir Hein deliberately positions herself as a white native of Washington. She emphasizes her pioneer heritage by noting her great-great grandfather homesteaded land where the Nez Perce, the Cayuse, the Yakima, and the Palus (Palouse) Indian tribes once lived. She recounts the story of Chief Qualchan, who was hung in 1858 by the U.S. Army for "murdering" U.S. troops during the Coeur d'Alene Indian wars. Hangman Creek, named for the event, ran through Hein's family property. Hein explicitly connects the brutal colonization of Native Americans by whites during the

nineteenth century with the radiation exposure inflicted upon white farmers in the latter twentieth century. Both were part of “some strange invasion,” she says.<sup>66</sup> To a certain extent, Hein recognizes her own cultural culpability in the Native American holocaust: not only does she tell Chief Qualchan’s story sympathetically—as a lie and a betrayal on the part of the U.S. Army—she also depicts her own ancestors as perhaps undeserving beneficiaries of that betrayal. Although her grandfather “allowed” a group of Cayuse Indians to continue living on his land, she speculates the homesteaders “must have felt the inherent evil lurking” in that region where so many natives had been betrayed and slaughtered. Hein recounts somewhat sheepishly her own personal appropriation of Native American history, when in 1960 her mother dressed her as Chief Qualchan’s wife for the town’s annual Flag Day parade. During the procession Hein was supposed to stick by her sister, who was dressed in a cumbersome teepee costume that limited her visibility. Instead Hein abandoned the sister in order to march next to a friend, “leaving Cheryl, the lone, blind teepee, to hobble down the street without me... a sad symbol of our treatment of the Indian Nation and, perhaps, in some abstract way, an even greater representation of the Chief Qualchan tragedy.”<sup>67</sup> Hein thus relates her abandonment of her sister during a hyperpatriotic Cold War parade to nineteenth-century white colonialism in Washington territory.

Government theft of Indian land in the nineteenth century was comparable, Hein also implies, to the government appropriation of farmland around Hanford in 1943. The letter sent to farmers in 1942 was actually titled a “Declaration of Taking.” Residents were first offered a low price for their land; those who didn’t accept the government’s offer were threatened with outright condemnation.<sup>68</sup> Hein cites old newspaper clippings



from the *Richland Courier-Reporter* to demonstrate how quickly the land was taken and how devastated the farmers were: “It is a myth that, overwhelmed with a sense of patriotic duty and concern, the farmer families gladly handed over their land for the price the government was offering to pay. In fact, the farming families had a much saner reaction. They were shocked and furious.”<sup>69</sup> In those towns, social clubs held final, rushed meetings to arrange the details of disbanding; high schools handed out diplomas without the chance to hold a graduation ceremony; cemeteries made rapid plans to move caskets; shops closed down; newspapers ceased publication; prisoners were brought in to finish harvesting crops that had been planted. At the end of the war, when it was announced the bomb dropped on Nagasaki contained plutonium produced at Hanford, many Washingtonians were proud of the role they had played. However, a former soldier who served in Hiroshima directly after the war and had seen the devastation there told Hein years later he didn’t feel quite as proud as the people back home did: “[A]t the time we had no idea what we were doing to ourselves here at home. If we’d known that, I think we would have felt a whole lot different about this plutonium business.”<sup>70</sup> That soldier’s wife would later die from brain cancer.

No doubt some will accuse Hein of false equivalencies when she compares the nineteenth-century Native American holocaust with twentieth-century nuclear betrayal. After all, Indian tribes were not invaded by their own governments, but rather by a separate political and racial entity. The murder of Natives was also far more brutal and was unequivocally a calculated action by a technologically dominant power, even if many of those events involved complicity on the parts of some Native Americans. The theft of Indian land was rarely followed by high-paying jobs for those who had been

displaced. On the other hand, Native Americans have never claimed their ancestors' deaths at the hands of the U.S. government were merely a figment of the imagination, as many white Americans have done with the atomic Downwinders. The twentieth-century events were a classic example of modern hegemony, whereby victims willingly submit to their own subjection in the name of a supposedly greater cause; by contrast, it is difficult to call Native Americans "willing" victims of the nineteenth-century Indian Wars. Yet one cannot escape the fact that colonialism was the foundation for both tragedies. If the two events have a common theme, it is that *colonial paradigms tend to spread inside societies, eventually impacting even those who once considered themselves immune.*

At the end of her memoir, Hein includes some historical and scientific data gleaned from the 19,000 pages of Hanford documentation released in 1986. She does so fairly skillfully, editing and translating technical details into a short, readable summary. She acknowledges the ongoing debates about nuclear risk: "There are more questions than answers in the case of Hanford and health. Scientists argue about whether short, intense exposure to radiation, as in the cases of Chernobyl and Nagasaki, is less likely to cause cancer than numerous smaller exposures over a longer period of time, as in the case of Hanford."<sup>71</sup> Hein also recognizes not everyone living around Hanford agrees with the Downwinders' claims: "Many people in Fairfield [the town nearest to Hein's former family farm] prefer to think of this activism as left-wing nonsense. ... Well, it could be that those are just cancers that would have come our way anyway, or maybe we just don't know enough yet."<sup>72</sup> She then invokes nativity, not only in an effort to understand the denial of her fellow citizens, but also as an appeal for solidarity: "It's hard to look out

over those fields, a view that has remained virtually unchanged for the past hundred years, and consider the hills as poisoned. *Those are our hills....*”<sup>73</sup>

Of course, when Hein says “our” hills,” she refers to white farmers rather than modern-day Native Americans who also have a claim to those hills, as she herself admits. Yet she makes little attempt to draw the modern tribes into her circle of advocacy other than comparing her parents to the long-dead Chief Qualchan: “I see a kind of connection between our neighborhood illnesses and Qualchan’s murder. Both incidents are about this piece of land, how people should be able to live on it, and about the intrusion of outsiders. Qualchan killed outsiders [i.e., army troops], and Mom and Dad joined a lawsuit [against the U.S. government].”<sup>74</sup>

What Hein fails to acknowledge is that modern Native Americans were negatively impacted by nuclearism more than any other ethnic or geographical group in the nation.<sup>75</sup> From the beginning, Native Americans comprised some of the nation’s most vocal activists in the effort to uncover nuclear secrets. They were particularly successful in the Hanford area. The Confederated Tribes of the Colville (Washington) Reservation were actually the first Hanford Downwinders to file a lawsuit in 1986 against the Department of Energy, which prompted the first public DOE emissions survey.<sup>76</sup> In another historic first, the 2009 Hanford environmental reparation settlement between the State of Washington and the U.S. Energy Department included a provision requiring consultation with several northwestern Native American tribes during the cleanup process.<sup>77</sup>

During the 1950s, when various radioactive isotopes were deliberately being released into the air and soil around Hanford to see what effects they would have, the AEC made many public statements designed to give the impression everything was under

control. In 1958, for example, Hanford scientists told a United Nations conference on nuclear technology: “Throughout the history of the Hanford project, radiation exposures in the environs due to plant contributions...have been well within the maximum permissible limits.”<sup>78</sup> Such statements implied that “permissible limits” had been firmly established before the releases, when in fact, the secret releases were part of an ongoing experiment to determine safe levels of radioactivity—levels which were constantly being adjusted *downward* throughout this era as scientists found their initial safety estimates had been too high.<sup>79</sup> During the 1980s, documentation was finally released under various Freedom of Information Act requests, showing the AEC scientists had been secretly concerned about their findings all along: “So far as genetic effects are concerned, humans are more sensitive to radiation than previous estimates have indicated” (in 1951) and “If one accepts the general picture of cesium metabolism derived from the rat data, but substitutes the longer half-life measured in man, then the MPCs [maximum permissible concentration] would require reduction from presently recommended values by a factor of approximately ten” (in 1957).<sup>80</sup> Even after the deliberate releases were exposed, Hanford continued to deny all responsibility. At a 1989 congressional hearing, one Downwinder produced a letter from the Hanford Operations Office stating, “We have found nothing to indicate that your illness was caused by the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his or her office or employment as required before a FTCA claim can be allowed. Your claim therefore is denied.”<sup>81</sup> Yet the Downwinders had an effect on national discourse. As the evidence accumulated, Congress forced the Department of Energy into a new era of

openness and self-examination in the 1990s, resulting in many eye-opening revelations.<sup>82</sup> That era of openness ended in 2001, after the 9/11 terrorist attacks.<sup>83</sup>

Scott Russell Sanders grew up during the Cold War behind the barbed wire fences of another part of the military-industrial complex, the (Ravenna) Ohio Arsenal.<sup>84</sup> Sanders' memoir starts in 1951, when Sanders was six years old and his father landed a job at the Arsenal as a munitions inspector for the U.S. government. The Korean War was underway and "Asia was absorbing bullets and bombs as quickly as the Arsenal could ship them."<sup>85</sup> The term "McCarthyism" had just been coined. The Rosenbergs had been sentenced to death. Truman was considering dropping the bomb on China. Until 1951, Sanders' family had lived in rural Tennessee on a family farm with a cow, a goat, and fields of beans and potatoes. The move to the Arsenal meant "I had leaped overnight from the nineteenth century into the heart of the twentieth." Although he was an aficionado of military machinery and read GI Joe comic books, Sanders's first sight of real military vehicles and armed soldiers pierced him with "a needle of dread" that stayed with him the rest of his life.<sup>86</sup> His memoir, like Hein's, weaves idyllic childhood adventures with increasingly ominous events that belied governmental claims of protection.

Like many military complexes of the era, the Ohio Arsenal was built for maximum containment. It was a heavily guarded facility of about thirty square miles where weapons of various kinds were manufactured, stored, and shipped out. The majority of the land was sold to the government by a U.S. senator, Sanders tells us, while the rest of it was appropriated (like Hanford) from local farmers, with the land either purchased or simply confiscated. Workers at the higher end of the social ladder—like

Sanders' father—lived inside the Arsenal with the military officers in a group of about twenty white frame houses circled like pioneer wagons around a center of domesticated lawn. Outside this suburban circle was a wilderness of trees and forest, surrounded in turn by a barbed wire fence. The fence served the purpose of keeping some people in and others out. It also made the land into a sort of nature preserve, at least for a short while. As a child, Sanders and his friends enjoyed roaming through the forest thick with the ruins of abandoned farms, growing wild now with lilacs, roses, asparagus, rhubarb, and fruit trees. The children took home armloads of berries and flowers, reminding Sanders of the way his own family farm had been left behind, with its crops now harvested by strangers.

Sanders utilizes the language of colonialism heavily in this essay. At first, the children are explorers of a wilderness garden, gatherers of fruits they never planted. They imagine themselves as anthropologists sifting the soil for evidence of long-gone civilizations, both farmer and Indian, artifacts best found by chance rather than by searching—Sanders's "first lesson in the Zen of seeing ... by not-looking."<sup>87</sup> The facility also had its own Indian-style burial mounds, in the form of igloo-shaped concrete bunkers where munitions were stored, a dangerous and forbidden museum collection. Adding to the intrigue, legends circulated about ghostly beings whose presence remained on the land. One story alleged a farmer refused to leave his land and instead hanged himself from the rafters of his barn before military forces arrived. His spirit supposedly haunted the abandoned fields of the Arsenal, much as Indian spirits were imagined to haunt the forests of North America.

Like frontier America, the Arsenal was a wilderness of plenty, heavily populated by wildlife due to its isolation from the outside world. At first, Sanders and his father set out hay for the starving deer in the winter, but soon the deer became such a problem that hunts were instituted, with most of the permits going to the Arsenal's workers. A number of licenses were reserved each year for elite military brass, who arrived en masse in the fall, in chauffeured vans and "star-spangled" planes, coming safari-style to claim their rights to the best of the game. The locals, including Sanders and his father, acted as natives, beating the deer out of the brush and driving them toward the generals, who engaged in a bloody shooting-spree from afar, without ever getting their hands dirty. Afterward, the game was dressed by the locals and handed over in neatly butchered form for the officers to take home with them.

Over the years, the children discovered an increasing number of military graveyards, where pieces of deadly weapons and vehicles had been discarded, including WWII-era bombers and tanks that operated as playground equipment for the children. Sanders and his friends played war games, in which the smallest children were relegated to enemy status as Japs or Nazis or Commies, a role forced upon Sanders for a good three years. If all the "enemies" happened to quit the game, the older kids would simply blast away at invisible foes, "GIs against the universe," Sanders says.<sup>88</sup>

As a space that was supposed to protect its citizens and guard their liberty, the Arsenal left much to be desired. Sanders paints an increasingly dark and disturbing picture of an enclosure that slowly drove its inhabitants mad. He writes about a neighbor who occasionally babysat for him and his sister and claimed to have been kidnapped many times by ghostly aliens. Even the soldiers exhibited signs of mental stress,

sometimes committing suicide or going on deer-shooting sprees. The lieutenant-colonel broke down one year while playing Santa Claus and began throwing presents at the traumatized children. The army wives turned to drink and drugs: “Now and again an ambulance would purr into the Circle and cart one of them away for therapy.”<sup>89</sup> The Arsenal was no longer a domestic containment unit where children were taught the rules of citizenship. It was rather a terrifying *reservation* that produced infantilized adults who were unable to make rational choices or provide examples of social responsibility. The children were abandoned as the adults become more and more paralyzed by fear. As Sanders says, “the threads of the world were beginning to unravel.”<sup>90</sup>

“Atomic psychosis” was the term coined for irrational fear of the bomb, which led to a significant growth in the psychology industry during the 1950s.<sup>91</sup> Although the adults on the Arsenal clearly had trouble deciding what was real, they dismissed the children’s fears about ghosts as well as the rumors that atomic weapons were being stored somewhere on the facility. The children searched for the bombs, but found only heavily protected bunkers. The possibility the Arsenal might be hiding atomic weapons led the children to realize they could easily become the *target* of such weapons. They eventually stopped playing their war games and exhibited signs of trauma. The teenage Sanders had trouble sleeping and eating as he waited for the end of the world to descend from the sky. During this period, the soldiers also began playing unauthorized games, rounding up deer with their tanks and chasing them against the fence, leaving tufts of fur and chunks of flesh caught in the barbed wire. One soldier started a grass fire that trapped a herd of deer at the fence line, charring them into twisted blackened lumps that haunted Sanders into adulthood.



Like other Americans of his era, Sanders imagined escaping both the Ohio Arsenal and the planet by building a rocketship to carry humans to “fresh, unpoisoned planets” where they could build a new world “from scratch.”<sup>92</sup> But he soon realized only a handful could leave, and perhaps building a new world (rather than living in the old one) was what caused the problem in the first place. He tried to retreat into his beloved woods, but found signs of death everywhere: fish floating belly-up in a filthy pond, trucks spraying herbicide that stripped the fields bare, bird eggs with shells too thin to hold chicks. Nature could not repair itself anymore. Evolution started working backward, as his pet collie turned into a wild wolf hunting deer in a pack. For Sanders, the nation-state, which created itself out of the natural world and justified its existence by recourse to land and inhabitants that must be protected, now sought to destroy both.

In 1962, during the Cuban Missile Crisis, the teenaged Sanders was so frightened he quit going to school and instead spent all his time looking for the albino deer some children claimed to have seen wandering the forests of the Arsenal. The missile crisis eventually passed, and Sanders failed to find any deer. At first he suggests they might belong with the other rumors about ghosts and bombs on the arsenal. Then, during one hunting season, the deer’s existence was definitively proven when an army doctor and his wife drove into the circle with the corpses of two white deer tied to the hood of their car.<sup>93</sup> The children’s rumors—dismissed as fables by their elders—were confirmed.

Like the deer on the Arsenal, Sanders suggests, radiation also remains invisible within human bodies until scientists confirm its effects through disease or death:

In my bone marrow I carry traces of the poison from the graveyard of bombs, as we all carry a smidgen of radioactivity from every atomic blast. Perhaps at this very moment one of those alien molecules, like a grain of

sand in an oyster, is irradiating some cell in my body, or in your body, to fashion a pearl of cancer.<sup>94</sup>

Here Sanders depicts nuclear weaponry as a two-edged sword that can turn on its wielder with invisible but fatal results. Whether or not actual nuclear weapons were hidden somewhere on the compound, nuclearism was the ultimate “ghost” at the Arsenal, endangering all its inhabitants while ostensibly protecting them. True escape was impossible for Sanders. Twelve years after leaving, he was unable to forget the constant threat of weapons that had been detonated every night at supertime. His teeth still chattered at the dinner table, his fork still rattled, no matter how far he travelled in space or time. The needle of dread that first pierced him as a child still exists in the very air he breathes, everywhere he goes. The Arsenal seems to follow him, its fences stretching “until they circle the entire planet.”<sup>95</sup> For Sanders, there are no places outside the nuclear state where citizens might escape their own subjection, because both radiation and subjection exist inside the citizen. Nuclear containment takes place at the most microscopic level possible—human cells and human memory—and every human on the face of the earth has already been enclosed within the fences of contamination.

The official dismissal of atomic fears harbored by Cold War Americans is particularly ironic given that the Department of Energy would later reveal a nation-wide system of “human radiation experiments” secretly conducted by U.S. scientists during this era.<sup>96</sup> Not only were radioactive isotopes deliberately released into the environment so their effects on humans and wildlife could be studied, but human subjects across the nation had been injected with various radioactive elements, often without documented consent. In some cases, the experimental subjects were nuclear industry workers who volunteered themselves, but in many cases, the experimentation was done on hospital

patients, including mental hospital patients, and on young children as well as on newborn babies. While a few of those patients were in the terminal stages of cancer, most were not. Documentation was so inadequate it is impossible to determine today how many subjects knew exactly what was being done to them. From the mid-1940s through the early 1960s, hospital patients in Chicago, New York City, San Francisco, Rochester (New York), Minnesota, and Oak Ridge (Tennessee), were administered plutonium, phosphorus-32, iodine-131, magnesium-28, carbon-14, arsenic-76, and other radioactive substances. In at least one case, iodine-131 was labeled “albumin” so that neither the hospital workers nor the subjects—who in this case comprised both healthy subjects as well as patients—would know the real contents. Between 1951 and 1956, young children with nephritic kidney disease who came to Brookhaven National Laboratory in New York for treatment were administered radioactive medications that had nothing to do with their treatment and were only intended to track the uptake of radioactive isotopes in various bodily organs. The records do not contain parental permission forms. Brookhaven performed similar experiments on diabetic subjects, both children and adults. Between 1949 and 1950, mental patients in San Francisco were injected with iodine-131 in order to measure uptake by the thyroid gland. During this same period, inmates at San Quentin Prison, as well as in Washington State and Oregon, were asked to volunteer for radiation studies—a practice now prohibited. In perhaps the most egregious cases, healthy newborn infants were administered iodine-131 at hospitals in Iowa, Nebraska, Detroit, and Tennessee between 1947 and 1969. Consent documentation is missing. In the 1940s, healthy pregnant women in Tennessee were administered radioactive iron-59, resulting in three cases of cancer among the children, which was considered statistically significant

by the researchers. A state school for mentally disabled children in Massachusetts also participated in radiation experiments during the 1950s. Documented consent forms do not exist for either of these cases. In most of these studies, researchers concluded radiation passed through human subjects without harm, but long-term follow-up was rarely conducted, with the exception being the pregnant women whose children were found to have a slightly increased rate of cancer.<sup>97</sup>

The human radiation experiments were finally uncovered in the 1990s when Congress forced the Department of Energy to investigate its own scientific record on radiation research. The report shows an ethical debate that began as early as 1950 between military officers (who wanted human experimentation) and medical officials (who hesitated). On paper, the doctors won the debate and human experimentation was supposedly rejected. But behind the scenes, the Defense Department continued contracting with civilian hospitals and clinics to perform human experiments. In order to keep the research secret, national security interests were invoked, even when unnecessary. Long before those studies began, officials had already decided the greatest danger was not radiation itself, but rather the *fear* of radiation among the public. By 1949, both military and medical experts claimed they already knew enough about radiation to declare it largely harmless. The general in charge of the AEC's military division at the time said, "I believe that the general public is under the opinion that we don't know very much about this condition [radiation]. . . . We know just about as much about it as we do about many other diseases that people take for granted . . . even tuberculosis." Despite this supposedly sufficient store of knowledge, decades of secret human experimentation would nevertheless ensue.<sup>98</sup>

Although General Cooney and others were certain in 1949 that enough was known about radiation to declare it harmless, the first national standards for radiation exposure were not established until 1953-54, and those standards would be considered far too high today.<sup>99</sup> Many present-day nuclear experts continue to dismiss public fears about radiation by equating them with sci-fi hysteria. One 1995 paper from the health physics industry laughed off public worry over possible genetic effects as something that “inspired the creation of such science fiction characters as Godzilla, the Incredible Shrinking Man, Spiderman, the Incredible Hulk, and many others.”<sup>100</sup>

Yet it was not just the amateur public who worried about health risks from radioactive fallout; even highly respected scientists like Linus Pauling and Hermann Muller, both Nobel-Prize winners, expressed alarm. The scientific community became polarized over the issue.<sup>101</sup> After conducting their own investigations into the research being produced by the AEC, enough scientists criticized the AEC’s methodologies and results that the AEC was forced to adopt increasingly stricter standards with regard to risk evaluation.<sup>102</sup> The signing of a Limited Test Ban Treaty by the U.S. and the Soviet Union in 1963—which forced atomic testing underground—reflected in part a concerted activism on the part of scientists who were involved in the nuclear disarmament movement.<sup>103</sup> Within the scientific community, a number of non-profit activist groups were organized during this era specifically to counter the AEC’s blithe reassurances, including the National Committee for A Sane Nuclear Policy (SANE) in 1957, Physicians for Social Responsibility in 1961, and the Union of Concerned Scientists in 1969.<sup>104</sup>

During the Cold War, average Americans might not have known the extent or risk of their radiation exposure, but they certainly knew important information remained missing in the nuclear story. That absent knowledge haunts nuclear literatures, appearing in Sanders' essay as the mysterious herd of white deer, dismissed at first as rumor, then finally confirmed when they show up dead on the roof of a general's car. Besides being linked to the nuclear rumor-mill, Sanders' albino deer are probably also connected to Native American legends. In the late nineteenth and early twentieth centuries, a number of Indian stories about a sacred white deer appeared in print. For example, the *New York Times* in 1882 carried an account supposedly tied to the tribes of the Delaware Valley about a young Indian hunter who wanted to marry the daughter of a great chief. The chief instructed the young suitor to take a silver arrow and shoot a white deer with it. When the young man by a great stroke of luck actually did find and kill a white deer, his actions precipitated a "boomerang" effect. The young man died, the maiden drowned herself, and the tribe was wiped out in battle. The author claimed, "The superstition as to the white deer no doubt was received from the Indians by the early white settlers of the valley, and has been preserved by their descendants." The *NYT* column also told the stories of several white hunters who killed white deer and then died terrible deaths.<sup>105</sup> Today, the white deer is found in the folklore of many native tribes, always with a warning about the rebound consequences of killing such a sacred animal. Although these stories clearly operated in some cases to support a racial hierarchy, the actual origins and authenticity of the legend are not important for our purposes. Like these legends, Sanders used the image of a sacred white deer killed by greedy colonial hunters to suggest atomic technology might rebound and destroy those who thought they were immune.

Marilou Awiakta, a Cherokee poet and breast cancer survivor who has been called “the mother of atomic folklore,” has also adopted the white deer as a symbol for atomic technology in her work of memoir/poetry, *Abiding Appalachia: Where Mountain and Atom Meet*.<sup>106</sup> I would assert Awiakta’s writings are part of “frontier literature,” since the Appalachias were, after all, America’s first frontier. But her work centers on another frontier, the atomic one, because Awiakta’s father worked during the war at one of the Manhattan Project sites in Oak Ridge, Tennessee. As her father’s daughter, Awiakta utilizes a native-inspired view of nature to remind humans of the urgent need to respect the power of the atom. A companion work of hers, *Selu: Seeking the Corn-Mother’s Wisdom*, has been called a “thorough hybrid of generic forms” that combines autobiography with poetry, myth, history, tribal folklore, and environmental critique.<sup>107</sup> Awiakta’s poetry is similarly hybridized into what one scholar calls “science poetry,” structured like science fiction such that a “narrative poetry of estrangement” is “set in an alternate world where the workings of science...are a major cause or effect.”<sup>108</sup> In *Abiding Appalachia*, Awiakta assimilates science into the language of myth:

The atom was poetry in my childhood. Then the atom went awry...was alien. ...Now I know it was the way they spoke of it...in heavy, concrete prose. But the language didn’t fit. Concrete won’t do...

Now in my ripening years I hear, “Quark,quark...” something so refined it has no form at all...except in mystery.

Four quarks are known so far—“Up, Down, Charmed and Strange.” And if there’re others they may be named “Beauty” and “Truth.” The language of science is coming round. The atom has found its poetry again.<sup>109</sup>

Against the backdrop of nature and science, Awiakta uses personal memory and ethnography in order to move across time, from the Cherokee Trail of Tears where blood

was shed to “seal the exiles pass/ and make fast our mountain home,” to pioneer lovers who are “bidin” on a hill where they let their dippers “sink slow” into the wellspring, to the new atomic “frontier a-borning” in 1942, and the Oak Ridge reactor, which she calls a “Graphite Queen” whose “power was of the light itself.” Thus the volume combines Cherokee tradition with Appalachian-Celtic history, inside a scientific-technological framework. Her self-professed task here is to create harmony from diversity, or “seek the whole.”<sup>110</sup> In both *Selu* and *Abiding Appalachia*, she warns about the self-destruction of humanity, as our species exhibits an abysmal “failure to take appropriate action.”<sup>111</sup>

The theme of self-destruction resulting from inaction is connected to Cherokee legends of the albino deer, who is called Awi Usdi, or Little Deer, the immortal chief of the deer. After killing a deer, all hunters must pray to Awi Usdi and seek his pardon; if they fail to do so, the deer god will track them to their homes and bring disease and perhaps death upon them.<sup>112</sup> As Mary Churchill notes, Awa Usdi is a symbol of reverence for Awiakta. By integrating him into the atomic age, Awiakta warns humans they need to show respect for nuclear technology or they might face disaster. Awiakta makes a deliberate connection to native religion, Churchill says, so science is not divorced from the sacred and does not become a privileged method of “knowing” over other methods like language and myth.<sup>113</sup>

One of Awiakta’s poems is “Disaster Drill,” about an atomic drill in a classroom, which occurred when Awiakta was a teenager about the same age as the doomed Anne Frank, as she notes in the poem. As she hides in a ditch near the school with her classmates, Awiakta wonders: “Have you heard, Little Deer.../the words of pardon...have you heard?/ Come, O Ancient White, in the honing cry of the wind/ and track the hunters



home.”<sup>114</sup> The poem suggests that because Americans as a whole did not respect the technology they used to end World War II, disaster is about to be visited upon Awiakta’s head in the form of an atomic bomb—perhaps because her own father was involved in the making of the bomb. Awiakta worries her father’s privileged position in the military-industrial complex does not offer her any immunity to nuclear consequences, and might even make her more of a target. The failure of Oak Ridge scientists to honor the sacredness of atomic power could bring self-destruction to all.

Later, after visiting the decommissioned reactor at Oak Ridge, Awiakta imagines herself meeting Awi Usdi: “I see him coming.../ leaping from the heart of the mountain/ leaping from the eye of the atom.../He inclines his antler to me/ and I lay my hand upon it/ as we set out on the way he has come.”<sup>115</sup> At this point, the white deer resembles an English unicorn, who can only be tamed by a pure maiden. Indeed, Awiakta’s reference to the feminine is deliberate.<sup>116</sup> Elsewhere she has noted the kind of reverence required when dealing with nuclear energy is not a masculine mindset that seeks to divide and conquer nature, but rather a feminine one that pursues fusion and wholeness: “The linear, Western, masculine mode of thought has been too intent on conquering nature to learn from her a basic truth: *To separate the gender that bears life from the power to sustain it is as destructive as to tempt nature itself...* The linear-thinking people continue to ignore the nature of the atom. They act irreverently. They think they’re in control. One day a spark....”<sup>117</sup>

The last line is a reference to an incident in her childhood. When Awiakta was six years old, she heard screams outside her home. Across the street was a dry cleaning shop, with a man in flames running frantically around. Another man with a hose was chasing

him and yelling, “Stop, stop!” But the burning man didn’t stop until he couldn’t run anymore. Then he fell to his knees, shrieking in terrible pain. When the water hit him, his skin fell off in chunks. Finally he collapsed to the ground in a charred heap. Awiakta’s mother used the incident to remind her daughter of the terrible power of the atom:

“Never tempt nature, Marilou. It’s the nature of fire to burn. And of cleaning fluid to flame near heat. The man had been warned over and over not to work with the fluid, then stoke the furnace. But he kept doing it. Nothing happened. He thought he was in control. Then one day a spark.... The atom is like fire.”

“So it *will* hurt us.”

“That depends on us, Marilou.”<sup>118</sup>

Like the other atomic memoirists examined here, Awiakta critiques the master narrative of the Atomic Energy Commission. Nuclear death and disease are the results of a choice humans make every time they artificially split an atom, not just the *natural* consequences of a *natural* process, as the Atomic Energy Commission often asserted in the 1950s. In 1953, for example, when a University of Utah nuclear researcher protested his children had been exposed by a single year’s fallout from a the Nevada Test Site to the same amount of contamination he had received during *eighteen years* of nuclear work, the AEC issued a pamphlet claiming “no person in the nearby region [of the Nevada Test Site] has ever been exposed to hazardous amounts of radiation, even from this heavier fall-out, and no crops or water supplies have been made hazardous to health” and “radiation from fall-out from Nevada tests would have no greater effect on the human heredity process in the United States than would *natural radiation* in those parts of the Nation where normal levels are high.”<sup>119</sup> The AEC also sent out Willard Libby, a Manhattan Project scientist, on a speaking tour to tell Americans “people have got to

learn to live with the facts of life, and part of the facts of life are fallout.”<sup>120</sup> Thus the AEC fluctuated between telling people there was no danger, on the one hand, while on the other hand insisting the (supposedly non-existent) danger was a natural and necessary part of Cold War life. Still later, the AEC would adopt a blackout strategy that simply neglected to mention the presence of fallout.<sup>121</sup>

All three of the memoirists examined here make a connection between nineteenth-century native dispossession and twentieth-century western nuclearism. All three recognize the ricochet dangers of a nuclear technology that both protects and harms its wielders. All three memoirs also reflect the identity conflicts often associated with western autobiography, wherein heterogenous authors must constantly divide their loyalties between different hegemonic influences like nation, region, culture, race, gender, and religion, while simultaneously interacting with the frontier plot from a range of positions, aligned with or against western myth, or situated as myth-reformers from either inside or outside the myth.<sup>122</sup>

Like the atomic memoirists, western memoirists often express a sense of urgency in regard to political/social/environmental issues in the West; in fact, they are “battle-engaged” when compared to memoirists from other regions.<sup>123</sup> In the atomic memoirs examined here, nuclearism expands the West’s pool of marginalized citizens to include those who might otherwise have affiliated themselves with the colonizers rather than with colonial subjects, so that white westerners who once thought they were firmly inside the arms of the nation-state suddenly find themselves trampled under its feet. We might thus conclude a central feature of *western atomic memoir*, or at least those memoirs written from *outside* the atomic priesthood, involves a recognition of one’s subordinate position

in the new socio-technological hierarchy, a resistance toward that subordination, and a new sense of identification with others who have been similarly oppressed.

By contrast, memoirs and histories written from *inside* the atomic priesthood, including those from the AEC explored here, often constructed outsider positions as illegitimate or inferior. As the head of the first atomic colonial project in the twentieth-century American West, General Leslie Groves knew and admired the men who had “won the West” in the nineteenth-century Indian wars. For Groves, the murder and colonization of Native Americans naturally paved the way toward nuclear colonialism in the West. What Groves could never conceive was nuclear technology seemed to be *losing* the West for many westerners. Their memories and personal histories presented a direct challenge to his worldview. Unfortunately, Groves exhibited very little respect for anyone else’s version of history. All other accounts of the Manhattan Project, he claimed in his own memoir, were “somewhat limited,” since they all suffered from “a lack of access to many important facts.” Americans could not trust the accounts written by historians, because they have not “completely grasped our command system,” which consisted of vertical channels reaching upward in a straight line, directly to him. Nor were the accounts of the atomic physicists to be trusted, since the physicists who sat below him on the chain of command lacked “full information.” Over time, he was sure, everyone else’s accounts except his would come to be viewed as “conjecture.”<sup>124</sup> It was Groves who kept Los Alamos open after the war was over, and even expanded its operations. It was Groves who kept the facility firmly under military control after the war. And it was Groves’ replacement for Robert Oppenheimer, physicist Norris Bradbury, who in 1946 rationalized ongoing postwar atomic testing as something that

would “stimulate the staff” at Los Alamos.<sup>125</sup> From there, of course, one can draw a straight line to the Nevada Test Site and Hanford, to radioactive fallout and deliberate releases, to the Human Radiation Experiments, to the AEC’s publicity campaign, to public outrage, to the release of secret documents, and then to the memoirs and oral histories of the Downwinders—who have mounted a resistance movement from inside the nuclear conquest.

When we discuss atomic Downwinders, we cannot overlook one particular group that has perhaps laid claim to nuclear victimhood more successfully than any other: the Utah Mormons. It was Utahns who first questioned the domestic impact of radioactive fallout emanating from the Nevada Test Site, and it was Utahns who kept the issue alive until documentation was finally released.<sup>126</sup> Yet there were also Utahns who tried to suppress that effort. The next chapter explores the internal conflicts that developed in the Utah Mormon community over atomic testing and nuclear missile silos. The injection of religion into the debate made this a particularly fierce conflict, even if it was largely invisible to the rest of the nation. The debate occurred in the context of twentieth-century Mormon assimilation to the American mainstream, which served to mix religion with nationalism so firmly the atomic bomb became as much a religious issue as it was a political one. Mormon atomic literatures reflected the conflict particularly through a doubling motif, which exposed the antimyths lurking underneath one of America’s most unique cultures.

### **Notes**

1. Jennet Conant, *109 East Palace: Robert Oppenheimer and the Secret City of Los Alamos* (New York: Simon and Schuster, 2005), 75; see also Richard Rhodes, *The Making of the Atomic Bomb* (New York: Simon and Schuster, 1986); Jon Hunner,

- Inventing Los Alamos: The Growth of an Atomic Community* (Norman: Univ. of Oklahoma Press, 2004); and Lawrence Badash, Joseph O. Hirschfelder, and Herbert P. Broida, eds., *Reminiscences of Los Alamos, 1943-1945* (Boston, Mass.: D. Reidel Publishing Company, 1980).
2. Leslie M. Groves, *Now It Can Be Told: The Story of the Manhattan Project* (New York: De Capo Press, 1983 [1962]), 415; emphasis added.
  3. Slotkin, *Regeneration through Violence*.
  4. Hales, *Atomic Spaces*, 13-18.
  5. Hales, *Atomic Spaces*, 14.
  6. Fermor S. Church and Peggy Pond Church, *When Los Alamos Was a Ranch School* (Los Alamos, N.M.: Los Alamos Historical Society, 1974); Peggy Pond Church, *House at Otowi Bridge* (Albuquerque: University of New Mexico Press, 1959); Hunner, *Inventing Los Alamos*.
  7. Limerick, *Something in the Soil*; Hevly and Findlay, *The Atomic West*; Scott C. Zeman and Michael A. Amundson, eds., *Atomic Culture: How We Learned to Stop Worrying and Love the Bomb* (Boulder: Univ. Press of Colorado, 2004). Richard Slotkin also explicitly connects western mythology to the atomic bomb in *Gunfighter Nation*, 481. For science fiction discussions of the frontier myth and the atomic bomb, see William H. Katerberg, *Utopia and Apocalypse in Frontier Science Fiction* (Lawrence: Univ. Press of Kansas, 2008); and Susan A. George, "Space for Resistance: The Disruption of the American Frontier Myth in 1950s Science Fiction Film," in *Space and Beyond: The Frontier Theme in Science Fiction*, ed. Gary Westfahl (Westport, Conn.: Greenwood Press, 2000), 77-84.
  8. Corkin, *Cowboys as Cold Warriors*.
  9. Nash, *The American West Transformed*.
  10. In 1979 the state of Utah successfully pushed the federal government to open classified files about the Nevada Test Site. That same year, national outrage over the Three-Mile Island nuclear reactor meltdown hastened the declassification process. Within a few years, published accounts of the AEC's secrets began appearing. In chronological order, some of the main ones are: Harvey Wasserman and Norman Solomon, *Killing Our Own: The Disaster of America's Experience with Atomic Radiation* (New York: Delacorte Press, 1982); John G. Fuller, *The Day We Bombed Utah: America's Most Lethal Secret* (New York: New American Books, 1984); Richard L. Miller, *Under the Cloud: The Decades of Nuclear Testing* (New York: The Free Press, 1986); A. Constandina Titus, *Bombs in the Backyard: Atomic Testing and American Politics* (Reno: Univ. of Nevada Press, 1986); Matheson and Kee, *Out of Balance*; Ball, *Justice Downwind*; Catherine Caulfield, *Multiple Exposures: Chronicles of the Radiation Age* (New York: Harper and Row,

1989); Fradkin, *Fallout: An American Nuclear Tragedy*; Hacker, *Elements of Controversy*; Stewart Udall, *The Myths of August: A Personal Exploration of Our Tragic Cold War Affair with the Atom* (New York: Pantheon, 1994); Wayne LeBaron, *America's Nuclear Legacy* (Haupaugge, N.Y.: Nova Science Publishers, 1998); Kuletz, *The Tainted Desert*; Raye C. Ringholtz, *Uranium Frenzy: Saga of the Nuclear West* (Logan: Utah State University Press, 2002); Michael A. Amundson, *Yellowcake Towns: Uranium Mining Communities in the American West* (Boulder: Univ. Press of Colorado, 2002); Masco, *The Nuclear Borderlands*; Doug Brugge, Timothy Benally, and Esther Yazzie-Lewis, eds. *The Navajo People and Uranium Mining* (Albuquerque: Univ. of New Mexico Press, 2007); Bryan C. Taylor, William J. Kinsella, Stephen P. Depoe, and Maribeth s. Metzler, eds., *Nuclear Legacies: Communication, Controversy and the U.S. Nuclear Weapons Complex* (Lanham, Md.: Lexington Books, 2007); Barbara Rose Johnston, ed., *Half-Lives and Half-Truths: Confronting the Radioactive Legacies of the Cold War* (Santa Fe, N.M.: School for Advanced Research Press, 2007).

11. Gallagher, *American Ground Zero*, 15, 23, 50, 127, 135, 139, 147, 151, 315.
12. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (New York: Verso, 1983).
13. Laurence Buell, "Toxic Discourse," *Critical Inquiry* 24.3 (1998): 639-65.
14. Virilio and Lotringer, *Pure War*.
15. Hacker, *Elements of Controversy*.
16. A. Constandina Titus, "Selling the Bomb: Public Relations Efforts by the Atomic Energy Commission during the 1950s and Early 1960s," *Government Publications Review* 16 (1989): 15-29.
17. Titus, "Selling the Bomb."
18. Udall, *The Myths of August*; Hacker, *Elements of Controversy*; Ball, *Justice Downwind*; Miller, *Under the Cloud*. As an example of the AEC's attitude toward public safety, when asked in 1963 by a lawyer representing a group of Utah shepherders exactly who was responsible for the safety of persons and property near areas of possible fallout, the answer was as follows: "It is the responsibility of the heads of families and owners of property to protect the members of their families and their property from possible radioactive fallout" (Fuller, *The Day We Bombed Utah*, 137).
19. Katherine Magraw, "Teller and the 'Clean Bomb' Episode," *Bulletin of the Atomic Scientists* 44 (May 1988): 32, 34-37.
20. Hacker, *Elements of Controversy*.

21. Excerpt from a 1955 AEC pamphlet, "Atomic Test Effects in the Nevada Test Site Region," distributed to local residents around the Nevada Test Site, particularly in southern Utah (quoted in Miller, *Under the Cloud*, 215). Also available online from the Public Broadcasting System, "American Experience: The Atomic Age," July 11, 2005, [http://www.pbs.org/wgbh/amex/lasvegas/sfeature/sf\\_atomic\\_04.html](http://www.pbs.org/wgbh/amex/lasvegas/sfeature/sf_atomic_04.html). Other pamphlets with similar illustrations have been retained over the years by residents (see Gallagher, *American Ground Zero*, 144).
22. Udall, *Myths of August*; Gallagher, *American Ground Zero*.
23. See the newspaper archives located in the Utah Digital Newspaper Project, Marriott Library, University of Utah; <http://digitalnewspapers.org/>.
24. The entire nation re-discovered the cowboy during the 1950s (Corkin, *Cowboys as Cold Warriors*).
25. Gallagher, *American Ground Zero*, 2-7.
26. In 2010, the Nevada Test Site workers were added to the Radioactivity Exposure Compensation Act of 1990, which already compensated civilians, miners, and soldiers who were exposed to uranium and fallout during the 1950s. Several workers were specifically named in Nevada Senator Harry Reid's press announcement regarding the amended legislation: "Reid Hails Victory for Nevada Test Site Workers," *United States Senator for Nevada Harry Reid*, May 5, 2010, [http://reid.senate.gov/newsroom/pr\\_050510\\_testsite.cfm](http://reid.senate.gov/newsroom/pr_050510_testsite.cfm).
27. For historical accounts of the 1950s uranium boom, see Ringholtz, *Uranium Frenzy*; Tom Zoellner, *Uranium: War, Energy, and the Rock that Shaped the World* (New York, Penguin, 2007). See also the public television documentary, *Atomic Stampede*, DVD, directed by Ken Verdoia (Salt Lake City, Utah: KUED, 1993); Peter H. Eichstaedt, *If You Poison Us: Uranium and Native Americans* (Santa Fe, N.M.: Red Crane Books, 1994); Eric W. Mogren, *Warm Sands: Uranium Mill Tailings Policy in the Atomic West* (Albuquerque: Univ. of New Mexico Press, 2002); Amundson, *Yellowcake Towns*; Brugge et al., *The Navajo People and Uranium Mining*.
28. *The Green River (Utah) Journal*, July 21, 1955, Utah Digital Newspapers, <http://digitalnewspapers.org>.
29. Slotkin, *The Fatal Environment*, 530.
30. Slotkin, *Gunfighter Nation*, 42-62.
31. *Atomic Tests in Nevada* was a 1955 publicity film from the Atomic Energy Commission (quoted in Hacker, *Elements of Controversy*, 165). Excerpt available at <http://www.youtube.com/watch?v=a3Lyo9WpbOU>. Another clip from this film can



be found in the now-classic documentary, *Atomic Café*, a DVD produced by Kevin Rafferty et al. (New Video Group, 2002).

32. Miller, *Under the Cloud*; see also Serge Matulich and David M. Currie, eds., *Handbook of Frauds, Scams, and Swindles: Failure of Ethics in Leadership* (New York: CRC Press, 2008), 117.
33. See Ball, *Justice Downwind*, for extensive accounts about protests expressed by Utahns in the media and through their political leaders. Census data taken during the pre- and postwar eras showed that Utahns were more educated than the rest of the country (John A. Widtsoe, "What are the Educational Attainments of the Latter-day Saints?" *Improvement Era* [March 1952]: 310-11).
34. *Atomic Energy as a Force for Good*, parts I and II, produced by The Christophers, 1955; Prelinger Internet Archive, [www.archive.org](http://www.archive.org).
35. Amy Laura Hall, *Conceiving Parenthood: American Protestantism and the Spirit of Reproduction* (Grand Rapids, Mich.: Wm. B. Eerdsman, 2007), 332.
36. W. Paul Reeve, *Religion of a Different Color: Race, Whiteness, and Mormon Bodies* (Oxford University Press, forthcoming).
37. Supposed Mormon hysteria and ignorance were featured in a recent atomic novel written from an evangelical Christian viewpoint by Christopher A. Lane, *Tonopah* (Grand Rapids, Mich.: Zondervan, 1999).
38. Matheson and Kee, *Out of Balance*; Udall, *The Myths of August*.
39. Michele Stenehjem Gerber, *On the Home Front: The Cold War Legacy of the Hanford Nuclear Site* (Lincoln: Univ. of Nebraska Press, 2002 [1992]); Taylor et al., *Nuclear Legacies*; Richard White, *The Organic Machine: The Remaking of the Columbia River* (New York: Hill and Wang, 1995).
40. Gerber, *On the Home Front*; see also Kinsella and Mullen, "Becoming Hanford Downwinders."
41. Kinsella and Mullen, "Becoming Hanford Downwinders, 93.
42. Raymond Williams, *Marxism and Literature* (Cambridge: Oxford Univ. Press, 1975), 125.
43. Robert Perks and Alistair Thompson, "Crucial Developments: Introduction," in *The Oral History Reader*, ed. Perks and Thompson (New York: Routledge, 2006), 1-13.
44. Michael Frisch, *Shared Authority: Writing on the Craft and Meaning of Oral and Public History* (Albany: SUNY Press, 1990); Elizabeth Tonkin, *Narrating Our Pasts: The Social Construction of Oral History* (Cambridge: Cambridge Univ. Press, 1992); Jan Vansina, *Oral Tradition as History* (Madison: Univ. of Wisconsin

- Press, 1985); David Thelen, ed., *Memory and American History* (Bloomington: Indiana Univ. Press, 1990); Jaclyn Jeffrey and Glenace Edwall, eds., *Memory and History: Essays on Recalling and Interpreting Experience* (Lanham, Md.: Univ. Press of America, 1994).
45. "Statement on Interviewing for Historical Documentation," *Perspectives on History: The Newsmagazine of the American Historical Association* 27.7 (October 1989): 8.
  46. See Lillian Hoddeson, "The Conflict of Memories and Documents: Dilemmas and Pragmatics of Oral History," in *The Historiography of Contemporary Science, Technology, and Medicine: Writing Recent Science*, ed. Ronald E. Doel and Thomas Söderqvist (New York: Routledge, 2006), 187-200. However, David Glassberg argues that in the case of public history, which requires the merging of memory with documentation, establishing a "finished interpretation" of events is less important than creating "spaces for dialogue" and insuring "that various voices are heard in those spaces ("Public History and the Study of Memory," *The Public Historian* 18.2 [Spring 1996]: 7-23).
  47. Ronald E. Doel, "Oral History of American Science: A Forty-Year Review," *History of Science* 41 (2003): 349-78.
  48. U.S. Department of Energy, *Advisory Committee on Human Radiation Experiments: Final Report* (Washington, D.C.: Office of Health, Safety, and Security, 1994); <http://www.hss.energy.gov/healthsafety/ohre/>.
  49. Hanford Health Information Archives, Special Collections Dept., Foley Center Library, Gonzaga University, Spokane, Wash., <http://www.gonzaga.edu/Academics/Libraries/Foley-Library/Departments/Special-Collections/Collections/>.
  50. Nevada Test Site Oral History Project, University Libraries, University of Nevada-Las Vegas, <http://digital.library.unlv.edu/ntsohp/>.
  51. Doug Brugge, *"Memories Come to Us in the Rain and in the Wind": Oral Histories and Photographs of Uranium Miners and Their Families*, Navajo Uranium Miner Oral History and Photography Project (Boston, Mass.: Red Sun Press, 1996).
  52. Hoddeson, "The Conflict of Memories."
  53. For memoir as a literary category, three excellent sources are: Daniel Lehman, *Matters of Fact: Reading Nonfiction over the Edge* (Columbus: Ohio State Univ. Press, 1997); William Zinsser, ed., *Inventing the Truth: The Art and Craft of Memoir* (New York: Houghton Mifflin Harcourt, 1998); and James Olney, *Memory and Narrative: The Weave of Life Writing* (Chicago: Univ. of Chicago Press, 1999).

54. Sanford Pinsker, "The Landscape of Contemporary American Memoir," *The Sewanee Review* 111.2 (Spring 2003): 311-20.
55. Lehman, *Matters of Fact*, 4.
56. The poignancy of Downwinder uncertainty was highlighted by Utah Downwinder and broadcast journalist Mary Dickson when she put her personal memories into the form of a play, *Exposed*, which was produced in November 2007 by the Plan-B Theatre Company in Salt Lake City, with Jerry Rapier as producing director and Cheryl Ann Cluff as managing director. (Copy of full script in the author's possession.) In the play, Dickson presents herself and other Downwinders experiencing a *double-pain*: the pain of illness/death compounded by the pain of uncertainty regarding the source of illness.
57. One of the few successful lawsuits occurred in 2005 when a federal jury awarded \$500,000 to two Hanford Downwinders, after declassified documents revealed that the Department of Energy had created a \$27 million research program—the "dose reconstruction project"—not to investigate actual risk to citizens, but rather to provide data for litigation defense. During that research, a scientist unexpectedly determined that the fatality risk had been far higher than previously acknowledged, at which point he was fired from his job (Kinsella and Mullen, "Becoming Hanford Downwinders," 88-92).
58. Buell, "Toxic Discourse," 659-60.
59. See John Whittier Treat, "Atomic Bomb Literature and the Documentary Fallacy," *Journal of Japanese Studies* 14.1 (Winter 1988): 27-57.
60. Lisa Yoneyama, *Hiroshima Traces: Time, Space, and the Dialectics of Memory* (Berkeley: Univ. of California Press, 1999).
61. Teri Hein, *Atomic Farmgirl: Growing up Right in the Wrong Place* (New York: Houghton Mifflin, 2003 [2000]). Hereafter cited as *AF*.
62. Hales, *Atomic Spaces*; Carl Abbott, "Building the Atomic Cities: Richland, Los Alamos, and the American Planning Language," in Hevly and Findlay, *The Atomic West*, 90-115; S. L. Sanger, *Working on the Bomb: An Oral History of WWII Hanford* (Portland: Portland State Univ., 1995).
63. Kinsella and Mullen, "Becoming Hanford Downwinders," 82-83; Gerber, *On the Home Front*, 45.
64. "Nuclear Waste: From Bombs to \$800 Handbags," *The Economist*, March 19, 2011, 40.

65. "After 12-year Wait for Trial, Downwinders Losing Hope," (*Spokane*) *Spokesman-Review*, May 18, 2003, available online at: <http://www.spokesmanreview.com/pf.asp?ID=s1352016&date=051803>.
66. *AF*, 12.
67. *AF*, 110.
68. Hales, *Atomic Spaces*.
69. *AF*, 62.
70. *AF*, 68.
71. *AF*, 235.
72. *AF*, 237-38.
73. *AF*, 237; emphasis added.
74. *AF*, 243.
75. Hooks and Smith, "The Treadmill of Destruction; see also Ward Churchill, "A Breach of Trust: The Radioactive Colonization of Native North America," *American Indian Culture and Research Journal* 23.4 (1999): 23-69.
76. Kinsella and Mullen, "Becoming Hanford Downwinders," 83.
77. Associated Press, "New Terms Set to Clean up Hanford Nuclear Site," *MSNBC*, August 11, 2009; [http://www.msnbc.msn.com/id/32378423/ns/us\\_news-environment/t/new-terms-set-clean-hanford-nuclear-site/](http://www.msnbc.msn.com/id/32378423/ns/us_news-environment/t/new-terms-set-clean-hanford-nuclear-site/).
78. Gerber, *On the Home Front*, 67.
79. Scientists from outside the AEC were instrumental in getting acceptable risk levels reduced during this era. See J. Christopher Jolly, "Linus Pauling and the Scientific Debate over Fallout Hazards," *Endeavour* 26.4 (2002): 149-153. See also Hacker, *Elements of Controversy*; and Gerber, *On the Home Front*, 171-99.
80. Quoted in Gerber, 184-87.
81. Quoted in Kinsella and Mullen, "Becoming Hanford Downwinders," 86.
82. For Hanford revelations, see Taylor et al., *Nuclear Legacies*; and Johnston et al., *Half-Lives and Half-Truths*.
83. Kinsella and Mullen, "Becoming Hanford Downwinders," 97.

84. Sanders merely calls it the “Ohio Arsenal.” He means the Ravenna Arsenal, known today as the Ravenna Army Ammunition Plant (Richard Sanders, “At Play in the Paradise of Bombs,” in *Learning to Glow: A Nuclear Reader*, ed. John Bradley [Tucson: Univ. of Arizona Press, 2000], 3-18). Hereafter cited as “At Play.”
85. “At Play,” 4.
86. “At Play,” 5.
87. “At Play,” 8.
88. “At Play,” 9.
89. “At Play,” 14.
90. “At Play,” 16.
91. Spencer Weart, *Nuclear Fear: A History of Images* (Cambridge, Mass.: Harvard University Press, 1988), 399; Elaine May, *Homeward Bound: American Families in the Cold War Era* (New York: Basic Books, 1999 [1988]).
92. “At Play,” 16.
93. A herd of albino deer continues to live on the Ravenna Arsenal today, according to Laura Bell, “Girls with Guns Have More Fun,” *Ohio Valley Outdoors Magazine*, March 10, 2010; <http://www.ohiovalleyoutdoors.com/>.
94. “At Play,” 7.
95. “At Play,” 18.
96. Advisory Committee on Human Radiation Experiments, *The Human Radiation Experiments: Final Report* (New York: Oxford Univ. Press, 1996).
97. “Human Radiation Experiments Associated with DOE and Its Predecessors,” in *Advisory Committee on Human Radiation Experiments—Final Report* (Washington, D.C.: Department of Energy, Office of Health, Safety, and Security, 1994). Available online from the Department of Energy at <http://www.hss.doe.gov/healthsafety/ohre/roadmap/roadmap/part3.html#Other>.
98. “New Ethical Questions for Medical Researchers,” in *Advisory Committee on Human Radiation Experiments—Final Report* (Washington, D.C.: Department of Energy, Office of Health, Safety, and Security, 1994). Available online from the Department of Energy at [http://www.hss.doe.gov/healthsafety/ohre/roadmap/achre/intro\\_7.html](http://www.hss.doe.gov/healthsafety/ohre/roadmap/achre/intro_7.html).
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101. Allan M. Winkler, *Life Under a Cloud: American Anxiety about the Atom* (Chicago: Univ. of Illinois Press, 1963 [1993]), 95-96.
102. Jolly, "Linus Pauling and the Scientific Debate."
103. Paul Rubinson, "'Crucified on a Cross of Atoms': Scientists, Politics, and the Test Ban Treaty," *Diplomatic History* 35.2 (April 2011): 283-319.
104. Winkler, *Life Under a Cloud*.
105. "The Charmed White Deer; The Misfortune Which Follows the Hunter Who Kills One," *New York Times*, May 2, 1882; nytimes.com.
106. Marilou Awiakta, *Abiding Appalachia: Where Mountain and Atom Meet* (Memphis, Tenn.: St. Luke's Press, 1990 [1978]).
107. James H. Watkins, "The Double-Weave of Self and Other: Ethnographic Acts and Autobiographical Occasions in Marilou Awiakta's *Selu: Seeking the Corn-Mother's Wisdom*," *American Indian Culture and Research Journal* 30.1 (2006): 5-16.
108. Parks Lanier, "The Science Poetry of Marilou Awiakta," in *The Many Faces of Appalachia: Exploring a Region's Diversity*, Proceedings of the Seventh Annual Appalachian Studies Conference (Boone, N.C.: Appalachian Consortium, 1984), 29-36.
109. *Abiding Appalachia*, 79.
110. *Abiding Appalachia*, 15.
111. Marilou Awiakta, "Mother Nature Sends a Pink Slip," in Awiakta, *Selu: Seeking the Corn-Mother's Wisdom* (Golden, Colo.: Fulcrum Publishing, 1993), 88. See also S. Bailey Shurbut, "Where Mountain Meets Atom, Within the Healing Circle: The Writing of Marilou Awiakta," *Journal of Appalachian Studies* 11.1-2 (Spring-Fall): 195-204.
112. James Mooney, *The Sacred Formulas of the Cherokee: Seventeenth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, 1885-1886* (Washington, D.C.: Government Printing Office, 1891); Project Gutenberg, <http://www.gutenberg.org/files/24788/24788-h/24788-h.htm>.
113. Mary Churchill, "Out of Bounds: Indigenous Knowing and the Study of Religion," in *Reading Native American Women: Critical/Creative Representations*, ed. Joanne Barker (Walnut Creek, Calif.: Altamira Press, 2004), 251-68.
114. *Abiding Appalachia*, 65.

115. *Abiding Appalachia*, 85-91.
116. See Shurbutt, "Where Mountain Meets Atom."
117. Marilou Awiakta, "Baring the Atom's Mother Heart," in John Bradley, ed., *Learning to Glow*, 227-33; emphasis in original. Also available online from *Nantahala: A Review of Writing and Photography in Appalachia* 2.2 (Winter-Spring 2004), <http://www.nantahalareview.org/issue2-2/non-fiction/AWIAKTA.htm>.
118. Awiakta, "Baring the Atom's Mother Heart," 228.
119. U.S. Atomic Energy Commission, *Atomic Effects in the Nevada Test Site Region*, January 1955 (quoted in Winkler, *Life Under a Cloud*, 103); emphasis added.
120. "Fallout Cover-Up," *Newsweek*, April 30, 1979, 26.
121. Hacker, *Elements of Controversy*, 190.
122. Kathleen A. Boardman and Gioia Woods, *Western Subjects: Autobiographical Writing in the North American West* (Salt Lake City: Univ. of Utah Press, 2004).
123. Julene Bair et al., "On Western Subjects: Western Memoirists Speak: A Panel of Writers," in *Western Subjects: Autobiographical Writing in the North American West*, ed. Gioia Woods and Kathleen Boardman (Salt Lake City: University of Utah Press, 2005), 40-65.
124. Groves, *Now It Can Be Told*, xiii-xviii.
125. David Hawkins, "Beyond Trinity," part II, *Project Y: The Los Alamos Story* (Los Angeles: Tomash, 1983); also James W. Kunetka, *City of Fire: Los Alamos and the Atomic Age, 1943-1945* (Albuquerque: Univ. of New Mexico Press, 1979).
126. In 1953, a group of Anglo shepherders in southern Utah initiated a lawsuit against the federal government for the deaths of their sheep following the infamous Dirty Harry bomb blast. The first lawsuit failed, as did a later one in the 1980s, after new evidence was located in declassified documents (see Udall, *The Myths of August*). The story of how Utah politicians began pushing the federal government in the late 1970s to open classified documents regarding the Nevada Test Site is told in Matheson and Kee, *Out of Balance*.

## CHAPTER 4

### MORMON FISSION: THE SPLITTING OF THE NUCLEAR MORMON FAMILY

In the Book of Mormon—the founding scripture of the Church of Jesus Christ of Latter-day Saints—a family living in ancient Jerusalem sets forth on a trans-oceanic journey to the New World, led by prophetic visions and technology given to them by God. Inside this family are four sons who are bitterly at odds with each other. Two of the boys, Nephi and Sam, are “good” sons who follow their father’s visions. The other two, Laman and Lemuel, are “bad” sons who question their father and try to kill their brothers. Over generations, this family rift leads to centuries of war between their descendants in the Americas, although the two groups sometimes switch places, with the “Lamanites” occasionally playing the righteous role and the “Nephites” occasionally playing the evil role. At one point, Jesus Christ himself appears and makes a successful but short-lived attempt to reconcile the two groups. Eventually the wars start up again, and in the end, the Nephites are entirely wiped out by the Lamanites, leaving behind only a written record of their history on gold plates, which Joseph Smith supposedly unearthed in 1830 and translated as the Book of Mormon.

The sibling rivalry in the Book of Mormon echoes well-known archetypes from the Bible, which is viewed by Mormons as a twin scripture to the Book of Mormon. In the Old Testament, especially, brothers are constantly pitted against each other and



families/tribes are split apart by the question of who will inherit the birthright or who has the power to decide the group's identity. The Cain and Abel story doubles and multiplies itself through many generations, until eventually the Israelites are conquered, destroyed, and dispersed. As a religious work, then, the Book of Mormon imitated and expanded upon familiar themes within Christianity, Judaism, and Islam. From a nationalist standpoint, the Book of Mormon also reflected the deep and long-lasting divisions in American society between North and South, as well as the divisions between the imperial Old World and the postcolonial New World.<sup>1</sup> At a psychological level, the LDS scripture mirrors the schisms within Joseph Smith's own family. Joseph and his younger brother William were often at odds and were known to attack each other physically.<sup>2</sup> After Joseph's death, William was the only Smith brother left alive, but the leadership of the church passed not to him, but rather to Brigham Young. William eventually joined forces with Joseph's wife and sons, who started a separate sect of their own, the Reorganized Church of Jesus Christ of Latter-Day Saints. Over the years, the two groups have maintained very different, competing narratives about their history—an unconscious re-enactment of the sibling conflict from their shared scripture.

The Latter-day Saint movement was just one of many utopian communal experiments in the nineteenth century, and like others, it attempted to construct homogeneity within its boundaries. One author has called such tightly-knit cultural groups “single organisms or personalities.”<sup>3</sup> Yet the Mormons' founding document hints at the impossibility of such an entity. As the Book of Mormon suggests, all communities—starting with the smallest unit of society, the family—experience internal dissent. The urge to suppress dissent and/or expel rebels from the group is hard to resist,

but suppressing an internal other can lead to generations of conflict, splintering, and eventually, perhaps, to the destruction of whole societies. Even though Joseph Smith's own text warned about the failure to mediate differences, he tended to dismiss from his group anyone who disagreed with him, and he concealed certain practices like polygamy that might (and did) cause further dissent. Within a few years of starting his own religion in 1832, Smith already faced multiple splinter groups launched by his disaffected disciples.<sup>4</sup> Thus the supposedly homogenous Mormon family was from the beginning not so much a single organism as it was an ever-splitting atom.

At the very time when Joseph Smith was writing ancient archetypes into both his texts and his life, the splitting of an imagined unitary self into multiple incarnations became an important literary motif in the western world. Shortly after the Book of Mormon was published, a "literature of the double" would begin appearing in English novels like Mary Shelley's *Frankenstein* and Charles Dickens' *Great Expectations*, perhaps modeled after the eighteenth-century German Romantic Movement.<sup>5</sup> In the U.S., Charles Brockden Brown presaged this trend with *Arthur Mervyn* (first published 1799-1800) which not only doubled plots and characters, but also doubled the doubling. Edgar Allan Poe would become even better known in America for his uncanny doubling motifs, while Robert Louis Stevenson would write the ultimate doppelgaengers into *Dr. Jekyll and Mr. Hyde* in 1886. Freudian-style readings of "the double" often depict warring twins or siblings as an uncanny expression of internal anxiety and conflict within the self,<sup>6</sup> but Jung reads the double—the "Shadow"—as a normal and necessary phenomenon, neither good nor evil, an outward sign of forbidden desires that have been suppressed by cultural constraints and social taboos.<sup>7</sup> Doubling is also said to occur at the macro-level of

societies, making visible the hidden fractures that threaten to dissolve the imagined unity of communities and cultures.<sup>8</sup>

In Chapter 2, we explored how the manifestation of slightly different iterations or copies can lead to anxieties about authenticity. In this chapter, copies are produced not through the addition of meaning but rather through *division*, an uncanny process that multiplies across space and time, resulting in what we might call *a surplus of loss*. When multiple discourses of identity erupt inside a supposedly monolithic society or inside a supposedly unitary self, binary explanations for conflict—Self vs. Other, Good vs. Evil, Jew vs. Gentile—become increasingly difficult to sustain. The self produces its own other(s), which then reproduce their own other(s), multiplying the conflict into infinity. The other must be constantly externalized in order to sustain the imagined self, yet the process threatens to nibble the self into oblivion.<sup>9</sup> Foucault discusses doubling-by-internal-division as a kind of discursive promiscuity: “these two languages are more than simply contemporaneous; they live within each other, share the same dwelling, constantly intertwine, forming a single verbal web and, as it were, a forked language that turns against itself from within, destroying itself in its own body, poisonous in its very density.” The double transgresses its own limits, he adds, creating infinite excess through mirror reflections that also signal a profound deficiency, a “wound of the double,” an empty hole in the interior “from which the work paradoxically erects itself.”<sup>10</sup> Foucault’s sexual metaphor mischievously depicts the double as a transgression—a sin—of self-reproduction that produces both surplus and loss.

Evidence of internal fission can be hard to locate in Mormon literature—that is, literature about Mormons and by Mormons. Over the decades, Mormon literature has

exhibited such faith-promoting consistency that Mormon literary critics often bemoan the lack of a “serious” literature, by which they mean a literature that grapples with the contradictions of Mormon culture and doctrine yet rests on a foundation of faith.<sup>11</sup>

Despite the scarcity of published works by Mormons who are willing to explore their internal incongruities, it would be a mistake to assume mainstream Mormondom has remained culturally and spiritually unified over the years; many battles have arisen over issues like polygamy, isolationism, welfare, the ordination of blacks, women’s rights, and—recently—gay rights.<sup>12</sup>

One issue that particularly split the Mormon community in the latter half of the twentieth century was the nuclear arms race. From the development of the atomic bomb, to uranium mining, to atomic testing and fallout, to the MX missile, to nuclear arms treaties, nuclear waste, and more recently, nuclear power—Utahns were involved in every step of the nuclear cycle, and have argued bitterly over these issues. Because Utah was the target of atomic fallout during the years of aboveground testing, a sub-culture of “Downwinders” arose inside the larger Mormon community. Those who embraced Downwinderism believed they had been betrayed not just by government and science, but also by a church claiming to have a living prophet whose job was to warn of impending doom. Mormon Downwinders began to question religious authority, marking them as expatriates, traitors, and heretics. The nuclear rift among Mormons has not always been visible to outsiders. Even inside the Mormon community, it has been scrupulously ignored or even suppressed by church leaders and members.

The LDS church never made an official statement regarding atomic testing, but in 1953—shortly after the mess that was “Dirty Harry,” after thousands of sheep had died

and the shepherders' protests grew louder, after miscarriages started occurring and local physicians began asking questions—the church published in its official magazine a somewhat condescending article by Dr. G. Homer Durham, a political science professor at the University of Utah (and later, one of the highest members of Mormon leadership), titled, “How Much Radiation?” The purpose of the article was to educate Mormons and lay to rest their concerns regarding fallout from the Nevada Test Site.

The question often arises, when the deadly gamma rays are released into the atmosphere, how much of this radiation is dangerous? If not dangerous today, what of the effect on soils, crops, and life, cumulatively, over a generation? The University of Utah, in co-operation with the Utah departments of health and civil defense, has trained citizens of southern Utah in the detection of radiation. ... Dr. [Alvin C.] Graves [director of nuclear weapons testing at the Nevada Test Site] explains that absorption of over four hundred “Roentgens” (units of measurements named for the German scientist who discovered X-rays) into the body is considered fatally dangerous. ...

On occasion, it is theoretically possible for residents of St. George to receive three or four Roentgens. However, if well-clothed and indoors, the amount will be a fraction of this, due to “shielding” effects of clothing and structures—as your elementary school children, who have been trained, will tell you. Salt Lake City residents may have received as much as 4 or 5/1000s of one Roentgen, if exposed throughout a wind-drift “fall out.”

No explosion is permitted without extensive investigation of weather conditions throughout western America. Nevertheless, Dr. Graves suggests that atomic radiation is a factor to be conscious of in these times; that knowledge of it must be diffused widely among our people in order that public opinion can intelligently enforce wise decisions from the AEC and other responsible officials....

Like all responsible officials, Dr. Graves suggests that public opinion faces a parallel task, that of the constant search to live in peace with ourselves, God, and our world neighbors.

No preoccupation with the effect of radiation from new weapons can substitute for the quest for peace on earth, good will towards men.<sup>13</sup>

Thus, relying on information gathered by a political scientist (i.e., Durham) who used a single source (i.e., Graves) from the government facility was most interested in continuing atomic testing (i.e., the Nevada Test Site), the LDS church told its members they were overly “preoccupied” with the dangers of radiation, and that “responsible officials” knew what was best for them.<sup>14</sup> It should be noted the “occasional” exposure to three or four roentgens *from a single blast*, as mentioned by Durham, would be the equivalent of 3,000-4,000 millirems today. In 1957, four years after this statement, occupational safety standards for *nuclear industry workers* would be set at a cumulative 5,000 millirems *per year*.<sup>15</sup> In 1951, twelve blasts occurred at the Nevada Test Site. In 1952, eight bombs were detonated. In 1953, eleven bombs. In 1955, seventeen bombs. In 1957, thirty-one bombs. In 1958, thirty-nine bombs. In 1961, nine bombs. In 1962, *sixty-three bombs* were detonated at the Nevada Test Site (and another thirty-two in or near the Marshall Islands) before the blasts were forced underground in late 1963 by the Partial Test Ban Treaty.<sup>16</sup> How many of those blasts resulted in the “occasional exposure” to which Durham refers? When sixty-three bombs were exploded in a single year, was it realistic to believe downwind residents received less than the cumulative 5,000 millirems/year that was already the standard for industry workers?<sup>17</sup>

As the years went by and the evidence accumulated, it became clear Dr. G. Homer Durham and *The Improvement Era* had been very, very wrong. When documents began to be released in the 1980s showing government officials and scientists had lied to Utahns about the amount of radioactivity they were exposed to, and had even targeted them as “expendable” citizens,<sup>18</sup> Mormon Utah split into factions just as surely as if a radioactive neutron had penetrated its core. Born in that moment were multiple atomic

byproducts: those who believed in the Downwind betrayal; those who would spend their last breaths denying it; those who weren't sure which side to believe; those who believed the risks of nuclear technology could be controlled through better engineering; those who simply wanted to continue benefitting economically from testing; and those who felt citizen deaths were an acceptable price to pay for national security. The conflicts over nuclear technology assumed a distinctly religious cast in Utah precisely because Mormons tend to adopt a universalizing worldview that locates religion at the center of life. This often leads to internal as well as external struggles in the attempt to align religious dogma with science, politics, art, economics, and so forth. In this case, Downwind Deniers claimed God/Country/Science (often as a single entity) would never betray them, despite much evidence to the contrary, while Downwind Believers expressed disillusionment with religion, government, and science, all three. Mormon families fought over the revelations about atomic testing. Some Mormon communities shunned anti-nuclear activists, while others praised them. Activists reported being threatened with excommunication or loss of their jobs. Individual Mormons lost their faith because of atomic testing. Yet atomic testing is almost never described in the literature as an intra-Mormon conflict, but rather as a conflict between citizens and their government, or as a conflict that *should have arisen* between citizens and government, but did not because the Mormons were both faithful and patriotic. Utah Mormons, we have been told again and again, were uneducated, trusting, simple folk, "capable of believing almost anything they are told" by authority figures.<sup>19</sup>

Whether or not Mormons were any more trusting of government than were other Americans during that era, the fact remains many Mormons did feel betrayed by both

state and religion when the truth about atomic testing finally emerged. Cheryll Glotfelty notes nuclear testing engendered a broad “crisis of faith” in the West, and Mormons were among those most deeply affected.<sup>20</sup> One Downwinder describes the conflict in poignant terms:

I was raised in a Mormon family, raised always to be patriotic, always to be obedient, and never to question at all. And so when we started testing bombs out in Nevada I was excited about it. I was thrilled with the idea that I was down in southern Utah and I would be able to watch the bomb blasts. ... At that time I was Mormon, but I have to clarify this for you, I am not Mormon now and haven't been for some years. I chose a different way. ... My girlfriend, who has never been Mormon, asked me if I wanted to go to the [anti-nuclear] demonstration and take our kids and make an issue of it. I asked my bishop what was the proper role for a good Mormon woman to take. He said, “No, you stay away from it, those people are Communists,” so I didn't go. To Mormons, the first law of God is obedience. ...

I don't mind discussing my change of religion because it's focal to the way I am, focal to the problem of why the state which was receiving most of the fallout didn't complain. Of all people, we should have been the ones complaining and we weren't. ... When I left the Mormon church I claimed back for myself the right to make my own decisions, even if they were bad ones. My parents were angry. My mother disowned me. My sisters wouldn't speak to me. My neighbors wouldn't have anything to do with me. It was not an easy decision, but I chose life over tyranny.<sup>21</sup>

Suppression of dissent occurs here at multiple levels: the first level involves self-suppression (“I was raised...to always be obedient”); the second level is ecclesiastical (via the bishop, or pastor, of her congregation); a third level references nationalism (“those people are Communists”); a fourth level is familial (“my mother disowned me”); and the final level is community-based (“my neighbors wouldn't have anything to do with me”). With such a wide range of forces working against dissent in Mormon Utah, it's no wonder most Utahns chose to simply say nothing.



This particular Downwinder story is not unusual; it has been echoed by other activists who disaffiliated from the church during this era, although their departures were not all directly related to ecclesiastical suppression. Some major anti-nuclear activists who left the LDS church and have been willing to speak publicly about their experiences include Terry Tempest Williams (highly acclaimed Utah eco-writer);<sup>22</sup> Mary Dickson (broadcast journalist and anti-nuclear activist from Salt Lake City);<sup>23</sup> Ed Firmage (a law professor at the University of Utah and founder of Utahns United Against the Nuclear Arms Race);<sup>24</sup> and Preston Truman (founder of an influential grassroots group, the Utah Downwinders).<sup>25</sup> There were also anti-nuclear Mormon activists who remained faithful, including Eugene England (former BYU English professor) and Emma Lou Thayne (Mormon feminist and poet).<sup>26</sup>

While some Utahns raised their voices in protest against nuclear weapons, others defended atomic testing as “harmless” and even questioned the integrity of fellow Utahns who claimed otherwise. One retired southern Utah physicist, for example, has vehemently disowned the claims of his Downwinder neighbors, going so far as to publish a scathing article in the *Physics and Society Newsletter* denying radioactive dust had ever fallen on the ground “like snow,” or that any of his classmates in southern Utah had died of cancer, or that radiation doses in Utah were anywhere close to that of the Hiroshima survivors—whom he disingenuously claims suffered only a five percent increase in cancer.<sup>27</sup>

In 1980 and 1981, shortly after government documents on atomic testing and fallout had been declassified, and the alarmists’ claims suddenly appeared a great deal more credible, the LDS Church adopted a surprisingly firm stance against the siting of

the MX missile system in Utah.<sup>28</sup> A rare official statement was issued by the First Presidency: “Such concentration [of nuclear missiles in one area], we are informed, may even invite attack under a first-strike strategy on the part of an aggressor. If such occurred, the result would be near annihilation of most of what we have striven to build since our pioneer forebears first came to these western valleys.”<sup>29</sup> Reaction from some Utahns was vitriolic: “a specific religious philosophy, only one of many, is dictating to our government what it can and cannot do, under threat of damnation.”<sup>30</sup> Others were supportive: “The message is an appeal to all, Mormon and non-Mormon. Let us learn to be peacemakers.”<sup>31</sup> The missile system was ultimately re-located to the Plains states.

Despite making strong statements against the siting of nuclear weapons in their own backyard, church leadership tried to suppress anti-nuclear activism among its members. For example, in 1982, when a prominent BYU professor asked church headquarters for permission to join a grassroots coalition, Utahns United Against the Nuclear Arms Race (UUANAR), he was denied.<sup>32</sup> In 1993, a group of BYU faculty members calling themselves the “Mormon Peace Gathering” (who presumably did *not* first check with Salt Lake City) joined the annual Nevada Desert Experience—a multi-denominational, anti-nuclear protest at the Nevada Test Site. About forty Mormons allowed themselves to be arrested that year, spurring vigorous debate in the BYU student newspaper over whether such activism was appropriate for church members, and particularly for BYU faculty. The church’s position became clear when a student editor was officially reprimanded for publishing an editorial praising the activism.<sup>33</sup> Church leaders did not want nuclear war, but neither did they want members engaging in the kind of civil disobedience associated with the counterculture movement. Ten years later, when

the U.S. went to war against Iraq in 2003, the president of the LDS Church would publicly argue *in favor of* the war, contradicting earlier church statements that condemned all war except for defensive actions.<sup>34</sup> The church's efforts to avoid any appearance of anti-Americanism was perhaps not surprising, given persistent mainstream American views of Mormons as subhuman, even racial others.<sup>35</sup>

A respectable amount of art, poetry, fiction, theater, film, and memoir has come out of the Mormon Downwinder community. The internal conflicts that developed over fallout and missiles spawned a new genre of specifically Mormon atomic literature in the late twentieth century. The most sophisticated of these works do more than simply bemoan government betrayal or portray a binary world of victim vs. victimizer; they also recognize the divisions that arose inside Mormon culture over atomic testing, and the complicity of Mormons themselves in their own victimization. They explore what it means to be complicit or innocent, and the gradations between the two extremes. They ask questions about religious authority and religious negligence. Most importantly, they fracture the carefully self-constructed image of Mormon homogeneity. This was clearly a moment of crisis in Mormondom—a *wound*, in Foucault's words.

The first work under discussion here is a 1996 play written by BYU Professor Eric Samuelson, called *Gadianton*.<sup>36</sup> In this play, the tragedies of 1950s atomic testing are juxtaposed against the orgy of corporate mergers occurring in the U.S. during the 1990s. The title of the play comes from the Book of Mormon. The Gadianton Robbers were a secret society of assassins and power-mongers that emerged again and again in the scriptural tale. They specialized in taking over elected governments from within, organizing powerful criminal gangs, or waging guerilla warfare from hidden mountain

strongholds. Gadianton members recognized each other through secret signs and oaths, and often insisted their motives were pure and their activities were for the common good. The group originated within the Nephites and eventually controlled the entire Nephite nation, but ended up on the opposite side, helping the Lamanites exterminate the Nephites from the American continent. Murderers and victims doubled and multiplied in the scriptural story until it is nearly impossible to tell who belongs to which side, or who is betraying whom. At times, the Gadiantons even murdered each other in their individual bids for power. Brothers were pitted against each other, over and over. Some Mormons believe the Gadiantons still exist today, and use the story to prove whatever conspiracy theory is the flavor of the moment.<sup>37</sup>

The story of how the BYU play came about is almost as full of intrigue as the play itself. Samuelson began writing the play in 1994, when his brother worked for a computer company, NCR (originally known as the National Cash Register Company), that was experiencing a hostile takeover by AT&T. At the same time, Mormon Utah's most famous homegrown software company, WordPerfect, was being purchased by Novell. Both mergers were accompanied by massive layoffs that temporarily increased the value of the stock right before the purchase, enriching the people at the top who held the largest shares in the original companies. Possible illegalities were ignored or covered up. Samuelson's first version of the play was scheduled to be produced at Brigham Young University in February of 1997. However, BYU administrators stopped the rehearsals, supposedly due to concerns the play might be seen as an attack on local members of the WordPerfect community. Samuelson agreed to rewrite the play, setting it in St. George instead of Orem (the location of WordPerfect), and changing characters so

they would not resemble anyone from WordPerfect. The play was then produced at BYU within the original timeframe. Samuelson claims the changes made the play stronger, and his job was never in jeopardy, only the future of the play itself. Nevertheless, rumors abounded he had been threatened by church leaders on behalf of a few powerful and wealthy Mormons.<sup>38</sup>

There are a number of mini-dramas going on inside Samuelson's larger story about the imaginary takeover of a computer software company named ONTI (an "onti" is a silver coin mentioned in the Book of Mormon). For example, a play-within-the-play takes place when a light-hearted church musical about the Gadianton Robbers gets produced by the very man who is orchestrating the corporate takeover. Poignant side-stories are told during interviews between an LDS bishop and his ward members. A callous eastern photographer has her own separate project going on, creating a pictorial collection of small-town America and using St. George's tragedy to her personal benefit. At times, ghostly appearances are made by the original Gadianton, who calls himself "just a businessman." Most surprisingly, Downwinders occasionally appear as characters who repeat well-known stories about fallout and cancer—the "St. George curse" or "disease," as it is called.

The connection between the Gadianton Robbers and the corporate merging spree should be obvious, but what are the Downwinders doing in there? Samuelson suggests the Downwinders' fate was somehow related to corporate thievery that would occur some forty years later. Significantly, that thievery is made possible only through the co-opting of certain executives and employees of ONTI, long-time members of the local community who are also good, faithful Mormons. This, therefore, is a betrayal *from*

*within*. For example, the founder of ONTI, who has a very Mormon name—Mahonri Ward—tries to resist the directive to lay off one-third of his employees—2,000 people—but after being over-ruled by his partners, he never even considers blowing the whistle. After all, the merger will make him very, very rich. His inner conflict is demonstrated through his interaction with an “inactive” member of his LDS ward, the degenerate John Wayne Cogburn,<sup>39</sup> who also became very rich some years earlier when he sold his share of Empasse, the company now taking over ONTI. Cogburn operates as Ward’s double, particularly after Ward becomes Cogburn’s “home teacher” (an official monthly visitor from the local LDS congregation). Ward tries to convince the ornery Cogburn he just wants to be his friend, but when Ward cleans up Cogburn’s yard and paints his house for him—a common service home teachers often perform for handicapped and elderly members—Cogburn calls him out:

COGBURN: I figured it out, I did! The yard and the paint job, it’s all outside the house, isn’t it?

WARD: I told you, I’m trying to---

COGBURN: This isn’t about home teaching! Not about me! It’s about the house!

WARD: It’s about you.

COGBURN: It’s about property values... This house is the disgrace of the neighborhood, and you don’t want to drag down property values. (Laughing again.)<sup>40</sup>

Cogburn then prophesies Ward’s future: after Ward’s \$300 million profit from the ONTI sale becomes known, no one in St. George will ever trust Ward again; every time Ward does a good deed, people will whisper behind his back and wonder what his motives are. Shortly after, Ward imagines himself brought before a church court that

accuses him of committing “willfully and with full knowledge and intent ... an act of economic violence” against his “brothers and sisters in the gospel, depriving them of their ability to earn an honest livelihood by the sweat of their brow and thus trampling on the poor but honest at heart in order that the stockholders of this company might get gain. And the stockholders did flourish, and their flourishing came at the cost of their brothers and sisters!”<sup>41</sup>

Another character in the play who sells out her friends and compromises her own principles is Helen Bryson, ONTI’s public relations head. Before being roped into the merger scheme, Helen describes herself thusly: “Nice girls don’t get angry. I believe in it, being nice. It gets you out of things, and it gets you through things, and it also makes for pretty strong armor. ... When I was nine, my father inherited his father’s carpet outlet, which declined rapidly under his management, ending eventually in bankruptcy. He turned to drink, and finally left the Church. His rages, his furious, impotent rages. I learned I could always deflect them with a smile and a giggle, and so that became my role. Niceness works. I don’t think it’s such a bad way to be, the peacemaker.”<sup>42</sup> Thus Helen’s childhood experiences with both religion and capitalism have taught her how to manipulate others, and it serves her well in her present job. Even so, she experiences long moments of hesitation and anxiety before agreeing to spin the merger as a positive thing, a “rightsizing” rather than a “downsizing.” The bait dangled before her—the one that finally does her in—is the promise of a promotion to Vice President of Marketing for the new company. Her husband helps rationalize the lie by telling her, “It’s your job to lie. ... It could even be illegal for you to tell the truth. As far as the SEC is concerned.”<sup>43</sup> But Helen’s slightly crazy assistant Sam (her double?) sees clearly what is going on when he

presciently tells her—before realizing he himself is going to be fired—“We are complicit, Helen! We are complicit!”<sup>44</sup>

The bishop’s wife also tries to justify her husband’s role in the whole nasty business. Bishop McKay Todd works in the mailroom at ONTI, and has spent two years employing ward members who desperately needed work. With the merger, all his good works will be undone. He agonizes about the fact his own job will be safe while the sheep in his flock will be cast out from the company. His wife says, “We need the money, McKay. This is no time for scruples.”<sup>45</sup> Significantly, the bishop’s family has been hit by the “St. George curse,” or Downwinder disease, and the Bishop himself seems to have a degenerative back problem that might or might not be linked to radiation exposure: “We call ourselves downwinders; the word’s a badge of honor. But it’s just stories people tell. My father, my mother, my brothers Wilford and Lorenzo [these are the names of early Mormon prophets]. ... Could just be bad luck. It’s just that ... when you grow up with mushroom clouds and red sunsets routine facts of life, and you see your entire family, one by one. ... Then for the rest of your life, every headache, every stubbed toe, every twinge in the back, every bruise. ... And you wonder if that’s the first sign. Of what’s going to kill you.”<sup>46</sup>

The play suggests that what killed the Downwinders and tore the ONTI community apart was *complicity* on the part of certain community members who placed their own interests above the common good, or simply remained silent. Samuelson makes this clear when his Downwinders—in the middle of the corporate purging of ONTI—start arguing with each other over who to blame for the atomic testing coverup:

WILSON HACKETT: I went to them hearings one day. All those men in suits, talkin’ so reasonable.



ERMA MACKELPRANGER: I just wanted to stand up and scream “shut up! Shut up you dumb people! Don’t you know they’re killing us!”  
But I didn’t. ...

WILSON HACKETT (conspiratorial): Eisenhower knew. We all voted for him, and he knew the whole time.

ERMA MACKELPRANGER: He never—

WILSON HACKETT: He said, “We can afford to sacrifice a few thousand people out there in the –interest of national security.”

ERMA MACKELPRANGER: Don’t talk dirty about the president—  
Them’s just rumors.

WILSON HACKETT: He was a damned politician!

ERMA MACKELPRANGER: He was a Republican!<sup>47</sup>

Blind patriotism is at work here, of course, but something deeper is also going on.

Erma knows Wilson is right—she wants to stand up and speak out—but even so she suppresses herself and chastises Wilson. This isn’t true blindness, or pure victimhood. Erma chooses her own inaction and she chooses to suppress the activism of others. If Eisenhower was complicit at the level of the larger American community, Erma is also complicit as a member of the smaller Mormon community.

This was not the first time a BYU professor had suggested Utah Mormons were complicit in their own radiation poisoning. Just one year before Samuelson began writing this play, another BYU professor, Eugene England, gave a speech at the aforementioned 1993 “Mormon Peace Gathering” at the Nevada Test Site, which caused an uproar at the university. England’s message that day highlighted key moments in Mormon history, including a dramatic reversal in church policy at the turn of the twentieth century that moved Mormons away from isolationism and toward nationalism. That move allowed

Mormonism to survive, England noted, but “one of the costs was an accommodation to this world’s violence, especially that of a particular nation, the United States.” A military veteran himself, England urged Mormons to consider the consequences of their unquestioning submission to authority figures, using atomic testing as a prime example:

It is now well-documented that our government, caught up in the hysterical anti-communism of the late 1940s and 1950s, let the goal of “national security” justify a range of evil means: lying about the amount and dangers of the radioactivity the AEC knew about; illegally interfering with independent efforts to test those dangers and silencing or punishing government employees who “blew the whistle”; intentionally refusing to warn potential victims or to provide medical research and care that they knew would alleviate sickness and death. *Mormons—including scientists, doctors, and leaders in the government, and the private sector—have collaborated in this process, mainly through silence, in the face of mounting evidence, in a desire to be supportive of the “divinely directed” country.*

Such unquestioning Mormon superpatriotism has been perhaps the most dangerous result of our accommodation to American values. It led most Mormons to acquiesce in the testing and even to accept the government’s cruel refusal of responsibility when the truth came out. Not only have we paid, in [historian Thomas G.] Alexander’s words, with the “blood of Mormon youth”—thousands of whom have died in American wars in the past 100 years—but we have paid with thousands of lives of women, men, children and elderly people who have died and will go on dying from cancer. We are paying a price in growing disillusionment and anguish, as individual Mormon Downwinders learn the truth about the betrayal by their government and culture.

...But there have been even more serious costs of our *complicity*, as Americans, in the madness of Mutual Assured Destruction. Jesus Christ clearly warned us about the negative results of imitative violence to our bodies, but also to our souls, that would come from the false idea that force can defeat force. ...

...Christ’s new ethical standards in the Sermon on the Mount and in revelation given to modern prophets imply that planning and organizing to kill millions of innocent citizens with nuclear missiles may be the same as actually doing it. It may be the ultimate dehumanization, targeting for destruction whole cities of people whom we will not face, and we who support such targeting with our taxes and our silence may be guilty of “thought sin” and of something “like unto” murder.<sup>48</sup>

By showing Mormons an *antitype* of themselves as selfish, greedy, sinners—perhaps even murderers in thought if not deed—Samuelson and England exposed a few contradictions of Mormon identity.<sup>49</sup> The myth of an integral Mormon community acting for the good of all rather than the self-interests of a few was seriously challenged by these two professors. Mormons were now forced to consider their worst enemy might lie lurking inside themselves ... or they *would* have been forced to consider such, had this play or this speech been more widely disseminated. Instead, Mormon leadership indicated such activism was frowned upon, which was an extremely effective form of suppression and duplicated the government suppression that had occurred during the years of atomic testing. If church leaders could not be entirely blamed for their complicity and lack of knowledge during the confusing years of atomic testing, they certainly could be blamed once they began suppressing outrage and dissent in the post-testing LDS community. The church became a shadow ego of the government at that point, repeating government's sins and raising all sorts of questions England hinted at in his speech: Is there no longer any difference between the mission of the church and the mission of the state? If so, do faith and citizenship become a single entity? Does sacrifice on behalf of the nation also become a religious sacrifice, making war a divine activity? If I lose faith in government, what happens to my faith in religion (and vice versa)? Ironically, in their quest to unite Mormonism with Americanism, church leaders initiated a cultural chain reaction, an internal doubling that produced both loss and surplus.<sup>50</sup>

While England and Samuelson remained faithful (but self-examining) Mormons, our next author did not. In her 2002 poetry collection, *Separate Escapes*, ex-Mormon Corrinne Clegg Hales focuses on her childhood in rural Utah, where the atomic bomb is

“sneaking in through the side door” and “blowing/ Like a tumbleweed across the desert, rippling through shirts/ And diapers hanging on the line.” Utah’s children “shake white ashes/ Out of oleanders into their hair, calling it desert snow/ And wiping it off ripe strawberries before popping them/ Into their mouths./ ... Tumors sprout cunningly, and take root/ Unnoticed in developing organs, hideous fruit/ Demanding a grim and perpetual harvest.” A dairy farmer who once believed the bomb was “God’s chosen” now accepts it as evidence that “Death is just part of the deal/ We make to be saved.” “The bomb seeps in/ Silently through the bedroom window, settling/ On tables and chairs and into our bones” as well as into Utah’s farm crops that are sold to markets across the nation “where we buy it/ Pray over it and take it, as if it were holy, into our flesh.”<sup>51</sup>

Here Hales depicts the bomb as a silent and sneaky invader attacking an innocent and unsuspecting Utah. She references a number of religious archetypes, hinting at Eve partaking of the apple when children pop contaminated strawberries into their mouths and bring upon themselves the “sin” of cancer—fruity tumors that demand “a grim and perpetual harvest,” that must be excised (cast out) again and again from the body. Like Adam and Eve, the Utah dairy farmer accepts a divine deal: his own mortality in exchange for the possibility of eternal salvation. But this Garden of Eden is contaminated, and its harvest is spreading poison through the nation. Dinner turns into a Holy Eucharist (or the Sacrament, as Mormons call it), which is supposed to signify salvation but becomes instead a marker for deadly radiation that prayerful disciples take unknowingly into their flesh. Utah serves as the contaminated twin of the Garden of Eden, a paradise which appears pure and unblemished on the outside but teems inside with tumors and death.

In another piece, Hales turns Mormon Utah's favorite symbol, the Beehive, into an enemy that threatens her family. "Alive" recalls a cold October morning from Hales' childhood, when she and her brother found hundreds of supposedly dead bees in a backyard shed and brought them in by the handfuls to show their sleeping mother: "And the beautiful bees began to move. Suddenly/ We were all screaming. The bees were crazy---/ Trying to fly and buzzing and stinging---/ And our mother was swatting at our hands/ And my brother was crying: Don't kill them again,/ Don't kill them again." She remembers her mother's face transforming "From perfect unconsciousness to vital fury" and the calamine lotion smeared on their skin "To numb the stinging anger/ We'd carried into the sleeping house,/ Brought to life in our own small hands."<sup>52</sup>

Viewed through the lens of the Cold War, which is the topic of most of Hales' poems in this collection as well as others, the bees of Mormon Utah—instead of protecting family and home—become instruments of pain and suffering that were *brought into the sanctuary by their own victims*. Hales and her brother were unwittingly complicit in their own victimization. The self-knowledge comes too late, and a bit hazily; Hales' brother will die later in an automobile accident, and all she has left are pieces of this memory: "And I honestly don't know/ The difference anymore between memory and story/ And pure imagination... [H]ow can I be sure/ I ever had that brother at all? And how can I be sure/ He is dead?" We might well ask how any Mormon—or any Christian—could distinguish between life and death, when the dividing line was blurred by the promise of resurrection? Moreover, this is a specious resurrection, where bees come back to life and sting children, but brothers do not come back and confirm their sisters' memories.

For Mormon Utah, Hales' bees tell a competing story—an antimyth—that operates against the Mormon construction of Utah as a place of sanctuary and resurrection, not a desert but rather a “deseret.” The word references a unique Mormon alphabet constructed by Mormon leaders in the nineteenth century. “Deseret” means “honeybee” and was Brigham Young's preferred name for the state of Utah, symbolizing the spirit of industry and self-sufficiency he hoped to cultivate within Mormon society. Even today, Utah is called the Beehive State. Thus Hales' poem turns a quaint and optimistic origin myth on its head. Bees no longer function as happy symbols of Mormon heritage, but rather as vehicles of hegemony, self-destruction, and death.

Although Mormonism is filled with both folklore and mythology, only its folklore has thus far received scholarly emphasis.<sup>53</sup> One of the Mormon folklorists, William A. Wilson, has briefly hinted that the mythical elements of Mormonism should be more fully explored when he noted that Mormonism's origin myth was heavily influenced by “the cauldron of struggle and conflict” that occurred during the settlement of Utah in the late 1840s: “generations of Mormons” have had stories of pioneer sacrifice “drilled into their heads as they have been encouraged to press on and in whatever tasks they may have been given in building up the kingdom.”<sup>54</sup> Myths are not the same as folklore, however, even if the two entities are related. Slotkin asserts myths are historical narratives that acquire the function of symbol as they are told and retold over time, becoming increasingly abstracted “until they are reduced to a set of powerfully evocative and resonant ‘icons’—like the Alamo, the Last Stand, Pearl Harbor, in which history becomes a cliché.” Myths eventually embed themselves into language itself, as a “set of deeply

encoded metaphors that may contain all of the ‘lessons’ we have learned from our history and all of the essential elements of our worldview.”<sup>55</sup>

For Mormons “bees” and “beehives” operate as mythological codes for a whole range of meaning that connects them to their past: their ancestors’ violent expulsion from the nation-state in 1847, the difficult trek across the plains, and the hard-won successes in the frontier West. The beehive represents an entire worldview in which Mormons comprise a small, unique collective surrounded by dangerous forces that threaten to invade and contaminate them—a sort of perpetual Last Stand that never quite materializes. In Hales’ account, though, it is the bees that invade and threaten her domestic space, forcing her family to make a Last Stand against the sting of a dominant culture. Hales employs the raw materials of the Mormon origin myth, but reverses the dynamic so an antimyth emerges, an oppositional ideology that teases out the full meaning of the coded symbol.

As one literary scholar notes, myth and antimyth are doubles locked in a dialectic of meaning; where one appears, the other inevitably lurks beneath, even if the hierarchies in the relationship are not necessarily stable. Together, the two narratives form a complex system of signification with both positive and negative features, the “necessary fictions” of society.<sup>56</sup> The full meaning of “bees” in Hales’ poem contains both myth and antimyth. Layers of hierarchy lie inside this poem. Mormon Utah imagines itself surrounded and threatened by a dominant culture, while smaller social units imagine themselves surrounded and threatened by Mormon Utah. Even that does not tell the whole story, because Hales and her brother transgress their own Last Stand borders and bring the outside in. At that point, it’s no longer possible to maintain a binary structure of “us”

versus “them.” Anxiety ensues, to the extent that Hales begins wondering about history and mortality. Her own past crumbles into instability, as she wonders whether she remembers this story right. Because the past is so shaky, she can’t even be certain about the present anymore—is the brother dead or not?

Hales also mixes past and present in another poem, from which she takes the title of her collection, *Separate Escape*. This lengthy poem, “Consummation: for K.J.S. (1947-1988),” explores the different life paths taken by Hales and her teenage boyfriend. With a nod to the song “American Pie,” Hales begins with the death of John Kennedy, then references a red Chevy, roadside diners, cherry pie, television, the Space Age, the Vietnam War, anti-war demonstrations, LBJ, Richard Nixon, *Life Magazine*’s photo of napalmed children running away from their village, and the tragic 1988 airshow crash at Ramstein U.S. Air Base in West Germany that killed her former boyfriend—referenced only as “K.J.S.”—just one year before the Berlin Wall fell. In their teenage years they made love in the red Chevy, determined to escape from small-town Utah: “At fifteen, I believed we’d always be/ In love; we were the chosen ones/ Who’d make it out/ Of our sorry neighborhood, have a life/ In the suburbs, eat steak and shrimp, go to work/ Every day in clean, happy offices/ Like all those pretty people in John F. Kennedy’s/ Television America.”<sup>57</sup> But the boyfriend joins the Army, goes off to Vietnam and sends home photos of himself with orphaned Vietnamese children. Hales, who is against the war, asks, “What are you doing there, so far from home/ And working for everything I hate?” When he returns from the war, Hales spends the summer arguing with her former boyfriend: “Everything was/ Out of place. You’d become the enemy/ I’d been working against. ... [T]he deep invisible seam/ That once had joined us so securely/ At the edges



of our skin had pulled apart.” Many years later, they have a brief reunion at a roadside diner, after Hales has divorced and K.J.S. has rejoined the Army: “Here at this diner, over coffee/ And hot cherry pie, you try again to convince me/ I should go to church. You tell me God and the army/ Have given you the life we dreamed about/ As kids. . . . We each feel chronically compelled/ To convince the other of the rightness/ Of our separate escapes.” When she discovers K.J.S.’s death, Hales regrets they didn’t leave the diner together and try “one more time to touch/ Our way back to the pure physical/ Strength of a common purpose.”

Here, then, is the central tragedy of Hales’ collection: a unified Self splitting into opposing doubles who have lost all common ground. Hales is not just referencing personal differences here, or Mormon ones, but also the nation in general, split into two parts—conservative vs. liberal—and still fighting: “You could smell smoke/ On any American street. The attempt to settle/ Our differences is still, I suppose,/ Going on.” Not only is she the anti-patriot to K.J.S.’s patriotism, she has also become the ex-Mormon, an opposing heretic to his newly regained faith. The two who were once so close they could make themselves “whole again by simple touch” find themselves facing each other on several ideological battlefields. Yet the title of the piece, “Consummation,” suggests the possibility of a final reunion, that perhaps a kind of bleak wholeness might be found again after death, or even *because* of death. Death is often the only way to resolve the archetypal conflicts between opposing doubles.<sup>58</sup> As the distance between the split selves multiply, the inner chasm grows until one or the other must be annihilated in a last apocalyptic moment, which is what occurs in the Book of Mormon, of course.

Death and apocalypse are also central themes in Warren Stucki's atomic novel, *Boy's Pond*, published in 2002.<sup>59</sup> The story takes place in Santa Clara, just north of St. George, Utah, between 1953 and 1954, right after "Dirty Harry" covered the area with deadly fallout. In the opening scene, six Mormon boys participate in a prank, a nighttime burning of old rubber tires on top of an inactive volcano outside of town. When police arrive, the boys taunt the officers from the top of the hill: "Run for your lives! Run for your bomb shelters, you damn fools! ... The Russians are coming—No, the Russkies are here and they're blowing up the goddamn place!"<sup>60</sup> Before the police officers can reach them, the boys escape in three separate trucks, while behind them the fire explodes like a small atomic bomb. Unfortunately, during the ensuing chase, one of the trucks and a police car slide off the road and fall into a gorge, creating yet another fiery explosion. The remaining four boys escape and make a pact to lie about the incident, thinking they might be blamed for murder if the truth is known. As it turns out, one of the boys in the doomed car has survived and lies in a coma at the local hospital. He dies before waking up, but the boys' fear of discovery mounts as pieces of evidence are slowly uncovered that could expose the lie.

Two of the boys are lifelong buddies, Jack and Mick, and the story revolves mainly around these two. Jack is a faithful Mormon planning to go on a mission, while Mick is a doubter. During a camping trip in the mountains with their two girlfriends, they witness the explosion of "Dirty Harry" and find evidence that exposes the second central lie of the novel, the coverup by the Atomic Energy Commission about fallout risk. Unfortunately, Mick is already showing signs of cancer, and to top it off, he gets shot in the back while trying to escape from the town sheriff. Jack and Mick go on the run,

eventually turning themselves in to a sympathetic police officer in St. George who was once their Little League coach. Mick is diagnosed with a full-blown case of myeloblastic leukemia (one of the cancers most closely linked to radiation), leaving Jack to face a court trial alone. The other two boys who were involved in the incident are never linked to it, and they lie in court to help Jack cover up his own guilt. Jack is acquitted only through a lack of concrete evidence, though by now everyone in town knows he and Mick were involved in the deadly prank. As Mick lies dying, Jack tries to return to his normal life on the ranch under the thumb of an autocratic father, but his faith has been deeply shaken. Meanwhile, Mick literally finds religion on his deathbed and confesses to Jack that he killed the injured boy in the hospital, to prevent him from speaking. Despite committing this worst-of-sins, Mick believes he will serve a mission in the afterlife (a comforting doctrine for Mormons, who want to save souls both alive and dead). Jack, on the other hand, tells his bishop he no longer wants to serve a mission, and goes off to the University of Utah to study science and medicine instead. Thus the boys have switched religious roles by the end of the novel. Their friendship remains intact—but death divides them nonetheless.

The novel is partly autobiographical. Stucki is a former Mormon and a practicing physician who grew up on a ranch in southern Utah. He claims to have committed many boyhood pranks, none involving murder. One of his friends died of leukemia, but not his best friend. Over the years, Stucki has treated patients who were original Downwinders and are still being diagnosed with cancer. He has seen the same cancers show up in second and third generations, though it's difficult to definitively connect any of those cancers with radiation exposure. Like Hales and so many others, Stucki lost his faith at

some point, and now considers himself an agnostic. He calls Jack's "difficult, gut wrenching road to atheism" the most "cathartic" part of the novel for him.<sup>61</sup> If Jack and Mick are doubles in the novel, Stucki and Jack are also alter-egos.

In literature, mirror-opposites who are inexorably joined together came to be called Doppelgaengers. They may have originated in the novels of Jean Paul Richter, a German romanticist and humorist at the turn of the nineteenth century. Doppelgaengers face tragedy when they are together as well as when they are separated. Generally one is depicted as the Good, or Authentic, Twin, while the other becomes an Evil, or Counterfeit, Twin.<sup>62</sup> Even if the two began life together, the distance between them increases during the story, which also increases the tension. Usually one has to die at the end so the story can attain wholeness. One author has perceived a change over time in doubling motifs, noting postmodern doubling seems more concerned with individual identities rather than social groups, and particularly with the divided and split self.<sup>63</sup> However, another author notes doubles tell different stories at different times and in different genres: "twin tales are continually mutating: each repetition offers the opportunity for difference." It is at the point of mutation, this same author asserts, that we often find a moment of cultural crisis or change.<sup>64</sup>

The crisis of the Cold War, of course, amplified the human tendency to divide the world into Good vs. Bad, Real vs. Fake, Loyal vs. Traitor. Yet Mick (as apostate) resists this tendency in *Boy's Pond*: "I'm just not convinced that Russians are all that evil and that our military, government and Atomic Energy Commission are so lily white. They're just people. I'll bet they're just running scared like we are."<sup>65</sup> Later, Mick (as convert) takes a more black-and-white view, picturing himself as an iconic character from the

Book of Mormon, Alma the Younger, who makes a 180-degree turn from the church's worst rebel into its greatest missionary. By contrast, Jack argues early in the book that Russians are alien to Americans, then later finds himself being called a "Communist" when he writes a letter to the local newspaper trying to warn Utahns about the dangers of atomic testing. Like the Nephites and the Lamanites of the Book of Mormon, it's not always easy to tell who is occupying which position in this story of faith and doubt.

This is not just a book about double persons, it's also a book about double crimes that have been committed and covered up: the boys' crime and the AEC's crime. In each case, there is evidence that is uncovered, discarded, or judged inconclusive. At one point, Mick and Jack have in their hands a stolen briefcase that would prove the AEC had been lying to Utahns about their exposure risk; they end up throwing the evidence into a river for fear they will get into deeper trouble. In each case, there are also witnesses and participants who lie for their own selfish reasons. And in each case, the perpetrator escapes accountability, even though the larger community knows he is guilty. Significantly, guilt and innocence are hard to define in both cases. Perpetrators become victims of their own crimes, and victims are perpetrators of their own tragedies. The "good" twin switches places with the "bad" twin, so the reader cannot make moral judgments. There can't be a good twin and a bad twin in this story; there can only be desire and regret. This is a significant departure from most Mormon narratives, which tend toward moral binarism.

Over the centuries, opposing twins have often been used to depict the inner conflicts experienced by nations and cultures. From the founding of Rome via Romulus and Remus, to the Israelite myth of Esau and Jacob, many national myths are based on

rivalry and antagonism, with one twin dominating or even eliminating the other. Classical myths like these suggested societies can exist only under conditions of homeogeneity. Yet, as one scholar notes, the literary imperative today is toward hybridization, creolization, multiethnicity, and changing/relational identities. In such an atmosphere, the twin-tale also changes: “twins now offer a readily available image for the solution to strife, for peaceful coexistence.”<sup>66</sup> In these cases, doubling becomes a means of *overcoming* division, or a way to warn against the terrible price paid when cultural exclusion is practiced. The dynamics of change in society are particularly manifest when twins switch places, as do Jack and Mick. As a literary strategy, switching places can reduce or even eliminate the distance between the doubled characters that so often leads to fission/apocalypse. Each twin self suddenly sees himself through the other’s eyes: “multiple images of the self mirrored in the other are not threats to identity but constantly constitute it. It is in the course of identifying with [multiple images] that we acquire identity.”<sup>67</sup>

At a macro-level, the contemporary American West finds itself experiencing exactly this moment of doubling and tension, according to literary scholar Neal Campbell, who imagines the West as a “series of discourses ‘tucked inside’ the United States,” a “mythic wonderland that ‘spills onto the outside,’ overflowing beyond these limits in multiple ways.”<sup>68</sup> Campbell outlines a “practice of outside” by which western scholars should try to examine the things they *can’t* see, including that which is supplemental and perhaps even threatening to the established canon.<sup>69</sup> His text models his technique, by connecting and layering multiple discourses together into one grand

pastiche. In the following passage, he quotes one scholar, John Rajchman, and in the passage after that, he quotes Gilles Deleuze, as quoted by Rajchman:

To rethink the West rhizomatically, beyond its function as national unifier—a “holding together of a prior or virtual dispersion”—is to view it as unfinished, multiple, and “open” and to recognize that “beneath... official histories and divisions there exist other powers, actualized through other kinds of encounter and invention,” tracing divergent, entangled lines of composition *that both interconnect and split apart constantly*.<sup>70</sup>

Here we see Foucault’s dynamic of simultaneous surplus and fission at work. Western studies should transgress its own limits, Campbell says, locate the surplus, and let the doubling begin. The sin of self-reproduction, or “mutating multiplicity,” as Campbell calls it, might operate to detach the West from its own rootedness at the center of our national myth, where it functions as the de facto American identity. A constantly dividing West cannot sustain its own binary ideologies.

When Mick and Jack switch religious roles in *Boy’s Pond*, the process of fission is at work, yet paradoxically, a new collectivity emerges. Each boy creates a new identity not quite the same as the identities being replaced, but these new identities are inherently coexistent, since each has previously experienced the other’s faith and/or doubt. Life is no longer quite so black and white. Although their relationship is sorely tested in the book, the boys are able to remain friends: “We just differ on certain things,” Mick says. “Friends can do that, you know.”<sup>71</sup> Of course, Mick still dies, leaving Jack alone with his newfound doubt, but conflict doesn’t die with Mick. Instead, the tension moves inside of Jack, as if he now embodies Mick. Mick’s funeral heralds a new unity in the community, as a former enemy of the boys expresses genuine regret to Jack about Mick, leaving Jack “stunned.” But when Jack is called upon to speak at Mick’s funeral, he can only blurt out,

“I think I can now tell you with some certainty that I loved Michael Graff. Other than that, regardless of what Bishop Heinke says, none of the rest of this makes any sense at all to me!”<sup>72</sup> Jack survives, but he is not the legitimate heir in a scriptural system of primogeniture. Rather, his future involves leaving behind his family ranch and generations of tradition. He rejects his father’s birthright. Yet Jack is also not a synthesis of Mormon oppositions. He is more like a branch splitting off the tree, carrying with him his entire heritage as well as the promise of something new.

Jack’s evolution away from his religious belief occurred alongside a real-life effort by the LDS church to exert more control over the membership amid increasing concern over global and domestic social changes. In 1960, a program of “correlation” was introduced, which sought to standardize and make more efficient the global organization and curricula of the church.<sup>73</sup> According to Mormon scholar Armand Mauss, this process reinforced an already existing “fundamentalist tendency toward unquestioning obedience, rote learning, and indoctrination in preference to understanding and informed commitment.”<sup>74</sup> In other words, the church engaged in a frantic process of cultural fusion, trying to construct a unified Mormondom at the very moment when rebels like Jack were multiplying and splitting away from the nuclear core.

Jack, of course, is the alter-ego of his creator, Warren Stucki, who reports *Boy’s Pond* caused a mixed reaction in his Mormon community: “I have had some say it is the best book they’ve every read ... and some expressed outrage and indignation. I even had one woman march into my office one day, demanding to speak with me personally so she could voice her displeasure. One local bookstore cleared their shelves of *Boy’s Pond*, apparently after several complaints. And I have had several very negative phone calls at



home, which is interesting, since I have an unlisted phone number. Also interestingly, it never affected my practice.”<sup>75</sup> Thus Stucki—like Samuelson and England before him—experienced a certain amount of suppression by individual Mormons, who perhaps thought they were carrying out the wishes of church leaders.

Yet censorship often has the opposite effect from what was intended. As Mauss notes, the official suppression of Mormon dissent over recent decades has resulted in a not-inconsiderable mobilization of Mormon intellectuals, which has in turn “elicited an unusually public critical response from certain quarters of church leadership.”<sup>76</sup> In 1966, a group of Mormon graduate students at Stanford University started a groundbreaking academic journal that explored Mormonism from a scholarly but faithful viewpoint. The first few issues of *Dialogue: A Journal of Mormon Thought* challenged the church on perhaps the most divisive issue of the twentieth century: the ban on priesthood ordination of blacks. The journal continues to operate today and has since been joined by other independent Mormon journals, including *Sunstone* and the *Journal of Mormon History* (both started in 1974). However, the church struck back in 1993 by excommunicating a number of highly visible Mormon intellectuals, several of whom wrote for these journals.<sup>77</sup> As a result, members who would like to engage in self-examination of church doctrine or practice often feel obliged to choose between silent loyalty and outspoken treason.

The story of Jack and Mick suggests faith and apostasy *can* learn to dwell together, while the Book of Mormon goes so far as to imply that human survival might actually depend on learning how to coexist with opposition, especially when that opposition was part of the self from the start. That message, however, was lost almost

from the first moment. Even the Book of Mormon's author, Joseph Smith, did not seem to fully understand the issues his subconscious wrestled with, so it's no surprise modern Mormon leaders would continue dividing the church and the world into Chosen vs. Non-Chosen, and aligning themselves with government power rather than political dissenters. Before we know it, war becomes sacred, and religious narratives turn into political or military ones, almost seamlessly so. Those who try to pry them apart are labeled not just apostates, but also traitors. They seek refuge where they can, in science, in literature, in academia.

The atomic doubling of Mormon Utah continued a process of fission already at work inside this supposedly unitary community, creating a surplus of loyalty as well as a void of trust. That process occurred in parallel with a splitting of the American West into multiplicities. In the real-life West, there is no author who can manipulate the plot so as to reduce the vast distances and tensions between the West's "characters." However, as Chapter 3 demonstrated, at least some westerners are beginning to identify with Native Americans who have plenty of experience at being sacrificed by government in the name of national security. New identities and new alignments are percolating in the West, but the end result will not produce solid, unitary selves. The next chapter examines more closely the role the bomb has played in the never-ending search for identity in the American West. Westerners who go looking for something—anything—that might fill the gaps created by nuclearism are never going to find what they seek. Precisely because there are so many missing pieces in the atomic puzzle, the story of the bomb in the West often takes the form of a mystery that must be pursued but can never be resolved. At a

deep, structural level the “atomic mysteries” of the American West reveal a gaping hole lurking at the center of the atomic story.

### Notes

1. However, one historian asserts that the Book of Mormon was a “document of profound social protest” against the dominant republican culture of Joseph Smith’s America, since it promoted non-democratic forms of government and depicted Native Americans as God’s chosen (Richard L. Bushman, *Rough Stone Rolling: A Cultural Biography of Mormonism’s Founder* [New York: Alfred A. Knopf, 2005], 104).
2. Andrew Jenson, *Latter-day Saint Biographical Encyclopedia*, vol. 1 (Salt Lake City: Deseret Book Company, 1901), 86-89. Available online at the Harold B. Lee Library, Brigham Young University, <http://www.lib.byu.edu/dlib/misc/>.
3. Frances Fitzgerald, *Cities on a Hill: A Journey through Contemporary American Cultures* (New York: Simon and Schuster, 1981), 19.
4. Leonard J. Arrington and Davis Bitton, *The Mormon Experience: A History of the Latter-day Saints* (Chicago: University of Illinois Press, 1992 [1979]), 66-67.
5. Marianne Wain, “The Double in Romantic Narrative: A Preliminary Study,” *Germanic Review* XXXVI (1961): 257-68.
6. Freud relied on Otto Rank for his depiction of “the double” as a manifestation of inner anxiety, although for Freud doubling was specifically caused by castration anxiety (Rank, *The Double: A Psychoanalytic Study*, trans. Harry Tucker, Jr. [Chapel Hill: Univ. of North Carolina Press, 1971 [1938]).
7. Carl G. Jung, *Psychology and Religion* (New Haven, Conn.: Yale Univ. Press, 1938), 93.
8. Carl G. Jung, *The Archetypes and the Collective Unconscious*, vol. 9, part 1, in *The Collected Works of C. G. Jung*, ed. Sir Herbert Read et al. (Princeton, N.J.: Princeton University Press, 1981[1959]); Jacques Lacan, “The Mirror State as Formative of the Function of the I,” *Ecrits: A Selection* (London: Tavistock, 1977 [1949]), 93-100.
9. A constant division of the newly birthed republic into various factional interests until nothing remained was a deep concern expressed in the Federalist/Anti-Federalist debate less than two decades before Joseph Smith’s birth (*Federalist Papers*, esp. nos. 6, 7, 9, and 10; Library of Congress, <http://thomas.loc.gov/home/histdox/fedpapers.html>).

10. Transgression is embedded at a deep structural level into the architecture of the Foucauldian double, because Foucault's sexualization of the double transgresses its own limits, so that transgression becomes both the means by which doubling occurs and the means by which Foucault represents that doubling (Michel Foucault, "Language to Infinity," in Foucault, *Language, Counter-Memory, Practice: Selected Essays and Interviews*, trans. and ed. Donald F. Bouchard [Ithaca, N.Y.: Cornell Univ. Press, 1977], 53-67).
11. For an overview of the Mormon literary situation, see Eugene England, "Mormon Literature: Progress and Prospects," in *Mormon Americana: A Guide to Sources and Collections in the United States*, ed. David J. Whittaker (Provo, Utah: BYU Studies, 1995), 455-505.
12. See Thomas G. Alexander, *Mormonism in Transition: A History of the Latter-day Saints, 1890-1930* (Urbana: Univ. of Illinois Press, 1986).
13. G. Homer Durham, "How Much Radiation?" *The Improvement Era*, October 1953, 734, 794.
14. Ironically, Graves himself was a victim of one of the worst nuclear accidents ever to occur, at Los Alamos in May 1946, which killed one physicist and left Graves temporarily sterile and partially blind (U.S. Atomic Energy Commission, Division of Operational Safety. *Operational Accidents and Radiation Exposure Experience within the United States Atomic Energy Commission, 1943-1970* [Washington, D.C.: Government Printing Office, 1971], 35; Fradkin, *Fallout*, 89-90).
15. "Radiation: How Much Is Considered Safe for Humans?" *MIT News*, January 5, 1994; <http://web.mit.edu/newsoffice/1994/safe-0105.html>.
16. Federation of American Scientists, "United States Nuclear Tests by Date," *United States Nuclear Tests, July 1945 through September 1992*; <http://www.fas.org/nuke/guide/usa/nuclear/209chron.pdf>.
17. For detailed charts on the deposition of all radionuclides per blast for every county in the U.S., see Richard Miller, *U.S. Atlas of Nuclear Fallout, 1951-1962*, vol. 1, *Total Fallout* (The Woodlands, Tex.: Legis Corp., 2000).
18. Wasserman and Solomon, *Killing Our Own*; Fuller, *The Day We Bombed Utah*; Miller, *Under the Cloud*; Titus, *Bombs in the Backyard*; Matheson and Kee, *Out of Balance*; Ball, *Justice Downwind*; Caulfield, *Multiple Exposures*; Fradkin, *Fallout*; Hacker, *Elements of Controversy*; Udall, *The Myths of August*; LeBaron, *America's Nuclear Legacy*.
19. For slightly differing versions of this same story, see Gallagher, *American Ground Zero*, xxvii; Williams, *Refuge*; Hacker, *Elements of Controversy*; Ball, *Justice Downwind*; Matheson and Kee, *Out of Balance*; and Fradkin, *Fallout: An American Nuclear Tragedy*.

20. Cheryll Glotfelty, "Spiritual Testing in the Nuclear West," *Literature and Belief* 21.1 (2001): 221-34.
21. Interview with Darlene Phillips in Gallagher, *American Ground Zero*, 300-305.
22. Williams, *Refuge*.
23. Mary Dickson, "Living and Dying with Fallout," *Dialogue: A Journal of Mormon Thought* 37.2 (Summer 2004): 1-35.
24. Edwin Brown Firmage, "Allegiance and Stewardship: Holy War, Just War, and the Mormon Tradition in the Nuclear Age," *Dialogue: A Journal of Mormon Thought* 16.1 (Spring 1983): 47-61.
25. William M. Adler, "Hellraiser: Atomic Activist Preston J. Truman," *Mother Jones* (May/June 2001), <http://motherjones.com/politics/2001/05/hellraiser-atomic-activist-preston-j-truman>.
26. Members of other faiths have also questioned nuclear testing within religious frameworks by participating in the "Nevada Desert Experience," an ongoing anti-nuclear pilgrimage that takes place annually at the Nevada Test Site. The event was started by Franciscan monks in 1982 (first called the "Lenten Desert Experience") and has since included many other religious groups such as Episcopalian priests, Jewish rabbis, Japanese Buddhist monks, Native Americans spiritualists (specifically from the Western Shoshone tribe), the Catholic Worker movement, the Ecumenical Coalition for Peace and Justice, among others. The pilgrimage takes place during the week before Easter, and involves visiting the "Stations of the Nuclear Cross," where religious liturgies are recited and acted. Afterward, participants are given a chance to peacefully cross the desert line into the Test Site and be arrested. See Ken Butigan, *Pilgrimage through a Burning World: Spiritual Practice and Nonviolent Protests at the Nevada Test Site* (Albany, N.Y.: State Univ. of New York Press, 2003). See also "Nevada Desert Experience," Sacred Peace Walk website, <http://www.sacredpeacewalk.blogspot.com/>.
27. Daniel W. Miles, "The Great Fallout-Cancer Story of 1978 and Its Aftermath," *Physics and Society Newsletter*, October 2005, available online at <http://www.aps.org/units/fps/newsletters/upload/october2005.pdf>. In 2009, Miles also published a non-peer-reviewed book through Amazon's self-publishing arm, Booksurge, which made the same argument (*The Phantom Fallout-Induced Cancer Epidemic in Southwestern Utah: Downwinders Deluded and Waiting to Die*). Incidentally, the author's name appeared in 2008 on a list of global warming deniers put together by Sen. Jim Inhofe (R-OK), an infamous global warming critic (<http://www.thedailygreen.com/environmental-news/latest/inhofe-global-warming-deniers-scientists-46011008>). Miles' claim that fallout and cancer are not linked has been refuted by large-scale epidemiological studies of both Hiroshima survivors and Utah Downwinders. The work of University of Utah professor Joseph Lyon was instrumental in connecting fallout exposure to leukemia among children in

southern Utah; see especially Joseph L. Lyon et al., "Childhood Leukemias Associated with Fallout from Nuclear Testing." For Lyon's congressional testimony on how he was forced by the Department of Energy to alter his findings before publishing them, see U.S. Congress, *Radioactive Fallout*. For recent research on cancer incidence among Hiroshima survivors (which began very high and has subsided over the years), see D.L. Preston et al., "Solid Cancer Incidence in Atomic Bomb Survivors: 1958-1998," *Radiation Research* 168 (2007):1-64. For detailed charts on how much fallout was deposited on a county-by-county basis by each blast during the atomic testing years, see Miller, *U.S. Atlas of Nuclear Fallout*.

28. Jacob W. Olmstead, "The Mormon Hierarchy and the MX," *Journal of Mormon History* 33.3 (Fall 2007): 1-30. The LDS church and the Western Shoshone formed an alliance against the MX, and both cultures used a rhetoric of nativity in the public debate. See Matthew Glass, "Air Force, Western Shoshone, and Mormon Rhetoric of Place and the MX Conflict," in Hevly and Findlay, *The Atomic West*, 255-75.
29. Spencer W. Kimball, N. Eldon Tanner, and Marion G. Romney, "Statement of the First Presidency on Basing of the MX Missile," *LDS Church News*, May 9, 1981, 2; see also Spencer W. Kimball, "Christmas Message," *LDS Church News*, December 20, 1980, 3; and "Easter Message," *LDS Church News*, April 8, 1981, 3.
30. William M. Sands, "Flirting with Trouble," letter to the editor, *The Salt Lake Tribune*, November 9, 1982, 12A. Copy located in Edwin B. Firmage Papers, Box 107, Folder 4, Marriott Library Special Collections, University of Utah, Salt Lake City.
31. Lynne Goodhart, "Mormon Voice," *Herald Journal* (Logan, Utah), October 17, 1983. Copy located in Boyer Jarvis Papers, Box 29 Folder 9, Marriott Library Special Collections, University of Utah, Salt Lake City.
32. Letter from Truman G. Madsen to Edwin Brown Firmage, November 19, 1982 (Firmage Papers, Box 70, Folder 2, University of Utah Marriott Library Archives, Salt Lake City). At the time of the MX missile debate, Firmage was a University of Utah law professor and disaffected Mormon. He founded UUANAR in 1980. Many scholars view Firmage as the main force in persuading the LDS Presidency to oppose the MX missile. See Olmstead, "The Mormon Hierarchy and the MX."
33. Russell Fox, "Forty Mormons Arrested at Nevada Test Site during First Mormon Peace Gathering," *Sunstone Magazine* (November 1993): 76-77.
34. Gordon B. Hinckley, "War and Peace," Church of Jesus Christ of Latter-day Saints, General Conference Archives, April 2003, <http://lds.org/general-conference/2003/04/war-and-peace?lang=eng>.

35. Martha M. Ertman, "Race Treason: The Untold Story of America's Ban on Polygamy," *Columbia Journal of Gender and Law* 19.2 (2010): 287-365; and Reeve, *Religion of a Different Color*.
36. Eric Samuelson, "Gadianton: A Play in Two Acts," *Sunstone Magazine* (July 2001): 35-67.
37. Even church leaders have insisted that Gadianton-type "secret combinations" exist today. See, for example, Richard Dilworth Rust, "I Know Your Doing": The Book of Mormon Speaks to Our Times," *Ensign* (December 1988): 15; Horatio A. Tenorio, "Let Us Build Fortresses," Church of Jesus Christ of Latter-day Saints, General Conference Archives, October 1994; M. Russell Ballard, "Standing for Truth and Right," Church of Jesus Christ of Latter-day Saints, General Conference Archives, October 1997. The general conference archives are available online at the official LDS Church website, <http://www.lds.org/general-conference/conferences?lang=eng>.
38. Eric Samuelson, "Me, *Gadianton*, and BYU," *Sunstone Magazine* (July 2001): 66-67.
39. The name references John Wayne's final, Oscar-winning role as Rooster Cogburn in *True Grit*, just before he died of cancer that might or might not have been contracted while working on the set of *The Conqueror* in southern Utah during the 1950s (Karen G. Jackovich and Mark Sennet, "The Children of John Wayne, Susan Hayward and Dick Powell Fear That Fallout Killed Their Parents," *People Magazine* 14.19, November 10, 1980; available online at <http://www.people.com/people/archive/article/0,,20077825,00.html>.)
40. *Gadianton*, 64.
41. The last phrase references the Book of Mormon, where the Gadianton Robbers arose amid a culture of wealth and capitalism: "...thus they did have free intercourse one with another, to buy and sell, and to get gain, according to their desire. ... [T]herefore, they began to set their hearts upon their riches; yea, they began to seek gain, that they might get lifted one above another; therefore they began to commit secret murders, and to rob and plunder, that they might get gain" (Helaman 6:8, 17).
42. *Gadianton*, 50.
43. *Gadianton*, 56-57.
44. *Gadianton*, 54.
45. *Gadianton*, 60.
46. *Gadianton*, 60.

47. *Gadianton*, 60. These are the names of actual Downwinders.
48. Eugene England, "What Covenant Will God Receive in the Desert?" *Sunstone Magazine* (September 1994): 26-34; emphasis added.
49. As a graduate student at Berkeley in 1966, England helped found the first Mormon Studies journal, *Dialogue: A Journal of Mormon Thought*. In 1976, he co-founded the Association for Mormon Letters. In 1977, he joined the faculty at Brigham Young University, but left in 1998 to teach at a nearby state college in Orem, Utah. Rumors abounded that he had been forced out of BYU. No matter how it occurred, the move gave him more freedom to continue his faithful questioning. He died in 2001 at the age of sixty-eight from brain cancer.
50. See Armand L. Mauss's broad examination of twentieth-century Mormon assimilation, which eventually resulted in an unofficial merger between Mormonism and the conservative Religious Right, and a corresponding marginalization of the Mormon Left, in *The Angel and the Beehive: The Mormon Struggle with Assimilation* (Urbana: University of Illinois Press, 1994).
51. Corrinne Clegg Hales, "Covenant: Atomic Energy Commission, 1950s," in *Separate Escapes* (Ashland, Ohio: Ashland Poetry Press, 2002), 16-18.
52. Corrinne Clegg Hales, "Alive," in *Separate Escapes*, 8.
53. The folklore of Mormonism has been explored by numerous scholars, including Jan Harold Brunvand, *A Guide for Collectors of Folklore in Utah* (Salt Lake City: University of Utah Press, 1971) and Austin E. Fife and Alta S. Fife, *Saints of Sage and Saddle: Folklore among the Mormons* (Gloucester, Mass.: P. Smith, 1966). However, these are merely accounts of stories told by Mormons without any literary or social analysis regarding the ongoing meaning of the larger Mormon mythological system.
54. William A. Wilson, "The Study of Mormon Folklore: An Uncertain Mirror for Truth," *Dialogue: A Journal of Mormon Thought* 22.4 (Winter 1989): 95-110.
55. Slotkin, *The Fatal Environment*, 16-23.
56. For an exhaustive historiography of "myth," see Andrew Von Hendy, *The Modern Construction of Myth* (Bloomington: Indiana Univ. Press, 2002). See especially pp. 333-36 for an exploration of the myth/antimyth dynamic.
57. Hales, "Consummation," in *Separate Escapes*, 34-41.
58. Rene Girard, *Violence and the Sacred* (Baltimore: Johns Hopkins University Press, 1977 [1972]), 49-67.
59. Warren Stucki, *Boy's Pond* (Santa Fe, N.M.: Sunstone Press, 2002).



60. *Boy's Pond*, 16.
61. Personal correspondence from Warren Stucki to Dynette Reynolds, November 11, 2008.
62. Hillel Schwartz, *The Culture of the Copy: Striking Likenesses, Unreasonable Facsimiles* (New York: Zone Books, 1993).
63. Gordon Slethaug, *The Play of the Double in Postmodern American Fiction* (Carbondale: Southern Illinois Univ. Press, 1993).
64. Juliana de Nooy, *Twins in Contemporary Literature and Culture: Look Twice* (New York: MacMillan, 2005), 8.
65. *Boy's Pond*, 56.
66. de Nooy, *Twins in Contemporary Literature*, 120.
67. de Nooy, *Twins in Contemporary Literature*, 126.
68. Campbell, *The Rhizomatic West*, 36.
69. Campbell, *The Rhizomatic West*, 17.
70. Campbell, *The Rhizomatic West*, 9; emphasis added.
71. *Boy's Pond*, 61.
72. *Boy's Pond*, 230-31.
73. Robert Gottlieb and Peter Wiley, *America's Saints: The Rise of Mormon Power* (New York: Putnam, 1984).
74. Mauss, *Angel and Beehive*, 165.
75. Personal correspondence from Warren Stucki to Dynette Reynolds, November 11, 2008.
76. Mauss, *Angel and Beehive*, 170-72.
77. Lavina F. Anderson, "The LDS Intellectual Community and Church Leadership: A Contemporary Chronology," *Dialogue: A Journal of Mormon Thought* 26.1 (Spring 1993): 7-64.

## CHAPTER 5

### ATOMIC MYSTERIES: DETECTING THE BOMB IN THE AMERICAN WEST

The frontier myth imagined the American West as a space of unbridled freedom where men could escape domesticity, earn their fortunes, dominate their enemies, and affirm their masculinity. In reality, though, the West had always been a place where some people could enact freedom, and others had freedom enacted upon them.<sup>1</sup> During World War II, frontier freedom reached new heights of contradiction as the West became a place of national containment, where secrets of all kinds were locked away. The detention camps of the West took a variety of forms during the war. They held not just citizen-enemies like Japanese Americans, but also citizen-scientists like Oppenheimer and his atomic physicists, citizen-workers who helped build the bomb, and citizen-soldiers like those in Wendover, Nevada, who trained in secret to drop the bomb long before it was a viable weapon. The Manhattan Project sites were called “military reservations” in which the “control of the authorities over every phase of life is absolute.”<sup>2</sup> Transferred to the interior of the continent during the war, citizens of various kinds were carefully controlled and—some claimed—protected, for their own good and for the good of the nation.<sup>3</sup> The fences that physically surrounded the warscapes of the American West reflected a larger effort to contain the meaning of the war and the meaning of the bomb, in particular.

National containment continued after the war, as these spaces were not shut down but rather expanded for Cold War purposes. Inevitably, Americans began to question the legitimacy of the postwar regime of secrecy. The Manhattan Project scientists were among the first citizens to challenge military secrecy when they formed the Federation of Atomic Scientists that lobbied Congress to place nuclear technology under the purview of a civilian agency, the Atomic Energy Commission. They were only partially successful; the AEC was quickly co-opted by military forces.<sup>4</sup> During the ensuing decades, the debate over government secrecy increased, eventually resulting in Congress' creation of the Freedom of Information Act in 1966, which was reluctantly signed by President Lyndon B. Johnson, and strengthened after the Watergate scandal in 1974.<sup>5</sup>

The questioning of government secrecy also occurred in the realm of cultural production. In 1964, television producer David Susskind contacted Mel Brooks about creating a new television show that would satirize Cold War espionage. Brooks was indeed interested, and the popular *Get Smart* was born. Its lead character was Maxwell Smart (played by Don Adams), a bumbling secret agent working for a clandestine U.S. spy agency called CONTROL. One of the most ridiculous tropes of the show was the "Cone of Silence"—an acrylic bubble that descended from the ceiling over the heads of Max and his Chief whenever they needed to discuss something so secret they could not risk it being overheard by anyone, even by those on their own side. The Cone never worked quite right. Sometimes those inside the Cone were unable to hear a single word the other insider was saying. Sometimes only outsiders could hear the conversation. Sometimes everyone could hear everything, including the enemy spies of CHAOS. Occasionally the Cone suffered mechanical malfunctions that trapped its users inside or

smashed them into the floor. Once when the Cone did function perfectly, it turned out Max had nothing to report, much to the Chief's exasperation.<sup>6</sup>

Let us imagine for a moment the Cone of Silence actually worked, i.e., that individuals inside the Cone could communicate with each other while those outside were unable to hear what was being said. The Cone does not have to be transparent in order to function, but the transparency both highlights and dismantles the separation between the supposedly privileged position inside the Cone and the supposedly de-privileged position outside it. Those watching from outside can see the secret being discussed, but they cannot translate this knowledge into information that makes sense. Still, the simple recognition that a secret exists impels outsiders—including the viewer—to pay attention, pursue the mystery, and attempt to uncover the secret. The Cone of Silence helps us understand the dynamics of *différance*, Derrida's infamous "trace" that signals the deferred presence of an absence. For Derrida, language can never be fully decoded because its signs are always defined in relationship to other signs. As a result, meaning is perpetually postponed as the speaker/hearer pursues more information in order to more precisely define meaning. Thus meaning inside any discursive system has an "absent presence," i.e., present in the sense that its absence has been recognized even if only at an unconscious level.<sup>7</sup>

The Cone of Silence played an important role in the signifying system that was the Cold War. Information passed inside the Cone was both absent and present to outsiders—present in that everyone standing outside the Cone could see privileged information being conveyed, but absent in that no one knew exactly what that information meant. The Cone alerts outsiders that a secret exists, one that must be

pursued and apprehended. The antics depicted in *Get Smart* illustrated how dysfunctional the Cone becomes when people inside are prevented from leaving or from communicating with those outside the Cone. Dysfunctionality was more a feature than an anomaly, though, because one of the Cold War “cones” was the Berlin Wall, a barrier that was supposed to prevent both secrets and people from leaving the space behind the Wall. The Berlin Wall had particularly American antecedents, namely the Japanese-American internment camps of World War II that in turn were modeled after Indian reservations in the American West.<sup>8</sup> In each case, the Cone of Silence worked *in reverse*, as the inside position quickly became the de-privileged position.

The Cone of Silence was an appropriate symbol for the Atomic Age because it established a dynamic of *mystery*. In both academic and popular discourses, nuclear discussion often assumes the pattern of a mystery tale, with clues that must be uncovered, suspects that must be interrogated, and documents that must be examined, all leading to a *dénouement*, a tidy narrative of events filtered through the lens of a privileged storyteller. Even official rhetoric involving nuclear deterrence and diplomacy follows this pattern, although here the process is often chronologically reversed, using clues in an effort to predict future events: Will nuclear war occur? Can it occur? Can it be avoided? Who will use the bomb first? Who will survive? How will they survive? Because the atomic bomb expresses itself largely through discourses of this kind, Derrida calls it “fabulously textual.” The bomb is the ultimate absent presence, Derrida says, a signifying trace that will vanish the instant the bomb leaves the realm of language and enters reality, because the entire signifying system will vanish with it.<sup>9</sup> Derrida thus implies *the atomic bomb can only ever exist as a mystery*. However, one nuclear studies scholar has criticized

Derrida sharply for overlooking the fact that nuclear war has in fact already occurred in Hiroshima and Nagasaki. In contrast to Derrida, Japan's literary critics tend to view Hiroshima and Nagasaki not as events that assert the primacy of language, but rather as the opposite, something that casts doubt upon the integrity of the sign: "To think about 'atomic-bomb literature' is to be made acutely aware that 'literature' proceeds with the world not as its telos but as its fundamental condition."<sup>10</sup>

Whether the mystery rests in the weapon itself (as per Derrida) or in the language that surrounds it (as per Japan's scholars), the bomb was deliberately cloaked in secrecy even after its existence became known. When the Manhattan Project scientists emerged from their Cone of Silence at the end of the war, the U.S. military retained strict control over who was allowed to tell the story of the bomb and how that story would be told. The famous "Smyth Report," which told the "inside" story of the Manhattan Project, was released as soon as the war ended; it contained a carefully constructed account rigidly controlled by General Groves, the military engineer assigned to lead the project. Because the Smyth Report presented the science and theory of the bomb without releasing details about specific technologies, the "origin story" of the bomb emphasized the role of the physicists, while the chemists and engineers were forced into the background until the declassification of certain material by Eisenhower. By the time they were allowed to speak, it was too late; the physicists were already firmly enshrined as the heroes of the epic.<sup>11</sup>

It wasn't just the construction of the bomb that was mysterious; the actual devastation that had occurred in Hiroshima and Nagasaki was also kept from the public. For years, information coming out of Japan was carefully censored.<sup>12</sup> One of the first and,

for a long time, *only* published accounts of Hiroshima came from a *New Yorker* reporter, John Hersey, who traveled to Hiroshima in 1945 to investigate what happened. However, Hersey deliberately chose not to tell the story as an all-knowing detective who presents his audience with a tidy *dénouement*, but rather as fragmented clues told through the eyes of six victims who narrate their own experiences, leaving the job of interpretation up to each reader.<sup>13</sup> Hersey explained his choice: “A high literary manner, or a show of passion, would have brought me into the story as a mediator. I wanted to avoid such mediation, so the reader's experience would be as direct as possible.”<sup>14</sup> A full interpretation of Hiroshima must have seemed then—as now—impossible. The suppression of information about the bomb’s effects in Japan continued for decades as various officials condescendingly insisted the cancers and other diseases appearing among Hiroshima’s survivors were not linked to radioactivity, but were merely false rumors spread by uneducated and ignorant people.<sup>15</sup> One official claimed in 1950 that radioactive fallout in Hiroshima and Nagasaki was “much the same as sunlight,” a phrase often repeated by the nuclear industry today.<sup>16</sup> There was no mystery, these experts asserted, and thus nothing to investigate, yet they continued to envelop Hiroshima and the bomb inside a shroud of secrecy. As a result, Americans today still tell the story of nuclear warfare largely through speculative science fiction rather than as actual historical events that occurred in 1945 Japan—a phenomenon one literary scholar calls a “perpetual deferment of an historical fact into an immaterial future.”<sup>17</sup>

The Great Atomic Mystery crept into popular crime fiction in the 1950s. The first atomic-themed mysteries might not have tackled the idea of nuclear apocalypse as directly as science fiction did, but they nevertheless reflected the nuclear identity

struggles of the nation. In those early stories, “random violent accidents [propelled] the novel’s protagonists to perform violent actions, to seek rationale for them, and then ultimately to suffer dismal fates,” which echoed broader American rationalizations for using the bomb.<sup>18</sup> More recently, atomic mysteries have taken a different turn, particularly those set in the postdisclosure American West, where a declassification of documents in the 1980s led various peoples and cultures to contemplate their simultaneous roles as both builders and targets of the bomb. These later atomic mysteries reflect a fundamental ambivalence regarding the structure and nature of crime itself: What constitutes crime? How does guilt get determined? Who gets to investigate crime and/or define guilt? The larger question behind these stories, of course, centers on the global secrecy surrounding nuclear technology, and might be articulated as follows: *Is there anyone—scientist, politician, historian, general—who knows the real atomic story?*

The atomic mysteries examined here could also be categorized as “historical fiction,” because they construct fictional characters and plotlines inside a framework of actual historical events. The intimate relationship between fiction and history—between *story* and *history*—has been examined by Linda Hutcheon, who calls certain kinds of historical fiction in the postmodern era “historiographic metafiction.” The term refers to popular novels like *Midnight’s Children* or *The French Lieutenant’s Woman* that incorporate history and fiction in order to develop a self-awareness of the constructed nature of history and identity.<sup>19</sup> According to Hutcheon’s framework, we are constantly “forgetting” our own history, so that history becomes an absent presence that must be pursued without ever fully being apprehended. Involved in the perpetual pursuit and reconstruction of the historical process, *historiography* necessarily adopts a self-aware



insider/outsider position that problematizes the past and our ability to know it. Similarly, historiographical metafiction paradoxically positions the protagonist—and perhaps readers themselves—as both *inside* and *outside* a system of meaning, thus both complicit and innocent. Moreover, instead of telling us what we know, or even what we *want* to know, historiographical metafiction always directs us to examine further. History and literature alike become perpetually unsolved mysteries, a hungering for something we can never fully grasp or represent, a Lacanian lack that can never be filled.

Thus we should not be surprised when the mysterious history of the atomic bomb is represented today through historical fiction, and particularly through historical *mystery* fiction, in a way that alters the genre of mystery itself. Recent atomic mysteries exhibit distinctly postmodern characteristics, even works that seem fairly simplistic on the surface. They force readers to question the conventions of both history and literature so neither the bomb nor the mystery genre itself is fully knowable. Protagonists are situated both inside and outside the atomic story, as detectives, villains, witnesses, and/or historians trying to uncover clues that never lead to a complete story. Ultimately, though, it is the *reader* who becomes a detective interrogating the atomic bomb through the dynamic of mystery and possibly discovering his/her own complicity, perhaps even his/her own absent presence in various human signification systems.

For example, in Curtis and Dianne Oberhansly's *Downwinders: An Atomic Tale*, the “detectives” are disaffected Mormons living in southern Utah who not only have to locate a villain in the “crime” of atomic testing, they also have to locate evidence that a crime was committed at all. They are aided in their quest by a local sheriff and an FBI agent, but at the same time, other law enforcement officials are hunting them, as if they

were the criminals instead of the victims. What's really being hunted here is the evidence itself, which finally comes from a whistleblowing scientist—who is a perpetrator-turned-eyewitness.<sup>20</sup> Although the story has a happy ending, in real life the courts eventually dismissed all the Utah Downwinder cases. Another recent atomic mystery, *Tonopah*, explicitly challenges the (Mormon) Downwinder narrative by depicting Utahns as uneducated, hysterical “rubies” when it comes to atomic testing. Here a female Creationist schoolteacher who is also an amateur paleontologist unknowingly discovers evidence of a crime committed on the Nevada Test Site, then finds herself the target of a murder plot. She must first establish the existence of a crime before she can defend herself from the villains. In this case, the crime turns out not to be a large government attack on citizens but rather a localized fraud scheme involving Test Site officials and the Las Vegas mafia. The schoolteacher is aided by a romantic and benevolent Army sergeant, who is (rather obviously) defending domesticity inside a classic frontier military framework. The mystery that is never completely solved is the actual age of some dinosaur bones found on the Test Site. The novel ends with the schoolteacher insisting humans and dinosaurs could have walked the earth at the same time. She enlists the help of her new military friends to conduct a “scientific” investigation that will seek clues toward that end.<sup>21</sup> A third atomic mystery adopts a Quaker viewpoint, as an elderly peace activist travels to Hanford, Washington, to help an old friend gather evidence her cancer was caused by deliberate releases of radioactivity that were covered up by scientists and government. Murder ensues, the culprit is eventually apprehended, but concrete evidence of the larger crime at Hanford disappears so full justice can never be accomplished.<sup>22</sup>

In many of the atomic mysteries from the postdisclosure era, victims and perpetrators are divided from each other only by the degree of their involvement in the crime or by their proximity to one of several possible Ground Zeroes. Detecting is confused with criminality, victimhood is confused with detecting, and criminality is confused with both victimhood and detecting. Furthermore, the crime in question can never be fully resolved, partly because the original atomic crime referenced in the story has never been fully resolved. As literary theorist Peter Schwenger notes, there is no strategy “capable of laying the ghost [of the atomic bomb] to rest.”<sup>23</sup>

In her award-winning “Mas Arai” mystery series, author Naomi Hirahara bases her amateur detective/protagonist on her father, a second-generation immigrant, one of thousands of American-born *Kibei* who were attending school in Hiroshima when war broke out.<sup>24</sup> The father in the novel, Mas Arai, survived Hiroshima then returned to live in Pasadena, California, where he married and entered upon a career as a gardener for wealthy white families. Like many *hibakusha* (bomb victims), Mas steadfastly refuses to talk about Hiroshima. When his daughter needs to write a report on Hiroshima for school, she must turn to a family friend for information. In the first installment of Hirahara’s series, *Summer of the Big Bachi*, we discover one of the reasons for Mas’s silence: crimes were committed in the aftermath of the bomb, and Mas is protecting himself as well as someone else. The Cold War dynamic of mutually assured destruction is unmistakable here, as Mas’s knowledge about what happened in Hiroshima becomes a weapon he fears to fire lest it return and also injure himself and his family. Hirahara uses the Japanese concept of *bachi*—what goes around comes around—to illustrate this

dynamic. Toward the end of the story, Mas finally realizes his secret is harming innocent people, and makes a decision to reveal the truth even if it results in his own destruction.

Mas has lived his entire life inside ever-changing systems of hierarchy. Before World War II, Japanese-American immigrants participated in the frontier myth by depicting themselves as “the Puritan brothers of the Orient” whose mission was to partner with EuroAmericans to colonize and civilize the New World. First-generation *Issei* called themselves “pioneers” and developed an alternate history in which they had been recruited by white America to help rule over inferior races. Stuck between two empires—metropolitan Japanese viewed the colonials as cultural and economic inferiors, while EuroAmericans considered the *Issei* unredeemably alien, part of an imaginary “Yellow Peril”—Japanese immigrants tried to carve out a relational identity that made them not-black, not-Indian, and not-Mexican, i.e., *not colored*.<sup>25</sup> In this effort, they were not alone. Immigrant groups before them—including the Germans, the Jews, the Irish, and the Italians—all used this same strategy with considerable success. When the war broke out, Japanese Americans were still trying to straddle both sides of the ocean in the mistaken belief American democracy would allow them to maintain their ties to the racial/cultural “motherland,” Japan, *and* their political citizenship under the new “fatherland,” the U.S.<sup>26</sup> The *Issei* deliberately trained the next generation, the *Nisei*, not as patriotic, full-blooded Americans, but rather as bridges of culture between Japan and America, i.e., global citizens who belonged to neither nation-state. In fact, the *Issei* often sent their children back to Japan to educate them in Japanese language and culture. About 30,000 American-born *Kibei* were living in Japan when the first atomic bomb was dropped, with perhaps

7,000 in Hiroshima itself.<sup>27</sup> (Another 23,000 American servicemen were held captive in Hiroshima and Nagasaki.)

Unfortunately, the war made transnational citizenship impossible. In the U.S., Japanese Americans were forced into internment camps regardless of their citizenship status or national loyalties.<sup>28</sup> Once there, internees had to choose one side or the other. Violent conflicts erupted in the camps between various gangs, divided along nationalist lines. Eventually, separations had to occur in order to quell the fighting. Those who expressed a wish to return to Japan after the war had their citizenship stripped from them and were sent to Tule Lake, where security measures reached wartime extremes. Conditions at other internment camps became more lax, with weekend passes extended to detainees who wanted to go shopping or see a movie in nearby towns. Work programs were instituted so internees were able to earn wages (albeit extremely minimal wages). Farm laborers were granted agricultural leave to work on western farms. College students were permitted to attend universities located away from the West Coast. Young Nisei men who wanted to join the military were eventually sent to the European Theater, and returned after the war as heroes. However, Nisei who refused to register for the draft were sent as prisoners to Heart Mountain, Wyoming. They were labeled “no-no boys” and were treated like pariahs by both EuroAmericans and Japanese Americans upon their release.<sup>29</sup>

In Hirahara’s novel, Mas Arai’s status as an American-born Kibei who spent the war in Japan is somewhat above the “no-no boys,” but well below that of the Nisei war veterans. Because Mas has the thick accent of an immigrant rather than a born-and-raised Japanese American, he has a hard time convincing white policemen to trust him, even

after he learns the secret behind the multiple murders that have occurred in the novel. He must find actual evidence before justice can be done. The proof finally comes in the form of a sign, and not just any sign but the sign of a hole: an “O” scrawled by the original victim in his own blood, and copied onto a drawing by a witness—a layered representation of a representation.<sup>30</sup> Although Mas discovers this drawing early in the story, he fails to interpret its meaning until he re-examines a familiar photograph hanging on his wall and remembers the victim’s blood type was “O.” Thus the clue that solves this mystery is an absence that was present all along, just as Hiroshima—Ground Zero—remained an ongoing absent presence for Mas and his family. Hiroshima continually erupts into the present in this novel, an uncanny residue from the past that never goes away. Both Hiroshima and the crime can become present only through Mas’s memories and interpretation, but in exposing his secrets, Mas runs the risk of self-destruction. Mas must unpeel the layers of his own past in order to solve this mystery, bringing his deliberately suppressed memories into the present—in Freudian terms, from latent to manifest consciousness. Historians might say Mas undertakes a historiography of his own history.

The genre of mystery seems well suited for exploring the political and racial structuring of blame that centered on Japanese-American identity during this era. Mas is a detective who hides clues from *himself*. He holds the key to the interpretation inside his own head, but first he has to recognize and admit his secret is in fact a necessary clue. Mas must decode Hiroshima—the original, absent crime—inside his own memory before it can operate properly in the world of the story. In a classic detective tale, literary critic Carl Malmgren says the central drama arises not from the crime itself but from the

decoding of signs that the author has deliberately withheld from the reader. Often the clue lies in plain sight, waiting for the investigator to decode.<sup>31</sup> The absent crime plays an important role in the structure of all detective fiction. As cultural philosopher Tzvetan Todorov points out, mystery plots center on an investigation process, but the investigation serves merely to mediate or interpret the primary element, the absent crime. It is the process of interpreting or “apprehending” the crime, Todorov says, that produces discourse, or meaning.<sup>32</sup> Even if the missing signifier can never be located—because only its traces remain—its absence has an ongoing impact on the signifying structure that pushes us to recognize the existence of the absence, the *différance* in the signifying system of literary mystery.<sup>33</sup> For Mas, his own identity is one of many absent crimes that permeate the novel.

Another absent crime haunts this novel, namely the internment camps. One of Mas’s friends, nicknamed “Wishbone,” is a former internee who feels deep anger toward the Japanese, even going so far as to blame them for causing the Americans to lock him up. Mas understands his friend’s anger, but at the same time he wishes Wishbone would “remember” Hiroshima:

Wishbone didn’t know the whole story. He hadn’t seen the ravaged bodies, the burning flesh. One minute friends laughed, full of life; next minute, destroyed. Those things never escaped one’s mind. Once you witnessed that, you saw evil, and it didn’t live in just Americans or Japanese. It lived close by, in friends, in neighbors, and, most frighteningly, inside yourself.<sup>34</sup>

Because Wishbone is a U.S. veteran, Mas sees his friend as more American than himself. Mas calls himself “*only a bloody Kibei* born in Watsonville who had spent most of his early years across the Pacific in Japan.”<sup>35</sup> The word “bloody” is important here, because in Japan, Mas was literally beat up for being an American and refused admission

to the Imperial Army when he tried to enlist: “The [Japanese] clerk slammed the registry shut. ‘Check with your parents, and find out why they didn’t change your status. As far as we are concerned, you are legally a full-blooded American.’ Mas felt sick to his stomach. To be one of the enemy—a hundred percent. How could his parents have forgotten to make sure he was properly registered?”<sup>36</sup> In Japan, Mas faces questions about his Japanese-ness that make him doubt his own identity. In California after the war, Mas also questions his American-ness, even though he was born in the U.S. Even to himself, he doesn’t seem as genuinely American as his friends who served in the U.S. military during the war.

By contrast, Mas’s friend, Joji, who was born in Japan, claims to be a genuine American citizen. Only Mas and Joji know the truth, which is that Joji stole a dead Kibe’s identity after the bombing of Hiroshima so he could immigrate to the U.S. Thus Joji is a fake American insisting he is genuine, while Mas is a genuine American wondering who he really is. Paradoxically, Mas’s doubts about his identity make us trust him more, while Joji’s boasting makes us trust him less. Todorov has noted that within the genre of crime fiction (as elsewhere), speech claims about authenticity are automatically suspect, since authenticity shouldn’t have to speak itself. Conversely, speech that asserts its own *ina*uthenticity acquires a certain legitimacy: “To designate feelings, to verbalize thoughts, is to change them. ... The first rule of modification can be formulated thus: if a speech claims to be true, it becomes false. ... This law ... has its corollary (which we might have deduced by symmetry) as follows: if a speech claims to be false, it becomes true.”<sup>37</sup> The identity falsehoods that appear in Hirahara’s story not only serve the requirements of the mystery genre that critical information be withheld



until the end of the story, they also serve the requirements of a Japanese-American literature trying to solve the mystery of its own authenticity. Mas searches not just for clues that will solve a murder, but also for clues regarding himself. Like other Sansei writers of her generation, Hirahara uses Hiroshima to investigate both sides of her Japanese-American identity, precisely because the signifying systems of Hiroshima and the atomic bomb have a self-reflexive property that challenges discourses of authenticity.<sup>38</sup>

An enormous irony in *Summer of the Big Bachi* is the reader doesn't know what the real crime is until the end of the book. The novel starts with an apparent murder, as any good detective story should, but this murder turns out to be a death rather than a murder. Another, prior murder is then discovered, which also turns out not to have been a real murder. In order to unravel the Pasadena murder, Mas must also unravel the primary Hiroshima murder, the mystery inside the mystery. Significantly, the one real murderer in *Big Bachi* manages to escape the country, leaving an important thread in the story unresolved, a perpetual *différance* that escapes full presence. Nothing follows the expected norms in this murder mystery. Some of the investigators turn out to be criminals, while some of the criminals are also victims and/or investigators. Crimes that aren't entirely crimes; criminals who aren't entirely criminals; victims who aren't purely victims; detectives who also serve as eyewitnesses; cancers and deaths that may or may not be connected to the bomb—Hirahara's novel contains multiple layers of mystery, displaying a depth not often found inside popular literature. It's not just Mas who unpeels layers of consciousness here, but also the reader him/herself, as conventions of literary genre are undone. By the end of the novel, readers find themselves questioning the

definition of “crime” and wondering exactly who, if anyone, is in a position to define criminality. Knowledge itself comes under suspicion as one murder after another, one criminal after another, one detective after another, are all deconstructed. Even Mas is unable to fully determine his own guilt.

After the war, the second-generation Nisei undertook a vast identity reconstruction process aimed at assimilating themselves into white America. Their very survival seemed to depend on discarding any hint of ethnicity. One third-generation writer, David Mura, has imagined his traumatized father, a World War II veteran, diligently constructing a purely American identity: “‘I am American,’ he [the father] says to himself. ‘I am glad we won.’ ...He repeats his mantra over and over. He learns to believe it.”<sup>39</sup> Sadly, postwar integration was achieved through a self-erasure of difference.<sup>40</sup> Silence and secrets were important survival strategies on both sides of the ocean, among former camp internees in the U.S. as well as among *hibakusha* in Hiroshima and Nagasaki. The famous phrases used by both groups were: *kodomo no tame*, “for the sake of the children”; and *sho ga nai*, “it can’t be helped.” But the silence left gaping holes for the next generation.<sup>41</sup> Mura, who made a pilgrimage to Japan and Hiroshima in the 1980s, has discussed the overwhelming silence his generation faced. The third-generation *Sansei* grew up knowing about the camps, he says, but were never allowed to talk about them. The deliberate erasure of memory—intended to protect the next generation—also created *detectives* out of them. They became a generation forced to search for clues to their own identity: “Children must answer those questions their parents never ask,” Mura says.<sup>42</sup> The *Sansei* were forced to conduct a historiographic

investigation into their parents' past by unraveling constructions and deconstructions of identity that had occurred before their time.

When the Nisei finally began opening up about their past, it was the internment camps, not Hiroshima, that understandably became the central narrative of Japanese-American literature. Although internment experiences varied widely, the camp story told in Japanese-American literature focuses almost exclusively on the victimization of a uniformly loyal citizenry, with little suggestion of, for example, the complicity of JACL leaders who worked in tandem with the U.S. government to ferret out disloyalty, or the brutal Black Dragon gang that intimidated internees into relinquishing their American citizenship.<sup>43</sup> Bibliographies of Japanese-American literature are heavily weighted on the side of young adult works that translate the camps through a childhood lens of innocence and simplicity.<sup>44</sup> The frontier myth plays a prevalent role in these literatures, because the camps are often depicted as wilderness areas that must be conquered and domesticated by their pioneering internees.<sup>45</sup> We might further note internment camp myths duplicated another long-standing trope of the American West in which (white) women and children are always the innocent victims of hostile natives. No one, Patricia Limerick notes, can signify pure victimhood on the frontier better than a woman and her children—even when those women were complicit invaders.<sup>46</sup>

Although the internment camps became “the” story of Japanese America, a few early J-A writers mentioned the atomic bomb in vague terms that encouraged young people to look forward rather than backward. For example, Toshio Mori—a Nisei who wrote about his childhood in the close-knit J-A communities of California—put words

into his Issei mother's mouth in his 1978 autobiographical novel, *Woman from*

*Hiroshima*:

And what is this fear we have today? Why are we afraid of our atomic age? Is it because every one of us is involved in the coming war?

Ah, the atomic fear will pass, children. Just like the mighty weapons of the past. Every age comes forth with better tools, and be assured that in another age, man will discover more fearsome one [sic] than the atomic bomb.

And why are you afraid, children? You are afraid because the next time there will be a total war. But what is that? We will all be in a soldier's lot, that's all. ...

Children, there is no greater opportunity than to become involved in the total war if each one of us is seriously for total peace.

Just the other week your grandma heard from her niece in Hiroshima. Yes, my long lost niece wrote me a short letter:

"My husband was killed in the South Pacific. ...I have a tiny bookshop to support myself, Mother and my two children. I was burned by the atomic bomb."

Now that's one example of how one living being reports her atomic experience. If she had died I would not have heard from her. And that would be that. But she survived and she's thinking of the welfare of her children. How to keep the family going. Maybe someday she will face another atomic blast, who can tell? In the meanwhile, she has work to do while still alive.<sup>47</sup>

Mori's mother is depicted as almost pathologically dispassionate in her focus on the future. She not only dismisses her American grandchildren's fears about the bomb, but also dismisses her Japanese niece's experiences as a *hibakusha* on the other side of the ocean. Whether Mori himself felt that way, or whether he actually saw such characteristics in his mother (and perhaps in the Issei in general) is not entirely clear.

Literary critic David Mura believes Mori intended to "praise the Issei generation for their strength in overcoming difficulties and for teaching the Nisei how to survive," and this

necessarily involved a combination of fatalism, optimism, and pragmatism.<sup>48</sup> As part of the third generation, and also as the son of a Japanese-American war veteran, Mura has found it much easier to express his contempt for the American military machine, his profound empathy for the hibakusha, and his sense of parental betrayal. Precisely because his parents gave up one side of their identity, Mura was able to develop a greater self-awareness than was permitted to earlier generations.<sup>49</sup>

By the time Toshio Mori published his novel, the word “Hiroshima” meant only one thing, as Japanese poet Kurihara Sadako poignantly declared: “When we say ‘Hiroshima,’/...[we] hear echoes of blood and fire./ [and]...remnant radioactivity.”<sup>50</sup> Today Hiroshima is firmly anchored at the center of the postwar signifying system that is the atomic bomb. But by figuring Hiroshima so prominently in the title of his novel, Mori employed a signifier that no longer carried the same meaning for the contemporary reader as it did for his mother. To his mother, “Hiroshima” signified a pastoral Japan, a forever-lost home now existing only in her memory. To Mori’s readers, of course, Hiroshima meant something entirely different. After World War II, Hiroshima became an ultimate symbol for the technological excesses of modern warfare and the social and cultural repercussions thereof. Even ruthlessly objective accounts of Hiroshima could not escape this dynamic; one critic has called John Hersey’s account of the bombing “simultaneously a personal expression, a social history... and a cultural critique of American and Japanese value systems.”<sup>51</sup> Hiroshima signified a shameful and illegitimate contamination for both America and Japan, as if the hibakusha were guilty of deliberately poisoning themselves, or the U.S. had tainted itself through its deployment of the ultimate weapon on a civilian population.<sup>52</sup>

Let us not forget Nagasaki, even if Nagasaki tends to forget *itself*. One Asian literary critic, John Whittier Treat, believes Nagasaki might have a lesser presence than Hiroshima in atomic literatures because it was inhabited largely by Christians rather than Buddhists. After the war, a Christian “embrace of martyrdom” helped self-silence Nagasaki’s victims more than Hiroshima’s.<sup>53</sup> Nagasaki has a haunting absence and presence in the next work to be discussed here. *Obasan* is a semi-autobiographical novel by Japanese-Canadian author Joy Kogawa, who spent time in a Canadian “resettlement camp” as a young child.<sup>54</sup> Like *Summer of the Big Bachi*, Kogawa’s novel also weaves together the two self-imposed absences in the Japanese-American story, the camps and the atomic bomb. Although *Obasan* takes place in Canada, it is often claimed by Asian-American literary scholars under the general category of “North American.”<sup>55</sup> Marie Lo points out that *Obasan* crosses borders of nationalism and racialism.<sup>56</sup> *Obasan* is also part of the genre of “prairie historical fiction,”<sup>57</sup> because Kogawa’s protagonist, Naomi, is interned during the war in a tiny frontier town in the wilderness of Canada, called Slocan (major industry: timber), where she lives in an old, abandoned two-room log cabin with no plumbing or electricity. Furthermore, the Japanese story is explicitly tied to Native American internment in several different passages. For example, while sitting with her uncle on a piece of prairie “virgin land” that is “unbroken by tree or house or any hint of human handiwork,”<sup>58</sup> Naomi compares her uncle to the infamous border-crossing Sioux chieftain, Sitting Bull, who defeated General Custer but then was forced to flee into Canada. Because some of Kogawa’s characters seem to “pass” as natives, these passages have been read not only as a postcolonial partnership between two groups victimized by white colonialism,<sup>59</sup> but also as a problematic appropriation of native culture on the part

of Japanese Canadians, as well as a duplication of white nationalism.<sup>60</sup> U.S. readers are reminded Canada shares our Wild West heritage as well as our western mythology that constructs the frontier as a place of liberty where various peoples are nonetheless held captive or exterminated by the conqueror *du jour*.

The imprisonment of Japanese immigrants was a global phenomenon that involved many North and South American nations, as well as Australia. Several Allied nations deported their Issei and Nisei to the United States, where they were placed in separate camps from the American Japanese. Many of those deportees remained in the U.S. after the war was over.<sup>61</sup> However, Canada did not send its Japanese citizens to the U.S. Instead, they followed the U.S. example and evacuated Japanese Canadians to the interior of the country. One of Kogawa's characters notes that, in many ways, the internment experience was worse in Canada than in the U.S.:

...for all we hear about the states, Canada's capacity for racism seems even worse. ... The American Japanese were interned as we were in Canada, and sent off to concentration camps, but their property wasn't liquidated as ours was. And look how quickly the communities reestablished themselves in Los Angeles and San Francisco. We weren't allowed to return to the West Coast like that. We've never recovered from the dispersal policy. But of course that was the government's whole idea—to make sure we'd never be visible again. Official racism was blatant in Canada. The Americans have a Bill of Rights, right? We don't."<sup>62</sup>

Unlike the U.S., the Canadian government appropriated and liquidated the property of Japanese Canadians at the beginning of the war, using the proceeds to fund the resettlement effort. Japanese-Canadian men were forced into labor camps, while their wives and children were sent to live in isolated towns among hostile white populations. Canada also passed laws banning Japanese Canadians from voting or serving in the armed forces. The injustices continued after the war, when a 1945 dispersal order forced

internees to remain in the central and eastern parts of Canada, where they worked in deep poverty as sharecroppers on sugar beet farms. The order was not lifted until 1949. By then, Japanese communities had been destroyed, which was the aim all along.<sup>63</sup> In the U.S., Japanese Americans also experienced poverty and broken communities. While the U.S. did not issue dispersal orders after the war, many U.S. internees moved eastward anyway. Moreover, while there might not have been any U.S. laws preventing Japanese Americans from voting, it surely happened anyway due to lack of access in the camps. Thus the experiences in the two countries were not exactly alike, but the overall story was only too familiar.

*Obasan* begins in 1972, on the twenty-seventh anniversary of the Nagasaki bombing. Thirty-six-year-old Naomi and her Uncle are walking near a stream on his patch of land in Alberta, a yearly ritual that Naomi does not yet understand. One month later, the uncle dies, and Naomi begins to piece together certain clues about her past. Naomi and her brother were raised in Canada by their Issei uncle and aunt. Their Nisei mother traveled to Japan shortly before the war to visit a dying great-grandmother and was never heard from again. Naomi's father was sent to a labor camp, and ordered to remain there after the war, while the rest of the family was sent elsewhere; he died before the dispersal order was lifted. Naomi and her brother grew to adulthood wondering why their mother never came back for them. The abandonment haunts their lives. At the end of the novel Naomi finally discovers the truth: their mother survived the bombing of Nagasaki, only to die a few years later from radiation-induced cancer. After the war was over, the mother asked to return to Canada, but government authorities wouldn't allow her to bring her adopted niece, the only other surviving member of the family. (The niece



also died from the effects of the bombing.) “Obasan,” Naomi’s aunt, kept these facts secret at the request of the mother. Over the years Naomi was given access to cryptic clues—a diary from another aunt; old newspaper clippings; an official letter from the Canadian government rejecting her mother’s application for repatriation. Finally, after Naomi’s uncle dies, the second aunt insists the secret be told. Naomi is given a cardboard folder containing two letters from her Nagasaki grandmother explaining in detail what happened the day of the bombing, as well as afterward. Naomi has seen this folder before, but she was unable to read Japanese and had to wait for someone to interpret its contents. That someone is a Christian pastor whom her family knew before the war, a man who has traveled throughout Canada and across the ocean looking for the lost members of his congregation. The clue, of course, was in Naomi’s sight all along, but the interpretation was not.

Many critics have noted the interplay between absence and presence, as well as silence and speech, in the novel.<sup>64</sup> Shirley Geok-Lin Lim is one of many who assert Naomi’s story represents a Japanese-Canadian journey from silence and helplessness to narration and empowerment.<sup>65</sup> However, King-Kok Cheung has chastised early critics for reading the novel from a westernized viewpoint that privileges speech over the negative absence of silence; Cheung prefers readers understand silence as a parallel, rather than opposite and privileged, form of communication.<sup>66</sup> At a meta-level, David Palumbo-Liu has argued ethnic writers like Kogawa find themselves in a double bind: by deconstructing the power of language and official history, they deconstruct all narrative, opening a potentially harmful path to the questioning of all accounts, dominant or otherwise.<sup>67</sup> In other words, there is something about *Obasan* that challenges not just

established truths but also language and narrative, and perhaps meaning itself. This novel rightfully belongs to Hutcheon's category of historiographical metafiction, which subverts historical conventions and involves a critical reworking of history rather than a nostalgic return to the past.

Our focus here will be on the perpetual absent-presence in Kogawa's novel that is expressed through the dynamic of mystery. As mentioned earlier, atomic mysteries tend to merge guilt with innocence in a way that upsets traditional literary conventions. Erika Gottlieb has read *Obasan* as a "riddle of concentric circles," a maze of mystery that Naomi must navigate in order to uncover her missing past.<sup>68</sup> Significantly, Naomi's investigation into her personal history leads to an increasing sense of her own *complicity* in a crime. For one thing, she grew up feeling she betrayed her mother because she never confessed her childhood sexual abuse by a white neighbor.<sup>69</sup> But there is another form of complicity Naomi recognizes only after her uncle's death, namely, that her endless quest for truth might have turned into an obsession that does more harm than good.<sup>70</sup> Kogawa uses an interesting device to depict Naomi's lifelong search for her mother: she writes a nightmare into Naomi's dream a few days after her uncle's death, a vision of a dark, swooping figure—a Grand Inquisitor who forces open the absent mother's mouth as well as Naomi's eyes. The Grand Inquisitor is "carnivorous and full of murder":

His demand to know was both a judgement [sic] and a refusal to hear. The more he questioned her [Naomi's mother], the deeper her silence became. What the Grand Inquisitor has never learned is that the avenues of speech are the avenues of silence. To hear my mother, to attend her speech, to attend the sound of stone, he must first become silent. Only when he enters her abandonment will he be released from his own.<sup>71</sup>

The implication, of course, is that Naomi will only understand the mystery through passive silence or listening and not through forceful interrogation. In fact,

*interrogation becomes part of the crime itself*, because interrogation buries the secret even deeper. Significantly, the mother in Naomi's dream has a red rose attached to her mouth by a string, which connects to other rose symbols in the novel.<sup>72</sup> Given the presence of the Inquisitor in the dream, we might also suspect a connection to Umberto Eco's classical medieval mystery, *The Name of the Rose*, where a Franciscan monk goes head-to-head with a Grand Inquisitor. The monk is investigating a murder at a monastery, while the Inquisitor is looking for heresy. The monk insists the murder cannot be solved through religious superstition but rather through the interpretation of material evidence. The Inquisitor is more concerned with finding someone to burn than learning the truth behind the murder. An Inquisitor, of course, requires information from those he interrogates, but as *The Name of the Rose* demonstrates, truth is not revealed through simple information; context and interpretation are also required. The Inquisitor's goal is to locate guilt, and there is always a lot of guilt to be located, whether or not it pertains to the crime. The monk, on the other hand, knows he must look for *understanding* as well as clues. After her dream, Naomi suddenly sees herself as a Grand Inquisitor who looks for blame rather than understanding, and she resolves to let the matter rest, at least temporarily: "Her [mother's] tale is a rose with a tangled stem. All this questioning, this clawing at her grave, is an unseemly thing. Let the inquisition rest tonight."<sup>73</sup> Naomi's acknowledgement that her investigation has perhaps implicated her in the crime is interesting. As Eco has suggested, "any true detection should prove that we are the guilty party."<sup>74</sup> He means, of course, there are no pure victims in any mystery story, including, perhaps, the reader.

Just as Naomi drops her investigation, the former pastor arrives and the mysterious letters are translated. However, the absence of Naomi's long-lost mother cannot be undone by letters from the past. Even after Naomi has the understanding she needs to solve the mystery, she still feels empty. Her former pastor prays she will "see Love's presence in [her] abandonment," but Naomi thinks that "for a child there is no presence without flesh. ... The letters tonight are skeletons. Bones only. ... Dead hands can no longer touch our outstretched hands or move to heal."<sup>75</sup> Naomi wants *presence*. Neither absent mother nor absent God is sufficient for her. Yet the reading of the letter allows her to speculate her mother might also have suffered from absence and abandonment, just as she did:

Silent Mother, you do not speak or write. ... You wish to protect us with lies, but the camouflage does not hide your cries. Beneath the hiding, I am there with you. Silent Mother, lost in the abandoning, *you do not share the horror*. ... Young Mother at Nagasaki, am I not also there?

In the dark Slocan night, the bright light flares in my dreaming. I hear the screams and feel the mountain breaking. Your long black hair falls and falls into the chasm. My legs are sawn in half. The skin on your face bubbles like lava and melts from you bones. Mother, I see your face. Do not turn aside.<sup>76</sup>

The mystery has constructed a mother who could not or would not share her daughter's horror. But as Naomi imagines herself in Hiroshima with her mother, and her mother in Slocan with her, she finally recognizes that, while she was abandoned in Canada by her Issei mother and her country, her mother was also abandoned in the ruins of Nagasaki. When Japanese Canadians were forced to take sides, they necessarily abandoned one half of their dual identities. Those who chose Japan abandoned Canada and all they loved in Canada, while those who chose Canada abandoned Japan and all they loved in Japan. By embracing Canada, Naomi has embraced the very entity that

abandoned her mother, making her complicit in her mother's death. The hegemony of the twentieth-century nation-state inevitably creates such impossible situations.<sup>77</sup>

What of Eco's sweeping suggestion that implicates readers in the crime? Do Kogawa's readers also become Inquisitors who force questions upon the text and seek resolution rather than understanding? Some critics have found this dynamic operating inside the novel as well as in the criticism of the novel.<sup>78</sup> Naomi is forced to undergo several interrogations by whites as well as by other Japanese Canadians during the course of the novel. The reader/critic becomes yet another outsider trying to peer into Naomi's life and decode her secrets. Inquisition is, of course, the inherent logic behind both literature and history, each of which questions a now-silent past and/or now-silent authors who have left clues behind. The dynamic of inquisition automatically produces a hierarchy of knowledge whereby the questioner has more power than the questioned. The fact that *Obasan*'s critics have been chastised for reproducing white dominance is perhaps evidence that inquisition cannot help but reproduce dominance and/or complicity in spite of our best efforts. The very structure of historiography turns historians into inquisitors. The very structure of literature turns critics into inquisitors.

Like *Obasan*'s readers, Naomi doesn't seem to know how to escape the dynamic of inquisition. At the end of the story, she looks back at Obasan kneeling helplessly on her bed, praying silently with her dead husband's photo ID card in her hands: "Through the doorway I can see the faint shaft of light from the kitchen across the living-room floor, straight as a knife cutting light from the shadow, the living from the dead. I tiptoe out to the kitchen and put on my cleanly scraped shoes. Aunt Emily's coat is warmer than my jacket. I slip it on over my pyjamas and step out to the car."<sup>79</sup> On the one hand, these

final images show Naomi dividing herself from Obasan like a knife dividing “the living from the dead.” She even covers herself with her second aunt’s coat—namely, the loud, “crusading” aunt who insisted Naomi had a right to know what happened. Yet instead of writing an activist screed or going to a protest, like Aunt Emily would do, she drives to the coulee to re-enact her Issei uncle’s silent memorial service.<sup>80</sup> It’s a fitting ending because atomic mysteries, like atomic identities, can never be fully resolved.

Another atomic mystery deserving mention here is Martin Cruz Smith’s *Stallion Gate*.<sup>81</sup> This novel explores the Manhattan Project through the lens of a Native American protagonist, Joe Peña, who finds himself enmeshed in the intrigue surrounding the creation of the atomic bomb at Los Alamos. The novel was published in 1986, when the Reagan administration re-escalated the Cold War by funding the anti-Soviet insurgency in Afghanistan and upsetting the delicate balance of détente through the so-called “Star Wars” missile defense program.<sup>82</sup> Although Smith’s novel was set in the 1940s, he deliberately interprets history through the lens of the 1980s. In the novel, Joe appears at the center of almost every historic milestone at Los Alamos, as if he were an atomic version of Forrest Gump. Smith himself is part white, part Yaqui, and part Pueblo. However, he notes, “I’ve frankly avoided, if possible, being a professional Indian.”<sup>83</sup> Smith is better known for his popular Cold War spy thrillers like the *Gorky Park* series set in the Soviet Union. This lesser-known novel, *Stallion Gate*, juxtaposes domestic espionage with native sabotage, as elite scientists and soldiers at Los Alamos spy on each other while local tribal leaders attempt to stop the making of the bomb. A full cast of characters is included. Oppenheimer, Groves, Fermi, Ernst Fuchs, and Harry Gold (the latter two were real spies at Los Alamos) all make an appearance, along with some

characters who merely reference real people (e.g., Captain Augustino, the head of military security who is certain Oppenheimer is a Communist agent, and German-born Anna Weiss, who represents any number of single female mathematicians hired to crunch data), as well as many fictional characters, including Joe himself.

As a college-educated Pueblo, Sergeant Joe Peña stands squarely at the center of multiple conflicts, with everyone trying to enlist him in their cause. At least one critic believes Joe finally chooses his native side and tries to stop the explosion from occurring.<sup>84</sup> But the ending is deliberately vague. The reader doesn't actually know if Joe is trying to sabotage the bomb, or if he is merely accused of doing so. The novel seems to resist taking a side or even revealing its own ending, so once again this is an atomic mystery that can never be resolved. As literary critic Sara Spurgeon points out, Smith maintains throughout the novel a postcolonial viewpoint that challenges white constructions of native identity,<sup>85</sup> but whether that challenge extends to sabotaging the bomb is another question. Bryan Taylor notes *Stallion Gate*, like all nuclear discourse, becomes "the site of struggle between multiple interests seeking legitimacy and authority over the production of nuclear meaning for popular audiences."<sup>86</sup> This particular struggle takes place on multiple battlefields of race, gender, class, religion, nationalism, militarism, art, literature, science, and technology. Joe tries to straddle many fences here. His main difficulty is to figure out how to escape intact when his individual goals and identity are threatened from all sides.

The novel opens in November 1943 in a Leavenworth jail cell where Joe has been locked up for sleeping with an officer's wife. He is offered his freedom in exchange for serving as Oppenheimer's personal driver at Los Alamos. The catch is that he must spy

on Oppenheimer and pass information to Captain Augustino, the head of security at Los Alamos. Joe is also supposed to serve as the official liaison between the Hill and the various native tribes living in the area. Although the liaison part of the job is not labeled “spying,” later events indicate Joe’s role of spy is supposed to extend to his friends and family members on the reservation. The title of the novel comes from an actual gate, “Stallion Gate,” which is the entry to a ranch seized by the government that becomes the site where the test explosion will take place. When Joe first drives Oppy and Groves to this gate, they are nearly killed by bombers making practice runs. Their first instinct is to flee, but thanks to Joe’s stalling, the bombers pass by and instead target a herd of wild Mustang horses, which gallops eerily through the valley covered in deadly phosphorus while being strafed by bullets. Later Joe will remember how Oppy turned this seminal horror into an aesthetic pleasure (just as he would later with the bomb): “It was awful, but it was still beautiful.”<sup>87</sup>

Unfortunately, one of Joe’s first mistakes is to sleep with Augustino’s wife after she threatens to accuse him of rape if he refuses her. When Augustino finds out, he retaliates in a menacing way, by taking Joe on a hunting trip, making derogatory racial comments, and then shooting a pregnant elk cow in front of him. Joe reacts with horror, since it goes against the hunting ethics of many cultures to kill a pregnant animal. A shootout between Joe and Augustino ensues, interrupted by the appearance of two elderly Indians emerging from the forest, who turn out to be Joe’s Uncle Ben and a blind old medicine man or priest named Roberto. They have deliberately prevented Augustino from killing Joe, believing Joe is the “giant” foreseen in Roberto’s dream who might or might not be able to stop the terrible “gourd of ashes” being made on the Hill that will



“poison the clouds and the water and the ground and everything that lives on it.”<sup>88</sup>

Augustino decides not to kill Joe and instead sends his wife home where she will be conveniently murdered by an “unknown intruder.”<sup>89</sup> From this point forward, Augustino’s demands will become increasingly threatening, as he commands Joe to produce incriminating information on Oppy whether or not Joe has any to provide. In the end, he even orders Joe to plant evidence on Oppy. Joe has to constantly stall Augustino so he can gain time to locate the real evidence. Significantly, Augustino is called the “Grand Inquisitor” while Joe is the detective searching for clues and understanding.

Joe and Oppenheimer develop a certain rapport in the novel. However, as Spurgeon points out, this is a colonial hierarchy in which Oppy performs Indian masculinity by taking Joe’s masculinity away.<sup>90</sup> One result of their interaction is that Joe finds himself thoroughly involved in building and testing the bomb. When the physicists test their bomb mechanism by attempting to bring it to near-criticality, Joe’s job is to prevent the two halves of the apparatus from coming together too quickly. *Joe slows down the process*, delaying that moment when the present becomes the future. During this very risky procedure, Oppy casually engages in a moral argument intended to convince a fictional colleague, Harvey Pillsbury, that developing the bomb is a sound moral choice. When he draws Joe into the argument, Joe seems to take both sides. But before Joe can finish his thoughts, the experiment goes haywire. His oversized body supposedly triggers the Geiger counters into issuing a false alarm. Oppy says cryptically, “You’re a more unpredictable factor than I thought.” In the end, Oppy wins the day, and Harvey happily drops the argument, absorbed in the pure technicality of the experiment.

When Joe asks if they are all radioactive now, both scientists dismiss his fears: “*Nothing really happened.*”<sup>91</sup>

But something did happen, because this incident references a real event at Los Alamos in 1946 (after the war), when a group of scientists were demonstrating the mechanism of the plutonium bomb that had been dropped on Nagasaki. Physicist Louis Slotin was holding apart two hemispheres of plutonium with a screwdriver. The tool slipped, the plutonium went critical, and all nine men in the room were bathed in radiation. Slotin desperately tore the hemispheres apart with his bare hands, ordering the others to remain in position. He received a whole-body dose of about 2,000 roentgens, with possibly ten times as much on his hands. He died within nine days. Another participant, Alvin Graves, received a whole-body dose of 400 roentgens and was given a 50 percent chance of living. He did live, but was temporarily sterilized and developed radiation cataracts in both eyes.<sup>92</sup> (Graves would later be put in charge of the postwar atomic testing project at the Nevada Test Site.) Smith rewrites the history of the bomb here. *Joe keeps the accident from happening*, while at the same time triggering an alarm for the scientists. Unfortunately, the alarm was ignored because it was “false.”

At another point in the story, Joe is ordered to make a test-run to Utah, carrying plutonium in the back of a van with two crazy companions: an enlisted colleague named Ray who is scared to the point of hysteria by the plutonium, and a jolly white-haired officer, a psychologist with the mythical nickname of “Santa,” who scoffs at the possibility of any danger. When the van has a minor accident, the psychologist is knocked out, and the plutonium comes loose from its moorings. The paranoid Ray wedges Santa’s unconscious body against the plutonium to secure it before driving

onward. Later, Santa will develop signs of radiation poisoning, but will dismiss his illness as “psychosomatic.”<sup>93</sup> The reader is supposed to question Santa’s denialism, even if Joe doesn’t directly express his own doubts about this holiday fantasy. Once again Joe is positioned precisely between opposites, in this case between two conflicting views on radiation risk, never fully arriving on one side or the other.

Joe is drawn into the making of the bomb more or less against his will. He becomes a complicit participant, an insider/outsider who is both innocent and guilty of atomic “crimes.” At a critical juncture in the plot, Joe discovers his own complicity when he accidentally kills a pregnant cow, echoing Augustino’s earlier crime. Part of Joe’s job involves testing cattle at Los Alamos for radioactivity and burning the corpses in a giant bonfire, but when he belatedly notices one of the cows was pregnant, he is horrified as he imagines the “still-beating heart” inside that will be consumed by fire. Significantly, the cow’s hide had turned white from radiation exposure. This could be a reference to multiple native legends which depict white animals as sacred, making this cow doubly off-limits. It could also be a reference to the racial and sexual conflicts pervading the text. Directly afterward, with the blood of the cow still on him, Joe catches the attention of Anna Weiss, the woman he will fall in love with. When Anna first looks at him, she “could have been scrutinizing the gore on a beast that walked on all fours.”<sup>94</sup> Later, they become lovers, and Joe even takes Anna home with him to meet his family and friends. Because of her German background, though, Anna will come under Augustino’s scrutiny, and Joe will have to sacrifice himself in order to save her. Anna’s last name means “white” in German, so she is certainly connected to the white cow Joe failed to save. Later, when Anna is in danger, he will correct his earlier failure.

Joe is also drawn into an *anti*-bomb plot, when the tribal elders try to persuade him to sabotage the “gourd of ashes” haunting their visions. After the old Indians are targeted for punishment by Fuchs and the security team, Joe tries to save them without promising anything to either side. In the process, though, he is forced to dress up and play a clown in a local native “clown dance” intended to mock power and authority. Since the atomic physicists are in the audience, Groves and Oppy are both targeted for mockery. When a clown hands Oppy a firecracker to ignite and throw in the air, everyone thinks this must be a reference to the bomb and assumes someone has spilled the beans.<sup>95</sup> Now the entire Hill suspects Joe is working with the tribe to sabotage the bomb, particularly since they keep finding Indian “lightning wands” planted everywhere—magical tokens meant to attract lightning that will destroy a target. However, as far as the reader knows, Joe refuses to grant any credibility to the native superstitions and is merely acting to save his friends from falling into Augustino’s hands. Whenever Joe finds a lightning wand, he tosses it into the desert or puts it in his car, rather than placing it in strategic locations that would indicate a desire to use native magic against the bomb.

As the story progresses, clues are provided, but the reader has very little understanding of what those clues mean. A few characters *inside* the story are sure the clues point to Joe’s role as a native anti-nuclear saboteur, but Smith suggests throughout the novel that Joe will not be co-opted by either side. Thus the real mystery here is not the identity of the spies (we already know that, of course), but rather Joe’s identity. Has he chosen a side? Can he escape choosing a side? He tries his hardest. His escape plan is to raise \$50,000 in a prizefight so he can buy a bar from his father’s friend in Alamagordo. He envisions himself after the war, tending bar and listening to jazz for the

rest of his life. The night before the bomb test, Joe secretly leaves Los Alamos and goes into town to fight for his future. He manages to win the boxing match and earns more than enough cash to buy the bar. It looks as if everything is going to work out according to plan: “You’re going to be okay, Joe,” says his friend who is selling the bar. “From now on, everything is going to be okay.” Joe agrees, “We got out alive.”<sup>96</sup> Unfortunately, it is too early to make such a prediction.

In the final pages of the book, Joe arrives on the scene at Trinity for the bomb test. Despite the fact he *saves* the bomb at one point, even risking his own life to do so, he is still under heavy suspicion. Oppy worries the bomb will be a dud. Because it’s raining, Joe talks Oppy into delaying the test, arguing the chances for success will improve if the weather is better. What the others don’t know is Joe also wants to give Anna enough time to smuggle Ben and Roberto across the Mexican border before Augustino can go after them. Because Joe is arguing to delay the test, the reader might assume he’s trying to stop the test altogether. When Oppy finds some lightning wands inside the bomb tower, he thinks Joe has “turned Indian” and is working to sabotage the test.<sup>97</sup> But Joe discovered earlier that Augustino had planted the sticks to make him look guilty; Joe might simply not have found time to remove them. When Oppy casts nasty aspersions on Joe, Joe punches him in anger, then apologizes. It looks to Oppy like Joe intends to stop the test, because Joe tells him the test will be called off in one hour. “I’ll explain everything then,” Joe tells him, possibly alluding to his intent to reveal that Augustino asked him to plant evidence on Oppy. A classic detective’s *dénouement* seems on the horizon. Sadly, it will never occur. The exhausted Oppy is bundled away into a car that takes him to a distant vantage point, while Joe remains alone at the tower. As thunder and lightning crash

around the bomb tower, Joe *appears* to have placed the wands on an ersatz altar, yet there is still reason to wonder about his intentions:

Everyone insisted he was Indian, so, why not? Put some finery on the atom, a brace of electric snakes, and let it dance on hundred-foot legs. Dance in the desert and shake the earth. He wished he knew the right prayer or song; there had to be some music for this, or something he could improvise. Good music and good religion, he guessed, were both born in times of stress. Roberto would be proud.

It was about seven hours to the Mexican border, staying under the speed limit. Anna would be putting Ben and Roberto on the trolley for Juarez about now, or driving them across. It would be safer for her to stay over the border herself.<sup>98</sup>

Joe says in multiple places he wants nothing to do with Indian religion. There is little reason for the reader to believe he has had a sudden conversion and now believes the wands could actually sabotage the bomb. Furthermore, he is still focused on Anna's escape, not on actively stopping the bomb. The clues are all laid out, but full understanding remains elusive, even here, at the very end.

Suddenly, Augustino shows up at the tower. Joe again tells the security chief the test will be canceled—because of the rain? Because of the wands? Because of the impending *dénouement*? The reader can't tell. Joe has always played the Indian with Augustino, and he continues to do so here, echoing the role Smith plays with his readers. When Augustino sees the wands, he says, "Magic, Sergeant?" "I'm down to that, sir." But then the weather changes, and the test is on again. Joe's plan also changes. At gunpoint, he tells Augustino they will be going together to a bunker to wait out the test. Clearly he wants to keep an eye on Augustino until the test is over. But then Augustino says something ominous: "Anna Weiss is at the border right now. A phone call can still catch her. You never should have touched Mrs. Augustino." Now it appears Anna's

safety might be threatened despite Joe's efforts. As the countdown to the explosion takes place over the broadcasting system, Augustino and Joe fight at the top of the tower.

Augustino falls to his death. Joe climbs down and tries to drive away in the jeep waiting below, but the keys are nowhere to be found. In one last, desperate attempt, Joe begins to run. We know he still wants to escape this trap, because as he runs he touches the deed to his bar inside his pocket. This is not a suicide mission. He makes it about one mile before finding a water-filled trench. As the bomb explodes, Joe leaps into the trench. The last words of the novel are: "Last step. Last heartbeat. Last breath. 'NOW!' From the eye of the new sun, a shadow flying."<sup>99</sup>

As Jane Caputi notes, we can't be entirely sure of Joe's fate. He might just survive inside that trench. In 1990 Caputi interviewed Smith, who told her the central question with the bomb is "Do we live or do we die?"—a question he refused to answer in the book. Smith also referred to native beliefs about "sacrifice" and "a still-beating heart" as the two elements necessary to "renew the sun. ... Yet you don't know what kind of god is being born here." Caputi believes the evidence places Joe firmly on the side of native resistance against the bomb.<sup>100</sup> I'm not so sure. Joe might be a sacrifice, but this is not necessarily a *willing* sacrifice of himself. Joe tends to avoid such sacrifices as much as possible. In an earlier scene, Joe confessed his *modus operandi* to Oppy. While the two of them were sitting in the bomb tower waiting for the rain to stop, Joe told Oppy the story of how he escaped from Bataan. Desperately ill with dysentery, Joe was put into a boat by his Filipino scouts and set adrift in the ocean while the battle was being waged. At first, Joe tried to paddle back to shore so he could get back into the fight, but he found

himself surrounded by sharks trapped inside a net that bumped the leaky boat every time he struggled:

“Those fucking Filipinos. They should have told me.”

...”Told you what?” Oppy asked.

“To stop struggling. During the night the tide came in and lifted the boat over the shark nets, and when the tide went out I went with it into the bay. A gunboat picked me up and put me on a sub, and that’s how I heroically escaped from Bataan, by finding out that fighting the tide may not be a test of courage so much as a sign of stupidity. That’s the last time I went sailing.”<sup>101</sup>

This does not sound like someone who has joined an “active resistance” movement against the bomb, as Caputi asserts. This sounds like someone who plans to *not rock the boat*, keep his head down, and try to get out with his own skin intact. Bryan Taylor also believes the novel’s ending implies anti-nuclear activism on Joe’s part. The bleak message here, Taylor says, is “even honorable attempts to resist and survive the Bomb are unsuccessful.” For Taylor, the novel portrays a “seminal anti-nuclear resistance” that might awaken the reader to his/her own activism.<sup>102</sup> I find the novel much too ambiguous to make such judgments. It seems entirely possible Joe’s moral choice was to delay the bomb long enough for Anna to escape with Roberto and Ben. Then he planned to make his own escape to his bar in Alamagordo. This is certainly an ethical plan of action, but not on the scale suggested by Caputi and Taylor. This would rather be a choice to save “me and my own,” not the entire world. If so, it would make Joe more of a human being, and less of a Noble Savage who must rescue the white man from his own follies.

Throughout the novel, Smith impugns the values and beliefs that infused the scientific community at Los Alamos. Oppy and crew are depicted as soulless technocrats



who have little concern for life, not to mention their lack of respect for other cultures and people, while Santa the psychologist is utterly clueless when it comes to radiation exposure. But Smith never presents native values as a sufficient response to nuclearism. Ben and Roberto are stuck in the past, carving wooden lightning wands and dressing up like clowns in a ritual that Joe mocks as an “ancient Greek fertility rite”: “The clowns were performing feeble antics inside the dancers’ circle. Joe remembered when they were fierce mimics who imitated Navajos, tourists, Catholic priests, when clowns put at least some heat in the Pueblo milk.”<sup>103</sup> Literary critic Helen Jaskoski notes clown ceremonies in Pueblo ritual are supposed to restore community harmony through parodies of exaggeration and excess.<sup>104</sup> But if the clowns can’t put “heat in the Pueblo milk” anymore, how are they supposed to offer a credible challenge to the atomic bomb? The clown dance appears to Joe like a sorry imitation of what it once was. At this point in time, the ceremony doesn’t even do a decent job of mocking, let alone changing the future. After Joe reluctantly agrees to take Roberto’s place in the dance, he expects someone at any moment to yell, “That’s not a real clown, that’s Joe Peña!” Of course, there is no such thing as a “real clown.” Clearly Joe knows he’s participating in a sham. Spurgeon calls the clown dance a “reverse mimesis” that “shatters the colonial discourse of authority.”<sup>105</sup> That might be a good description of a real-world clown dance, but this dance is different, as Joe tells us. If we take Joe at his word, he is mainly trying to buy someone else time to get away, as he does over and over in the text.

In fact, Joe’s job in the novel does not simply involve mediation between whites and natives, or between reader and text. His job is also to *stall time* in order to allow someone to escape. He stalls so Indians can escape from white men; he stalls so Fuchs

can escape from the Indians; he stalls so Oppy can escape from Augustino; he stalls so Anna can escape from the Hill; his stalling even benefits the bomb itself, as he slows down the scientists from their own rash mistakes. Oppy notes time on the Hill operates differently: “The Hill isn’t a place, it’s a time warp. We are the future surrounded by a land and a people that haven’t changed in a thousand years. Around us is an invisible moat of time. Anyone from the present, any mere spy, can only reach us by crossing the past. We’re protected by the fourth dimension.”<sup>106</sup> As time rushes forward on the Hill, Joe is the man who “crosses the past” and tries to slow down time. But what is his end goal? Does he want to stop the bomb or is he simply hoping to give people time to escape?

Joe knows full well he is a pawn in several overlapping hegemonic systems from which he might not escape, with the most inescapable system being the atomic bomb. He is simultaneously hunter and prey, detective and spy, eyewitness and victim in this novel. It is impossible to definitively interpret either Joe, or the bomb, or even the text itself. We have clues, but we lack full understanding. The novel operates like a Cone of Silence, allowing us to see that a secret exists, but preventing us from fully figuring out what the secret means. One reason readers cannot solve this mystery is because it is an entirely different mystery from the one Joe himself is trying to solve. Joe is trying to find the real spies, and is ultimately successful. We are trying to find Joe, and we cannot. Ultimately, though, this mystery is unsolvable because the atomic mystery itself is unsolvable. Smith’s novel uses historical events to subvert history, and literary conventions to subvert literature. Situated as both historiographers and literary critics, readers must accept the impossibility of discovering the truth here.

The impossibility of “apprehending” the bomb cannot prevent us from the very important process of *seeking*. The endless chain of signifiers left behind by the absent presence should not lead to passivity and dormancy, but rather to pursuit. Even if knowledge itself seems impossible in the aftermath of the bomb, the quest for knowledge must still occur. As literary critic Lisa Yoneyama notes, the hibakusha of Japan have been forced to acknowledge their own inability to either understand or convey the full story of the bomb, and yet they courageously continue to speak while knowing the full meaning of Hiroshima must be forever postponed. The hibakusha have learned truths over the years they did not know at the time of the bombing, which has led them to assume there are other things they still do not know. This “haunting absence of knowledge,” Yoneyama says, has generated a healthy self-awareness and skepticism toward any kind of official narrative. Even after hidden knowledge comes to the surface, the hibakusha recognize other knowledge might remain submerged and unknown to them.<sup>107</sup> One of the hibakusha whom Yoneyama interviewed was Numata Suzuko, who is well-known in Japan for breaking out of the “mold of infatuation with victimhood” to expose Japan’s responsibility for the war and for racial crimes committed during the war. Suzuko demonstrates how vital it is to recognize knowledge is always missing:

During the war, I was turned into a person who could not listen. ... I only believed in unidirectional truth. ... I believe that what enables me [now] to rise up like this is my desire to pursue the unseen. ... In this information society age, facts appear to be conveyed. But I am afraid that this is only a sham.<sup>108</sup>

The first step to understanding Hiroshima, Suzuko implies, is to understand that our view is always from both *inside* and *outside* the atomic crime. As *outsiders*, we can see that secrets are hidden from us but we cannot necessarily interpret the clues. The

secrets must nevertheless be pursued, Suzuko says, even if we discover we are also *insiders* who share guilt and can no longer claim pure victimhood. Perhaps with an eye toward that end, Yoneyama has not confined her own criticisms to Japanese mythmaking, but has also investigated the ways in which the U.S. constructed a convenient postwar narrative about the magnanimous liberation and rehabilitation of Japan, thus helping Americans self-legitimize future wars and deny the reality of war injuries: “The injured and violated bodies of the liberated do not require redress according to this [American] discourse of indebtedness, for their liberation has already served as payment/reparation that supposedly precedes the U.S. violence inflicted upon them.” Even if redress movements have rarely been successful in the courts, Yoneyama notes, the very process of investigating injuries has “generated critical knowledge that makes the legacy of the Cold War global order increasingly questionable.”<sup>109</sup> Through such investigations, U.S. imperialism and paternalism become more obvious not just to outsiders but also to the interpellated subjects of the nation-state. For Yoneyama, historiography is a necessary interrogation of history that subverts official historical knowledge.

The historiographic atomic meta-mysteries explored in this chapter represent an ongoing interrogation of the bomb, a pursuit of the absent presence that constitutes atomic mystery. By interrogating the bomb, we discover interrogation itself is suspect. The long-awaited classical *dénouement* of atomic history seems increasingly unlikely. Moreover, as Mas Arai discovered, investigating the atomic bomb also exposes each of us to our own complicity in the crime, and yet, investigation is critical to our survival. As readers, as critics, as human beings, we are required to interrogate our texts and our actions, even at the risk of implicating ourselves in the very crimes we are investigating,

as well as in the larger and more general “Crimes of Inquisition” that implicate the academic community as a whole.

As westerners learned more and more about the atomic bomb, they began to realize they had played an important role in the nation’s turn to nuclearism. During the war, most Manhattan Project workers never knew exactly what they were working on. Each worker was involved in only a small piece of the process, and strict rules forbade workers from speaking to each other on the job or off the job. Communication occurred in a strictly vertical method, rather than across branches, to prevent workers from putting the clues together. Even two workers who sat together at the same table were not allowed to talk to each other. Workers who ended their shifts were prevented from talking to those starting the next shift. Heavy barbed wire and lookout towers surrounded each facility. Passes were required to enter and leave the compound. Letters going out were thoroughly scrutinized and censored to make sure nothing about the work leaked to the outside world. Only after the war did most workers learn they had participated in the making of the bomb.<sup>110</sup>

Just as Manhattan Project workers woke up one day to learn they were atomic bomb-makers, so too did most westerners soon arrive at the knowledge that the West had been turned into a massive weapons factory. The next chapter examines two works of fiction which imagine that experience as a distinct moment in time, when a pair of protagonists suddenly realize not only had they participated in a war machine, but the machine had also turned them into weapons of mass destruction. The transformation of the West and westerners into weapons of mass destruction ran counter to nearly every

version of the frontier myth. From that point forward, the frontier could never again operate as anything more than a memory still haunting the West today.

### Notes

1. The dichotomy between (Anglo) freedom and (Native/Mexican) colonization on the American frontier is visually displayed in Martha Sandweiss, *Print the Legend: Photography and the American West* (New Haven, Conn.: Yale Univ. Press, 2002).
2. "Oak Ridge: Life Where the Bomb Begins," *Newsweek*, August 5, 1946, 33.
3. For a cultural history of all three Manhattan Project sites—Oak Ridge, Tennessee; Hanford, Washington; and Los Alamos, New Mexico—see Hales, *Atomic Spaces*. Other sources include: Abbott, "Building the Atomic Cities"; Katrina R. Mason, *Children of Los Alamos: An Oral History of the Town Where the Atomic Age Began* (New York: Twayne Publishers, 1995); Badash et al., *Reminiscences of Los Alamos*; Sanger, *Working on the Bomb*; and Charles W. Johnson and Charles O. Jackson, *City Behind a Fence: Oak Ridge, Tennessee 1942-1946* (Knoxville: Univ. of Tennessee Press, 1981). For historical accounts of Japanese-Americans internment during World War II, see Brian M. Hayashi, *Democratizing the Enemy: The Japanese American Internment* (Princeton, N.J.: Princeton Univ. Press, 2004); Ronald Takaki, *Strangers from a Different Shore: A History of Asian Americans* (Boston: Little, Brown and Company, 1989); and Eiichiro Azuma, *Between Two Empires: Race, History, and Transnationalism in Japanese America* (New York: Oxford Univ. Press, 2005).
4. Alice Kimball Smith, *A Peril and a Hope: The Scientists' Movement in America, 1945-1947* (Chicago: Univ. of Chicago Press, 1965); Rhodes, *The Making of the Atomic Bomb*; Gregg Herken, *Brotherhood of the Bomb: The Tangled Lives and Loyalties of Robert Oppenheimer, Ernest Lawrence, and Edward Teller* (New York: Holt, 2002); Weart, *Nuclear Fear*; Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (New York: Pantheon Books, 1985), 49-106. A common narrative among historians today depicts the interaction between military officials and scientists during the Manhattan Project and Cold War era as entirely oppositional, with scientists on the side of free and open access, and the government/military on the side of secrecy. However, this might rest on an overly simplistic definition of scientific "freedom" (Michael Aaron Dennis, "Secrecy and Science Revisited: From Politics to Historical Practice and Back," in *The Historiography of Contemporary Science, Technology, and Medicine: Writing Recent Science*, ed. Ronald E. Doel and Thomas Söderqvist [London: Routledge, 2006], 172-83).
5. Thomas Blanton, ed., "Freedom of Information at 40," The National Security Archive, George Washington University, Washington, D.C., July 4, 2006, <http://www.gwu.edu/~nsarchiv/>; Dan Lopez et al., eds., "Veto Battle 30 Years Ago

Set Freedom of Information Norms,” The National Security Archive, George Washington University, Washington, D.C., November 23, 2004; <http://www.gwu.edu/~nsarchiv/>.

6. James Robert Parish, *It's Good to Be the King: The Seriously Funny Life of Mel Brooks* (New York: John Wiley & Sons, 2008); “Cone of Silence,” *Wouldyoubelieve.com*; <http://www.wouldyoubelieve.com>; accessed February 12, 2012.
7. Jacques Derrida, “Différance,” in *Margins of Philosophy* (Chicago, Ill.: Univ. of Chicago Press, 1982), 1-28.
8. For the connection between Native American reservations and Japanese American internment camps, see Richard Drinnon, *Keeper of the Concentration Camps: Dillon S. Myer and American Racism* (Berkeley: Univ. of California Press, 1989). For the history of the Berlin Wall, see David E. Murphy, Sergei A. Kondrashev, and George Bailey, *Battleground Berlin: CIA versus KGB in the Cold War* (New Haven, Conn.: Yale Univ. Press, 1999); and Frederick Taylor, *The Berlin Wall: A World Divided, 1961-1989* (New York: Harper, 2008).
9. Derrida, “No Apocalypse.”
10. Treat, *Writing Ground Zero*, 351-357.
11. Rebecca P. Schwartz, “The Making of the Atomic Bomb: Henry DeWolf Smyth and the Historiography of the Manhattan Project,” Ph.D. diss., Princeton University, 2008.
12. Lawrence Badash, “From Security Blanket to Security Risk: Scientists in the Decade after Hiroshima,” *History and Technology* 19.3 (2003): 241-56; Hacker, *Elements of Controversy*, 148-52.
13. Quoted in Boyer, *By the Bomb's Early Light*, 208.
14. John Hersey, “Atomic Power and the Human Race,” *National Jewish Monthly*, October 1945, 56.
15. Wilfred Burchett, *Shadows of Hiroshima* (London: Verso, 1983).
16. Quoted in Boyer, *Bomb's Early Light*, 315.
17. Treat, *Writing Ground Zero*, 357.
18. Ilse M. Schrynemakers, “American Crime Fiction and the Atomic Age,” Ph.D. dissertation, Fordham University, 2009.
19. Linda Hutcheon, *A Poetics of Postmodernism: History, Theory, Fiction* (New York: Routledge, 1988), 4-5.

20. Curtis and Dianne Nelson Oberhansly, *Downwinders: An Atomic Tale* (Salt Lake City, Utah: Black Ledge Press, 2001).
21. Lane, *Tonopah*.
22. Irene Allen, *Quaker Indictment: An Elizabeth Elliott Mystery* (New York: St. Martin's Press, 1998).
23. Peter Schwenger and John Whittier Treat, "America's Hiroshima, Hiroshima's America," *boundary 2* 21.1 (Spring 1994): 233-53.
24. Naomi Hirahara, *Summer of the Big Bachi* (New York: Dell, 2004). Hereafter cited as *Bachi*.
25. Azuma, *Between Two Empires*, 91; Takaki, *Strangers from a Different Shore*.
26. See Lisa Lowe's discussion on the feminization of Asian identity in American, in *Immigrant Acts: On Asian American Cultural Politics* (Durham, N.C.: Duke University Press, 1996).
27. Rinjiro Sodei, *Were We the Enemy? American Survivors of Hiroshima* (Boulder, Colo.: Westview Press, 2000).
28. Hayashi, *Democratizing the Enemy*.
29. Commission on Wartime Relocation and Internment of Civilians, *Justice Denied. Part I, Nissei and Issei* (Washington, D.C.: National Park Service, 1982); [http://www.nps.gov/history/history/online\\_books/personal\\_justice\\_denied/contents.htm](http://www.nps.gov/history/history/online_books/personal_justice_denied/contents.htm). Later edition published by Civil Liberties Public Education Fund, University of Washington Press, 1996.
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31. Carl Malmgren, "Anatomy of Murder: Mystery, Detective, and Crime Fiction," *Journal of Popular Culture* 30.4 (Spring 1997): 115-35.
32. Tzvetan Todorov, *The Poetics of Prose*, trans. by Richard Howard (Ithaca, N.Y.: Cornell University Press, 1977), 46, 189.
33. Todd McGowan, "The Case of the Missing Signifier," *Psychoanalysis, Culture & Society* 13 (2008): 48-66.
34. *Bachi*, 319.
35. *Bachi*, 66; emphasis added.



36. *Bachi*, 198.
37. Todorov, *Poetics of Prose*, 95-96.
38. Two examples of Sansei writers who traveled to Hiroshima in an attempt to explore their identities are: Rahna Reiko Rizzuto, *Hiroshima in the Morning* (New York: The Feminist Press, 2010) and David Mura, *Turning Japanese: Memoirs of a Sansei* (New York: Doubleday, 1991).
39. David Mura, *Turning Japanese*, 124.
40. Caroline Chung Simpson, *An Absent Presence: Japanese Americans in Postwar American Culture, 1945-1960* (Durham, N.C.: Duke Univ. Press, 2002).
41. An excellent novel about the generational effects resulting from the repression of internment memories is Rahna Reiko Rizzuto's *Why She Left Us* (New York: Harper Collins, 1999); see also David Guterson's award-winning *Snow Falling on Cedars* (New York: Vintage, 1995) and David Mura, "No-No Boys: Re-X-Amining Japanese Americans," *New England Review* 15.3 [Summer 1993]: 143-65.
42. Mura, "No-No Boys."
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46. Limerick, *Legacy of Conquest*, 48-50.
47. Toshio Mori, *Woman from Hiroshima* (San Francisco, Calif.: Isthmus Press, 1978), 129.
48. David Mura, "Silent Survivor: Toshio Mori's *Woman from Hiroshima*," *Akademia: Bungaku gogaku hen* 77 (January 2005): 219-48.

49. Mura, *Turning Japanese*, 235-36; see also David Mura, "The Hibakusha's Letter (1955)," in Bradley, *Atomic Ghost*, 40-43; and David Mura, "Tatsue's Prophecies," in Mura, *Angels for the Burning: Poems* (Rochester, N.Y.: BOA Editions, Ltd., 2004), 15-16.
50. Kurihara Sadako, "When We Say 'Hiroshima,'" trans. Richard H. Minear, in *Atomic Ghost: Poets respond to the Nuclear Age*, ed. John Bradley (Minneapolis: Coffee House Press, 1995), 202-203.
51. Albert E. Stone, *Literary Aftershocks: American Writers, Readers, and the Bomb* (New York: Twayne Publishers, 1994), 3; Hersey, *Hiroshima*.
52. Maya Todeschini, "Illegitimate Sufferers: A-bomb Victims, Medical Science, and the Government," *Daedalus*, 128.2 (Spring 1999): 67-100.
53. Treat, *Writing Ground Zero*, 302-349.
54. Joy Kogawa, *Obasan* (Boston: David R. Godine, Publisher, 1981).
55. Sau-Ling Cynthia Wong, *Reading Asian-American Literature: From Necessity to Extravagance* (Princeton, N.J.: Princeton Univ. Press, 1993), 16.
56. Marie Lo, "Passing Recognition: *Obasan* and the Borders of Asian American and Canadian Literary Criticism," *Comparative American Studies* 5.3 (2007): 307-32.
57. Coral Ann Howells, *Private and Fictional Words: Canadian Women Novelists of the 1970s and 1980s* (New York: Methuen, 1987).
58. *Obasan*, 2.
59. Eva C. Karpinski, "The Book as (Anti)National Heroine: Trauma and Witnessing in Joy Kogawa's *Obasan*," *Studies in Canadian Literature* 31.2 (2006): 46-65.
60. Lo, "Passing Recognition."
61. Daniel M. Masterson and Sayaka Funada-Classen, *The Japanese in Latin America* (Urbana: Univ. of Illinois Press, 2004).
62. *Obasan*, 34.
63. Roger Daniels, "The Japanese Experience in North America: An Essay in Comparative Racism," *Canadian Ethnic Studies* 9.2 (1977): 91-200.
64. For example, Betty Sasaki, "Reading Silence in Joy Kogawa's *Obasan*," in *Analyzing the Different Voice: Feminist Psychological Theory and Literary Texts*, ed. Jerilyn Fisher and Ellen S. Silber (Lanham, Md.: Rowman & Littlefield Publishers, 1998), 117-39; Teruyo Ueki, "*Obasan*: Revelations in a Paradoxical Scheme," *MELUS* 118.4 (Winter 1993): 5-20; Manina Jones, "The Avenues of

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65. Shirley Geok-Lin Lim, "Japanese American Women's Life Stories: Maternality in Monica Sone's *Nisei Daughter* and Joy Kogawa's *Obasan*," in *Asian American Writers: Modern Critical Views*, ed. Harold Bloom (Philadelphia: Chelsea House Publishers, 1999), 89-107.
  66. King-Kok Cheung, *Articulate Silences: Hisaye Yamamoto, Maxine Hong Kingston, Joy Kogawa* (Ithaca, N.Y.: Cornell Univ. Press, 1993).
  67. David Palumbo-Liu, "The Politics of Memory: Remembering History in Alice Walker and Joy Kogawa," in Amritjit Singh et al., *Memory and Cultural Politics: New Approaches to American Ethnic Literature* (Boston: Northeastern University Press, 1996), 211-26. See also Karpinski, "The Book as (Anti)National Heroine."
  68. Erika Gottlieb, "The Riddle of Concentric Worlds in *Obasan*," *Canadian Literature* 109 (1986): 34-53.
  69. Gary Willis, "Speaking the Silence: Joy Kogawa's *Obasan*," *Studies in Canadian Literature* 2 (1987): 239-49.
  70. Gottlieb, "Riddle of Concentric Worlds."
  71. *Obasan*, 228.
  72. Gottlieb, "Riddle of Concentric Worlds."
  73. *Obasan*, 229.
  74. Umberto Eco, *The Name of the Rose* (New York: Harcourt Brace Jovanovich, 1983), 81.
  75. *Obasan*, 242, 245.
  76. *Obasan*, 243; emphasis added.
  77. Schwenger and Treat, "America's Hiroshima and Hiroshima's America."

78. Palumbo-Liu, "The Politics of Memory"; Lo, "Passing Recognition." See also Smaro Kamboureli's discussion of how *Obasan's* Aunt Emily "unwittingly reproduces the liberal ideology that justifies racism within a democratic framework" (*Scandalous Bodies: Diasporic Literature in English Canada* [Don Mills, Toronto: Oxford University Press, 2000], 188).
79. *Obasan*, 246.
80. After writing this novel, Kogawa became an activist on behalf of Japanese Canadians. She has been called the "driving force" behind the Japanese Canadian redress movement. An official apology from the Canadian government was finally issued in 1988. See Roy Miki, *Redress: Inside the Japanese Canadian Call for Justice* (Vancouver, B.C.: Raincoast Books, 2005).
81. Smith, *Stallion Gate*.
82. Most historians agree the fall of the Soviet Union was due to a combination of internal problems and external pressures, including pressures brought by the Reagan administration. For an overview of the research see Jeremi Suri, "Explaining the End of the Cold War: A New Historical Consensus?" *Journal of Cold War Studies* 4.4 (Fall 2002): 60-92. Other important sources are: John Lewis Gaddis, *We Now Know: Rethinking Cold War History* (Oxford, U.K.: Clarendon Press, 1997); Don Oberdorfer, *The Turn: From the Cold War to a New Era* (New York: Simon and Schuster, 1991); and Francis Fitzgerald, *Way Out There in the Blue: Reagan, Star Wars, and the End of the Cold War* (New York: Simon and Schuster, 2000).
83. "Martin Cruz Smith, 1942-, Pueblo and Yaqui Novelist," in *Native North American Literature: Biographical and Critical Information on Native writers and Orators from the United States and Canada*, eds. Jeffrey H. Chapman, Christopher Giroux, and Janet Witalec (New York: Gale Research, 1994), 587.
84. Jane Caputi, "The Heart of Knowledge: Nuclear Themes in Native American Thought and Literature," *American Indian Culture and Research Journal* 16.4 (1992): 1-27.
85. Sara Spurgeon, "Mimesis and the Bomb: Race, Masculinity, and (de)Colonial Identities in Martin Cruz Smith's *Stallion Gate*," *Southwestern American Literature* 34.1 (Fall 2008): 29-40.
86. Bryan C. Taylor, "Jazzy Indian Boxes Anglo Bomb: Stallion Gate as Nuclear-Revisionist Pastiche," in *The Atomic Age Opens: American Culture Confronts the Atomic Bomb*, edited by Alison M. Scott and Christopher D. Geist (Bowling Green, Ohio: The Bowling Green Center for Popular Culture Studies, 1997); <http://comm.colorado.edu/~taylorbc/Jazzy%20Indian%20Boxes.pdf>.
87. *Stallion Gate*, 65.

88. *Stallion Gate*, 241-42.
89. *Stallion Gate*, 91.
90. Spurgeon, "Mimesis and the Bomb," 30-31.
91. *Stallion Gate*, 232; emphasis added.
92. U.S. Atomic Energy Commission, Division of Operational Safety, *Operational Accidents and Radiation Exposure Experience within the United States Atomic Energy Commission, 1943-1970* (Washington, D.C.: Government Printing Office, 1971), 35; Cynthia C. Kelly, ed., *The Manhattan Project: The Birth of the Atomic Bomb in the Words of Its Creators, Eyewitnesses, and Historians* (New York: Black Dog & Levinthal Publishers, 2006), 436-38; Fradkin, *Fallout*, 89-91.
93. *Stallion Gate*, 255.
94. *Stallion Gate*, 71-72.
95. *Stallion Gate*, 162-75.
96. *Stallion Gate*, 334.
97. *Stallion Gate*, 359.
98. *Stallion Gate*, 362.
99. *Stallion Gate*, 363, 366, 374.
100. Caputi, "The Heart of Knowledge," 11-12.
101. *Stallion Gate*, 349-50.
102. Taylor, "Jazzy Indian," 21-22.
103. *Stallion Gate*, 167.
104. Helen Jaskoski, "Thinking Woman's Children and the Bomb," in *The Nightmare Considered: Critical Essays on Nuclear War Literature*, ed. Nancy Anisfield (Bowling Green, Ohio: Bowling Green State Univ. Popular Press, 1991), 159-76.
105. Sara Spurgeon, "Mimesis and the Bomb."
106. *Stallion Gate*, 166.
107. Yoneyama, *Hiroshima Traces*, 121-23.
108. Yoneyama, *Hiroshima Traces*, 122; emphasis added.

109. Lisa Yoneyama, "Traveling Memoirs, Contagious Justice: Americanization of Japanese War Crimes at the End of the Post-Cold War," *Journal of Asian American Studies* 6.1 (February 2003): 57-93.
110. Hales, *Atomic Spaces*.

## CHAPTER 6

### APOCALYPSE: THE WEST AS A WEAPON OF MASS DESTRUCTION

In 1985, sci-fi writer Orson Scott Card published a novel called *Ender's Game*, based on a story he had written for *Analog* magazine in 1977.<sup>1</sup> *Ender's Game* is about a gifted child, Andrew Wiggin, nicknamed Ender, who attends a military academy to learn the art of war via computer simulation. He learns his craft so well he is chosen—against his knowledge—to lead a global army against an alien race, nicknamed the Buggers because of their insect-like behavior, who very nearly wiped out Earth one generation earlier. Ender believes he is participating in a final exam through a computer game, but his commands are being relayed to ships in space, sent decades earlier to the Buggers' home planet. At a critical juncture in the game, Ender decides to break the rules by employing a devastating weapon of mass destruction, not only destroying the Buggers' military force but also wiping out the entire species. When he realizes he was responsible for the xenocide of an alien species (as well as the murder of two fellow students at the academy), he feels a crippling remorse that nearly kills him. Ender finally understands he was deliberately crafted to become a weapon of mass destruction, having been maneuvered and manipulated into this untenable position by the adults in his life, including his own parents, starting from his conception and continuing all the way

through his academy training—an impossible situation that leaves him simultaneously innocent and guilty.

In the last few pages of the novel, Ender is sent into space to lead a human colony on the Buggers' home planet. There he discovers that a single "queen" of the Bugger race miraculously remains alive somewhere in the universe. This knowledge reaches him through a spiritual revelatory process, in which the queen lets him know he is forgiven and tells him how to regenerate her race. He decides to publish the queen's story back on Earth using the pseudonym of "Speaker for the Dead." In this form, no one knows Ender is the conduit, and no one can be certain whether the Buggers still exist. Thus Ender the Weapon of Mass Destruction finds redemption by "speaking" for the Hive Queen, who in turn speaks for her vanished people. Yet he himself is spoken by his sister Valentine, who writes a novel of her own—under a pseudonym—telling Ender's story. Ender then ghost-writes a novel that speaks for his powerful older brother, Peter, titled *Hegemon*, that also has no real-life counterpart as yet. When published together back on earth, the two imaginary novels, *The Hive Queen* and *Hegemon*, become the scriptural basis for a new religious cult whereby living people speak for dead ones. (Although Card has since expanded on his popular Ender story with a maze of sequels and prequels, he never wrote the two sacred scripture-novels, and their absence haunts the series.) Under his former identity, Ender functioned as an unthinking weapon of mass destruction; under his new identity he functions as a blank medium for healing and regeneration. However, readers can never know exactly how the latter process operates, because it takes place through absent or "phantom" texts.<sup>2</sup> Ender ends up operating exactly like the atomic bomb,



which—as Derrida notes—became a “fabulously textual” weapon after its initial use, functioning only through discourse.<sup>3</sup>

As an apocalyptic novel, *Ender's Game* is unusual in that it focuses sympathy on the destroyer as well as the destroyed. Readers cannot see what happens to the Buggers except through Ender's sympathetic eyes, but Ender, of course, was the one responsible for their genocide. Moreover, the Buggers—ostensibly victims of Ender's genocide—tried to destroy the Earth a generation earlier. At a deep structural level, then, the novel deliberately entangles guilt with innocence. Readers are warned throughout the story to avoid making clear distinctions between “perpetrator” and “victim.” Yet some critics have insisted on making those distinctions. At times the author himself has seemed intent on making such distinctions. Most notably, Card has argued Ender is completely innocent of the crimes ascribed to him, even though the text reveals an intense struggle with guilt on Ender's part. In a 2000 interview, when Card was asked about the question of Ender's guilt, he responded by citing a somewhat outdated concept of military immunity: “Our entry into the Korean and Vietnam wars reflect very well upon the American people. The motive was not imperialistic at all, but genuinely altruistic. We were willing to send our children off to war to protect, as we saw it—as we were told to see it—to protect the freedom of other nations. And like Ender, if we were lied to, we're still not responsible for the actions we took based on what we believed.”<sup>4</sup> For Card, there is no reason for Ender to feel guilty—and yet Ender clearly feels guilty: “he heard a voice whispering in the forest, You had to kill the children to get to the End of the World. And he tried to answer, I never wanted to kill anybody. Nobody ever asked me if I wanted to kill anybody” (331). Somewhat contradictorily, Card has also claimed the novel centers on

the issue of guilt. As he explained in the introduction to a later edition, *Ender's Game* was supposed to be a statement about human behavior, or more precisely, about the ability of humans to learn from their mistakes, which implies Ender was guilty of *something*.<sup>5</sup>

Although it won many sci-fi awards, and remains a beloved classic in the sci-fi world, *Ender's Game* has been criticized for its apparent glorification of violence and its refusal to hold Ender accountable for his actions. One critic controversially accused Card of using Hitler as a model for Ender, which Card denied.<sup>6</sup> Another critic chided Card for presenting Ender as morally spotless by making him a child who was manipulated by adults and tormented by other children. The novel, this critic says, sets up a series of unjustified attacks on Ender, followed by savage retaliation on Ender's part—a pattern repeated in Card's other novels: “Card thus labors long and hard in *Ender's Game* to create a situation where we are not allowed to judge any of his defined-as-good characters' morality by their actions. The same destructive act that would condemn a bad person, when performed by a good person, does not implicate the actor, and in fact may be read as a sign of that person's virtue.”<sup>7</sup> Yet another critic has accused Card of using formulaic sci-fi memes in the Ender series centered around “nerdish adolescent power fantasies.”<sup>8</sup> To complicate matters even more, Card has become a target of criticism over the years for his homophobic, anti-gay rants appearing both online and in print.<sup>9</sup> It can be difficult for critics to separate Card's literature from his political views or from his Mormon religion, assuming such is even appropriate when the author boasts about deliberately merging them into his work.<sup>10</sup>

Without defending Card from his critics, or from his own texts, I would like to suggest a slightly different framework for *Ender's Game*. Card was born in postwar Utah, and grew up in the middle of the atomic testing era. While he was writing *Ender's Game* during the 1970s and 1980s, much debate was occurring in Utah regarding the safety of atomic testing. Many Utahns were employed at the Nevada Test Site as well as at numerous other military bases in Utah; they discovered after several decades that radioactivity and other toxic fallout had been emitting from those installations, affecting themselves, their families, and a large part of the nation in the process.<sup>11</sup>

The hegemony of the situation was perhaps the most disturbing part about it: citizens were persuaded by an authoritarian system to participate in the simulated destruction of an enemy, which resulted in their own subjection and destruction. Whether or not Card consciously wrote atomic testing into his novel is irrelevant: the dynamic is unmistakably there. The horror of discovering you have participated in actual destruction when you thought it was just a simulation is reflected again and again in Downwinder testimonies. One example is Keith Prescott, who worked at the Nevada Test Site during the 1960s, commuting 1200 miles on weekends between the site and his home in northeastern Utah. His job involved digging tunnels under the blast sites and recovering instruments from those tunnels after a blast. He was diagnosed with multiple myeloma in 1969, and sued the federal government in the late 1980s: "When I worked down there, I never doubted them," Prescott said.<sup>12</sup> His lawsuit eventually failed, and Prescott died in 1997. Another example comes from the widow of Eugene Haynes, an ex-Marine and security guard at the Nevada Test Site who died in 1985 from a specific kind of cancer linked to radiation exposure. The AEC tried to deny Haynes was employed by them, but

official photos of him have been located in their archives. His widow now speaks for him: “My tears are for everybody, for the ones I don’t know and the ones I know. . . . This is man’s Armageddon: you don’t even have to go into a nuclear war for man to die off.”<sup>13</sup>

Ender is not the sole representative of the Utah Downwinders in Card’s novel. The “hive-mind” mentality exhibited by the alien Bugger species also seems to reference Card’s Mormon community, the citizens of the Beehive State. Ender feels connected to his Bugger victims precisely because they, like him, found themselves acting as complicit participants in a hegemonic system that offered few escape mechanisms. The textual merging of Ender and the Hive Queen points to a shared victimhood between two parties who are not-quite-victims. Of course, it wasn’t just Utahns who participated in atomic destruction. By the time Card wrote *Ender’s Game*, the nation had long before discovered its collective complicity in nuclear apocalypse. After the war, when the Manhattan Project became public knowledge, social critic Dwight Macdonald declared, “There is something askew with a society in which vast numbers of citizens can be organized to create a horror like The Bomb without even knowing they are doing it.” The Manhattan Project, he said, demonstrated “that perfect automatism, that absolute lack of human consciousness or aims which our society is rapidly achieving.”<sup>14</sup> Since Macdonald’s prescient 1945 statement, further explorations of nuclearism have noted its inherent tendency to merge victims and perpetrators into a single category of complicit subjects/objects.<sup>15</sup>

Thus Card seems to have turned his local western experiences with nuclearism into not just a national or an international story, but into an *inter-planetary* as well as a deeply *intra-personal* conflict. Today, the regional scholars of the American West are

similarly engaged in uncovering the many ways in which Americans continue to merge their frontier history into a larger imaginary that justifies global U.S. exceptionalism through a cultural framework of invasion, victimhood, and brutal retaliation.<sup>16</sup> The American West might even be considered part of a postnationalist movement which cultural critic Arjun Appadurai calls “modernity at large” whereby local cultures interact with global ones on many different fronts, from economics to technology to communication to transportation.<sup>17</sup>

Scholars in western studies are keenly aware of what it means when the formerly local culture of the American West manifests itself globally. Suddenly, a tradition well-versed in rationalizing violence has the opportunity and the resources to write itself large across the planet. Literary critic Sara Spurgeon notes the militarization of the American West transformed regional myth into the “blueprint for and justification of [imperialist] attitudes and behaviors” on the part of the entire nation.<sup>18</sup> John Beck asserts the history of the American West is now the “fulcrum of U.S. military power.”<sup>19</sup> On a similar note, historian Timothy J. LeCain has traced the present-day phenomenon of global strip mining back to a few individuals who merged a blind faith in technology with a “culture of mass destruction” that is rooted in the American West.<sup>20</sup> Thus the cowboy and the engineer remain ghostly doppelgaengers today, just as they were 100 years ago, but with one important difference: they now control a variety of weapons of global destruction.

If the cultural West influenced U.S. military policy, nuclearism in turn altered the sociocultural imaginary of the American West. Anthropologist Joseph Masco has explored the many ways in which nuclearism has influenced culture and society in and around Los Alamos, among scientists, activists, and workers.<sup>21</sup> The influence of ever-

present weapons of mass destruction in the West can particularly be seen in a 2003 billboard erected by a grassroots group in Los Alamos just as the Iraq War was starting. The sign advised U.S. citizens if they want to find weapons of mass destruction, they should start by looking “closer to home” (Figure 4).

The idea that the West and its people have been transformed into weapons of mass destruction, rather than just a place that houses weapons or people who make such weapons, marks an important transition in western studies. Not only does it challenge the long-standing “wilderness ideal” which says the West is a place where humans can heal and regenerate, but it also implies complicity on the part of the West and its inhabitants. As historian Patricia Limerick suggests, recognizing one’s own role in the process of mass destruction offers perhaps the only viable challenge to a myth centered on victimhood and retribution, and points the way forward for western studies.<sup>22</sup> Yet the West’s atomic literatures are rarely discussed in terms of complicity; instead, literary critics have often adopted narratives of victimhood that mirror the larger western narrative. This phenomenon is perhaps understandable, since many of these texts were written from the viewpoint of an oppressed minority. However, neglecting complicity can operate against authorial intention when the texts themselves exhibit a strong urge to change the direction of the frontier myth. The myth cannot change if critics remain focused on victimhood while ignoring moments of complicity.

The focus on victimhood is particularly evident in literary commentary on Leslie Marmon Silko’s canonical novel, *Ceremony*, where criticism often focuses exclusively on the many kinds of damage done by the nation-state to the Laguna Pueblo people, and the ways in which a “return to nativity”—or a new and altered nativity—heals native injury,



**Figure 4. Billboard installed by the Los Alamos Study Group after the 2003 Iraq War began** (Masco, *Nuclear Borderlands*, 261; used with permission from the author).

undoes environmental damage, repairs racial and cultural inequities, and heals society at large.<sup>23</sup> For David Rice, Silko's main object in *Ceremony* is "to expand the boundaries of Laguna culture and tradition in order to show its relevance on a multicultural and global scale."<sup>24</sup> Lawrence Buell calls *Ceremony* a "case study of a sickness of global scope," such that the "fate of the earth" hangs on the story's outcome.<sup>25</sup> Sharon Holm has discussed how the "indigenous ethos" of *Ceremony* offers a "shared political vision" of social justice for tribal nations and peoples.<sup>26</sup> Jane Caputi sees the native belief systems in *Ceremony* as a possible "cure" for the nuclear dilemma.<sup>27</sup> Paul Beekman Taylor proposes Silko's native mythology has the power to rejuvenate European value systems as well as western literature.<sup>28</sup> Helen Jaskoski suggests *Ceremony* offers Pueblo mythology as "a long-tested philosophy of human survival" in comparison to short-term white western thought.<sup>29</sup> Sara Spurgeon reads *Ceremony* as a captivity narrative-in-

reverse, or a “new story for how America might begin to live within itself and its history.”<sup>30</sup> Many critics have discussed the regenerative functions assigned to nature in *Ceremony*,<sup>31</sup> and the novel has even been compared to a Holy Grail romance, in which an injured king must be healed before the land can heal.<sup>32</sup> At least one critic has made a sweeping and somewhat essentialist assertion that Silko and perhaps all Native American writers should be viewed as America’s penultimate nature writers.<sup>33</sup> On the other hand, John Peacock, who is one-quarter Dakota, worries most of these interpretations rest on a Noble Savage foundation whereby native peoples must rescue white men from their own follies, thus saving themselves as well as the entire world.<sup>34</sup>

At a broader level, we might also note the commentary on *Ceremony* reflects a larger academic project that seeks to justify literary discourse and criticism as a meaningful activity that can have real-world impact. To a certain extent, the novel encourages such viewpoints through its emphasis on storytelling and discourse that magically constructs real-world situations. However, if we focus on the fact that Tayo is a somewhat *flawed* hero, and the native texts depicted in the novel are somewhat *flawed* texts, it might be possible to overcome both the native-as-superman and the literature-as-world-savior premises.

*Ceremony* tells the story of a young mixed-blood veteran from the Laguna Pueblo tribe, who returns home from the war with a case of what today’s medical professionals would call post-traumatic stress disorder. Since the military doctors were unable to heal him, the tribal elders must undertake the task. A number of healing ceremonies are performed in the novel, some targeting the young veteran individually and others targeting a larger cultural sickness. Eventually, the protagonist, Tayo, finds salvation at



an important site in the Atomic West, the Jack Pile uranium mine located on the Laguna Pueblo reservation, which supplied uranium to make atomic bombs for thirty years during the Cold War. Problematically, this particular healing ceremony involves the torture and sacrifice of someone else, and while Tayo does not participate in the sacrifice except by witnessing it, he also does not actively try to stop it.

Starting in the mid-twentieth century, with the rise of the military-industrial complex in the American West, new forms of colonialism targeted native peoples both directly and indirectly, which scholars have variously termed “environmental ecocide,”<sup>35</sup> “nuclear colonialism,”<sup>36</sup> and “treadmills of destruction.”<sup>37</sup> Tribal lands were once again appropriated for military purposes, for capitalist extraction, and for toxic waste disposal. During World War II, the U.S. military quintupled its land holdings, relying mostly on less-desirable areas already under federal ownership.<sup>38</sup> However, these areas were often located adjacent to reservations, so natives became first-contact victims when pollutants spread beyond their boundaries, as frequently happened.<sup>39</sup> The risk increased as native peoples were enlisted to work at those facilities, and as waste materials from the facilities were dumped on native lands or migrated into native water supplies.<sup>40</sup>

Of course, it isn't just Native Americans who have experienced environmental injustice in the U.S.; African-Americans and Latinos were also affected.<sup>41</sup> Robert Bullard calls inhabited lands damaged almost beyond repair “human sacrifice zones.”<sup>42</sup> Bullard's phrase derives from Richard Nixon, who signaled government's intentions to abandon certain “national sacrifice areas” in 1972. Among the areas secretly set aside for national sacrifice by the Department of Energy at that time were the Four Corners and the Black Hills region of the northern Plains. Residing in the Four Corners are 120,000 Navajo,

Hopi, Zuni, Laguna, Acoma, Isleta, Ramah Navajo, Caoncita Navajo, Ute Mountain, and Southern Utes. In the Black Hills, 50,000 Sioux reside in at least five reservations; this area might also include the Crow and the Northern Cheyenne in Montana, as well as the Eastern Shoshone and Northern Arapaho in Wyoming.<sup>43</sup>

*Ceremony* takes place in one of the officially designated “national sacrifice areas,” on the Laguna Pueblo reservation in New Mexico. In the novel, Silko raises issues of race, imperialism, environmentalism, and militarism that have inspired much exploration by literary critics. Tayo is a mixed-race Laguna orphan who experiences discrimination from both whites and natives, including his own family members. The novel closely examines the conflicts and hierarchies that occur between cultures as well as among cultures. At the same time, it is infused with the specific lifeways of the Laguna Pueblo. Jace Weaver notes *Ceremony* speaks both to the dominant white culture and to a native audience in a way that fiercely defends native peoples and community.<sup>44</sup>

*Ceremony* has also been said to be “mediational” in that it translates “cultural codes” for various kinds of readers.<sup>45</sup> One critic has urged readers to consider *Ceremony* neither “Native American literature” nor “American literature,” but rather “Southwestern literature,” which is a literature of cultures in contact and conflict with each other.<sup>46</sup>

The conflict between cultures is represented not just through interaction among characters, but also through internal discord. Tayo is a self-conflicted hero who feels enormous guilt about his own actions. Just as Ender Wiggin found himself turned into a weapon of mass destruction against a supposed enemy, so also does Tayo discover he unwittingly participated in the destruction of innocent parties while serving as a soldier during World War II. Like Ender, Tayo cannot excuse his actions by invoking his own

victimhood; he too experiences a crippling remorse that nearly finishes him. And, like Ender, Tayo has to find a way through his guilt and toward redemption. For both characters, redemption comes partly through story-telling, or discursive representation, turning both of them into “fabulously textual” *former* weapons of mass destruction. With Ender, that discursive process is not entirely visible to the reader, since it occurs through phantom texts vaguely referenced at the very end of the novel.<sup>47</sup> But with Tayo, the reader can follow along as he tries different stories and ceremonies, some of which are not very successful.

As the novel unfolds, a tormented Tayo reflects back on his experiences as a soldier in the Pacific Theater with his cousin Rocky. At one point, their platoon was ordered to execute a group of Japanese captives, but Tayo suddenly has a vision in which he sees his beloved Uncle Josiah among the enemy faces:

When the sergeant told them to kill all the Japanese soldiers lined up in front of the cave with their hands on their heads, Tayo could not pull the trigger. ... [I]n that instant he saw Josiah standing there; the face was dark from the sun, and the eyes were squinting as though he were about to smile at Tayo. So Tayo stood there, stiff with nausea, while they fired at the soldiers, and he watched his uncle fall, and he *knew* it was Josiah; and even after Rocky started shaking him by the shoulders and telling him to stop crying, it was *still* Josiah lying there. ... Rocky made him look at the corpse and said, “Tayo, this is a *Jap*! This is a *Jap* uniform!” And then he rolled the body over with his boot and said, “Look, Tayo, look at the face,” and that was when Tayo started screaming because it wasn’t a Jap, it was Josiah, eyes shrinking back into the skull and all their shining black light glazed over by death.<sup>48</sup>

This is not merely an implication of shared ancestry between Japanese and Native Americans, although the connection is certainly implied; it is also a moment of self-recrimination in which Tayo finds himself about to engage in the murder of his own family member. What he doesn’t know is Josiah will indeed die back on the reservation,

and Tayo's actions in the Pacific might be responsible for that tragedy. But in this moment, Tayo discovers for the first time he might be culpable in the destruction of both enemy and homeland.

Later, the tables are turned when Tayo and Rocky are captured by the Japanese and forced into the Bataan Death March. Rocky was injured by a grenade, so Tayo must carry his cousin on a stretcher during the march, until one day when he stumbles in exhaustion and drops Rocky to the ground. Through the haze of a fever, Tayo sees the Japanese soldiers watching, and hallucinates that one of them is an old Navajo friend of his from Indian boarding school. He even calls the Japanese soldier "Willie Begay" in an attempt to save Rocky's life: "You remember him, Willie, he's my brother, best football player Albuquerque Indian School ever had."<sup>49</sup> Despite Tayo's pleading, the Japanese soldier smashes his rifle butt into Rocky and kills him. After reaching the prison camp, Tayo thinks he sees this same soldier coming to the fence every day to stare at him—suggesting the soldier might be feeling a sense of retribution as well as an uncanny ancestral familiarity.

Literary critic Gloria Bird has commented on Tayo's struggle with guilt, focusing particularly on the cultural self-hatred expressed by Tayo's Christian aunt, which Tayo eventually recognizes and learns to repudiate. Recognition of the ways in which native peoples internalize the paradigms of colonization is an important step toward decolonizing the self, Bird notes. She finds Silko "undermines the fixity of the process of colonization by naming those moments when Indian people turn upon themselves."<sup>50</sup> Although Bird makes an important observation about the "interiorization" of colonialism, she might not go far enough in addressing Tayo's horror when he discovers the deadly

results of his own actions. At some point during the war, Tayo recognized his willing and knowing acquiescence to the nation-state was the catalyst for the disasters visited upon himself, his family, and the reservation. He remembers when the recruiter first came to town: “Anyone can fight for America,” the recruiter said, “even you boys.”<sup>51</sup> Rocky was eager to sign up and prove his patriotism, but Tayo hesitated until Rocky called him his “brother”:

“And my brother,” Rocky said, nodding at Tayo. “If we both sign up, can we stay together?”

It was the first time in all the years that Tayo had lived with him that Rocky had ever called him “brother.”

...Tayo signed his name after Rocky. He felt light on his feet, happy that he would be with Rocky, traveling the world in the Army, together, as brothers. Rocky patted him on the back, smiling too.<sup>52</sup>

And so Tayo was pulled into the war when the recruiter suggested to Rocky that Indians could earn admission to the nation-state by signing up, and Rocky in turn hinted Tayo could earn official admission to the family circle. Tayo’s conflict seems to hinge on the fact *he knowingly used the recruiter’s deception to serve his own interests*. After Rocky dies, Tayo feels a terrible sense of guilt for failing to save his cousin: “It was the one thing I could have done,” Tayo tells Betonie, the medicine man. “For all of them, for all those years they kept me ... for everything that had happened because of me...”<sup>53</sup> The juxtaposition of the recruitment story and Rocky’s death suggests that Tayo’s original failure might have occurred at the recruiter’s booth, making his enlistment the primary cause of all the tragedies that would follow.

Tayo’s anguish is unusual only because of its complexity. While the other young Indian veterans are quick to blame whites for their postwar anger and despair, Tayo

blames himself. Yet Tayo is the only one who is able to move beyond the pain. After the war, the others finally understand the recruiter's promise was an empty one:

“We fought their war for them.”

“Yeah, that's right.”

“Yeah, we did.”

“But they've got everything. And we don't got shit, do we? Huh?”

They all shouted “Hell no” loudly, and they drank the beer faster, and Emo raised the bottle, not bothering to pour the whiskey into the little glass any more.

“They took our land, they took everything! So let's get our hands on white women!” They cheered.<sup>54</sup>

Clearly the other veterans perceive themselves as victims, but they fail to accept personal responsibility to escape that process. Tayo is the one who finds the path to the future, while the others spiral into a fatal pattern of self-destruction. The dynamics of victimization have been discussed by psychologist Tanya Wilkinson, who notes that an ethos of victimhood weakens individuals over time as they become increasingly preoccupied with their grievances, thus inviting even further victimhood. This is particularly true within western culture, which privileges the Hero over his cultural shadow, the Victim. Both figures are often innocent targets of evil forces, although only one manages to avoid perpetual victimhood. However, victimhood should not be viewed as a dialectic of innocence vs. evil, Wilkinson says. Rather, “Victims need to take responsibility for their own transformation but are not responsible for their own betrayal.”<sup>55</sup> Accountability thus plays an important role in the recovery process, but the term “betrayal” as used here by Wilkinson is also interesting. Betrayal implies that victims once held an insider position in the system, and were then pushed to the outside.

If so, then victimhood can involve complicity in a given system, which would imply partial responsibility for the sins of that system.

The dialectic of guilt and innocence was something the Manhattan Project scientists also struggled with. One conflicted atomic physicist at Los Alamos was Harry Palevsky, a first-generation Jewish immigrant from Eastern Europe, who was so troubled by his role in making a weapon of mass destruction he decided after the war never to work on weapons again and instead spent the rest of his life researching nuclear power at Brookhaven National Laboratory in Long Island, New York. Palevsky met his wife—who was also a scientist—at Los Alamos. After their deaths in the late 1980s, their daughter Mary went on a personal crusade to interview surviving Manhattan Project scientists about the moral issues involved in building the bomb. The results were ambiguous. With the exception of Edward Teller, who remained adamantly enthusiastic about nuclear weapons and his role in their invention, the scientists expressed mixed feelings, with many distancing themselves by claiming they had no influence over the decision to use the weapon. Hans Bethe echoed the widespread mantra that lives were saved and would continue to be saved because of the bomb: “in a way, the victims of Hiroshima died so that other people could live,” Bethe told a somewhat horrified Palevsky. Once the even-larger hydrogen bomb was under development, though, Bethe admitted to Palevsky he thought it was a “mistake and a calamity,” but proceeded to do his job anyways. When Palevsky asked whether Bethe and his colleagues had left the world “better than they found it,” Bethe was unable to answer with a definitive “yes.” Another Los Alamos physicist, Robert R. Wilson, came from Quaker heritage and described himself as a pacifist. Wilson told Palevsky he maintained hope throughout the

Manhattan Project his team of scientists would somehow discover the bomb was not possible after all. However, when the first test was successful, his initial reaction was relief that “we had done our job.” The decision to actually drop the bomb on Japan felt like a betrayal to Wilson, although he admitted “betrayal” implies a pre-existing agreement, and there had never been any agreement between the scientists and the military to avoid using the bomb. Wilson felt even more betrayed after the war when it became clear nuclear weapons would be used to escalate international tensions instead of resolving them. He joked with Palevsky that perhaps all scientists should be killed or “thrown out in the snow as soon as they show any curiosity.”<sup>56</sup> Of course, the head of the Manhattan Project, Robert Oppenheimer, who died decades before Palevsky started her project, was the penultimate symbol of the defrocked atomic priest, having lost his position in the inner circle in 1954 when he was accused of communist sympathies.<sup>57</sup> Thus even the atomic physicists were both complicit and helpless participants inside a hegemonic system that ultimately betrayed some of them and pushed others outside the very system they helped construct.

For Silko, a key step to escaping a hegemonic power system requires accepting one’s simultaneous complicity and innocence, and forgiving oneself. An entirely innocent actor would never experience the internal conflicts the physicists expressed, or that Tayo agonizes over in *Ceremony*, nor would they feel a need to make amends. Recognizing personal accountability is an essential part of *Ceremony*, along with an active redemption process. For Ender Wiggin, redemption involved rebuilding the Bugger colony and telling the Bugger’s story. For Tayo, it means recovering his dead uncle’s herd of cattle and telling the uncle’s story as well as stories from his Pueblo heritage. Josiah’s



amazingly strong halfbreed cattle, it turns out, were the suggestion of a Mexican whore, the “Night Swan,” whom Josiah had been regularly visiting in secret. Their romance comes to life for Tayo when he encounters Night Swan during the summer before he joins the Army. Tayo finds he has much in common with her, since both are racially mixed “others” living among the Laguna. She takes him to her bed, then gives him advice: “You don’t have to understand what is happening. But remember this day. You will recognize it later. You are part of it now.”<sup>58</sup>

True to Night Swan’s prophecy, Tayo begins to recognize a pattern of illicit romance in his life and in the legends of the reservation. The illicit love stories multiply and repeat themselves in *Ceremony*, eventually involving Tayo’s mother, Betonie’s grandfather, Helen Jean, and the mysterious Ts’eh, who initiates a sexual encounter with Tayo that strengthens him so he can recover his cattle from the white rancher’s land where they were being held captive. It is generally accepted that Ts’eh plays the part of “Yellow Woman” in *Ceremony*.<sup>59</sup> Yellow Woman (sometimes known as Thought Woman or Spider Woman) is a spirit being or katsina who appears often in Hopi and Pueblo stories. According to Pueblo tradition, Yellow Woman stories are often about a woman who is separated from her husband or lover, sometimes through a willing complicity and sometimes innocently, by force or trickery; she then tells her story to others in order to claim agency over the story, or to steer the story in a specific direction.<sup>60</sup> Silko creates a new kind of Yellow Woman with Ts’eh, because she has healing powers that allow Tayo to change his future.<sup>61</sup> However, Ts’eh is not the only important woman in the novel; other female characters bear the stamp of Yellow Woman as well.<sup>62</sup> Edith Swan notes all the female characters are related to each other, because

they are all “associated with the supernatural being called Our Mother.” As symbolic figures who can harness the elemental powers of the universe, the women help connect Tayo to the land.<sup>63</sup>

The illicit love stories in *Ceremony* also serve to expose the culturally constructed distinction between guilt and innocence. The story about Night Swan, in particular, emphasizes accountability. An early encounter between Night Swan and an unnamed customer (not Josiah) leads to disaster when the customer refuses to accept responsibility for his own actions:

She knew it before he spoke. His eyes were still feverish as he spoke, and his fingers quivered like the legs of a dreaming dog; at that moment he wanted her more than he had ever wanted her. And it was for that she would not forgive him. She could have accepted it if he had told her that her light brown belly no longer excited him. She would have sensed it herself and told him to go. But he was quitting because his desire for her had uncovered something which had been hiding inside him, something with wings that could fly, escape the gravity of the Church, the town, his mother his wife. So he wanted to kill it: to crush the skull into the feathers and snap the bones of the wings.

“Whore! Witch! Look at what you made me do to my family and my wife.”

“You came breathlessly,” she answered in a steady voice, “but you will always prefer the lie. You will repeat it to your wife; you will repeat it at confession. You damn your own soul better than I ever could.”

... “We will run you out of town,” he said. “People listen to me. I’m somebody in this town.”<sup>64</sup>

The next morning, Night Swan discovers her customer was trampled to death during the night by his own horses. In this story, self-awareness of guilt becomes an important moral issue when the doomed customer refuses to admit his own accountability. Through other Yellow Woman stories, Tayo begins to recognize guilt and innocence are considerably more complicated than his Christian aunt thinks. Night Swan

is specifically constructed as a flawed heroine who recognizes her own failings and yet has the power to help Tayo *see* through the lies surrounding him because she has the same *Mexican eyes* as Tayo, marking her as a fellow half-breed. She tells Tayo, “‘most people are afraid of change. They think that if their children have the same color skin, the same color of eyes, that nothing is changing.’ She laughed softly. ‘They are fools. They blame us, the ones who look different. That way they don’t have to think about what has happened inside themselves.’”<sup>65</sup> A self-awareness of complicity is the common link between Tayo and Night Swan. In fact, self-awareness is depicted here as an almost inherent feature of racial hybridity that goes unrecognized by those who consider themselves pure.

A large part of Tayo’s guilt obviously stems from his failure to save Rocky, but he also feels responsible for his uncle’s death and the terrible drought on the reservation. Tayo connects both tragedies to anti-rain chants he muttered while marching through the wet and rotting jungles of Asia:

Jungle rain lay suspended in the air, choking their lungs as they marched; it soaked into their boots until the skin on their toes peeled away dead and wounds turned green. This was not the rain he and Josiah had prayed for, this was not the green foliage they sought out in sandy canyons as a sign of the spring. When Tayo prayed on the long muddy road to the prison camp, it was for dry air, dry as a hundred years squeezed out of yellow sand, air to dry out the oozing wounds of Rocky’s leg, to let the torn flesh and broken bones breathe. . . . Tayo hated this unending rain as if it were the jungle green rain and not the miles of marching or the Japanese grenade that was killing Rocky. . . . He damned the rain until the words were a chant. . . . He wanted the words to make a cloudless blue sky, pale with a summer sun pressing across wide and empty horizons.<sup>66</sup>

Tayo’s chants didn’t work in the jungle, but they worked only too well back home where the rain stopped falling and the crops started dying. When Tayo returns to the reservation, he finds his uncle dead and the reservation suffering from a devastating

drought. Just as whites killed people across the ocean with their atomic bombs, “without knowing who or how many had died,” so too did Tayo reach across the ocean with his anti-rain chant, becoming a man of “monstrous dreams” who cursed the rain clouds.<sup>67</sup> However, he keeps this terrible secret to himself: “He didn’t know how to explain what had happened. He did not know how to tell [Ku’oosh, the medicine man] that he had not killed any enemy or that he did not think that he had. But that he had done things far worse, and the effects were everywhere in the cloudless sky, on the dry brown hills, shrinking skin and hide taut over sharp bone.”<sup>68</sup>

Like Ender Wiggin, Tayo thought his actions would have no real-life consequences. But the rain chant was not a mere simulation; Tayo was more powerful than he knew. Not only did his Uncle Josiah die trying to save his cattle from the drought while Tayo was in the jungle cursing the rain, but the reservation and the Laguna people are now threatened. Unless Tayo figures out how to reverse his anti-rain chant, the land might die, and its people with it. Ku’oosh, tells Tayo, “I’m afraid of what will happen to all of us if you and the others don’t get well.”<sup>69</sup>

Since he is the only one who recognizes his part in the disaster, it falls upon Tayo to save himself and the reservation. Part of the ceremonial process involves storytelling, and so Silko writes several native stories about drought and salvation into the novel—stories that are scriptural. Paula Gunn Allen has hinted some of the stories are so sacred they probably shouldn’t have been shared with outsiders. She cites an instance when a white anthropologist published sacred Laguna beliefs, after which disaster ensued for the Lagunas.<sup>70</sup> (Thus the stories themselves can become weapons of mass destruction in the wrong hands.) Silko notes the stories mix several different native traditions together.<sup>71</sup>

Grandmother Spider, for example, comes from Silko's Pueblo background, while the "witchery" stories come from Navajo culture. Most important for our purposes is that these mini-stories contain messages about accountability by emphasizing catastrophes do not occur inside a vacuum but are rather caused by individual actors who either unwittingly or deliberately bring disaster upon the land:

Corn Woman got tired of that  
                   she got angry  
                   she scolded her sister  
                   for bathing all day long.

Iktoa'ak'o'ya-Reed Woman  
                   went away then  
                   she went back  
                   to the original place  
                   down below.

And there was no more rain then.  
                   Everything dried up  
                   all the plants  
                   the corn  
                   the beans  
                   they all dried up  
                   and started blowing away  
                   in the wind.

The people and the animals  
                   were thirsty.  
                   They were starving.<sup>72</sup>

The stories also assert these disasters can only be rectified by courageous—but *flawed*—individuals who take on a hero's quest, often endangering themselves both physically and spiritually in the process. Hummingbird feels sorry for the "skinny people," so he is the first one to accept the quest to visit Reed Woman and determine what needs to be done in order to bring back the rain.<sup>73</sup> She gives him specific instructions and a chant to say, which results in the arrival of Fly. Fly then goes with

Hummingbird to the underworld for further instructions, but Fly gets distracted and starts sucking on sweet things, and Hummingbird has to pull him away. They give Reed Woman the gifts they brought, but she simply assigns them another quest, to find Buzzard and purify the town. They give Buzzard gifts, too, but he tells them they forgot the tobacco.<sup>74</sup> So Fly and Hummingbird have to return to town to get tobacco. But there is no tobacco, so they have to go all the way back to Reed Woman and ask her where to find tobacco. She tells them to ask caterpillar.<sup>75</sup> This quest doesn't seem to be accomplishing anything. Fly and Hummingbird are a bit careless in their mission. Furthermore, the story's circularity means Tayo can only end up where he started.

The next story we encounter is one about a child whose family takes him into the mountains and loses him through negligence. The next day, they find the boy's tracks mixed with bear tracks, which means they will need to consult the medicine man to call the boy back from the bears. According to Edith Swan, "bears are the sacred animals of the west" who can "restore the mind."<sup>76</sup> But these bears frighten the humans because they have turned the boy into one of them; he is "already crawling on the ground" by the time they find him. The medicine man has to be careful, or the boy will not be able to transition back into a human. The transition requires much time and effort, and still, the boy was never the same again. Immediately after this passage, Silko admonishes her readers to remember that "bear people" are different from witches, because witches are not hybrid entities; they merely adopt the "skins" or images of dead beings while remaining witches inside.<sup>77</sup> If we assume "bear people" are like the boy, i.e., unaware humans who are half in one world and half in another and so cannot be entirely blamed for their own actions, then we find once again this is a story about accountability. Bear

people are both complicit and innocent at the same time, co-opted into a system over which they have little control. Witches, on the other hand, are entirely responsible for their actions, because their disguise hides their true intentions.

At this point, Tayo starts to tell Betonie about his guilt, but still does not reveal what happened during the war. Betonie then launches immediately into another, stronger story that describes the origins of the atomic bomb. This story is particularly gruesome, involving cannibalism and sliced body parts. It begins with witches playing games. One witch suddenly gets very serious and tells a powerful story that creates white colonialism. The entire history of Native subjugation is told (and created) by this witch, all the way through the discovery of uranium: “Up here/ in these hills/ they will find the rocks,/ rocks with veins of green and yellow and black./ They will lay the final pattern with these rocks/ they will lay it across the world/ and explode everything.” The other witches pretend it’s still a game, but the witch who told the story refuses to take it back: “It’s already turned loose./ It’s already coming./ It can’t be called back.”<sup>78</sup> Betonie emphasizes through this story that the atomic bomb originated on native land, with native uranium, and through careless native witches *playing with fire*. This story is the worst yet. It suggests Native Americans are complicit in the invention of the worst weapon in the world. Betonie and the other elders then perform a hoop ceremony on Tayo that tries to call him back to himself, just like the medicine man called back the bear child. Tayo finally seems to be getting better after this, because he begins to *see* differently. He sees both white people and his friends more “clearly,” refusing to take a drink with them—perhaps in preparation for the ritual that will shortly follow.<sup>79</sup>

The final story in this part of the novel is that of Sun Man, whose cloud children have been captured and tortured by Kaup'a'ta. In this tale, Sun Man learns from Spider Woman he must gamble with Kaup'a'ta and risk his own life in order to save the clouds: "Go ahead/ gamble with him./ Let him think he has you too./ Then he will make you his offer—/ your life for a chance to win everything:/ even his life."<sup>80</sup> After a long contest, Sun Man wins the gambling match against Kaup'a'ta and gets his clouds back. Kaup'a'ta surrenders and tells Sun Man to kill him and cut out his heart. But instead, Sun Man cripples Kaup'a'ta by cutting out his eyes. This act of violent retribution seems to spoil the victory, but the narrator points out it was a rational choice, given that Kaup'a'ta could not actually be killed or eliminated. The future threat needed to be contained somehow, even if it tainted the hero in the process. Thus Sun Man is yet another of *Ceremony's* somewhat flawed heroes and flawed stories. The reader does not blame Sun Man for his act of retribution, but neither can Sun Man claim a pure moral victory. At precisely this moment in the text, Tayo meets Ts'eh for the first time and begins to take charge of his own healing process.

The Native stories emphasize individual accountability and an active, engaged redemption process. Curiously, this dynamic contradicts the ambiguous scapegoat of "witchery" that Silko employs in her narrative. Witchery shouldered the blame for nearly everything that goes wrong for Tayo and the Laguna in the novel. Some have interpreted Silko's witchery as a telling of evil stories which then become reality.<sup>81</sup> Others have connected it with racism and colonialism.<sup>82</sup> It has also been read as widespread global corruption.<sup>83</sup> Louis Owens finds Silko's use of witchery, vague as it is, implies a general human responsibility to shape our own world.<sup>84</sup> Because Silko never names the witchery,



readers can insert nearly any evil force they wish into the story—white racism, military brutality, government hegemony, environmental injustice, colonial interiorization, etc.—but certainly one plausible interpretation of the witchery that “turns upon itself” is the deadly hegemony of nuclearism. At the final ceremony that takes place on the site of the uranium mine, Tayo suddenly realizes he is standing on one point of an atomic triangle: 300 miles to the southeast is White Sands, where the first bomb was exploded, while Los Alamos is 100 miles northeast of him. At this spot, the bomb has produced “witchery’s final ceremonial sandpainting,” a “circle of death” that unites all human beings and all living things as collective victims of the destroyers.<sup>85</sup> Shamoan Zamir correctly notes the brutal torture of Harley is an appropriate ending for a novel located in an officially designated “national sacrifice area.”<sup>86</sup>

Harley does indeed become a human sacrifice, albeit a flawed and complicit one, as Tayo recognizes from the outset: “[Tayo] understood that Harley had bargained for it; he realized that Harley knew how it would end if he failed to get the victim he had named.”<sup>87</sup> Tayo witnesses the sacrifice but does not interfere, so that Harley dies instead of Tayo. The text justifies Tayo’s non-interference as the only possible way to repudiate violence, but the ending is nevertheless troubling, particularly since Tayo assumes the hero’s mantle afterward. Surely Silko could have written a different ending in which Tayo is the one who escapes death and saves both himself and the reservation. After all, Sun Man did not send in a ringer to gamble against Kaup’a’ta. Most critics accept Silko’s narrated explanation for the ending, but David Moore goes a little farther by emphasizing that a witness’s complicity “blurs the boundaries between good and evil.” The witness operates to diffuse destructive energy, creating a three-pronged polyglossia rather than a

two-pronged dialectic, Moore says. Readers of the novel also serve as witnesses, distributing the energy even more, but at the same time, implicating themselves in the blood sacrifice.<sup>88</sup>

It's important to remember that World War II—the shadow haunting *Ceremony*—also ended with a sacrificial not-so-innocent victim (the Japanese) and a not-so-innocent hero (the Americans) who finally achieved peace by using a remote killing machine, the atomic bomb. Most Americans assumed the position of passive but complicit witness as the bomb destroyed Hiroshima and Nagasaki. Just as the unnamed narrator in *Ceremony* justifies Tayo's inaction as a greater good, so also did the U.S. justify the bomb as a way to prevent further fatalities. But dropping the bomb was also a terrible form of retribution. The use of a weapon of mass destruction on a (complicit) civilian population tainted the victory, so neither side could claim pure victimhood or pure heroism. Tayo's passivity in this final ceremony might have been necessary to achieve the larger goal of peace, as Silko's narrator insists, but the story deliberately constructs Harley as a complicit scapegoat who suffers excessive consequences for Tayo's inaction. The fact that Tayo must spend an extra amount of time in the kiva telling his story to the elders after the final ceremony suggests he was undergoing a purification ritual. Harley's sacrifice might have tainted Tayo, even if Tayo was not directly involved.

At the very least, Tayo was complicit in the sacrifice, just as the story about witchery suggested native complicity in the creation of the bomb. However, this is a complicity that can be repented because Tayo has accepted his own accountability. Like the original atomic bomb builders, the main perpetrator of this violent sacrifice, Emo, escapes punishment when the entire incident gets labeled an "accident." Furthermore, the

final native chant included in the novel implies the witchery is only temporarily neutralized: “It is dead for now./ It is dead for now./ It is dead for now./ It is dead for now.”<sup>89</sup> Like the blind Kaup’a’ta, witchery remains a potential threat to the homeland that can never be eliminated but only circumscribed through human intervention. Because *Ceremony* suggests texts and language play an active role in both the creation and the circumscribing of evil, readers/hearers of those texts become yet another complicit party in the sacrifice. As a passive witness, the reader participates in a literary ceremony that tries to circumscribe threat but at the same time renders him/her as part of the threat. We are all flawed heroes in the atomic drama, which “renders the traditional antagonist/protagonist model of representation unworkable” and makes the “victim” indistinguishable from the “victimizer.”<sup>90</sup>

As *Ceremony* suggests, weapons of mass destruction do more than threaten an enemy; they also threaten the self. When Tayo joins the military and stops the rain on the reservation, he nearly destroys himself. When Ender Wiggin inadvertently destroys the Bugger race, he loses his identity in the process. Cast off Earth because its leaders fear him, and suffering from exquisite regret, Ender tries to find refuge in the human colony on the Buggers’ home planet, where he is forced to hide from those who might recognize him:

The one thing he could not bear was the worship of the colonists. He learned to avoid the tunnels where they lived, because they would always recognize him—the world had memorized his face—and then they would scream and shout and embrace him and congratulate him and show him the children they had named after him and tell him how he was so young it broke their hearts and *they* didn’t blame him for any of his murders because it wasn’t his fault he was just a *child*—<sup>91</sup>

Eventually Ender leaves the colony and wanders through space like an evangelistic preacher, adopting an alternate identity while searching for a place to resurrect the Buggers: “Wherever they stopped, he was always Andrew Wiggin, itinerant speaker for the dead.”<sup>92</sup> In 1992, after the publication of the second Ender novel, *Speaker for the Dead*, in which Ender becomes the oldest and wisest man in the universe, a reviewer asked, “Why? It fit nothing we knew of the original Ender. Somebody gave it a Nebula anyway.”<sup>93</sup> In the sequel, Ender the complex and flawed human child-warrior vanishes, to be replaced by a symbolic godlike figure focused on resurrection rather than death, existing largely in textual form as a story-teller or “speaker” for others. This was a radical deconstruction of the self that was once Ender. In essence, Ender-the-WMD finds peace and redemption only by making himself into a text. But that doesn’t happen as part of a natural sequence of events. It’s a calculated move on Ender’s part, a discursive quest for atonement.

Card’s critics have wondered how Ender can be simultaneously an innocent victim and a perpetrator of genocide, but what the story really asks is whether such labels as “guilty” and “innocent” can exist when hegemony is at work. Even if blame cannot be fully located, *Ender’s Game* also suggests ambiguity cannot erase consequences. Card might refuse to hold his protagonist accountable, but his text constructs a nuanced spectrum of accountability echoing that found in Silko’s *Ceremony*. When one’s actions or overreactions cause a disastrous outcome, any moral actor is forced to question his own role in those events. Both Ender and Tayo must atone, whether or not they are fully guilty. In the process, both characters experience an inner conflict that tears them apart and forces them into a ghostly exile and liminality. Ender becomes a space ghost,

speaking phantom words from a phantom source, enacting his atonement through multiple layers of textuality and representation as a “Speaker for the Dead.” Tayo accomplishes his atonement through story-telling and ceremonies, and as a complicit witness to the sacrifice of others. Textuality plays an important role in both stories. According to literary critic Douglas Robinson, apocalyptic stories originating in the U.S. often end in ironic “self-conscious explorations of the validity of literary creation” that highlight the inability of metaphor and textuality to adequately interpret reality. Moreover, destruction itself is not the point of American apocalyptic literature, Robinson says; rather, the point is to mediate between certain oppositions such as community vs. self and accountability vs. innocence.<sup>94</sup>

While crafting the bomb, the Manhattan Project participants tried to persuade themselves that the mere existence of a technology of mass destruction would mediate global conflict and lead to the end of war in general.<sup>95</sup> In the 1980s, Derrida explained how that might work, when he noted the meaning of the bomb today exists only in its discursive or representational form, through treaties and diplomacy. Humans can consider themselves “competent,” he said, only because “the sophistication of the nuclear strategy can never do without a sophistry of belief and the rhetorical simulation of a text.”<sup>96</sup> For Derrida, the discourse of deterrence is an inherent feature of atomic weaponry, and the only means by which humans can hope to influence the outcome. The atomic literatures of the American West go farther; they have adopted what we might call *texts of personal accountability*, asserting that humans are simultaneously the root source and the solution to the atomic bomb. Humans constructed the weapon and thus *became* the weapon; humans are also responsible for mediating the solution and becoming the solution.

According to this model, the discourse of deterrence necessarily occurs through deliberate human intervention and is neither a natural process nor an inherent feature of the technology. In both these texts, *Ender's Game* and *Ceremony*, the circumscription of a weapon of mass destruction through discourse or textualization was actively accomplished by human agents who recognized *the real weapon is not technology, government, military, etc., but complicit humans*. In his enthusiastic promotion of nuclear weaponry, Edward Teller often made a uniquely western argument that might be reduced to “bombs don't kill people, people kill people.”<sup>97</sup> His rationalization might suggest he forgot his own role in the process, as a person who killed people by making bombs. That would be an over-simplification, though, because Teller also said, “I have no hope of clearing my conscience. The things we are working on are so terrible that no amount of protesting or fiddling with politics will save our souls.”<sup>98</sup> Perhaps a similar dynamic is at work in *Ender's Game* and *Ceremony*, when Ender and Tayo admit their accountability, then try to mediate the threat through witnessing for its victims or “speaking” the consequences. It's a never-ending process, though, because Kaup'a'ta cannot be killed and Sun Man is always in danger.

The transformation of Tayo and Ender into weapons of mass destruction ultimately led to the destruction of their old identities and the rise of new ones. The new Ender was diametrically opposed to everything his old self stood for. The new Tayo was a purified native self, less hybrid and more self-aware than his old self. Identity dismantling and reconstruction are an inherent feature of atomic literatures and an inherent feature of the nuclear cycle, in which radioactive elements are constantly transformed into new and different ones. But that process does not always lead to a more

whole self, as it did for Ender and Tayo. The next chapter explores the uncanny tendency of nuclearism to turn back upon itself. Ultimately, what gets destroyed when the West and its people become weapons of mass destruction is the West itself. Instead of a regenerative wilderness, the American West today is a weapon of mass *self*-destruction.

### Notes

1. Orson Scott Card, *Ender's Game* (New York: TOR, 1985). Hereafter cited as *EG*.
2. Norman Spinrad, *Science Fiction in the Real World* (Carbondale: Southern Illinois Univ. Press, 1990), 163.
3. Derrida, "No Apocalypse."
4. Donna Minkowitz, "My Favorite Author, My Worst Interview," *Salon*, February 3, 2000; <http://www.salon.com/books/feature/2000/02/03/card>.
5. "Introduction" to Orson Scott Card, *Ender's Game*, author's definitive edition (New York: TOR, 1991 [1985]), xii.
6. Elaine Radford, "Ender and Hitler: Sympathy for the Superman," *Fantasy Review* 102 (1987): 7-1; available online from Peachfront Speaks (Elaine Radford blog). <http://peachfront.diaryland.com/enderhitlte.html>. In the same 1987 issue of *Fantasy Review*, Card published a response to Radford, denying that he had intentionally created similarities between Hitler and Ender (Orson Scott Card, "Response," *Fantasy Review* 102 [1987]: 13-14, 49-52). However, in a later interview, he admitted that he had already read and studied *The Rise and Fall of the Third Reich* by the tender age of ten (Minkowitz, "My Favorite Author.")
7. John Kessel, "Creating the Innocent Killer: Ender's Game, Intention, and Morality," *Foundation: The International Review of Science Fiction* 33.90 (Spring 2004): 81-97, [http://www4.ncsu.edu/~tenshi/Killer\\_000.htm](http://www4.ncsu.edu/~tenshi/Killer_000.htm).
8. Spinrad, *Science Fiction in the Real World*, 162.
9. See, for example, Orson Scott Card, "The Hypocrites of Homosexuality," *Sunstone Magazine* 146 (June 1990): 4; Nauvoo: A Gathering Place for Latter-day Saints, <http://www.nauvoo.com/library/card-hypocrites.html>.
10. Michael R. Collings, *In the Image of God: Theme, Characterization and Landscape in the Fiction of Orson Scott Card* (Westport, Conn.: Greenwood Publishing, 1990), esp. 11-12.

11. See the map compiled by Miller in *Under the Cloud*, 444. For other kinds of exposure from other government facilities in the West Desert, see Chip Ward, *Canaries on the Rim: Living Downwind in the West* (New York: Verso, 1999).
12. Gallagher, *American Ground Zero*, 9-11.
13. Gallagher, *American Ground Zero*, 37-41. However, there are also testimonies from NTS workers who deny that any harm was done to them or others at the site (Nevada Test Site Oral History Project, University of Nevada-Las Vegas, <http://digital.library.unlv.edu/ntsohp/>).
14. Dwight Macdonald, *Politics Past: Essays in Political Criticism* (New York: Viking, 1970), 170-79. The essay in which the quote appears was first published in Macdonald's magazine, *Politics*, August 1945.
15. See especially Schwenger and Treat, "America's Hiroshima."
16. Sara L. Spurgeon, *Exploding the Western: Myths of Empire on the Postmodern Frontier* (College Station: Texas A&M Univ. Press, 2005); Comer, *Landscapes of the New West*; Kollin, *Postwestern Cultures*; Rebecca Solnit, *Savage Dreams: A Journey into the Landscape Wars of the American West* (New York: Vintage Books, 1994); Ward, *Canaries on the Rim*; Kuletz, *The Tainted Desert*; and Limerick, *Legacy of Conquest*.
17. Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Globalization* (Minneapolis: Univ. of Minnesota Press, 1996).
18. Sara Spurgeon, *Exploding the Western*, 9.
19. Beck, *Dirty Wars*, 285.
20. Timothy J. LeCain, *Mass Destruction: The Men and Giant Mines That Wired America and Scarred the Planet* (New Brunswick, N.J.: Rutgers Univ. Press, 2009).
21. Masco, *Nuclear Borderlands*.
22. Limerick, *Legacy of Conquest*, 35-54.
23. Leslie Marmon Silko, *Ceremony* (New York: Penguin, 1986 [1977]).
24. David A. Rice, "Witchery, Indigenous Resistance, and Urban Space in Leslie Marmon Silko's *Ceremony*," *Studies in American Indian Literatures* 17.4 (Winter 2005): 114-43.
25. Lawrence Buell, "Environmental Apocalypticism," in Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, Mass.: Harvard Univ. Press, 1995), 280-308.



26. Sharon Holm, "The 'Lie' of the Land: Native Sovereignty, Indian Literary Nationalism, and Early Indigenism in Leslie Marmon Silko's *Ceremony*," *American Indian Quarterly* 32.3 (Summer 2008): 243-74.
27. Caputi, "The Heart of Knowledge."
28. Paul Beekman Taylor, "Silko's Reappropriation of Secrecy," in *Leslie Marmon Silko: A Collection of Critical Essays*, ed. Louise K. Barnett and James L. Thorson (Albuquerque: Univ. of New Mexico Press, 1999), 23-62.
29. Jaskoski, "Thinking Woman's Children."
30. Sara Spurgeon, "Decolonizing Imperialism: Captivity Myths and the Postmodern World in Leslie Marmon Silko's *Ceremony*," in *Exploding the Western: Myths of Empire on the Postmodern Frontier* (College Station: Texas A&M Univ. Press, 2005), 73-101.
31. Robert M. Nelson, *Place and Vision: The Function of Landscape in Native American Fiction* (New York: Peter Lang, 1993); Holly E. Martin, "Hybrid Landscapes as Catalysts for Cultural Reconciliation in Leslie Marmon Silko's *Ceremony* and Rudolfo Anaya's *Bless Me, Ultima*," *Atenea* 26.1 (June 2006): 131-49; Paula Gunn Allen, *The Sacred Hoop: Recovering the Feminine in American Indian Traditions* (Boston: Beacon Press, 1992);
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34. John Peacock, "Unwriting Empire by Writing Oral Tradition in Leslie Marmon Silko's *Ceremony*," in *(un)writing Empire*, ed. Theo d'Haen (Amsterdam: Rodopi B.V., 1998), 295-308.
35. Donald A. Grinde and Bruce E. Johansen, *Ecocide of Native America: Environmental Destruction of Indian Lands and Peoples* (Santa Fe, New Mexico: Clear Light, 1995).
36. Kuletz, *The Tainted Desert*.
37. Hooks and Smith, "The Treadmill of Destruction."
38. Hooks and Smith, "The Treadmill of Destruction."
39. Leo Brophy, Wyndham Miles, and Rexmond Cochrane, *The Chemical Warfare Service: From Laboratory to Field* (Washington, D.C.: U.S. Government Printing Office, 1959).

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41. Robert D. Bullard, ed., *Unequal Protection: Environmental Justice and Communities of Color* (San Francisco, Calif.: Sierra Club, 1997).
42. Robert D. Bullard, ed., *Confronting Environmental Racism* (Boston, Mass.: South End Press, 1993).
43. Churchill, "A Breach of Trust."
44. Jace Weaver, *That the People Might Live: Native American Literatures and Native American Community* (New York: Oxford Univ. Press, 1997).
45. James Ruppert, "No Boundaries, Only Transitions: Ceremony," in Chavkin, *Leslie Marmon Silko's Ceremony*, 175-92.
46. Dasenbrock, "Forms of Biculturalism."
47. However, Ender's redemptive process becomes clearer in the second book in the series, *Speaker for the Dead* (New York: TOR Books, 1986).
48. *Ceremony*, 7-8; emphasis in original.
49. *Ceremony*, 44.
50. Gloria Bird, "Toward a Decolonization of the Mind and Text: Leslie Marmon Silko's *Ceremony*," in *Reading Native American Women: Critical/Creative Representations*, ed. Inez Hernandez-Avila (Lanham, Md.: Altamira Press, 2005), 93-105.
51. *Ceremony*, 64.
52. *Ceremony*, 65, 72.
53. *Ceremony*, 124.
54. *Ceremony*, 55.
55. Tanya Wilkinson, *Persephone Returns: Victims, Heroes and the Journey from the Underworld* (Berkeley: Pagemill Press, 1996), 31.
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59. Melody Graulich, ed., *'Yellow Woman': Leslie Marmon Silko* (New Brunswick, N.J.: Rutgers Univ. Press, 1993), 13.
60. Elizabeth Hoffman Nelson and Malcolm A. Nelson, "Shifting Patterns, Changing Stories: Leslie Marmon Silko's *Yellow Woman*," in *Leslie Marmon Silko: A Collection of Critical Essays*, ed. Louise K. Barnett and James L. Thorson (Albuquerque: Univ. of New Mexico Press, 1999), 121-33.
61. Nelson and Nelson, "Shifting Patterns"; see also Louise K. Barnett, "Yellow Women and Leslie Marmon Silko's Feminism," *Studies in American Indian Literatures* 17.2 (Summer 2005): 18-31.
62. Edith Swan, "Laguna Symbolic Geography and Silko's *Ceremony*," *American Indian Quarterly* 12.3 (Summer 1988): 229-49; Edith Swan, "Feminine Perspectives at Laguna Pueblo: Silko's *Ceremony*," *Tulsa Studies in Women's Literature* 11.2 (Autumn 1992): 309-28.
63. Swan, "Laguna Symbolic Geography."
64. *Ceremony*, 85.
65. *Ceremony*, 99-100.
66. *Ceremony*, 11-12.
67. *Ceremony*, 34-35.
68. *Ceremony*, 36.
69. *Ceremony*, 38.
70. Paula Gunn Allen, "Special Problems in Teaching Leslie Marmon Silko's *Ceremony*," in Chavkin, *Leslie Marmon Silko's Ceremony*, 83-90. See also Taylor, "Silko's Reappropriation of Secrecy," in Barnett and Thorson, *Leslie Marmon Silko*, 23-62.
71. Larry Evers and Denny Carr, "A Conversation with Leslie Marmon Silko," *Suntracks* 3.1 (1976): 31-32.
72. *Ceremony*, 13-14.

73. *Ceremony*, 71.
74. *Ceremony*, 113.
75. *Ceremony*, 151-52.
76. Swan, "Laguna Symbolic Geography," 237.
77. *Ceremony*, 130-32.
78. *Ceremony*, 137-38.
79. *Ceremony*, 154-60.
80. *Ceremony*, 173.
81. Catherine Rainwater, "Semiotics of Dwelling in *Ceremony*," in Chavkin, *Leslie Marmon Silko's Ceremony*, 117-38; Shamoan Zamir, "Literature in a 'National Sacrifice Area': Leslie Silko's *Ceremony*," in *New Voices in Native American Literary Criticism*, ed. Arnold Krupat (Washington: Smithsonian Institution Press, 1993), 396-452.
82. David L. Moore, "Silko's Blood Sacrifice: The Circulating Witness in *Almanac of the Dead*," in Barnett and Thorson, *Leslie Marmon Silko*, 149-83 (Moore reads *Almanac* alongside *Ceremony* in this essay); David L. Moore, "Myth, History, and Identity in Silko and Young Bear: Postcolonial Praxis," in Krupat, *New Voices*, 370-95.
83. Catherine Rainwater, *Dreams of Fiery Stars: The Transformations of Native American Fiction* (Philadelphia: Univ. of Pennsylvania Press, 1999), 146-147.
84. Louis Owens, "Leslie Silko's Webs of Identity," in Chavkin, *Leslie Marmon Silko's Ceremony*, 91-116.
85. *Ceremony*, 245-46.
86. Zamir, "Literature in a 'National Sacrifice Area.'"
87. *Ceremony*, 252.
88. Moore, "Silko's Blood Sacrifice."
89. *Ceremony*, 261.
90. Schwenger and Treat, "America's Hiroshima."
91. *EG*, 341; emphasis in original.

92. *EG*, 357.
93. Charles Nicol, "Mormon and Mammon," *Science Fiction Studies* 19.1 (March 1992): 128-30. (This essay is not a review of Card; rather it reviews a secondary source: Collings, *In the Image of God*).
94. Douglas Robinson, *American Apocalypses: The Image of the End of the World in American Literature* (Baltimore, Md.: Johns Hopkins Univ. Press, 1985), 229.
95. Robert S. Norris, *Racing for the Bomb: General Leslie R. Groves, the Manhattan Project's Indispensable Man* (Hanover, N.H.: Steerforth Press, 2003). The idea that a powerful weapon might be invented which could end war forever was a meme that first appeared in science fiction toward the end of the nineteenth century (H. Bruce Franklin, "A Weapon to End All Wars," in Anisfield, *The Nightmare Considered*, 5-14).
96. Derrida, "No Apocalypse."
97. What Teller actually told Palevsky was "throughout all written history the killing of people was never limited by the ability to kill people but always by the amount of intention to kill people" (Palevsky, *Atomic Fragments*, 51).
98. See Mary Palevsky's interview with Teller in *Atomic Fragments*, 39-72.

## CHAPTER 7

### ATOMIC CANNIBALISM: THE WEST

#### EATS ITS OWN

Few who have read Cormac McCarthy's Pulitzer-Prize-winning novel *The Road* can forget its stark scenes of cannibalism: people butchered slowly in underground dungeons, babies conceived as sources of meat, marauding bands of flesh hunters, an orchard filled with entrails and human heads.<sup>1</sup> McCarthy's vision goes somewhat beyond the typical Darwinian conditions found in most postapocalyptic fiction. His humans have lost far more than their humanity; they've reached a point even lower than the animals, where children are sacrificed and roasted so the powerful can have just one more meal. The exact cause of the disaster is vague, with some clues pointing to a nuclear holocaust and others to a widespread meteor strike (bright explosions that left people blind, human bodies and machines fused into the asphalt, melted window glass, electronic clocks that stopped immediately, a sun hidden by atmospheric ash, etc.). The reader also cannot ascertain the exact location of the story. Some have suggested the Southeast<sup>2</sup> and the Gulf Coast,<sup>3</sup> while others have noted wherever this used to be, it's now a desert.<sup>4</sup> What we do know is a surviving father and son are moving southward toward an ocean in a desperate attempt to find more hospitable conditions. We also know this is not a localized disaster; it's been seven years and no rescuers have shown up. Ships from other countries lie wrecked and abandoned on the coast. Even more ominously, nature has stopped functioning. Not a single plant remains alive, including mushrooms, which are supposed

to survive anything. The animal population has long since been hunted to extinction. The entire insect population is gone, except for one lone beetle that miraculously flies out of a box and disappears into oblivion. What happened to the roaches? We were promised there would at least be roaches.

With its focus on future apocalypse rather than western nostalgia, *The Road* seemed somewhat of a departure for McCarthy. However, one critic asserts *The Road* represents the logical culmination of McCarthy's long journey toward a postmodern Baudrillardian hyperreality in which "fiction stands truer to life than flat dimensional 'reality.'"<sup>5</sup> The novel was also met with acclaim by environmentalists, one of whom called it possibly "the most important environmental book ever" with the potential to "change the world."<sup>6</sup> Yet it seems more than an environmental screed. Critics have discovered religious and mythical messages in the novel,<sup>7</sup> while some evidence suggests the events of 9/11 were McCarthy's inspiration.<sup>8</sup> One critic calls the holocaust in *The Road* a "metaphorical explanation for the state of the world" and man's insignificance.<sup>9</sup> As many have noted, the details of the disaster are deliberately ambiguous.<sup>10</sup> Perhaps McCarthy meant to focus his readers not on the specific technologies of mass destruction, or the possible places of mass destruction, but rather on the dynamic of mass destruction in general. Or, what seems more likely, the dynamic of mass *self*-destruction. Even if the disaster was due to natural causes rather than nuclear war, in McCarthy's world the human race is literally devouring itself. Self-destruction is arguably the most potent theme in the novel, providing conflicts that are both externalized and internalized. Ultimately, the worst threat hanging over this father's head during his journey is the possibility that he will have to kill his own son in order to save the child from being eaten

by the other survivors. In many respects, the story echoes the Prophet Abraham's journey into the mountains to sacrifice Isaac. Abraham must become the weapon that kills his own child, or face God's banishment; either choice means he will destroy himself in the process. At the end of *The Road*, though, it is the father who dies from sickness, while the son finds refuge with another family—an unusually affirmative conclusion for McCarthy that one reviewer felt might “infuriate” his fans.<sup>11</sup>

Cannibalism is a favorite theme in apocalyptic literature. Another apocalyptic writer, Margaret Atwood, notes cannibalism introduces two contradictory cultural fears: being eaten, and becoming the eater.<sup>12</sup> If we are eaten, we lose our physical self. If we are the eater, we lose our humanity. Because cannibalism creates a power dynamic “between a civilized ‘us’ and a savage ‘them,’” its discourses are inseparably connected with issues of race, class, and imperialism.<sup>13</sup> Anthropologist Geoffrey Sanborn reminds us the language of cannibalism has a “colonial provenance” that must not be forgotten.<sup>14</sup> Since industrialization, cannibal discourse has also been associated with themes of globalization and capitalism, by which dominant societies threaten to consume the world's resources and/or artifacts.<sup>15</sup> This raises interesting questions about *The Road*, since the father specifically pushes a shopping cart through the apocalyptic desert, rather than carrying his supplies in a backpack, or pulling a wagon, or any number of alternatives. According to one critic, *The Road* offers a critique of the “irrational exuberance” of late-capitalist consumer culture.<sup>16</sup> In a post-9/11 world, when a small group of third-world terrorists deliberately targeted the policies and practices of global corporatism, *The Road* suggests social systems which fail to draw a line against



cannibalizing others will eventually end up cannibalizing and destroying themselves. Systems of mass consumption inevitably become systems of mass *self*-consumption.

Thus literary cannibalism does not merely focus readers on the boundaries (or lack thereof) between civilization and savagery; it also rings an alarm bell warning societies of imminent self-destruction. However, cannibalism does not always make itself known as clearly as it does in *The Road*. It can manifest in less obvious ways, through discourses on gender, sexuality, domesticity, and materiality, and especially through everyday consumer culture.<sup>17</sup> The latter method is the route chosen by Carolyn See in *Golden Days*, a feminist New Age novel about a woman who lives through a nuclear holocaust in 1980s California.<sup>18</sup> The novel has been called a “work of bracing optimism” that depicts nuclear survival through the lens of humor and “holy rosy utopianism,”<sup>19</sup> a “stop-worrying-and-enjoy-the-bomb” novel.<sup>20</sup> But it can be read very differently, as a satire of the mythologies of the American West, and particularly the regional mythologies of California, that penultimate western paradise of easy wealth and hedonism, where any number of imminent disasters and antimyths hover in the background.<sup>21</sup>

See makes the connection between mass destruction and capitalist consumption by constructing her protagonist-narrator, Edith Langley, as a phony financial consultant living in Topanga Canyon near Santa Monica. Edith’s story plays out against the re-escalation of Cold War tensions that occurred during the 1980s under the presidency of Ronald Reagan, who began shaking the fragile foundations of détente right after his inauguration in 1981 by publicly denouncing the Soviet Union as an “evil empire” and calling the Cold War a “struggle between right and wrong and good and evil.”<sup>22</sup> At the same time, he ordered a massive buildup of the U.S. military and an expansion of

intelligence activities, all aimed at destabilizing the Soviet regime. When Reagan announced the U.S. was working on a new (but mythical) missile defense system that would have made the entire Soviet weapons cache obsolete, the entire world worried he might be planning a first-strike nuclear attack. Paradoxically, Reagan was able to use the heightened fears on both sides to negotiate a nuclear weapons freeze—a treaty his own Republican Party opposed—although that outcome was not clear until after his presidency was over.<sup>23</sup>

In *Golden Days*, the characters studiously ignore all political tensions amid their personal pursuit of wealth. Edith, we learn, is a self-made woman who started out as a struggling housewife and college student, then became a wandering hippie mother parenting her daughters from the back seat of a car, before returning to her Los Angeles roots and re-making herself into a woman “whose name meant money, and money meant power.”<sup>24</sup> With questionable credentials and using a Tupperware technique, she arranges parties at the homes of wealthy women and convinces them to stockpile their own sources of wealth not through an accumulation of paper stocks like those held by their husbands but rather by investing in something *real*, namely gemstones. Her goal at these parties is to re-orient the women’s views of jewelry and of themselves: “They’re not ornaments, they’re wealth!”<sup>25</sup> Later, Edith’s pearls will melt around her neck in the nuclear blast, but she will use her other gems to soothe the radiation burns on her hands, where they grow into her skin until her hands are like “glittering stone gloves.”<sup>26</sup> Those jewels *did* come in useful after all, she tells herself, so her advice must have been legitimate.

During this time Edith and her live-in boyfriend, Skip, a banker, start attending seminars held by a young man named Lion Boyce—which we later learn is a homophone for “lying boys”—who preaches a religion of abundance that everyone can “be, do and have” exactly what they want by giving away their wealth and letting go of their past: “if you ever expect to get anything, you’ve got to give it away first. Everything you give away comes back to you vastly multiplied! That’s called *outflowing!*”<sup>27</sup> Lion’s 1970s consciousness-raising hippie philosophy morphs easily into a 1980s supply-side economic theory in the hands of Edith and Skip. Soon the two have devoted their lives to “acquisition,” and are convinced “abundance was our natural state.”<sup>28</sup> The pinnacle of Edith’s social ladder-climbing occurs shortly before the nuclear holocaust, when she joins a group of upper-class parents working to establish an exclusive private school that will protect their precious little ones from the increasingly discontented brown masses who have been escalating their own war against a domestic enemy, namely white privilege. The school boasts all the luxuries of a colonial plantation. Among the board members is Barbra Streisand, who operates briefly as a symbol of liberal hypocrisy.

While real-life policymakers like Defense Secretary Caspar Weinberger and Secretary of State Alexander Haig hover in the background of the text, issuing nuclear threats toward America’s enemies and “jerking at their missiles,”<sup>29</sup> in the foreground Lion is teaching his students how to pull energy out of thin air and use it to levitate,<sup>30</sup> This energy has an internal source, not an external one. “I am a blazing sun of infinitely abundant energy,” Lion says, “flooding forth the limitless treasures of light for the good of one and all.”<sup>31</sup> Here, then, is the flip side of nuclearism, the side that promises an endless supply of fuel for the world’s consumption needs. See thus manages to combine

both forms of nuclear technology in the same text: the atomic power that produces miracles, and its opposite, the destructive weapon that collapses civilizations.<sup>32</sup>

Unfortunately, Lion ends up using his nuclear powers for evil when, shortly before the holocaust, he is arrested for fraud and drug-running. He escapes the police by “vaporizing” through the walls of his detainment cell, and is never seen again. Curiously, Edith doesn’t seem perturbed: “why did it take a punk like Lion to show us so definitively that it’s *all* an act, all of it, every breath that any of us takes, so, since that’s what it is, let’s make it a *good* act?”<sup>33</sup> Was Lion a magician or a false prophet? Edith sends mixed signals. On the one hand, she recognizes he was a con-man—indeed, she seems to have known all along. On the other hand, she uses Lion’s message to survive the nuclear blast and help re-fashion the world. But remember, *it’s all an act*, as she herself admits.

There are two character types who carry Lion’s philosophy into the postapocalyptic period: Edith, “the banker,” and her friend Lorna, the “evangelist.”<sup>34</sup> Before the bombs fall, Lorna appropriates Lion’s teachings and makes huge amounts of money preaching it all over television to fearful preapocalyptic Americans. Edith, on the other hand, uses Lion’s philosophy as a personal investment strategy and also makes millions. Lion’s message attains cult status, both in its economic form and its religious one. After the bombs fall, after five terrible years of inhuman death and suffering and starvation, Edith emerges from her mountain fortress as a postapocalyptic native prophetess—now brown and bald and toothless and ancient, a Gollum-like figure—still preaching Lion’s gospel of abundance and radiance in what she calls the “Age of Light.” When she encounters some pessimistic survivors, she tells them with what might or

might not be a touch of sarcasm, ““Our universe is infinitely rich and exquisitely beautiful! We live in love, we live life fully and joyously! Our universe is dynamically aglow with Radiant Healing and Prospering Energy! We are aglow with Radiant Health!’ *That one got a laugh, I can tell you!*”<sup>35</sup>

Edith survived the bombs not by hiding underground but by recklessly lying in an open bedroom high on a cliff, where the blasts washed over her, the fires nearly consumed her, and the sun baked her with purifying energy. She “surrendered” herself to radiation, because that’s what Lion would have advised. And like Lion, she finds herself turned into a mini-nuclear power reactor: “My arms crackled a bit, I could feel energy coming out of my fingers. ...And I looked down to see the damp grass drying into a golden circle, two circles out from my thin, white-hot feet. I stood in a nest of electric smoke, clacked my hands together to see the sparks again.”<sup>36</sup> Edith can now “start a fire by heating up her fingers,” even if those fingers are scabbed and crusty, their fingernails rotted away, and their skin eerily fused with gemstones.<sup>37</sup> Farther up the coast, Lorna also seems to have survived as a trickster/miracle worker.<sup>38</sup> Edith claims this was the moment when she knew Lion wasn’t a fraud, when she discovers his power actually operating inside herself,<sup>39</sup> yet earlier in the book, looking back after the holocaust, she proclaimed Lion a con-man.<sup>40</sup> Exactly which of Lion’s powers does Edith *really* assume here?

*Golden Days* is divided into three parts: before the holocaust, during the holocaust, and after the holocaust, although each section also includes flashbacks and flash-forwards. See says she structured the novel in the form of a missile, i.e., with a long tunnel at the beginning, a little “ridge” in the middle, and then a big, fast explosion.<sup>41</sup> (Notably, this is also a phallic metaphor.) The middle section, or perhaps we should call it

the “tip,” features the story of a middle-class family dealing with the day-to-day stress of an imminent nuclear cataclysm. See presents this fable as *The Last Day in the Life of an Ordinary American*. An unnamed suburban husband wakes up after having a nightmare, takes a pee, has a “quickie” with his still-sleeping wife, plays with his son, eats a breakfast of oatmeal, ignores his wife’s fears about the impending holocaust, goes jogging, drives to the office in his BMW, tries to work on a report about emergency management, meets his mistress for a lunch date, has sex with the mistress in a motel room, ignores the mistress’s fears, goes back to the office, laughs about it with his buddy, goes to a Dodgers game, eats Chinese food, drives home, gets chastised by his wife who wants to escape before the bombs fall, shouts there’s “nowhere in the world anyone can hide,” shouts at his child, and finally brushes his teeth, crawls into bed and falls asleep spooning his wife for their last moments together.<sup>42</sup> See does her best to make us ignore this story. She introduces it reluctantly, with a long excuse about why she doesn’t like to write about men—because they all seem to be involved in an “ongoing dick-waving contest”—then begins the fable with “I promise nothing, certainly not that this will be a story.”<sup>43</sup> At the end of the story, she deconstructs it: “Now I can see all kinds of things wrong with that story,” then launches into a feminist rant about the male leaders of the western world, wonders whether missiles are merely a compensation for sexual insecurities, and ends with: “I just don’t know any stories about [men]. Any stories that ring true, anyway.”<sup>44</sup> And yet, of all the stories she tells, this one rings truest. No exaggeration or excess here, just average every-day domestic life, troubled ever so slightly by infidelity and impending doom.

The realist fable in the middle almost makes us overlook the cartoonish contrasts between the first part of the book—which features conspicuous consumption, quasi-religious chicanery, and collective denial about the escalating nuclear threat—and the third part of the book, where everything falls apart and California dreamin’ turns into California nightmare. As holocaust threatens, the consumerism that seemed a natural part of upper-class life early in the book takes on an excessiveness that repels the reader. At the exact moment when the first nuclear device is detonated in Central America by a rogue military junta, Edith is attending an exclusive party where she meets a fat man named Hal, whom she calls her “Doppelgaenger,” aka “Prince Hal,” a man who exemplifies extreme excess and artificiality: “Everything I’d ever studied to get rid of was there, in front of me. The weight I’d dieted off was there, on him.”<sup>45</sup> Hal keeps pure gold chains in his car, which he passes out to everyone he meets. He owns a construction business but never actually works there because his rich girlfriends support him. His current girlfriend, Felicia, is the kind of woman who, when she loses a button on her designer dress, goes out to buy another dress rather than another button.<sup>46</sup> In those last few weeks, when everyone knows the bombs are about to hit, Edith and Skip spend ten precious days not with their own children but with Hal and Felicia (whom they just met), lounging in Felicia’s luxury ocean-view apartment, feasting on artichoke hearts, endive, fresh raspberries, oranges drenched in rakia, and expensive champagne. Outside, the streets are filled with expensive foreign cars like Mercedes, Porsches, and Volkswagens. Families are strolling leisurely along the beach, picnicking or roller skating, doing their best to ignore what they know is going to happen. The rich are having wild, non-stop sex, snorting cocaine, giving away gobs of money, and ordering food and wine delivered

to their hillside homes. Those who try to flee eastward into the desert become “friendly targets” for the missiles of the hyper-vigilant U.S. military, thus validating the self-destructive choices of those who stay behind. The lingerers (and malingerers) find themselves gripped by a wild excitement and the knowledge they can do anything they want without consequences. The finest restaurant in town stays open till the end, serving LSD in its sauces. Edith calls those few weeks “paradise,” because “[e]very minute was your minute to make a choice: It was turn on the television and watch some hated white man tell you about hell, or it was lie down on damp green grass—or the dry weeds of Topanga, or the red ants of Lancaster—and say thank you, I love you, I love this.”<sup>47</sup> This, then, is a slightly twisted and highly condensed version of the California dream: people are leaving instead of arriving, disaster is imminent (as always), and Los Angeles is operating more than ever as a mythical theme park of escapism. Preparation seems to occur haphazardly, if at all. Someone in Edith’s family brings home two sacks of rice, which is all they will have to eat that first year. At one point, Edith tries to seriously consider politics, history, religion, but “I kept thinking about the cheese enchiladas at the Hacienda, or the fresh swordfish in ginger sauce at Michaels.”<sup>48</sup>

The actual holocaust occurs on the 4<sup>th</sup> of July, of course, since that *is* the national day of fireworks.<sup>49</sup> Edith and Skip, along with various family members and their friends, are huddled together in the master bedroom of their canyon fortress, their “wilderness home,” as Edith calls it.<sup>50</sup> They wake up that morning and have coffee. Then the blast comes, breaking out the bedroom window and letting in the “bad air.” Someone starts to turn on the radio, but Edith’s mother, a holdover from the 1950s, says, “No! Turn it off. What we don’t know won’t hurt us.” Like *Sleeping Beauties*, the group instantly falls



asleep “as if life had served us a collective mickey finn.” The next day they wake up long enough to fight off a massive canyon fire that leaves the rest of the world in ashes. Then they go back to bed and mostly sleep their way through the worst parts of the aftermath. During this time, as their skin and other body parts begin to slough off, as thirst consumes them, they lie tucked up against each other like corpses, wrapped in blankets and sheets that turn stiff and gray over the years that follow: “In our agony we needed beds, and to lie down and be with each other.” A plague hits, killing first one and then another of their group with a kind of racial sickness: “I saw that his neck was swollen like a fullback’s, he was black, black as a Bic, black as tar, black as coal, black as the Pit. *So, so, this is it*, is what I thought.” The others dose themselves with hoarded antibiotics to prevent contamination from the *Black Plague*, but later one of them will note he has nevertheless turned into a “nigger.” When their meager supply of rice runs out, they are forced to eat snails and grass, which makes them sick; they defecate outside with heads down between their knees, plucking grass out of their assholes “just as fresh and green and painful on the edges as when they went in.” Their teeth fall out, their ears fall off, their hair falls out, their eyelids are gone, noses decay, women’s breasts disintegrate, fingernails rot away, and their skin turns dark until they look like Indians, “the California Indians, those dipshit Chumash.” They forget basic things like language, sexual desire, family ties, gender differences. They fall lower than the masses they once scorned, lower than the blacks and Mexicans in the former ghettos of Los Angeles, lower than the despised natives, so low they are no longer human. About half of the original group lives. Eventually they are able to make contact with other canyon survivors, at which point they congratulate themselves

they were not forced like their neighbors to brutally kill the poor and the sick who sought refuge in the canyon.<sup>51</sup> Ah yes, thank God they did not sink *that* low!

After five years, Edith's little collective decides to journey down to the beach, which Edith has mythologized as the locus of her dreams, the place she has always wanted to go (but curiously never has) so she can "just lie down and look at the ocean."<sup>52</sup> When the group finally gets there, they find the sand fused by the nuclear blast into a glassy, jewel-like surface, a mirror that reflects the water and the sky. The lovely beach is gone, replaced by an artificial and dangerous surface that allows Edith to look at the ocean, but only in a self-reflexive, narcissistic way. Nevertheless, the beach is a better place than the canyon; there are makeshift lifeguards with makeshift sailboats, families with children, fires, sunshine, swimming, basket-weaving. They decide to stay, and Edith becomes a story-teller for the primitive community. Her tales are ambiguous ones of caution: a radioactive frog that jumps out of captivity and away from modernity, a man who decides not to even start a scientific experiment. Messengers arrive with stories about other survivors. Newcomers also arrive and tell their own stories to anyone who will listen. Through it all, Edith repeats Lion's words over and over, "*Everything always works out for us more exquisitely than we ever planned.*"<sup>53</sup>

As narrator, Edith tells her readers that only those who took California at its word and immersed themselves in its gospel of paradisiacal glory survived the holocaust: "As I say, the ones who decided to come west [to California's coast] instead of heading east, were by and large the ones who made it. And the wackos, the ones who used their belief systems, were the ones who got control over the radiation. Control is a silly word. It was *surrender*, really. The ones who relinquished control, who took it as it came, seem—out

here at least—to have lived. . . . And there are no more false prophets, only real ones.”<sup>54</sup>

Thus Lion’s con-game becomes reality in Edith’s postapocalyptic world, but not without hints of irony. The last lines in the book are:

There will be those who say it never happened, that we squeaked through [without a nuclear war]. Believe them if you can.

There will be those who say that the end came, I mean the END, with an avenging God and the whole shebang. And many more who say it came, and there was death and terror and weeping in the streets, and the last man on earth died in the Appalachians, of pancreatic cancer, all alone. I heard that story, and I don’t think much of it. You can believe what you want to, of course. But I say there was a race of hardy laughers, mystics, crazies, who knew their real homes, or who had been drawn to this gold coast for years, and they lived through the destroying light, and on, into Light ages.

You can believe who you want to. But I’m telling you, don’t believe those other guys.

Believe me.<sup>55</sup>

I *don’t* believe her. For one thing, this command is a bit too hypnotic; authenticity shouldn’t have to recruit on its own behalf. For another, Edith is just one of many untrustworthy characters in the novel. While she and the other golden California dreamers emerge alive—barely—from the holocaust, they are simply repeating the same old phrases that allowed them to ignore the impending disaster in the first place: “expect miracles”; “surrender”; “release the past”; “take the cash and let the credit go”; “carry your jewels with you”; and of course, “our universe is aglow with Radiant Healing and Prospering Energy.” At one point, Edith says, “No, I can’t remember when our new ideas all started.”<sup>56</sup> That’s because *there were no new ideas*.

Critics aren’t quite sure what to do with *Golden Days*. While chastising the “snobbery” present throughout the novel as well as its “withdrawal from history,” most

maintain the ending is an affirmative one in which “only the most spiritually sensitive and ecologically in-tune people” survive the holocaust in order to create a “matriarchal utopia” in a “brave new paradise.”<sup>57</sup> I must respectfully disagree. The story feels more like a Voltairean farce in which a pompous Dr. Pangloss insists against all evidence that “*this is the best of all possible worlds.*” Lion seems to be California’s version of Wilhelm Leibniz, the German philosopher mocked by Voltaire in his snarky little classic called *Candide*. In 1710, Leibniz famously declared the solution to the problem of evil was, essentially, “God could have invented a better world, but then evil would not have existed, so this must be the best of all possible worlds”—a circular argument at best.<sup>58</sup> In 1759 Voltaire famously lampooned Leibniz by writing *Candide*, which takes its naïve protagonist and his pretentious mentor, Dr. Pangloss, on a grotesquely comic journey that exposes them to a nearly incomprehensible level of human suffering. Real-life events are written into the story, including a 1755 earthquake and tsunami in Lisbon that killed 15,000 people, as well as the contemporaneous Seven Years War that killed at least one million Europeans. *Candide* juxtaposes tragedy against comedy, including shocking episodes of cannibalism, described in such detail readers are ultimately forced to question Pangloss’s (and Leibniz’s) unending defense of God in the face of indefensible horror and just plain absurdity. What becomes painfully obvious in Voltaire’s story is this is *not* the “best of all possible worlds.”

For more than 300 years, scholars have argued over how to interpret *Candide*. The questions have largely centered around intentionality: Is Voltaire attacking philosophy, God, religion, individuals, or society? Is *Candide* supposed to make moral progress by the end, or does he remain an unthinking mouthpiece? Where does Voltaire

himself stand in the theological defense of evil? What philosophy did Voltaire intend for us to adopt in place of Leibnizian optimism? In 1969, a groundbreaking thesis argued *Candide* should be interpreted based solely on its internal messages, without regard for external factors such as Voltaire's perceived intentions or eighteenth-century intellectual squabbles. Instead of clearing up questions, though, the theory introduced a new debate among those promoting the "inside thesis" and others insisting outside evidence could not be ignored.<sup>59</sup> The debate also draws attention to a long-standing literary dilemma, namely that satire has no point unless there is a message, yet *the very nature of satire conceals that message*. Today we have Steven Colbert to remind us how polysemous satire can be.<sup>60</sup>

Is this the same dynamic operating in *Golden Days*? Is it possible that See—like Voltaire—adopts a clueless persona, Edith, to mock California's New Age white liberalism as well as expose the terrible consequences of American militarism? All signs point in that direction, although critics have paid scant attention to the arrows. Frances Barasch tells us *Candide* was a unique form of satire that represents a certain literary category, the grotesque: "In the best or purest grotesque, conflicting elements of ludicrous-horror occur simultaneously, producing in the reader a confused and uneasy tension between laughter and fear or disgust." Barasch adds that novels in this category "have as a common bond a structural reliance on horror perceived through a saving comic vision of humanity." Furthermore, because "the grotesque genre has always been a reflection of creative possibility, of hope overlying human anguish; in our era, it is perhaps the only positive expression in a potentially self-destructive world."<sup>61</sup> *Golden Days* follows the grotesque model. When See juxtaposes comedy against tragedy, and

outrageous consumption against terrible starvation, including a nod toward atomic cannibalism (whereby body parts are nibbled away by radiation), with constant jabs at both girl culture and hypermasculinity, followed by an uncanny return of the original, flawed philosophy—all this points inexorably toward satire and the grotesque. In interviews, See has called *Golden Days* her “best work,” but says she had to “sneak in” certain elements in order to get people through the worst parts:

I kept thinking, “This is an impossible narrative. Nobody will want to read it. The way to get them to read it is to sneak in—they’ll think it’s one kind of a story, then it will turn into another kind of a story, but they’ll be halfway through, and then before they realize it, they’ll be out of it.” It’s like putting your hand on a waffle iron. That material is so frightening, so horrible. The only way to deal with it is to get in and get out as fast as you can.<sup>62</sup>

In other words, See admits to a strategy of camouflage. She also claims to have used “every device of ‘beautiful’ writing” in order to make her message more “palatable.” She actually cried while she wrote the ending: “I would sit in the living room and write and cry, and people would walk by me and I’d be writing and sobbing. . . . I feel very strongly about it, mainly because I think that is the way, a way that we might live through all these dangers, just one small recipe of how we might live.”<sup>63</sup> For See, New Age optimism—a modern version of Leibnizian optimism—manifests itself as that single element of hope in her atomic grotesque. Nevertheless, that message is horrifically ludicrous in the postapocalyptic world. After the holocaust, Edith continues to insist against all empirical evidence that “everything works out more exquisitely than we ever planned,” and even *mocks herself* while repeating Lion’s gospel of abundance and prosperity. At the very moment when she says these things, her own body exhibits some of the worst nuclear injuries we can imagine, and civilization has been utterly destroyed

to the point where people are eating grass and snails and congratulating themselves for killing others who begged them for help—yet these are supposed to be the “Light Ages” rather than the “Dark Ages.”

At this point, readers must seriously ask themselves whether California’s New Age liberalism offers a sufficient response to the Nuclear Age, just as Voltaire’s readers were forced to ask whether the European Enlightenment offered a sufficient response to the eighteenth-century horror show that was Europe. Moreover, because Edith and her upper-class friends never concerned themselves with politics, but only with image and wealth and consumerism and ridiculous consciousness-raising seminars, the discerning reader must further wonder whether the foundational myths of California might be *complicit* in the project of ignoring nuclear risk, not just in the text but also in real life. One could further suggest that, as an author, See herself becomes complicit when she makes the horribly damaged Edith mouth happy discourses of denial and prosperity. See’s academic readers might notice discursive complicity could also be at work when literary critics praise the “affirmative narratives” of *Golden Day* instead of focusing on the horror and suffering.<sup>64</sup> All these interpretations are simultaneously possible, because such is the nature of satire. *Golden Days* raises the issue of atomic self-destruction to a meta-level, by implicating not only politicians, scientists, and generals, but also ordinary citizens, cultural mythologies, western regionalisms, as well as literature itself. Authors who write satires about nuclear holocaust might be complicit. Readers who get sucked into flawed belief systems might be complicit. Critics who focus on discourse instead of reality might be complicit. No one escapes *Golden Days* entirely innocent. The novel swallows readers in a pit of irony, and consumes its own textual integrity in the process.

Literary cannibalism also appears in another dark atomic comedy, Tim O'Brien's *The Nuclear Age*.<sup>65</sup> This novel explores Cold War anxiety, and particularly its long-term effects on the children of the 1950s, who were raised under the threat of the atomic bomb, then forced to confront or participate in the Vietnam War, and later, as parents, faced the uncanny recurrence of atomic anxiety in the 1980s under the Reagan administration.<sup>66</sup> Despite the humor present throughout the novel, O'Brien's protagonist, William Cowling, exhibits deep psychological trauma, directly attributable to the nuclear fear that has haunted him since childhood. As a child in the late 1950s, he builds his own fallout shelter in the basement to protect himself from the atomic bomb. As a college student in the 1960s, he starts a grassroots anti-war movement. As a draft dodger in the early '70s, he reluctantly joins a communist terrorist organization. As an adult in the '80s, he makes millions from a uranium discovery. Then he gets married, has a daughter, and seems to be living the American dream—until one day it all falls apart and he starts digging a hole in his backyard. His wife and daughter, alarmed by his mental state, make plans to escape, but William locks them inside the house, and finally, drugs them and carries them into the giant hole, where he plans to dynamite and entomb all three of them in a desperate attempt to keep his family intact. The hole not only represents the nuclear missile silos of the Midwest explicitly referenced in the text, it also represents William's own bodily cavities—a mouth, an anus—so that when he tries to fill the pit with his wife and daughter, he is in essence *swallowing* them.<sup>67</sup> At the last minute, his twelve-year-old daughter stops him from blowing them all up, and the book ends with an oh-so-reasonable separation agreement, i.e., a moment of domestic *fission* as well as *fiction*.



Critic Daniel Cordle notes *The Nuclear Age* is unique among atomic literatures, because it is not about actual nuclear explosions but rather about “the experience of living with this threat, unresolved, over a long period of time.”<sup>68</sup> Because William is a (largely untrustworthy) narrator who explores his own thought processes, the novel provides good fodder for psychological analysis. Throughout his life, William experiences constipation during moments of psychological crisis, and diarrhea during moments of physical danger; thus his psychological blockages have physical manifestations, providing plenty of opportunity for self-mockery and eschatological humor. At least one critic has investigated the sexual themes present in *The Nuclear Age*, including homoeroticism, incest, repression, phallocentrism, etc.<sup>69</sup> The issue of masculinity also arises, because as a child, William’s penis was injured in a bicycle accident, then sewed together by a Dr. Frankenstein character, leaving a massive zipper-type scar that makes him the lifelong target of jokes over his “mangled pecker.”<sup>70</sup> As a Vietnam veteran, O’Brien is so well known for his psychologically conflicted war novels that one critical commentary calls him a “trauma artist.”<sup>71</sup> An earlier novel about Vietnam won the National Book Award for O’Brien in 1979. However, *The Nuclear Age* was greeted in 1985 somewhat negatively, with reviewers calling it an “awkward polemic” and a “tepid cartoon.”<sup>72</sup> O’Brien responded with an “I-meant-to-do-that” defense: “*The Nuclear Age* in general was meant to be a big cartoon of the nuclear age, with everything heightened and exaggerated.”<sup>73</sup>

The novel begins in, and cycles back to, William’s fictional hometown of Fort Derry, Montana, which is important because Fort Derry is supposedly located near the Custer Battlefield National Monument at Little Bighorn, the site where General Custer

made his infamous Last Stand in 1876. Good evidence exists that O'Brien meant to fashion William as his alter-ego.<sup>74</sup> However, O'Brien was born and raised in Minnesota, not Montana. Thus he deliberately set this novel in a location that references a symbolic moment in the history of the American West. Custer's Last Stand has been called the "central fable" of the post-Civil War capitalist-era American West.<sup>75</sup> As a child, William (whose father calls him "cowboy") attends the annual celebration of Custer Days in his town, where the final battle is constantly re-enacted. His father even has a recurring role as the martyred general in the pageant, so young William has to watch his Dad "die" every year:

It was the implacable scripting of history: my father didn't stand a chance. Yet he remained calm. Firing, reloading, firing—he actually smiled. He never ran, he never wept. He was always the last to die and he always died with dignity. Every summer he got scalped. Every summer Crazy Horse galloped away with my father's yellow wig.<sup>76</sup>

Even though William knows it was all an act, Custer's ghost comes back to haunt him again and again throughout his life. At his father's funeral, William the adult wishes he had asked certain questions: "What about Custer Days? The fairgrounds—why did he die? What was the point? Honor? Irony? What? I wanted to know. 'I was just a kid,' I would've told him, 'I hated it, every fucking summer you always *died*.' I would've pinned him down. I would've demanded answers."<sup>77</sup>

Thus the reader is alerted from the start that this is a particularly *western* tale, and yet no critic has ever explored it as such. For more than a century, the story of General Custer played a mythical—and controversial—role in both the history of the West and the more general history of the United States. Volumes were written about Custer. Statues were erected in his honor. Poems and songs were composed. Paintings were

painted. Films were filmed. Fan clubs were created. Pilgrimages were instituted. Custer's Last Stand functioned almost immediately at the level of myth rather than history by propping up several faltering national narratives: "Stripped to its essential element of bravery and isolated as one moment of perfect heroism, Custer's Last Stand was the longed-for proof of an American destiny that transcended current affairs and was more real than reality."<sup>78</sup> After the Civil War, Custer's story was almost immediately merged with that of the "Lost Cause," the myth that established the Confederacy as self-sacrificing heroes fighting for their freedom against a tyrannical and barbaric North.<sup>79</sup> At the turn-of-the-century, Custer served the purposes of imperialism and anti-immigration, as the Tragic General became the Great White Father defending civilization against brown savages.<sup>80</sup> In 1886, Buffalo Bill Cody added a re-enactment of Custer's Last Stand to his traveling frontier extravaganza, cementing two frontier icons together so tightly historians have a hard time sorting out whether Custer grew his hair long to imitate Cody, or vice versa.<sup>81</sup> However, historian Louis S. Warren has closely examined the Buffalo Bill show, and determined it had less to do with Custer himself and more to do with turn-of-the-century anxieties about masculinity and gender roles. The show, Warren says, was "perennially popular in part because it was so adept at manipulating and soothing certain fears about women, homemaking, and the role of men." In particular, one ever-popular feature, the Attack on a Settler's Cabin by Hostile Indians, who were driven off by White Men on Horseback, emphasized that in a savage world the "only safe place for women was the house and the only safe social condition was dependence on white men." (Native women in the show represented "mobility, nomadism, the opposite of settlement.")<sup>82</sup>

Buffalo Bill was thus responsible for linking two closely related archetypes—Custer’s Last Stand and the Defense of Domesticity—and writing both in indelible ink onto the frontier myth. It is precisely these two grand narratives that Tim O’Brien weaves into *The Nuclear Age*, creating a hybrid act we might call “*Domesticity’s Last Stand*.” In this novel, domesticity turns into a form of white cannibalism when William the patriarch is seized by a deep desire to swallow his wife and child to prevent them from escaping into an unsafe nuclear world. William’s Last Nuclear Stand represents a desperate attempt to entomb Domesticity in the bowels of the western wilderness.<sup>83</sup> As western eco-writer Rebecca Solnit puts it, somewhat more tamely, “What, after all, is the American idea of a nuclear Armageddon but that of the preservation and reinvention of the [domestic] frontier?”<sup>84</sup>

The Custer Myth followed other classical “last stand” stories (Gawain, King Saul, Roland) so closely that one folklorist has mapped out the pattern:

The hero and a small band are

- a) Surrounded and overwhelmed by
- b) A much larger force of
- c) Racial or national aliens.
- d) Rash courage or pride has led him to fight at all, and
- e) Though the battle goes well at first,
- f) Treason or cowardice among one or more of his men turns the tide.
- g) A heroic stand is made in which
- h) Many of the enemy are killed
- i) On or near a mountain from which
- j) Help has been summoned, though it is too late.
- k) The hero spurns a chance to escape, preferring to die with his men.
- l) Wielding a sword which has served him well in the past, the hero is
- m) Among the last to die, if not the last.
- n) ***One man, usually insignificant, survives and carries the news.***
- o) A eulogy is intoned over the hero’s corpse, often by his slayer, but
- p) The victors are punished by the vengeful comrades or countrymen of the hero.<sup>85</sup>

This drama plays out over and over in *The Nuclear Age*, at all levels of nation, community, family, and individual. Although William insists from the beginning he's not interested in dying for a cause—"there's nothing worth dying for," he says—he constantly finds himself re-enacting the Last Stand story. Throughout his life, he has visions of atomic warfare, of nuclear warheads flashing across the sky and exploding on earth's surface, nuclear submarines rising up from the water and taking aim, missiles rising from the ground. Thus it's not just his father who acts out Custer's death over and over, it's also William himself. Time and again, William becomes a (reluctant) hero on a hill or in a bomb shelter or in a so-called safe house, surrounded by hostile forces beyond his control, inserted into the Last Stand myth against his will. He is constantly called a coward, even by his girlfriend. He calls *himself* a coward,<sup>86</sup> but he also sees himself as "a member of Custer's lost command,"<sup>87</sup> thus challenging the representation of heroism as it appears in the Custer myth. William's moral code is "There's nothing worth dying for," along with its corollary, "There's nothing worth *killing* for." By contrast, his girlfriend, Sarah, who also claims to be vehemently against death after growing up in a mortuary as an undertaker's daughter, is willing to both kill and die for the cause of peace, an inconsistency that William just can't wrap his head around: "Love and war. If necessary, I'll wipe out the world," Sarah says at one point.<sup>88</sup>

O'Brien calls William the "only hero I've ever written." It took more courage to dodge the draft, O'Brien says, than to be drafted like O'Brien himself was.<sup>89</sup> Thus *The Nuclear Age* is O'Brien's speculation about how his own life might have turned out if he'd walked away from the war.<sup>90</sup> The conclusion is: Probably not much different. William ends up at war no matter what. Along the way he tries different ways to cope

with his fears. Steven Kaplan has noted that games serve an important function in the novel.<sup>91</sup> Just as the world was playing insane games in order to repress its fears of nuclear reality, so too does William learn to use games and play-acting to manage his own fears. Even as a young child building a bomb shelter out of a ping-pong table, though, William understands there is something perverse in the fact that everyone has to engage in games, or pretense, in order to stay sane. When the Cuban Missile Crisis occurs, the terrified teenager begins seeing “flashes,” as bombs start exploding in his mind. His parents finally take him to a psychologist named Chuck Adamson. A hilariously funny scene ensues, in which young William discovers Chuck is just as scared as William is about the state of the world, and William becomes the counselor for Chuck. Of course, this might have been a deliberate strategy on Chuck’s part, but neither William nor the reader can be entirely sure. In their last session, after William has finally unburdened his darkest secrets, Chuck announces he’s going to run for governor; a new “racket” to replace the old charade of psychology—i.e., another game to cope with his fears about the world.<sup>92</sup> William remembers this later as a college student. One night he thinks he sees a nuclear missile rising from the Little Bighorn, and his anxiety reaches the point of near-suicide. He takes out the paper Chuck gave him many years earlier with a phone number written on it, but when he calls, there is no answer, so he carries on an imaginary conversation with his former psychologist. In William’s head, Chuck tells him, “Politics...give it some thought.”<sup>93</sup> And so William starts an anti-war movement at his university, a lone ranger in the cafeteria, holding up a sign that says “THE BOMBS ARE REAL.”<sup>94</sup> One thing leads to another, and soon William has a small group of Last Stand heroes—“The

Committee”—surrounding him to help fight the war. But they are a bloodthirsty bunch, he soon learns, and they require constant supervision lest they actually kill someone.

The coping game of Politics works for a while, until William gets a draft notice. Once again, his parents cannot save him from impending doom. His alternatives shrink, until his final choice is to join the underground terrorist group where the other Committee members have already landed. On his nighttime plane ride to Miami, William experiences yet another terrifying crisis when he looks out at the sky and sees threat everywhere, with bombs exploding and America going dark: “One by one, all along the length of the eastern seaboard, the great cities twinkled and burned and vanished. . . . I knew what was next, and when it came, I watched with a kind of reverence. There were flashes of red and gold. There were noises, too, and powdery puffs of maroon and orange and royal blue. . . . the laws of physics.”<sup>95</sup> This time he finds a different counselor, a stewardess named Bobbi who holds his hand and comforts him for the rest of the flight. Like Chuck, Bobbi leaves William with a piece of paper, a *text*, pinned inside his coat, a copy of a poem she wrote that supposedly expresses her “deepest feelings” for William.<sup>96</sup> Thus a new coping game is suggested, *Domesticity*. But this strategy, too, will have its flaws.

William spends the next few years as a *domestic* terrorist ensconced inside a *safe house* with his adopted terrorist *family*. The house merges Last Stand and Domesticity together, being a space where Sarah the terrorist plays house by baking cookies while wearing “a cotton nightgown with lace and blue ribbons, her hair in curlers, puffy booties on her feet.”<sup>97</sup> Whereas William’s role in the Committee was to hold the others back from their worst excesses, in the Underground that role is gradually assumed by Ned

Rafferty, a former football player who will become the “father” of the group. When William first meets his rival at a costume party, Ned is dressed as Crazy Horse, the warrior who led the Lakota to victory at the Little Bighorn and then died in his own Last Stand just one year later.<sup>98</sup> Ned the football player eventually takes William’s place as Sarah’s boyfriend—a natural fit, since Sarah is a former cheerleader. William learns to like Ned, because Ned has principles resembling his own. However, Sarah never stops wanting William, even though William refuses to commit himself to her. Sarah says her one goal in life is to “be wanted,” which seems to include being wanted by the nation-state as a terrorist, but what she wants *most* is for William to want her. Significantly, Sarah is described in terms of nineteenth-century savagery. She has dark eyes, dark hair, dark skin. She is athletic and physically fit. Her sexual appetites are kinky and endless. She prefers nomadism over settlement. In short, she is the seductive “red bride” whom Richard Slotkin calls the “key” that allows white men to enter and possess the wilderness.<sup>99</sup> Like Pocahontas, the Indian princess who saved Captain Smith from certain death, Sarah also finds herself rejected by the man she saved. No wonder it can never work out with William; Sarah does not adequately represent white domesticity, even if she fantasizes about escaping to Rio and having babies. She has to settle for a substitute, and so Ned becomes her John Rolphe.

As the courier for the terrorist cell, William is the “lone survivor” who reenacts his escape from the Last Stand—the safe house—over and over. When he is supposed to be flying across the country on terrorist business, he spends most of his time trying to track down Bobbi, the blond stewardess. But his nuclear anxiety soon returns, and another breakdown looms when he learns about the death of his father. Since he’s a



terrorist, he is forced to watch his father's funeral through binoculars from a nearby hill surrounded by his terrorist friends in yet another Last Stand circle of defense. This time, though, William will make his final escape. He arranges a meeting with his former psychologist, Chuck Adamson, who introduces him to genuine domesticity by taking him home to meet his "pretty wife and four terrific kids." Adamson tells William he needs to imagine a "quality future" for himself, and then "go out and make it happen."<sup>100</sup> William makes one last trip back to the safe house, where he and Ned secretly destroy a cache of weapons so the terrorists can't actually kill anyone, then William returns to Montana, where Adamson places him inside another safe house, a cottage in the mountains that allows William to re-enact frontier life by washing dishes and chopping wood. After six years hiding out as a single, unattached Mountain Man, William is allowed to consult a lawyer, and somehow he walks away from his past. He then earns a master's degree in geology and re-locates a cache of uranium in the Sweetheart Mountains that he and Sarah discovered years before. He brings his terrorist friends in on the project, and they end up making \$25 million by selling the claim to Texaco. Like the rest of America in the 1980s, the former radicals sell their souls for a piece of the giant nuclear pie: "Face it," Sarah says, "we're established. Donated our scruples to the highest bidder. Buckled, snapped, sold out."<sup>101</sup> The peace activists are now complicit in the nuclear weapons cycle.

Now rich and free, William can enact the next step in his domesticity plot. He finally tracks Bobbi down after a global search that ends at the United Nations headquarters in New York City, where the United States is engaged in its own Last Stand against Communism. Sarah helps him on this quest, hoping William will change his mind at the last minute and realize Bobbi is a fraud. It turns out Bobbi has been handing out the

same poem to men for years, promising them her undying love and fidelity, running away with one man after another, then escaping their grasp. Still William pursues her, captures her, marries her, and ensconces her inside a house built just for her in Montana's Sweetheart Mountains. Bobbi never speaks any dialogue, so the reader knows her only through William's narration and through her poems, which she pins inside his clothing, thus placing herself inside him as a kind of sacred self-offering. Because Bobbi never fully appears in the narrative, we must conclude her role is largely symbolic. Indeed, she is a "fabulously textual" Myth of Domesticity that is constantly escaping from itself. By the end, Bobbi has become so absent their daughter Melinda has to speak her mother's words for William.

William's biggest crisis of all comes when, within the space of a few months, both his mother and Sarah die; then Bobbi disappears for several months and when she returns, asks for a divorce; and finally, the remainder of William's terrorist friends die horribly when their "safe house" is set ablaze by government forces trying to recover a stolen nuclear missile. Now William really is the lone, escaping survivor of the Last Stand myth, the one who must tell the story of his comrades-in-arms to the world. Instead, this traumatized progeny of the Cold War reverts to his original, childhood coping strategy of building a bomb shelter. The reader has been following this part of the story from the beginning, through flashbacks and flash forwards. As William starts digging in his backyard, he finds he can't stop, and the supposed "shelter" gets bigger and bigger. When he hits bedrock, he uses dynamite. (Those terrorist years finally came in handy.) The hole begins speaking to him, revealing the darkest recesses of William's own mind and seducing him with the pleasure of "nothing-ness": *"I am all there is. ...I*

*am, in modesty, neverness. I am the be-all and end-all. I am you, of course. I am your inside-out—your Ace in the Hole.*”<sup>102</sup> Here again is the absent presence that characterizes not just nuclear holocaust, but apocalyptic literatures in general. According to literary critic Douglas Robinson, certain types of American apocalypse progress not toward romantic reconstructions of paradise, but rather toward an annihilative void where “[n]othing is finally revealed as the only *something* there is, an absence with all the destructive force of a presence.”<sup>103</sup> William’s unconscious fear of death and nihilism merges with the nuclear threat, so that weapons of mass destruction transform seamlessly—and almost reasonably—into mass *self*-destruction and nihilism.

When Bobbi and Melinda make plans to leave, William cuts the phone line and imprisons them inside a bedroom, passing food to them through an access hole inside an access hole he cuts in the door. In return, they pass waste and poems back to him. At one point, William *chews up and swallows* one of Bobbi’s poems, as a harbinger of what he is about to do with her personhood. When the hole in the backyard begins to resemble a nuclear missile silo, William decides to place Bobbi and Melinda inside it and blow all of them up together in one final Last Stand: “Folded in forever like the fossils....Here, she can’t leave me. The fossils don’t move. Crack open a rock and she’ll be curled around me. Her smile will be gold and granite. Immutable, metamorphic, welded forever by the stresses of our age. We will become the planet. We will become the world-as-it-should-be. We will be faithful. We will lace through the mountains like seams of ore, married like the elements.”<sup>104</sup>

Before William can push the firing button, though, his daughter Melinda wakes up from her drugged sleep and demands to know what's going on. This is the moment when William discovers *he has finally found something worth killing for*:

We will kill for our children. Our children will kill for us. We will kill for families. And above all we will kill for love, as men have always killed. Crimes of passion. As terrorists kill. As soldiers kill for love of honor and love of country. Just love. And when there is no love, there is nothing worth dying for, only nothing, and Melinda knows this.<sup>105</sup>

As Melinda pleads with him, William realizes he can't press the button. The very thing worth killing for—his family—will be destroyed in the act of saving them. He still knows the bombs are real. He knows domesticity is a myth. He knows if he backs out of his plan, he will “lose everything, which is crazy, but I choose it anyway, which is sane.” He helps Melinda get out of the hole, removes the still-drugged Bobbi, and finally, returns to the site of his last Last Stand and blows up the hole. Against all common sense, he tells us, he *chooses to believe* nuclear war cannot happen, that domesticity might still be possible, that in the end, “*E* will somehow not quite equal  $mc^2$ .”<sup>106</sup> Of course, this is precisely the insane definition of sanity in the nuclear world, where we all choose to believe something contradictory to what we know is real. Reality must be suppressed, because as Geoffrey Sanborn says, when it comes to cannibalistic encounters, the Real is “the thing that must always be swallowed but can never be digested.”<sup>107</sup>

William's Wild West Show, with its final performance of “Domesticity's Last Stand,” is a *drag show* that *drags* William against his will onto a frontier stage and forces him to perform night after night. He knows the myth is bogus, yet exposing it as such makes him look insane. He has to find a way to play his role and still escape intact—an increasingly impossible situation. In that sense, the hole that threatens to swallow

William and his family is actually the myth itself, or the void that is the myth. The fact that William forces himself at the end to go back on stage and continue acting his role is no comfort at all. While readers feel relief William's wife and daughter are safe, that sense of safety is grounded in the flimsiest of pretenses. Knowing the show will go on, *must* go on, is only slightly less frightening than the alternative. The cannibalistic frontier myth still lurks beneath the theater, threatening to collapse the stage at any moment.

Like Edith in *Golden Days*, William knowingly adopts a false belief system—a con-game—in order to survive nuclear hegemony. Clearly these are strategies of *survival*, rather than strategies of resistance. Both Edith and William might have begun their literary lives resisting hegemonic forces, but they end up in a state of what we can only call submission and surrender. Given the irony and satire in these stories, we might be tempted to label this *survivance*, a term coined by Gerald Vizenor to describe Native American survival/resistance strategies. Survivance is a declaration of presence under the threat of real or discursive annihilation and is often associated with storytelling, irony, and trickster figures: “Native survivance is an active sense of presence over absence, deracination, or oblivion; survivance is the continuance of stories, not a mere reaction, however pertinent. . . . Survivance stories are renunciations of dominance, detractions, obtrusions, the unbearable sentiments of tragedy, and the legacy of victimry.”<sup>108</sup> But at closer glance, what Edith and William are engaged in is not survivance. Survivance might employ camouflage and satire for its purposes; it might even adopt the myths of power in order to tear down that power, but it never allows the disguise to assume control. Edith and William know the myths they have adopted are bogus, yet they relinquish themselves to those myths. When the myths of the American West turn back

upon westerners and begin devouring them *with their full knowledge and participation*, that's not survivance. That's consensual cannibalism.

It's important to note here the gap between characters and authors. We can't accuse these authors of surrendering to hegemonic mythologies simply because their characters do. See and O'Brien are offering a critique of the myth as well as a critique of myth-colluders. Obviously there is value in producing texts that reflect our own mythical fallacies back to us, all the better to "see" them, but at a deeper level, these authors are suggesting literature might simply be inadequate at confronting the myths of the nuclear frontier. Using fiction to challenge fiction seems to trap us in an endless pit of...well, fiction. Neither Edith nor William manages to escape the pit of textuality and myth. In fact, their authors have deliberately highlighted the failure to escape. It might very well be that See and O'Brien are expressing a deep frustration regarding the limits of literature and discourse in the nuclear world. Apocalyptic literature in America has long obsessed over the failure of literature to adequately interpret or affect reality.<sup>109</sup> The nuclear case is just the latest example of what Lawrence Buell calls the "metanarrative irony" exhibited by a genre that finds it hard to "keep a straight face" when engaging in self-reflexive examination of its own absurdities.<sup>110</sup> See and O'Brien clearly struggle with the fact that even though nuclearism is deeply grounded in myth and discourse, the realm of language doesn't seem to provide an effective response or corrective. In the process of responding to nuclear mythology, literature might find itself colluding with the very myths it attempts to resist, eventually ending up trapped and self-aware in the mythical void, just like William and Edith.

To escape that trap, we must turn to yet another author, Rudolfo Anaya, whose first novel about a postwar Mexican-American family living in New Mexico is not generally read as atomic fiction.<sup>111</sup> Instead, *Bless Me, Ultima* has been called a Chicano *bildungsroman* as well as a “cosmic drama” of good and evil.<sup>112</sup> It features a young boy, Antonio, who comes of age when his three older brothers return from the war exhibiting varying degrees of damage, with the greatest injury being their psychological separation from their cultural and family heritage. Antonio seeks desperately to reconcile the dichotomies in his life—not just racial ones, but also cultural and religious ones—and the natural environment becomes one means by which he accomplishes that goal.<sup>113</sup> The novel is often placed in the category of magical realism because an elderly *curandera* named Ultima, or La Grande, instructs the boy in ancient, mystical healing techniques that challenge the Catholic teachings in which he simultaneously immerses himself.<sup>114</sup> Anaya alludes to history and myth from several different cultures: Aztec and other pre-Columbian myths, the stories of the Spanish conquistadors, and Christianity.<sup>115</sup> Critics are often intrigued by the psychoanalytic possibilities in the novel, because it includes multiple dream sequences as well as mythic visions. Like *Ceremony*, commentary on *Ultima* tends toward cultural universalization, with one critic suggesting *Ultima* “offers to modern America a mythic vision that has been lost, a vision of the sanctity of life... that transcends the lineal, judgmental, and historical view accepted by Western Christians.”<sup>116</sup> The novel encourages such interpretation because it features a conflict between universal origin myths, namely the opposing myths of hunter-gatherer vs. agriculturalist, with one side represented through Antonio’s matrilineal line and the other through his patrilineal line. Ultima becomes a mediator of oppositions, someone who synthesizes nature and

culture with her healing arts.<sup>117</sup> By 1985, the novel had already “captured more readers and critical attention than any other single work of Chicano literature.”<sup>118</sup>

The atomic bomb is alluded to several times in the text, with the most obvious passage occurring at the end of the book, when the residents of Antonio’s town begin to associate the Los Alamos bomb test with the harsh duststorms they have been experiencing: “‘Man was not made to know so much,’ the old ladies cried in hushed, hoarse voices. ‘They compete with God, they disturb the seasons, they seek to know more than God Himself. In the end, that knowledge they seek will destroy us all.’”<sup>119</sup> But the children were the first ones to connect the bomb with their own destruction, because a much earlier passage refers obliquely to end-of-the-world rumors spread at the elementary school once the war is over: “That year we waited for the world to end. Each day the rumor spread father and wider until all the kids were looking at the calendar and waiting for the day. ‘It’ll be in fire,’ one would say, ‘it’ll be in water,’ another would argue. ‘It’s in the Bible, my father said.’ The days grew heavy and ominous. Nobody seemed to know except the kids that the world was coming to an end.” The day comes and goes without incident, and everyone forgets about it, while Antonio learns to read the “magic of letters” so well he gets to skip a grade the next year.<sup>120</sup>

Thus the bomb in *Ultima* is associated with modern science and education, but also with magic. American studies scholar Leo Marx has discussed the ways magic can operate as a literary metaphor for science and technology in his seminal analysis of Shakespeare’s *The Tempest*. According to Marx, Prospero manages to tame the wild forces of his unnamed island—populated by the cannibalistic Caliban—using “art” or magic learned in the universities of Europe. Marx interprets Prospero’s powers as a



“machine in the garden,” a reference to technology and science that can turn a wilderness into a garden of prosperity and harmony.<sup>121</sup> I would argue Ultima plays Prospero in Anaya’s natural landscape, as a character who wields a powerful magic that can mediate between savagery and civilization in ways Catholicism seeks to do, but cannot fully accomplish, in the novel. But it’s not just the healing magic of herbs Ultima brings; it’s also a deadly power to destroy enemies. Her very name suggests she represents one particular kind of magic, the “ultimate” technology of the atomic bomb. Although no explosions occur in the novel, there are many references to whirlwinds and fire, in the context of both evil and good. For example, just before his brothers return home from the war, Antonio’s parents ask Ultima to bless their youngest son on his first day of school. During the blessing, Antonio has a vision: “I felt Ultima’s hand on my head and at the same time I felt a great force, like a whirlwind, swirl about me. . . .The twister struck with such force that it knocked me off my feet and left me trembling on the ground. I had never felt such fear before. . . .Then it was gone, and its evil was left imprinted on my soul. . . .how could the blessing of Ultima be like the whirlwind? Was the power of good and evil the same?”<sup>122</sup> Later, of course, the whirlwind will be connected with the effects of the bomb, as noted above. Shortly after that connection is made, Antonio experiences his first Communion on Ash Wednesday, where “the body becomes dust and trees and exploding fire, it becomes gaseous and disappears, and still there is eternity. Silent, unopposed, brooding, forever. . . .”<sup>123</sup> Thus the bomb has an absent presence in the novel that Ultima helps bring to the surface. Ultima’s arrival in Antonio’s village is called both the “beginning” of a new era and the “end” of a time of peace, making her arrival just as

paradoxical as that of the atomic bomb, which is being constructed at that very moment just a few miles to the southwest of Antonio's town.<sup>124</sup>

Ultima's evil counterparts in the novel are three witches—*brujas*—from a neighboring community, who allegedly use their powers for evil, to sicken and kill local residents. The girls are reported to be making dolls to represent their victims, and sticking pins in them, something which Antonio also catches Ultima doing. One night, Antonio's Uncle Lucas chances upon the girls as they dance around a fire: "He dismounted and crept up to a clearing from where the light of the fireballs shone. He drew near and saw that it was no natural fire that he witnessed, but rather the dance of the witches. They bounded among the trees, but their fire did not burn the dry brush."<sup>125</sup> Soon afterward, Lucas falls sick, and even the doctor in Las Vegas cannot cure him. When he is almost dead, Ultima is finally called in to work her magic. She decides to take Antonio with her, to help in the ceremony. But before she goes, she explains her powers have consequences that can lead to unintended effects on those who use them:

"I will go with one understanding," Ultima cautioned. She raised her finger and pointed at both of them. The gaze of her clear eyes held them transfixed. "you must understand that when anybody, bruja [witch] or curandera, priest or sinner, tampers with the fate of a man that *sometimes a chain of events is set into motion over which no one will have ultimate control. You must be willing to accept this responsibility.*"...

"I will accept that responsibility on behalf of all my brothers," my uncle Pedro intoned.

"And I accept your help on behalf of my family," my mother added.

"Very well," Ultima nodded, "I will go and cure your brother."<sup>126</sup>

The ceremony is long and arduous. Unfortunately, Ultima's cure results in a cycle of vengeance as one of the girl-witches subsequently dies a mysterious death that Ultima

may or may not have caused. Her father, Tenorio, swears vengeance on Ultima. When a neighbor comes to warn Ultima that Tenorio is on his way to kill her, Tenorio kills the neighbor and tries to kill Antonio as well, but his pistol misfires. The murder forces Tenorio underground for a while, but then a second witch-daughter sickens, and strange things begin happening on a nearby ranch belonging to a friend of Antonio's father. Ultima once again is called in, and she reminds Antonio's father, "You know the rules that guide the interference with any man's destiny," to which Antonio's father says, "I know...I must do this for my friends, *so let the bad consequences in your chain of destiny fall on my head.*"<sup>127</sup> Despite this invocation, the consequences will not fall on the father's head. For the time being, Ultima's magic works and again the curse is lifted. At the end of that summer, though, Tenorio re-emerges riding on a dark horse to avenge his two daughters' deaths. He kills Ultima's spirit-animal, an owl that has watched over Antonio since Ultima's arrival, and in return, Uncle Pedro shoots and kills Tenorio. At the same instant, Ultima herself is stricken. On her deathbed, she tells the grief-stricken Antonio, "My work was to do good. ...I was to heal the sick and show them the path of goodness. But I was not to interfere with the destiny of any man. ...With the passing away of Tenorio and myself the meddling will be done with, harmony will be reconstituted. That is good. Bear him no ill will—*I accept my death because I accepted to work for life.*"<sup>128</sup>

In order to fully understand the importance of Ultima's self-sacrifice, we must first recognize that the structure of *Ultima's* storyline echoes the events of World War II, beginning with one of the earliest scenes in which a war-crazed veteran (not one of Antonio's brothers) kills an innocent sheriff for no reason at all while crying out "Japanese sol'jer!," then is lynched by the whole town in revenge. The attack out of the

blue was like Pearl Harbor, while the town's over-reaction starts an all-out conflict between good and evil. The town is tainted by this initial vengeance-killing, which young Antonio witnesses firsthand, and which haunts him through the novel. As the conflict escalates, Ultima must eventually step in and use her powers against her enemies. She must kill rather than heal in order to bring peace, which situates her closer to the evil *brujas* than to the life-giving *curanderas*. She knows full well her actions will have consequences. In *Ceremony*, Silko speaks of a "witchery that returns upon itself," and Ultima's powers have the potential to do exactly that. When she uses them against other humans, even in pursuit of a greater good, she does so knowing the evil will circle back upon herself. Although others try to take the consequences upon themselves, it is Ultima and her young assistant, Antonio, who must pay the price for bringing peace to the town.

*Bless Me, Ultima* is not an obviously "atomic novel," but it does raise on a small scale the larger moral issues of nuclear weapons, which the U.S. employed in pursuit of a larger peace and which eventually returned to attack the homeland as well as the enemy.<sup>129</sup> Ultima uses her powers against her enemies with full self-awareness of its rebound effect, and she accepts the consequences. She willingly risks her own life in order to save those whom she loves. The conclusion of *Ultima* stands in distinct contradiction to Tayo's final ceremony at the uranium mine, where he passively witnesses the sacrifice of another human in his place. In light of Ultima's self-sacrifice, we understand just how flawed Silko's final ceremony was and how flawed Tayo's heroism was. We can accept the decisions Tayo was forced to make, but we don't have to turn him into a superman who saves white men from themselves, nor do we have to turn native stories or literary works of any kind into discourses that will save the world. Tayo

did what was necessary to save himself and the community he loved, but let us not pretend it was more than that. Nor was Ultima's sacrifice more than an attempt to save her loved ones and their town. *Bless Me, Ultima* likewise highlights the failures of Edith in *Golden Days* and William in *The Nuclear Age*, where self-awareness leads not to a greater good or to self-sacrifice, but rather to denial and a return of failed mythological systems. Because of Ultima, Antonio seems to achieve a cautious synthesis of self-awareness, rather than submitting himself to the numerous systems of myth-ideology that surround him. Even if *Ultima* does not offer us a path out of our nuclear conundrum (except through self-erasure), the novel helps readers better understand the self-destructive consequences of "ultimate" technologies that promise to keep us safe from our enemies and yet have the power to destroy us in return. Just as Ultima accepted those consequences, so too must we—or find another way to peace.

What *Bless Me, Ultima* fails to address is that even if we manage to prevent total apocalypse, nuclearism still alters us in a million subtle ways. In the next chapter, the eco-writers of the Atomic West find themselves turned into nuclear cyborgs inside a totalitarian system that leaves little room for western individualism. Under such conditions, the autonomous self struggles to survive, knowing that even a victorious outcome means he/she will be unavoidably altered by the struggle. When we come out on the other side of nuclearism—if we come out—what remains? And how much control do we have over that process? The atomic mystery offers few answers, but insists we continue to explore our options until the moment when exploration becomes impossible.

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## **CHAPTER 8**

### **ON SEA MONKEYS AND CYBORGS: TOTALIZING DISCOURSES IN THE ATOMIC ECO-IMAGINATION**

In 1957, while scientists and generals were setting off bombs in the Nevada desert to keep America safe from communism, an entrepreneur named Harold von Braunhut began selling an unusual product called “Instant Life.” It consisted of tiny crustacean eggs in a state of cryptobiosis, which came to life when placed in water. In 1962, Braunhut changed the name of his product to the whimsical “Sea Monkeys,” and a cultural icon was born.<sup>1</sup>

Many children of the atomic age can remember their first experience with sea monkeys. Braunhut’s marketing scheme depicted sea monkeys as a cozy human-like family relaxing on the floor of an aquarium: Dad, Mom, son, daughter, posing in front of their sea monkey castle, enjoying the perks of modern domestic sea monkey life (Figure 5). Young comic book readers begged their parents for a few dollars and then sent away for their very own sea monkey family. After many weeks of waiting, a tiny package arrived in the mail. Owners were instructed to sprinkle the packet into water. If everything went right, if the water stayed at a precise seventy-eight degrees, a few days later the eggs might “hatch.” With the help of a magnifying glass, one might see something swimming around, something that looked more like insects than the humanoids pictured in the advertisement. Of course, these new pets did not form family

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- 1—A ONE-YEAR SUPPLY of GROWTH FOOD.
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**IT SOUNDS GREAT!** Please send my Sea-Monkey kit(s) and my **FREE** supplies and guarantee. I must be 100% satisfied or you will refund my money. I enclose \$1.25 plus 50¢ shipping charges for each kit.

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(No C.O.D.'s Please) Total amount enclosed \$ \_\_\_\_\_

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Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 **SUPER-RUSH ORDERS (50¢ extra)**

**Figure 5.** Old comic book advertisement for Sea Monkeys (used with permission from Transcience Corporation).

units or congregate in tiny sea-monkey castles. What they did was grow ever so slightly and then die off rapidly.

Sea monkeys were actually brine shrimp that Braunhut bred in a New York laboratory from a species living in the Great Salt Lake, called *artemia salina*.<sup>2</sup> They were part of a twentieth-century trend in science-related toys that included ant farms, model rockets, doctor's kits, erector sets, wind-up robots, and at least one "atomic energy lab set" guaranteed to be harmless.<sup>3</sup> Through these toys, children observed and imitated the world around them, drawing lessons that connected humans with nature and technology. Ant farms, for example, portrayed ants contributing to the growth and development of a

society, just as humans contributed to their communities via jobs and social roles. The ads for sea monkeys suggested brine shrimp somehow fit into the chain of human evolution, a barely visible remnant of that distant moment in time when humans had emerged from the oceans. Sea monkeys appeared to be both human and animal—i.e., *biological cyborgs*. While they might sport tails and antennae, they seemed to confirm the unchanging nature of human families and communities across the millennia and across species. Here was a form of Darwinism everyone could accept, a human-animal hybrid that allowed evolution to coexist with humanism. Of course, there was nothing remotely human about sea monkeys; there was only a mindless, self-replicating biological horde. Sea monkeys were nearly invisible masses of life at such a low level they might as well have been bacteria. As objects of juvenile scientific observation, they were disappointing. As representations of human society, they were terrifying.

Our collective trauma over sea monkeys has been registered in memoir after memoir from that era:

The tragedy of it was that when your Sea Monkeys finally came in the mail and you actually situated them in the bathtub, one by one with tweezers, with expectations of a veritable population explosion, they transformed rather pathetically into jumbo, faceless paramecia. Seven days later, there would be no more to show for your investment than a pile of lifeless worm-nothings—maybe fifteen in all—at the bottom of the bucket that your mother had made you transfer them into.<sup>4</sup>

The most obvious lesson learned by American children from sea monkeys was not to trust advertising. However, more subtle lessons might have been internalized. If encounters with nature reassure us that “the world and I reciprocate one another,” as ecologist David Abram says, then sea monkeys were teaching America’s children they were infinitesimal specks in a vast, uncaring universe designed merely to reproduce and

destroy.<sup>5</sup> As it turned out, that would be an appropriate, though tragic, lesson for the atomic age.

When Braunhut marketed sea monkeys as family units, he was conflating two different but related concepts: *systems* and *communities*. Sea monkeys were part of a biological system, of course, but Braunhut's marketing suggested natural systems were similar to social systems or human communities. Systems consist of independent but interrelated parts that combine to create an emergent whole (that is, a whole that is more than the sum of its parts). Human communities belong to the broad category of "system," in that they are composed of discrete, individual parts that function collectively, but they have unique qualities not present in other systems, even in other biological cooperatives. According to sociologist Kenneth Wilkinson, human societies are composed of individuals who "act purposively in response to their concepts of connections among themselves. That is, they engage in willful, volitional behavior as they interact."<sup>6</sup> As parts of a social system, people deliberately choose to cooperate with each other in order to obtain benefits for themselves and to perpetuate the group's existence.<sup>7</sup> Human communities, then, are supposed to be characterized by meaning and intention, not by mechanical patterns. The systems found in nature are generally considered to be different from human systems because they consist of "interactions between organisms, as distinct from behavior that is a direct result of the actions of individual organisms."<sup>8</sup> The difference between a human community and, say, a swarm of bees or a tub of brine shrimp lies somewhere in the realm of conscious individual action.

The distinction is important because scholars in many disciplines today tend to blur the lines between community and system. One reason was the postwar emergence of



a widespread intellectual paradigm that upended prevailing thought about systems, whether natural or human. Systems of all kinds were no longer viewed as stable, essential entities; they became fluid and complex, filled with both order and disorder. Literary critic Katherine Hayles has named this trend an “archipelago of chaos,” a cross-disciplinary movement that found value in disorder that was previously considered useless or even harmful.<sup>9</sup> The process through which this occurred was not a linear one whereby scientific discoveries led to literary deconstruction, or linguistic poststructuralism inspired chaos theory. Rather, the paradigm arose simultaneously across disciplines.<sup>10</sup> During the course of the twentieth century, scientific views about chaos and order changed, as did humanist views about free will and agency. As a result, natural phenomena today no longer appear quite so unconscious, and human societies no longer appear quite so conscious.

On the scientific side, this paradigm shift was associated in part with the discovery that natural systems are not entirely predictable according to Newtonian law. One of the first shocks registered by the original atomic physicists was the observation that atoms were emitting core particles and transforming themselves into other entities with no apparent warning or pattern. In a 1929 lecture, Niels Bohr noted, “an atom in a stationary state may in general even be said to possess *a free choice* between various possible transitions.”<sup>11</sup> In other words, if the behavior of atoms was not mechanically predictable, then to a certain extent they exhibited the unpredictable characteristics of conscious, living organisms. Even after Bohr’s attempts to quantify subatomic processes through quantum mechanics, the natural world appeared less, well, *mechanical*.<sup>12</sup>

Similarly, the concept of a holistic, cooperative “ecosystem” that naturally and predictably trends toward a steady-state balance point has been questioned over the decades. Biologist Michael Barbour has traced how, starting in the 1950s, ecologists began viewing nature as fragmented, individualistic, competitive, continually changing, chaotic and disordered—in other words, something far from the previous definition of a harmonious and steady-state ecosystem.<sup>13</sup> Some (not all) scientists have started to wonder whether nature can be adequately represented by theory, so unpredictable is it.<sup>14</sup> Today “ecosystem” is still a useful rhetorical tool, especially for environmentalists, but it might be more of a human construct than a scientific reality.<sup>15</sup>

It wasn't just the existence of a spontaneously chaotic natural world that upset established scientific norms; the opposite phenomenon, spontaneous organization, also challenged the predictability of a Newtonian universe. In 1977 chemist Ilya Prigogine won the Nobel Prize for his research on naturally occurring dissipative systems that organize themselves into patterns, a process seemingly at odds with the second law of thermodynamics that describes a universe devolving into chaos, not order. Under certain far-from-equilibrium conditions (i.e., chaos), individual molecules sometimes begin forming orderly systems, as if they were making decisions to cooperate with each other. That is, when one molecule undergoes a chemical change, the others around it will also change, even without experiencing the external trigger, as if invisible signals were being sent and received between the molecules, as if there were a *community* of molecules acting together, a rudimentary society in the process of inventing laws and behavioral norms. At equilibrium molecules ignore each other, but “nonequilibrium wakes them up and introduces a coherence quite foreign to equilibrium.”<sup>16</sup> Although these “chemical

clocks” were first discovered in the nineteenth century, scientists have only recently begun to recognize their impact on system theory. The idea that nature could self-organize at the molecular level was fairly shocking. It was almost as if brine shrimp were found forming themselves into family units.

In humanist thought, the definition of a system has become equally muddled. Here, human communities have been discovered behaving like mindless, interdependent systems that follow natural cycles of order/dissipation/chaos.<sup>17</sup> Michel Foucault’s poststructural ruminations about power are well known; for him, power operates almost as if it were a self-organizing biological entity rather than a human construct.<sup>18</sup> Similarly, Antonio Gramsci’s 1930s treatise on the phenomenon of hegemony in capitalist societies has been resurrected in recent decades precisely because Gramsci asserted human action, whether collective or individual, is not necessarily based on rational thought processes.<sup>19</sup> Herbert Marcuse of the Frankfurt School declared in 1955 humans were so repressed by modern capitalist societies that even repression had been repressed: “Men do not live their own lives but perform pre-established functions.”<sup>20</sup> More recently, a growing school of *posthumanism* has begun to redefine what it means to be human amid the overwhelming predominance of science and technology in postmodern societies. Posthumanism incorporates into humanist discourse all the latest scientific thought from system theory, network theory, chaos theory, and/or cybernetics. The trend is known as posthumanism precisely because “human” is no longer considered a stable concept. For scholars like Katherine Hayles, Mark Taylor, and Donna Haraway, humans are more accurately described in terms of networked nodes or complex information patterns or technological cyborgs—i.e., as parts of a system—rather than as autonomous agents.

System theory is used across disciplines today to describe and predict not just the physical world, but also relationships between and among social systems, industrial systems, economic systems, political systems, language, and human psychology. One reason system theory is so broadly employed is because it illuminates the interdependence not just between parts and wholes, but between conglomerate organizations and their environments (although the boundaries between an organization and its environment are arbitrary human constructs).<sup>21</sup> One criticism of system theory is that it tends toward *totalization*. Indeed, system theory was first developed as an attempt to establish universal principles that would apply to systems of all kinds. It was not so much a theory as a “paradigm for the development of theories”—i.e., a system to help create systems that would describe systems.<sup>22</sup>

For example, system theorist Mark Taylor claims all aspects of life—from the smallest microscopic DNA pattern, to biological entities like the human brain, to myth and language, to social communities, to global markets, to the largest entities in the universe like galaxies—operate as complex, co-adaptive, self-organizing, networked systems in a continual state of change, tending toward ever more complexity.<sup>23</sup> The entire world, Taylor says, consists of collaborative relationships among dynamic selves, parts that exist to sustain the whole, and vice versa. Although Taylor insists systems should not be viewed as inescapable structures that oppress human agency, he nonetheless explains the universe in totalizing terms that scientists themselves would renounce. Scientists have been searching for centuries for just such a “unified field theory” that could predict phenomena at varying scales and under varying conditions, but their goal remains more elusive now than ever before, according to Prigogine: “We come, therefore, to an

important conclusion. ...[W]e will never be able to deduce a theory of irreversible processes that will be valid for every system that satisfies the law of classical (or quantum) dynamics. There isn't even a way to speak of a transition from order to disorder! ... [W]e live in a pluralistic universe in which reversible and irreversible processes coexist, all embedded in the expanding universe."<sup>24</sup> In other words, order and chaos are dependent on each other—an assertion that redefines the very concept of “system” as parts and wholes working together toward a constructive goal.

During the Cold War, the ideological constructs of community and system confronted each other in the American West, where humans were incorporated into a scientific and military system of atomic testing as if they were merely parts that existed to serve the whole. The established narrative holds that the tragic results of atomic testing were entirely unintended because so little was known about radioactivity. It's true scientists were still trying to calculate exact risks during those years, but their rapidly evolving charts and numbers obscured the fact that the U.S. government made a deliberate decision to risk the lives of a certain number of the people it claimed to protect.<sup>25</sup> During that massive but futile effort to force atomic processes into a predictive, Newtonian mold—which quantum theory had already suggested might not be entirely possible—the very idea of *community* began to break down among the human parts of the atomic ecosystem. Scientists and generals increasingly defined certain groups of people as necessary collateral damage, while downwind inhabitants increasingly viewed government systems through a lens of suspicion. The results were long-lasting. Decades after the end of atomic testing, westerners are still resisting their incorporation into what

they perceive as a totalizing federal government, even as they paradoxically maintain a patriotic and nationalist identity developed long before they discovered their betrayal.

No less paradoxical are the western eco-writers who have deliberately used western individualism—which is intimately tied to a history of capitalist resource extraction<sup>26</sup>—and the “wilderness ideal”—which is similarly tied to colonial exploitation and racial/gender hierarchies<sup>27</sup>— to resist the assimilation of citizens into the modern nation-state and the military industrial complex. Anti-government jeremiads are so common in western nature writing that it is hard to locate a twentieth-century western eco-writer who focuses on something other than the damage wrought in the West by the military industrial complex. The connection between the frontier and environmental activism are so strong that historian William Cronon claims contemporary eco-writing and eco-criticism originated within the framework of western literature.<sup>28</sup> Eco-writers like Valerie Kuletz and Rebecca Solnit have made actual and literary journeys to the Nevada desert to document the interactions between nuclear technology, military hegemony, human cultures, and the natural environment during the ongoing conflict Solnit calls “America’s Armageddon.”<sup>29</sup> Photographers Carole Gallagher, Richard Misrach, and Peter Goin have produced disturbing evidence of the military’s lasting impact on the land, wildlife, and people in and around the bombing ranges of the West.<sup>30</sup> Mike Davis discusses the “secret holocaust” still occurring in the West’s “Great Waste Basin.”<sup>31</sup> Chip Ward exposes the devastating impact of hazardous military and industrial waste in the western desert.<sup>32</sup> Even those western eco-writers whose topics center around other land issues generally mention atomic testing and/or military hegemony somewhere in their musings.<sup>33</sup>

This chapter focuses on three western eco-writers—Terry Tempest Williams, Ellen Meloy, and Ed Abbey—who have told complicated stories about what it means to both resist and submit to the totalizing atomic ecosystems of the American West. In their works we can see the inherent conflicts that arise between systems and communities when nuclear technology infiltrates a landscape and its people. Atomic testing incorporated westerners into a system of scientific experimentation and military hegemony as if they were sea monkeys in a bathtub. Downwinders who thought they were part of a national community discovered they had been turned into insignificant parts of a system over which they had no control. But of course, this was neither a spontaneous nor natural phenomenon, despite the efforts of scientists and governmental officials to depict it as such. It was rather the result of deliberate human decisions.

The incorporation of western communities into the atomic system during the Cold War has been explored by ecofeminist and professional naturalist Terry Tempest Williams. Her canonical *Refuge: An Unnatural History of Family and Place* compares the demise of a Salt Lake-area bird refuge in the 1980s with the death of her mother from breast cancer.<sup>34</sup> The bird refuge is dying due to natural climate cycles causing the lake to rise. Williams' mother is dying from what looks at first to be the natural process of disease. Her mother tries to fight the cancer, just as the Utah Legislature tries to fight the rising Salt Lake, but the battle merely buys a little more time for both victims. The cancer keeps returning, and the water keeps rising, and finally Williams learns to accept the deaths of both the refuge and her mother. Only at the end of the story do we learn her mother's death was perhaps not so natural, after all. Williams' family, it turns out, was exposed to fallout from the Nevada Test Site during the 1950s. So many of her female

relatives have contracted (and died of) breast cancer over the subsequent decades that she names them the “Clan of the One-Breasted Women.”

In this fusion of nature writing with autobiography, fiction with nonfiction, nature with culture, science with religion, into what one critic has called an “unnatural genre,”<sup>35</sup> Williams expresses anxiety over the individual’s fate among hegemonic systems of nationalism, religion, culture, government, military, and science. Many critics have noted *Refuge* confronts the inherent tensions between self and community, although the privileged party in that conflict differs from critic to critic.<sup>36</sup> According to Jeannette Riley, Williams promotes a native western ethos of communalism against the cowboy ethos of individualism.<sup>37</sup> Farr and Snyder also find Williams celebrating the “freedom of community” rather than individualism.<sup>38</sup> Others believe *Refuge* is too complex for such judgments. As Katherine Chandler puts it, “instead of offering fixed answers and uncontested resolutions, Williams’s story takes [readers] on a quest” that recognizes the impossibility of a unified and discrete self as well as the importance of process over outcome.”<sup>39</sup> While Williams seems to privilege communality in some passages, in others she defines the self as tragically too fragile in modern society. For example, when Williams asks her dying mother what she believes in, her mother responds, “I believe in me.”<sup>40</sup> That “me,” however, is slowly dissolving inside a larger system, a phenomenon Williams likens to a whale pod: “The experience of an individual whale is valuable to the survival of its community. . . . It has been said when an individual dies, whole worlds die with them.”<sup>41</sup> For Williams, one reason individuals matter is because the welfare of the whole depends on the welfare of each individual part.



At a very basic level, then, *Refuge* is about systems, both human and natural. Williams doesn't simply promote the superiority of communality over individualism, or vice versa; she grapples with the complex moral issues that arise from the interactions between parts and wholes. As a typical westerner, Williams has serious doubts about communality. The problem with being part of a system is systems have a tendency to totalize their constituent parts. Systems operate to ensure their overall survival, but that survival often comes at the expense of individuals within the system. For example, when Williams finally returns to the bird refuge after her mother's death and after the lake begins to recede, she is pleased to find a general renewal process starting to occur. Thousands of birds have already returned to the land: "In this moment, I realize how little I have hung on to for so long."<sup>42</sup> The communal eco-system might be recovering, but countless individual birds were sacrificed during the process. Williams cannot forget that hidden deep inside her new sense of hope lies a totalizing viewpoint that erases individual losses and replaces it with statistical survival. Wrapped in a Mexican shawl during this visit to the refuge, she recalls a trip to a church in Mexico on the Day of the Dead, when "the voices of my Dead came back to me."<sup>43</sup> In this instant, Williams recognizes—and regrets—the consequences of systemic totalization as she sprinkles marigold petals into the lake in a ritual to honor both her dead mother and the dead birds.

As a survivor of atomic fallout, Williams reminds us throughout her book about the dangers of totalizing systems: "When the Atomic Energy Commission described the country north of the Nevada Test Site as 'virtually uninhabited desert terrain,' my family and the birds at Great Salt Lake were some of the 'virtual uninhabitants.'<sup>44</sup> Although she resists the scientific view-from-above adopted by the government during the Cold War,

she paradoxically positions herself as a scientist describing the lake and its birds with that same view-from-above. Like individual parts that fill conflicting roles within various systems, Williams' narration hovers between contradictory forms of individual agency and collective experience, with self-erasure one moment and self-affirmation the next. For example, dying is depicted as a systemic process that must be passively accepted, not willfully resisted: "Dying doesn't cause suffering. Resistance to dying does."<sup>45</sup> On the other hand, recovery might grant her mother a certain amount of agency as she becomes part of a giant, self-healing system: "We can heal ourselves, I thought, and we can heal each other."<sup>46</sup> In another convoluted passage, the individual achieves agency through a never-closing Moebius strip of unselfish selfishness: "By being selfish a woman ultimately has more to give in the long run, because she has a self to give away."<sup>47</sup> Lurking behind this language is yet another totalizing viewpoint, because a self that must be given away for the good of others will probably cease to exist. Of course, Williams' discussion of her growing disaffection from the Mormon faith is also a story about the possible erasure of self through a totalizing system. For Williams, the human (female, Mormon) self must constantly walk a delicate line between individual agency and collective erasure, between communality and co-optation.

Exactly who or what is trying to erase or co-opt the constituent elements in this system is not always clear. Sometimes the individual participates in his/her own erasure, either knowingly or unknowingly. This occurs at multiple levels. At the macro-level, the atomic bomb becomes a kind of parasite or cancer lurking inside the nation, a self-grown tumor that threatens to engulf and erase the national whole. At the micro-level, her mother similarly decides her cancer is part of herself, created by her own cells:

“It feels good to finally be able to embrace my cancer. It’s almost like a friend. . . . For the first time, I feel like moving with it and not resisting what is ahead. Before, I always knew I had more time, that the disease was outside of myself. This time, I don’t feel that way. The cancer is very much a part of me.”<sup>48</sup>

Here again is a contradictory process in which Williams’ mother erases herself by allowing the cancer to take her where it will, but at the same time expresses an agency that owns the cancer. Fascinatingly, even cancer is granted an identity here—a role in the system—but cancer’s selfhood is also threatened by its incorporation into the totalizing system that is the body of Williams’ mother. The boundaries between parts and whole are not stable in this narrative.

From a posthumanist standpoint, Williams and her family members are atomic *cyborgs*, or hybrid mixes of human, disease, and bomb. Self-designated posthumanist Donna Haraway has used the concept of the cyborg to examine the ways humans in the late-twentieth century were “restructured through the social relations of science and technology.”<sup>49</sup> Haraway’s cyborg is not just a technological merging between human and machine, or a biological one between human and animal, but also an historical and social merging of various kinds of human relationships, a joining as well as a disassembling of imaginary constructs like race, class, and gender. Cyborgs are “the illegitimate offspring of militarism and patriarchal capitalism, not to mention state socialism,” Haraway asserts.<sup>50</sup> Since we ourselves created the various systems that merged with us, we are like parasites who constructed our own hosts, or hosts who have crossed into parasite territory. Mark Taylor helps clarify this point: “The strange logic of the *parasite* makes it impossible to be sure who or what is parasite and who or what is host. Caught in circuits that are recursive and reflexive yet not closed, each lives in and through the other.”<sup>51</sup>

Williams' mother and family might exist as parts inside an atomic ecosystem, but they also act as hosts to other systems (cancers, birds, religion), which creates an ongoing interplay between agency and subordination in the text. By embedding her human characters inside totalizing systems, as well as by turning them into systems themselves, Williams creates humans who are simultaneously individuals and not-individuals. They are emergent, complex, cyborg entities defined by their interdependence with other systems and other parts. This is not necessarily advantageous. By definition, some parts of a system in flux will not survive the metamorphosis process. Williams' mother did not survive her atomic cyborgization.

Ellen Meloy was another western eco-writer who imagines herself turned into an atomic cyborg. In *The Last Cheater's Waltz: Beauty and Violence in the Desert Southwest*, Meloy embarks on an atomic pilgrimage across the Colorado Plateau.<sup>52</sup> Her journey takes her to Trinity and Los Alamos, the White Sands Missile Range, and the Gasbuggy Nuclear Test Site. There are multiple ground zeroes here, including the primary one: her home, which stands at the center of her self-drawn map, "The Map of the Known Universe." Meloy's pilgrimage was prompted by a psychic crisis; she felt beset by a catatonic numbness caused by either apathy or rage, although she cannot say which: "Had I forgotten the point of consciousness? Was there a point to consciousness?"<sup>53</sup> Meloy finds herself lacking a sense of self, and correspondingly, a sense of place. She is literally homeless, since she and her husband are in the process of building a new home. At the center of the book (and the center of her map), she returns briefly to southern Utah to help construct the house they will come to call home. Until that is finished, she describes herself as "encamped but not yet established."<sup>54</sup> Her

restless tramping across the desert is like a nomadic migration from watering hole to watering hole. But these are no ordinary watering holes; these are atomic rest stops.

Literary critic John Beck calls *Last Cheater's Waltz* “a book about the substantiation of nuclear subjectivity and a nuclear body.” Meloy’s pilgrimage helps bring to her consciousness a toxic landscape—and a toxic self—that many westerners have repressed. Beck finds Meloy paradoxically retreating into the typical western myth of the “atomized, self-reliant stake-claimer” who is suspicious of authority and verges on “misanthropic isolationism,” while also confronting the local and global implications of the western military-industrial complex.<sup>55</sup> Like Williams, Meloy explores her personal role as a constituent element in a larger system threatening to engulf her. However, Meloy takes a slightly different direction from Williams when she makes common cause with the desert itself. In Meloy’s account, the desert has also been turned into an atomic cyborg. The various uranium mines, testing sites, and nuclear laboratories have forged a “peculiar marriage between desert and physics,” she says.<sup>56</sup> For her, nature—or the nature that has been produced by nuclearism on the Colorado Plateau—is a crossbred monster that doesn’t fit her pre-conceived notions: “The great abstraction of nature—physics and the tools that enabled it—lay across a gnawing chasm from our most tangible experience of nature: the land. Yet here again, on this grand mesa [Los Alamos], the two had coupled intimately.”<sup>57</sup> She speaks of the atomic desert as an “oddity,” even a “tainting.” She tries to manage her anxiety about the uncanny desert by focusing on a non-native species of sheep, the aoudad, which was introduced during the 1950s from Africa by misguided biologists seeking to populate the “empty niches” of the New Mexican desert. “If, with your edited notions of proper native western wildlife, you come

across [an aoudad], you will likely react to its oddity in the same way you react to an atomic bomb under this woodland clearing. Neither quite fits the myth. Both taint the purist's notion of nature's wild garden. One—the enormous globule of unfinished physics—defies rational thought, so before you disintegrate with anxiety, you concentrate on the other, the sheep. It has fur. It breathes.”<sup>58</sup> In case of panic, she says here, think about the *real* rather than the abstract. Non-native life forms are better than *no* life forms.

This new nature—this *postnatural* cyborg desert—clearly does not match Meloy's origin myth. She evokes an explicit sense of betrayal about the interbreeding between technology and nature, as if her lover, the desert, has abandoned her for someone else, something too human: “Out here in the red-boned desert, I once thought, the human voice seemed less consequential than in other places, at best a remote echo of intellectual ascetism. Now it was the only voice I heard, the desert itself an accomplice to betrayal.”<sup>59</sup> The title of Meloy's book references a pop song by Emmy Lou Harris, in which a woman is told by her lover while dancing with her that he has found someone else. Like a betrayed spouse, Meloy is not willing to accept the desert's atomic cheating. “*I loved that desert,*” she laments in italics, referring to the idyllic Hollywood desert from Cold War westerns.<sup>60</sup>

Stephen Tatum places Meloy's desert explorations in the category of “forensic aesthetics,” a cultural paradigm whereby human subjects—especially westerners—are haunted by loss while living within a framework of ruin or contamination. The loss is mediated, Tatum says, by focusing on the aesthetic traces of the past left behind. Even if coherence and meaning cannot be achieved, even if no refuge from loss can be found, exploring the traces of the absent past results in an “emergent space of spectral beauty,” a

“techno-sublime” by which beauty and justice merge together. Meloy’s pilgrimage focuses especially on artifacts like rocks and animals and maps—objects, things—that represent the traces of the absent, original West and provide her with material and aesthetic representations of her loss.<sup>61</sup>

As part of her quest, Meloy engages in a purification ritual which Tatum associates with the process of forensic aesthetics. She establishes a “ground zero” around her new home by fencing her land off from the cattle ranging over the rest of the desert, and she names her space “Unchewed.”<sup>62</sup> Unlike the ground zeroes at Los Alamos and the Nevada Test Site, Meloy’s ground zero seeks to prevent contamination from entering, not to keep it from escaping. When she finds what she thinks is a piece of uranium ore on her land—an invasion of the enemy into her territory—she panics and sets off in search of someone who can identify it for her. To her relief, it is merely a chunk of asphalt. But she knows her efforts are futile, because both Self and Home have already been contaminated by invisible radioactive elements. She can never fully escape her own atomic hybridization: “The pixie dust of the only nuclear war thus far—the bombing of the American West—may or may not cause my demise.”<sup>63</sup>

Ultimately, though, Meloy’s pilgrimage fails to reconcile the past with the present, the natural with the unnatural, and the real with the imaginary. At the beginning, she imagines herself as a bridge spanning the chasm between nature and technology, and she corporeally depicts her quest by laying her body across the “seam” that joins obelisk monument to desert land at Trinity.<sup>64</sup> By the end of the book she pictures her body cut in half, no longer a cyborg but a split personality under even more threat than before: “I felt as if someone’s tire had squished half of me. I wanted to crawl under a rabbitbrush,

determined to never again return to that barbaric patch of injuring ground [i.e., Trinity].”<sup>65</sup> This is no longer a cyborgian border-crossing whereby oppressed humans establish new connections between previously disparate entities. If the cyborg, according to Donna Haraway, “is a kind of disassembled and reassembled, postmodern collective and personal self,” then Meloy fails to achieve the necessary reassembly.

Like other atomic cyborgs discussed herein—Edith Langley, William Cowling, and Terry Tempest Williams’s mother—Meloy decides that to survive in the new cyborgized desert, she has to *surrender* herself to it. In the last pages of the book, she adopts a fatalistic attitude of self-relinquishment:

Someday (maybe today, if I fell off the cliff or lightning struck me) I would leave it all; all these glorious ways to feel the world—the hearing, smelling, seeing, touching, loving, wondering—would end in nothing. In the midst of this maelstrom, I was certain that alive, too, I would be forever lost in this desert’s deep, selfless beauty, literally killed by a magnificent obsession. . . . I was a lowly puddle of plasma, trading “I am alive” for a vague “I tend to exist” and weeping for joy over the sheer revelation.<sup>66</sup>

Meloy engages here in *self*-totalization by submitting herself to the overwhelming domination of the atomic system. In so doing, she accepts the possibility of her own self-erasure. Lawrence Buell has explored the “aesthetics of relinquishment” that Thoreau first established for American nature writers, whereby authors suspend their own ego sufficiently for nature to assume an equal subject position. Rather than disappearing the “I” completely, Buell finds Thoreau instead situated the self “among many interacting presences.”<sup>67</sup> However, in this passage, Meloy goes farther than Thoreau. By introducing the specter of her own death, she adds herself to the list of losses that must be mourned. In essence, she begins haunting herself. As thunder and lightning crash around her, she begins searching for traces of history, for artifacts that might fill the loss of *herself*:



I tried to think of death not as nothingness but as a change in the manner of existence. I tried to think of Hopi jokes. I vowed to revive the Saint Thomas Aquinas Cactus and Succulent Society. ... Then the Map's black scribblings, its tiny, pathetic hieroglyphics, grounded me.

In the sketchbook the Known Universe lay broken into pages. I had to suture the folios into a whole. As one piece, the Map became an overlay, a membrane. Residing on the Map meant not tending the territory. A map on paper turned my gaze away from the desert itself. I must raise my eyes.

It all fit beneath the belly of a lizard. River-polished stones, broken cliffs, skirts of talus clad in ricegrass and claret cup. Red dune fields marching to Colorado, weeds invading from Arizona. ... Clay pots and wrist shells and the jumbled bones of wild geese and tender infants. ... A coyote-trodden lowland with anxious rabbits. ... There was but a single way to exist here, to make my way through this land with grace: take it into myself and rediscover it on my own breath.<sup>68</sup>

The map has been fragmented, but making it whole will not make herself whole. She has to take the desert inside of herself, and turn *herself* into an aesthetic experience. Yet that effort cannot create wholeness, because the Epilogue following this passage locates Meloy at the White Sands Missile Range on the fiftieth anniversary of the first atomic bomb test. She turns and finds herself gazing at a Japanese man, which evokes a sense of "cracking" and "dessionication." Then she launches into a brief discussion of subatomic matter, which consists mostly of empty space, electrons separated from their nucleus by a great void physicists call a desert.<sup>69</sup> Like Thoreau, Meloy puts herself on the same plane as nature, but since nature is already a fragmented and spectral space, she too becomes a ghost. There can be no grounding of the self in the pixelated techno-sublime that is the atomic desert.

When Meloy feels her sense of identity dissolving into particles of quicksand, Mark Taylor would call that process "creative disequilibrium," or the moment when something new begins to emerge from the chaos and destruction of an older system.<sup>70</sup>

Taylor's phrase, of course, takes a godlike point of view that focuses on the larger system and elides the individual sacrifices made in the midst of such chaotic rebirth. For Taylor, innovation occurs in the maelstrom of ever-moving, ever-adapting systems, so that innovation and change are the paramount forces of the universe. System dynamics do not erase the self, he claims, because the self never really existed outside the system to begin with: "The self—if, indeed, this term any long[er] makes sense—is a node in a complex network of relations. In emerging network culture, subjectivity is nodular. . . . I am plugged into other objects and subjects in such a way that I become myself in and through them, even as they become themselves in and through me."<sup>71</sup> Here Taylor articulates a classic poststructuralist position: The system that is humanity has no stable center; there are only subjectivities in a constant state of flux. For Taylor, human agency resides not in resistance to the system, but rather in knowing one is not just a parasite of the system, but also the host of other systems. The classic autonomous self dies in Taylor's theory, but is resurrected as a collectivity, a set of systemic relationships.

Taylor insists system theory empowers individuals, but the western eco-writers discussed here might disagree. Clearly the embedding of humans inside scientific and technological systems has had dire consequences for our western atomic cyborgs. Somewhere inside the vast, impersonal atomic ecosystem, living beings are dying, sacrificed to an amorphous larger cause. Because eco-writers are constantly moving between natural systems and human systems (at least, metaphorically so), their anxiety exposes the tragic consequences of applying system theory to human cultures: When we elide the differences between systems and communities, individual humans lose something in the process. *The autonomous self, imaginary though it always was, begins*

*to appear helpless in the face of its own constructs.* Decisions that were deliberately made by humans—systems that were created by humans—become natural and inevitable. Submission and/or death seem the only possible choices.

Decades before Terry Tempest Williams and Ellen Meloy found themselves altered by the postnatural atomic desert, Ed Abbey was also struggling with atomic cyborgization, but unlike Williams and Meloy, Abbey refused to engage in self-relinquishment. Some critics have castigated Abbey for neglecting to tell the full story of atomic testing in his canonical ode to the West, *Desert Solitaire*.<sup>72</sup> SueEllen Campbell says Abbey included only a “tiny bit” of Cold War history in *Desert Solitaire*, and even that bit was concerned largely with the economics of Moab’s uranium boom.<sup>73</sup> Surely, Campbell says, Abbey must have known he was exposed to dangerous fallout from the atomic tests taking place in Nevada during his years with the Forest Service. She suggests in a brief parenthetical note that perhaps Billy-Joe’s sunburn represents Abbey’s “displacement” of his anxieties regarding radioactivity, a repressing of knowledge.<sup>74</sup> Yet another critic has taken the opposite stance, accusing Abbey of focusing *too much* on apocalypse and not enough on salvation. Alex Hunt claims *Desert Solitaire* seemed to “welcome” humankind’s self-destruction through nuclear apocalypse. He finds Abbey’s atomic fatalism ultimately misanthropic and misguided, and accuses him of engaging in wishful fantasies rather than constructive environmental jeremiads.<sup>75</sup>

Abbey was perhaps the original atomic cyborg among the western eco-writers. He was keenly aware of the “undesirable elements” like plutonium and strontium accumulating inside his own body as well as inside the metaphorical body of the American West.<sup>76</sup> The shadow of the Atomic West haunts much of his writing, but it was

*Desert Solitaire* that passed right through the skin of frontier mythology and exposed the atomic cyborg lurking inside.<sup>77</sup> In a chapter titled “Rocks,” Abbey presents us with a parable about the nuclear weapons cycle. On the surface his tale is an archetypal account of the 1950s uranium boom when thousands of hopeful prospectors arrived in Utah in a chimerical search for yellowcake gold. The story is based on real-life “Uranium King” Charlie Steen, who against all odds actually did find a mother-lode of uranium and became an instant millionaire. Steen was a geologist from Texas who borrowed \$1000 from his mother in 1949 and moved his pregnant wife and three young sons to the Colorado Plateau, where they lived first in a trailer and then in a tarpaper shack near Moab, Utah. Steen couldn’t afford a Geiger counter so he relied instead on a wild geological theory that uranium might be found in the core of an anticlinal fold, much like oil. By 1953 he was a millionaire and was buying up others’ claims. Eventually, though, his gambling nature caught up with him and a series of bad investments forced him to declare bankruptcy in 1968. He died in 2006 in Loveland, Colorado.<sup>78</sup>

Abbey’s mythical family of prospectors is not nearly so fortunate as Steen. In Abbey’s account, a ragtag prospector from Texas named Albert T. Husk arrives in Moab toting a wife and three children in an “antique house-trailer of . . . plywood and tarpaper, a thin coat of aluminum paint, tires worn down to the threads.”<sup>79</sup> Husk gets flim-flammed by a slick operator named Chuck Graham, who sells him a partnership in a useless mine, then seduces Husk’s wife while Husk and his older son are off prospecting. Eventually Graham shoots and kills Husk out in the desert. The boy, Billy-Joe, manages to escape, but falls into a ravine, critically injuring himself. In the meantime, Graham tries to make Husk’s death look like an accident. He places Husk’s body inside his truck and pours

gasoline over it, but in the process of pushing the truck over the ravine, Graham gets trapped inside and falls to his own death in a fiery explosion. Billy-Joe wanders the desert, sunburned and hallucinating, for several days until he is swept up in a flash flood that carries him on a fallen tree through the canyon, where he is found sixteen days later, half-dead. After three days in the hospital, unconscious, he finally dies. His mother goes home to Texas with her two daughters. About a year later, she sells Husk's claim for \$100,000 to the U.S. Air Force, which presumably intends to use the land for a bombing range.

As Hunt has noted, the long and complex parable of Billy-Joe is a lament about the paradoxes of nuclear weaponry, which promised to rescue westerners from poverty while also destroying them with radiation.<sup>80</sup> Young Billy-Joe the uranium miner is exposed to a metaphorical atomic blast. His father's truck blows up in the desert like a bomb, leaving body pieces scattered all over like the infamous dismembered mannequins from the Nevada Test Site. At one point, Billy-Joe sees a burning bush that explodes into a fire so bright he has to cover his eyes and "the joints of his bones grate together like glass."<sup>81</sup> While floating downriver on the log, which becomes both ark and crucifix, the boy is baked by the sun's heat that "poisoned the marrow of his bones."<sup>82</sup> Here is the experience of southern Utah's atomic Downwinders, whose children contracted leukemia at a rate seven times that of their counterparts in northern Utah.<sup>83</sup> They were told over and over that radiation was natural and harmless, exactly like the sun's rays. Earlier in the story, Abbey notes the inherent problems with radiation exposure when he describes a token uranium miner who inhaled yellowcake dust every day and yet remained oblivious to the risk. The danger is "vague, theoretical and intangible" to the miner, but

for the rest of his life whenever he became sick or his health seemed to be ebbing he might remember and wonder about the rumors he had heard years before in the bars and machine shops of Moab, Monticello, Mexican Hat, Green River. Those hot, dusty, strange and isolated little towns set so far apart from one another, so far from anywhere, in the middle of silence and emptiness and burning rock.<sup>84</sup>

This passage is especially poignant, since it's not just the miner but also the forest ranger, Ed Abbey himself, who will wonder the rest of his life whether his health was destroyed by fallout. Abbey died in 1989 at a fairly young age from a mysterious circulatory problem in his veins, so any relationship between his death and radiation is tenuous at best. But therein lies the problem: Downwinders could never be entirely certain about the cause of their sicknesses, which made it only too easy for others to dismiss the risks and rationalize the economic benefits of the military-industrial complex. By the time Abbey published *Desert Solitaire* in 1968, an international furor over atomic testing had forced the U.S. military to move its bomb tests underground, although documentary proof of the damage would not be released until the 1980s. Ultimately, Downwinders' lawsuits against the government would fail—not due to a lack of evidence, but because of state immunity.<sup>85</sup>

Billy-Joe's tragic journey through the nuclear weapons cycle was one of two river trips recounted in *Desert Solitaire*. The other appears in a better-known chapter titled "Down the River." Here Abbey describes a trip down the Colorado made with his friend Ralph Newcomb in 1959 just before Glen Canyon Dam was completed. He depicts the trip as a eulogy to the canyon, a "last voyage through a place we knew, even then, was doomed."<sup>86</sup> In the midst of this idyllic experience, Abbey recognizes atomic testing has contaminated his Eden: "...we take our lunch, on board and under way, of raisins and oranges and beef jerky and the cool cloudy river water with its rich content of iron and

minerals, of radium, uranium, vanadium and who knows what else. We have no fear of human pollution, for the nearest upstream town is Moab, pop. 5000, one hundred miles away. (Blessed Utah!)”<sup>87</sup> Moab, of course, was the uranium capital of the nation at this point, the town that grew around Charlie Steen’s mine and mill. By referencing that specific town and those specific radioactive elements, Abbey acknowledges that the Colorado River water—which he defiantly drinks, unfiltered—has become part of the nuclear cycle. He also becomes part of that cycle when he describes himself and Newcomb absorbing the river, becoming “amalgams of man and man, men and water, water and rock”: “We are merging, molecules getting mixed. Talk about intersubjectivity—we are both taking on the coloration of river and canyon, our skin as mahogany as the water on the shady side, our clothing coated with silt, our bare feet caked with mud and tough as lizard skin....”<sup>88</sup> Their assimilation into the atomic ecosystem duplicates the river’s assimilation into the nation-state: “We think we have forgotten but we cannot forget—the knowledge is lodged *like strontium* in the marrow of our bones—that Glen Canyon has been condemned.”<sup>89</sup> Like Williams and Meloy, Abbey sees himself as an atomic cyborg in a radioactive landscape. He and Newcomb become particles carried along by the wave, like Bartley Alexander when he was thrown off his own bridge and into a river of radioactive decay.

Yet there are indications that Abbey, unlike Bartley Alexander, resists his incorporation into the atomic system. He is constantly climbing up and out of Glen Canyon, and then back down again, as if to prove he is still capable of removing himself from the system. He is an independent particle ejecting itself from the nuclear core. Because Newcomb has “only one good leg,” Abbey makes these trips alone, after they

have camped.<sup>90</sup> At first his hikes take him just above the river, but still inside the canyon: “The climb gives me some comprehension of the fact that we are *down inside* the mantle of the earth. For though I stand on the summit of a considerable hill, at least a thousand feet above the river, I can see no more than ten miles in any direction. On all points the view is cut off, near or far, by the unscalable walls of buttes, mesas and plateaus far higher than the hill beneath my feet.”<sup>91</sup> A few pages later, he takes another solo hike up the Escalante River, entering a separate ecosystem bearing the remains of a long-dead human community, the Anasazi, who lived in the bluffs high above the water as if to assert their own independence from the system. An even higher climb takes him up the cliffs at Hole in the Rock, where a second human community, the Mormon pioneers, in 1879 spent months blasting their way through the rock and then lowering their wagons down, one-by-one into the canyon. They too left their mark on the wilderness, but by 1930, the town founded by this particular group, Bluff, was almost a ghost-town with only seventy people living there. Abbey climbs up to the narrow notch in the cliff carved by the Mormons, then passes through it:

I come out on the surface of a rolling plain of cross-bedded sandstone, the petrified dunes of the Navajo formation, and win the view I’d been hoping for. Far in the distance lie the blue ranges under hard-edged, snowy cumulus clouds.... I walk out onto a point from which I can look down at the river, nearly straight below. I can see the switchbacks of the trail, the fan of greenery at the outlet of the side canyon, but no sign of Newcomb or the boats, deep in the shade of the willows. From up here the sound of the river, until now a permanent part of my auditory background, is no longer perceptible, and the desert silence takes on a deeper dimension. The sound of nothingness? “In the desert,” wrote Balzac, somewhere, “there is all and there is nothing. God is there and man is not.” God? ...who the hell is *He*? There is nothing here, at the moment, but me and the desert. And that’s the truth.<sup>92</sup>



Looking down on the river, Abbey adopts a divine view-from-above. As he says, there is no God here except Abbey himself. He stands outside the river system, a particle that has briefly escaped the wave. Later, on a separate hike to Rainbow Bridge, which he calls “God’s window into eternity.” he continues to climb up to the rim and entirely out of the canyon:

Now I am in the open again, out of the underworld. From up here Rainbow Bridge, a thousand feet below, is only a curving ridge of sandstone of no undue importance, a tiny object lost in the base of Navajo Mountain. Of more interest is the view to the north, east and west, revealing the general lay of the land through which we have voyaged in our little boats. . . . Off in the east an isolated storm is boiling over the desert. . . . The distance is so great that I cannot hear the thunder. . . . Light. Space. Light and space without time, I think, for this is a country with only the slightest traces of human history. In the doctrine of the geologists with their scheme of ages, eons and epochs all is in flux. . . . The landscape of the Colorado is like a section of eternity—timeless. Men come and go, cities rise and fall, whole civilizations appear and disappear—the earth remains, slightly modified. . . . I sometimes choose to think, no doubt perversely, that man is a dream, thought an illusion, and only rock is real. Rock and sun.<sup>93</sup>

Here Abbey goes farther than before, escaping entirely from the canyon. He passes right through “God’s window” and into a place that seems to exist apart from human or divine experience. He envisions himself escaping the most totalitarian system—Time—that humans can imagine. Then he climbs back down to the river and to the moonlit dinner that Newcomb has prepared for him.

Clearly Abbey’s river trip is very different from Billy-Joe’s. While Billy-Joe is swept helplessly along, clinging unconsciously to a log, Abbey makes his way deliberately through the river as well as out of it and back into it. Billy-Joe is the victim of a totalitarian atomic system that has destroyed his family, captured him, and eventually kills him. He is a sea monkey trapped in a bathtub. Abbey, on the other hand, is a

resistant part of that same system, insisting on his right to both escape the system and reinsert himself into it at will. It is the river, not Abbey, that has been captured in this story by the dam-builders: “In the morning Ralph and I pack our gear... and take a last lingering look at the scene which we know we will never again see as we see it now: the great Colorado River, wild and free, surging past the base of the towering cliffs.”<sup>94</sup> That afternoon, Abbey and Newcomb find themselves at the end of their journey when they reach a sign: “Attention: You are approaching Glen Canyon Dam Site. All boats must leave river at Kane Creek Landing one mile ahead on right. Absolutely no boats allowed in construction zone. Violators will be prosecuted. Bureau of Reclamation.”<sup>95</sup>

This is the “end of the river,” of course, in more ways than one. The river that served as a totalitarian system from which Abbey escapes has itself become the victim of a totalitarian system created by humans. The parasite becomes the host, and the host the parasite. Yet Abbey makes certain his readers understand this was not a natural process by which systems inevitably rise and fall, a simple instance of order arising from chaos, or a part submitting to a whole. This is rather the result of deliberate human action: “While we dream and drift on the magic river the busy little men with their gargantuan appliances are hard at work, day and night, racing against the time when the people of America might possibly awake to discover something precious and irreplaceable about to be destroyed.”<sup>96</sup> Humans made this catastrophe and they could unmake it if they so desired. The river does not operate by conscious choice to entrap its human parasites, but humans do consciously create their own systems and then end up trapped by their constructs. Even Billy-Joe ultimately was not trapped by the river but rather by the choices of his own parents: his father’s treasure-hunting, and his mother’s cheating. Of

course, Billy-Joe serves as a metaphor for Downwinders themselves, who were trapped by the decisions of a government that had promised to protect them, as well as by their own decisions to comply with and/or participate in the nuclear cycle. There are many layers of betrayal here, but for Abbey, betrayal always requires human thought. Nature can both nurture and destroy, but it does so without conscious deliberation. Nature is a mindless system; humans are something more. Human communities are not supposed to *cannibalize* their parts so the whole can survive. That, of course, is the definition of totalitarianism.

*Desert Solitaire* wasn't the first time Abbey had tried to write about atomic totalitarianism. *Fire on the Mountain*, Abbey's 1962 novel about a government takeover of private land, was most obviously an anti-government rant, but it was also an early metaphor for the hegemony of government nuclearism.<sup>97</sup> Its dedication page gives us a clue: "The story which follows was inspired by an event which took place in our country not many years ago. However, it is a work of fiction and any resemblance to living persons or actual places is accidental." This may be a work of fiction, but the novel takes place in the White Sands Missile Range, where the first atomic bomb test took place. Abbey doesn't tell us that directly; he merely describes the landscape around the area:

I could see four different mountain systems, not counting the one holding me up, the lights of two cities, and about seven thousand square miles of the desert in between. I saw the San Andres Mountains rolling north, the Sacramento Mountains beyond Alamagordo, forty miles away to the northeast, the Guadalupe Mountains some eighty miles due east and the Organ Mountains and the hazy smudge of El Paso far to the south, with the deserts of Chihuahua spreading toward infinity beyond.<sup>98</sup>

Readers who check their maps will find the novel's narrator is standing inside the White Sands Missile Range, which lies directly west of Alamagordo, north of El Paso,

nestled between four different mountain ranges, on the northern end of the Chihuahuan Desert.

In this early novel by Abbey, a boy visits his grandfather who owns land which the federal government intends to appropriate for vague military purposes. In the end, the dead grandfather and his cabin are cremated in a “seething inferno moaning like the wind” that seemed “the brightest thing in the world.”<sup>99</sup> As he watches, the boy contemplates this momentous event: “[C]ell by cell, atom by atom, [Grandfather] rejoined the elements of earth and sky. ...[T]he fire achieved the climax of its energy and towered above the cabin, rolling up and up in a pillar of smoke and sparks and flames that illuminated for one moment of splendor the entire height of the granite cliffs beyond the ruin.”<sup>100</sup> Maybe it’s just a normal fire, but both the location and the language suggest Abbey is constructing a metaphor of the first atomic bomb test. Once again, he insists humans must take responsibility for their actions. A Native American character tells the boy, “We have to be smart like the other Indians, Billy. We don’t take everything the white man tries to dump on us but we make choices, we take what we can use and we let him bury himself with the rest. You understand?”<sup>101</sup> The white men who are “burying themselves” are the same government officials who are trying to take the grandfather’s land by co-opting him into a system of national security. They tell the grandfather, ““you must understand that national security takes precedence over all other considerations. Every citizen owes his first allegiance to the nation, and all property rights ... are derived from and depend upon the sovereignty of the state. I refer you to the law of nations.””<sup>102</sup> Here then is a totalitarian system *designed by humans* that preys upon its individual parts. The good of the whole is supposedly more important than the well being of individuals,

yet the people making decisions fail to recognize the whole cannot survive without its constituent parts. When you kill the parts, you kill the whole, just as Terry Tempest Williams noted while watching a pod of whales.

The stories told by Williams, Meloy, and Abbey about the dangers of the totalitarian atomic ecosystem cast a harsh spotlight not just on government but also on postmodern humanist techno-theory. On the one hand, the posthumanists dream of a society in which cyborgization does not imperil individual human survival but rather enhances it. Katherine Hayles, for example, believes that human/technological cyborgs can exceed the boundaries of race, class, gender, and species by forming a “subjectivity [that] is emergent rather than given, distributed rather than located solely in consciousness, emerging from and integrated into a chaotic world rather than occupying a position of mastery and control removed from it.”<sup>103</sup> Donna Haraway calls cyborgs a “fruitful” metaphor for imagining a world decoupled from patriarchy and social hierarchies.<sup>104</sup> Joseph Tabbi ruminates on cyberpunk writers who assign power not to any one person or group of people, but rather to computer networks, creating recombinant forms of identity that resist totalization.<sup>105</sup> Mark Hansen sees technology as the “very contact between humankind and the world on which societal forms are themselves constructed.” It is the “*robust materiality of technology*,” he says, that forces us out of abstract semiotics and into embodied experience, where agency actually lies.<sup>106</sup> Yet the atomic eco-writers discussed here might protest that humans could very well do without the “robust materiality” of the atomic bomb and without the “emergent and distributed” identities trapped within a chaotic nuclear system that permits the destruction of individual parts in the quest to preserve an abstract national whole.

On the other hand, most posthumanists recognize technology causes the very problems it promises to resolve. Donna Haraway notes, “the need for unity of people trying to resist world-wide intensification of domination [by technics] has never been more acute.” For her, the technological cyborg is all about “the power to survive, not on the basis of original innocence, but on the basis of seizing the tools to mark the world that marked them as other.” Cyborgs, Haraway says, are like postcolonial hybrids who “subvert the central myths of origin of Western culture.”<sup>107</sup> Cyborgs might be co-opting the tools of the master, but who is master and who is slave when humans become the victims of their own constructs? Haraway would like to make the cyborg not just a symbol of assimilation, but also a symbol of *resistance through, or despite, assimilation* into a totalizing system—even when that system is the product of his/her own efforts. As such, the complicit atomic cyborg might be a viable expression of human agency in the American West, or it might be merely another layered example of humans depending on technology to solve the systemic problems created by technology. When Williams and Meloy immerse themselves in the nuclear technology that has profoundly altered them, they become not-quite-humans who are critiquing a human-constructed system. They are also, in essence, technological constructs that resist the consequences of technology. Abbey goes a bit farther, though. When Abbey imagines himself moving in and out of the postnatural Colorado River system, he insists he is something different, that the Atomic West is ultimately a human construct, and humans can change their own destinies. Human communities do not have to be totalizing, Abbey tells us. If they are, that is our collective fault. We are the ones who made ourselves into sea monkeys and cyborgs.

### Notes

1. Tim Walsh, *Timeless Toys, Classic Toys, and the Playmakers Who Created Them* (Kansas City, Mo.: Andrews McMeel Publishers, 2005), 124-29; see also Susan Barclay, *The Ultimate Guide to Sea Monkeys* (Mountain View, Calif.: Street Saint Publications, 2002).
2. Evan Hughes, "The Shocking True Tale of the Mad Genius Who Invented Sea Monkeys," *The Awl*, June 28, 2011, <http://www.theawl.com/2011/06/the-shocking-true-tale-of-the-mad-genius-who-invented-sea-monkeys>; see also Douglas Martin, "Harold von Braunhut Seller of Sea Monkeys, Dies at 77," *New York Times*, December 21, 2003, <http://www.nytimes.com/2003/12/21/national/21BRAU.html>.
3. "For the Kids: Toys for Christmas Feature 'Atomic' Sets, Reflect Sciences, Arts," *Manti (Utah) Messenger*, November 24, 1950, 2 (Utah Digital Newspapers, <http://digitalnewspapers.org/>). Even toys that weren't related directly to science were often based on scientific principles. See for example Ed Sobey and Woody Sobey, *The Way Toys Work: The Science behind the Magic 8 Ball, Etch-A-Sketch, Boomerang, and More* (Chicago: Chicago Review Press, 2008).
4. Jeff Duncan, "Spade Work," in Curtis White, *An Illuminated History of the Future*, vol. 2 (Tuscaloosa: University of Alabama Press, 1989), 48.
5. David Abram, *Spell of the Sensuous: Perception and Language in a More-than-Human World* (New York: Vintage, 1997), 33.
6. Kenneth P. Wilkinson, *The Community in Rural America* (Middleton, Wis.: Social Ecology Press, 1991), 13.
7. In the late nineteenth century, Ferdinand Tönnies distinguished between human systems of "community" (*Gemeinschaft*) and "society" (*Gesellschaft*), but both systems are based in rationality and agency (Werner J. Cahnman, et al., *Weber and Toennies: Comparative Sociology In Historical Perspective*. [New Brunswick, N.J.: Transaction, 1995], 181-84).
8. Mark M. Millonas, "Swarms, Phase Transitions, and Collective Intelligence," in *Artificial Life III: Proceedings of the Workshop on Artificial Life, Held June 1991 in Santa Fe, New Mexico*, edited by Christopher G. Langton (Reading, Mass.: Addison-Wesley, 1994), 417-46.
9. Hayles, *Chaos Bound*.
10. James Gleick, *Chaos: Making a New Science* (New York: Penguin, 1987); N. Katherine Hayles, *Chaos and Order: Complex Dynamics in Literature and Science* (Chicago: Univ. of Chicago Press, 1991); Steven Best and Douglas Kellner, *The Postmodern Turn* (New York: Guildford Press, 1997).

11. Niels Bohr, *Atomic Theory and the Description of Nature* (New York: Cambridge Univ. Press, 1934); emphasis added.
12. A good account of the widespread cultural and social impact of quantum mechanics can be found in Daniel J. Kevles, *The Physicists: The History of a Scientific Community in Modern America* (Cambridge, Mass.: Harvard Univ. Press, 2001 [1971]), 170-84.
13. Michael G. Barbour, "Ecological Fragmentation in the Fifties," in *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York: Norton, 1996), 233-55.
14. For an overview, see Kristin Asdal, "The Problematic Nature of Nature: The Post-constructivist Challenge to Environmental History," *History and Theory* 42 (December 2003): 60-7. For an example of a less-than-successful attempt to quantify marine ecosystems in order to determine maximum sustainable fishing yields in the 1970s, see Tiffany C. Vance and Ronald E. Doel, "Graphical Methods and Scientific Practices: The Stommel Diagram's Intriguing Journey from the Physical to the Biological Environmental Sciences," *Historical Studies in the Natural Sciences* 40.1 (2010): 1-47.
15. Barbour, "Ecological Fragmentation"; see also Douglas R. Weiner, "A Death-defying Attempt to Articulate a Coherent Definition of Environmental History," *Environmental History* 10.3 (2005): 404-20; and Peter J. Bowler, *The Norton History of the Environmental Sciences* (New York: Norton, 1993), 535-53.
16. Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue with Nature* (New York: Bantam, 1984), 180-81. Prigogine is not without critics. French physicist Jean Bricmont argues that Prigogine's findings strengthen classical determinism rather than invalidating it ("Science of Chaos or Chaos in Science?" *Annals of the New York Academy of Sciences* 775 [June 1995]: 131-75; available online at <http://physics.nyu.edu/sokal/UCL-IPT-96-03.pdf>).
17. However, one author who stresses the importance of agency in human systems modeling is R. Keith Sawyer, *Social Emergence: Societies as Complex Systems* (New York: Cambridge Univ. Press, 2005).
18. Michel Foucault, *Discipline and Punish: The Birth of the Prison* (New York: Random House, 1975); see also Foucault, *The History of Sexuality*, trans. Robert Hurley (New York: Vintage Books, 1990 [1978]).
19. Gramsci, *Prison Notebooks*.
20. Herbert Marcuse, *Eros and Civilization: A Philosophical Inquiry into Freud* (Boston: Beacon Press, 1955), 45.



21. Ervin Lazlo, *Introduction to Systems Philosophy: Toward a New Paradigm of Contemporary Thought* (San Francisco: Harper, 1972).
22. Ludwig Von Bertalanffy, *Perspectives on General System Theory*, ed. Edgar Taschdjian (New York: George Braziller, 1974).
23. Mark C. Taylor, *The Moment of Complexity: Emerging Network Culture* (Chicago: Univ. of Chicago Press, 2001).
24. Prigogine and Stengers, *Order out of Chaos*, 251.
25. See Hacker, *Elements of Controversy*.
26. Limerick, *Legacy of Conquest*.
27. Comer, "Sidestepping Environmental Justice: 'Natural' Landscapes and the Wilderness Plot," *Frontiers: A Journal of Women Studies* 18.2 (1997): 73-101.
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33. For example, Mary Sojourner, *Bonelight: Ruin and Grace in the New Southwest* (Reno: University of Nevada Press, 2002); Dayton Duncan, *Miles from Nowhere: In Search of the American Frontier* (New York: Penguin, 1993); William Kittredge, *Hole in the Sky: A Memoir* (New York: Vintage, 1993).
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35. Cheryll Glotfelty, "Flooding the Boundaries of Form: Terry Tempest Williams's *Unnatural History*," in *The Green Studies Reader: From Romanticism to Ecocriticism*, ed. Laurence Coupe (New York: Routledge, 2000), 293-98.
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41. *Refuge*, 175.
42. *Refuge*, 275.
43. *Refuge*, 278.
44. *Refuge*, 287.
45. *Refuge*, 53.
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47. *Refuge*, 51.
48. *Refuge*, 156.
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56. *LCW*, 144.
57. *LCW*, 165.
58. *LCW*, 180.
59. *LCW*, 188.
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62. *LCW*, 112.
63. *LCW*, 36. Meloy died in 2004 at the age of 58 from a heart attack.
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65. *LCW*, 196.
66. *LCW*, 215-17.
67. Buell, *Environmental Imagination*, 178-79.
68. *LCW*, 216-17.
69. *LCW*, 221-25.
70. Taylor, *Moment of Complexity*, 268.
71. Taylor, *Moment of Complexity*, 231.
72. Edward Abbey, *Desert Solitaire: A Season in the Wilderness* (New York: Simon and Schuster, 1968). Hereafter cited as *DS*.

73. Campbell, SueEllen. "Foreword II: Magpie," in *Coyote in the Maze: Tracking Edward Abbey in a World of Words*, ed. Peter Quigley (Salt Lake City: University of Utah Press, 1998), 33-46.
74. *DS*, 43-44.
75. Alex Hunt, "The New Atomic Wilderness: Ed Abbey's Post-Apocalyptic Southwest," *Southwestern American Literature* 34.1 (Fall 2008): 41-54.
76. Edward Abbey, *Abbey's Road* (New York: E. P. Dutton, 1979), 107. Other nuclear rants by Abbey can be found in *Fire on the Mountain* (New York: Dial Press, 1962), which takes place on the White Sands Missile Range near Los Alamos; *Down the River* (New York: Plume, 1991 [1982]), 97; *Journey Home* (New York: Plume, 1991 [1977]), 184; and "One Man's Nuclear War," *Harper's* (March 1979): 8-18.
77. Abbey, *Desert Solitaire*.
78. Ringholtz, *Uranium Frenzy*; Zoellner, *Uranium*.
79. *DS*, 67.
80. Hunt, "The New Atomic Wilderness."
81. *DS*, 76.
82. *DS*, 80.
83. Lyon et al., "Childhood Leukemias. For Lyon's congressional testimony on how he was forced by the Department of Energy to alter his findings, see U.S. Congress, *Radioactive Fallout*.
84. *DS*, 65.
85. Udall, *The Myths of August*. Udall was a former Secretary of the Interior and one of the lawyers who prosecuted the government on behalf of the Downwinders in a 1980s lawsuit.
86. *DS*, 152.
87. *DS*, 162.
88. *DS*, 189.
89. *DS*, 189; emphasis added.
90. *DS*, 153.

91. *DS*, 171; emphasis in original.
92. *DS*, 183-84; emphasis in original.
93. *DS*, 193-94.
94. *DS*, 194-95.
95. *DS*, 195.
96. *DS*, 165.
97. Abbey, *Fire on the Mountain*. Hereafter cited as *Fire*.
98. *Fire*, 64.
99. *Fire*, 210.
100. *Fire*, 210-11.
101. *Fire*, 196.
102. *Fire*, 92-93.
103. N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Univ. of Chicago Press, 1999), 290-91.
104. Haraway, "A Cyborg Manifesto."
105. Joseph Tabbi, *Postmodern Sublime: Technology and American Writing from Mailer to Cyberpunk* (Ithaca, N.Y.: Cornell Univ. Press, 1995).
106. Mark Hansen, *Embodying Technesis: Technology beyond Writing* (Ann Arbor: Univ. of Michigan Press, 2000), 235, 4; emphasis added.
107. Haraway, "A Cyborg Manifesto."

## CONCLUSION

The two river trips that bookend this project are different in many ways. At the beginning of the twentieth century, we discovered Alexander Bartley engineering his way into scientific collapse, then floating into unknown territory. At mid-century, we found Ed Abbey defiantly drinking the waters of the atomic eco-system while climbing in and out of it. In one story, the river was a symbol of scientific promise; in the other, a symbol of scientific betrayal. Over the course of the century, nuclear technology brought both promise and betrayal to the American West, offering westerners a chance to climb out of poverty but at the same time threatening their health and fundamentally altering their self-conceptions. We can trace that transformation through literature and history, the twin doppelgaengers of discourse that help us construct and re-construct our stories but can never answer all our questions.<sup>1</sup>

In fact, very few of our questions have been answered. Even after volumes of history and memoirs and essays and theory and historical fiction and science fiction and mystery, the best advice the atomic western writers can offer against nuclear hegemony is endless seeking, surrender, and self-sacrifice, with occasional moments of resistance. According to eco-theorist Timothy Merton, a strategy of surrender is exactly what literary discourse needs right now.<sup>2</sup> For Merton, the problem with present-day nature writing—a category that arguably encompasses atomic literatures like those discussed here—is that any attempt to represent Nature through literature, art, or symbol, results in the construction of an aesthetic entity, a queer Nature that is even more distant than before.

Meloy confronts a queer Nature in her postnatural West, as does Edith in her postapocalyptic California. Abbey confronts a queer river. Corinne Hales confronts a queer Eden in Utah. Like some of these authors, Merton finds the only choice left is to surrender to the “sheer negativity” of ecomimesis and aesthetics: “The task is not to bury the dead but to join them, to be bitten by the undead and become them.”<sup>3</sup> Going farther down the rabbit hole is the only way to escape the paradox, he says. By surrendering we refuse to construct inside or outside positions, or indeed any positions at all. We accept our complicity in everything that has happened, even if we were simply particles who were swept along by the wave. Dive into the wave, Merton says, and hope you come out on the other side. Submit to the chaos. Order might emerge, or it might not.

This recognition of complicity has indeed begun to express itself in the environmental movement as well as in the literatures of the West. Anthropologist Joseph Masco has identified peace activists in and around Los Alamos Laboratories in New Mexico who use metaphors of cyborgization to protest their own situation inside the atomic system. For example, one pregnant activist worried whether the unborn child growing inside her might be deformed by its increasing exposure to environmental radioactivity, but simultaneously noted such a fate might be a kind of poetic justice, a rebound effect by which the universe exacts revenge on its human destroyers: “maybe a country who planned to bomb and destroy whole countries deserves to bear monsters, a karma fitting to so monstrous a mentality. Maybe I deserve to have a mutant because once I was so casually uncaring about what these bombs were made for.”<sup>4</sup>

Thus a certain sense of universal complicity is beginning to arise, a recognition that all humankind participates in or benefits from processes that simultaneously operate

to destroy them. If we are already in the stream, we might as well swim rather than sink. However, naming that process “surrender,” as Merton does, seems particularly dangerous. My skepticism toward surrender as a political strategy is grounded in an atomic point of view. In the nuclear case, the consequences of our surrender already litter the West. Surrender might make sense if one has been overtaken by forces beyond human control. But as Abbey points out, nuclearism is within our control. We have the ability to take charge; what we lack is political will. Perhaps surrender will magically construct the collective willpower we need to turn things around, but Merton fails to offer an example of how that might work. Once again, I refer readers to the difference between surrender and *survivance*—that hybrid form of survival and resistance best exhibited in Native American narrative. Survivance might fall into the water when the bridge collapses, but it searches for ways to resist while riding the wave. Sometimes it has to wait for opportunity. Sometimes it has to laugh at the sheer illogic of the universe. But all along, survivance is quietly gathering its allies. Survivance is a tiny pebble in the river that sits at the bottom and catches more pebbles, maybe a few rocks, then a boulder or two, until one day, almost unnoticed, the flow of the river changes. The pebble might even be said to have been complicit in the river’s flow, since it was part of the river system all along. Yet the river’s flow changes because that pebble found a tiny niche where it could stand its ground without the river noticing. It surrendered when it had to, and resisted when it could.<sup>5</sup>

Literature and history are not going to save the West from itself, of course, or the nation from its frontier follies, but they can toss a few pebbles into the stream, maybe even a rock or two. What would one of those pebbles look like? It might look like Valerie



Kuletz's *The Tainted Desert*, an unflinching activist screed about the Yucca Mountain nuclear repository and its dispossessed owners, the Western Shoshone, which combines history, memory, science, and literary metaphor.<sup>6</sup> It might look like Cheryl Glotfelty's recent collection of literature from and about Nevada that includes a section on "Nuclear Nevada" with excerpts from some of the West's best writers.<sup>7</sup> It might look like scientist Richard Miller, who has spent his career tracing fallout clouds as well as actual fallout levels on the ground left by atomic testing.<sup>8</sup> It might look like *The Myths of August*, a sweeping condemnation of Cold War nuclearism written by former Secretary of the Interior and Arizonan Stewart Udall, in which he calls on the United States to remember its own ideals.<sup>9</sup> It might look like the Navajo uranium miners' oral histories collected and published in 2006 by Doug Brugge, Timothy Benally, and Esther Yazzi-Lewis.<sup>10</sup> It might look like Joseph Masco's social and environmental history of Los Alamos, which examines the bomb through the eyes of its engineers as well as its grassroots opponents.<sup>11</sup> It might look like any one of the numerous works cited and discussed here. As individual pieces they can't change the course of the stream, but over time they have steadily accumulated, and they are starting to form a "preponderance of the evidence" that cannot be easily dismissed.

The regional literatures of the American West played a foundational role in constructing the violent frontier myth that now governs the nation. They are also playing a role in *reconstructing* that myth. We stand at a moment in time when the frontier holds greater importance as memory than as an actual presence.<sup>12</sup> By now, though, the memory of the frontier is more than just a myth or a ghost haunting us; it's a dangerous and decrepit infrastructure that has outlasted its usefulness. If enough people step onto the

bridge, the whole thing might crumble under its own weight. Western studies as a discipline is uniquely situated to expose the weaknesses of this particular bridge. In fact, one might argue that exposing the myth(s) of the frontier has become the *mission* of postmodern western studies. But in so doing, western studies might bring itself down too. If the frontier myth falls, where does that leave western studies? The nuclear case tells us we have to accept that risk. The fear of discovering our own complicity or our own irrelevance cannot stop us from relentlessly pursuing the nation's destructive secrets.

Perhaps the most important issue raised by this research is that a significant gap exists in our knowledge about the long-standing relationship between frontier culture and frontier technology. Romantic images of the Old West that replay on our screens and in our literatures and in our memories have helped obscure the hard fact that some of the world's most advanced technologies were first invented and tested in the American West. Donald Worster's western "irrigation empire" is just the tip of the iceberg.<sup>13</sup> It should have already been obvious that today's global strip-mining technologies and ideologies began in the American West, and yet Timothy LeCain's 2009 book was the first to actually put the pieces together.<sup>14</sup> As research proceeds, I suspect we will discover that westerners—far from being the anti-modern curmudgeons we wanted them to be—were always enamored by technology. In other words, the cowboy and the engineer remain connected today in very physical ways. I further suspect we will discover the West's ability to absorb the inevitable engineering mistakes associated with new technologies has reached its limits. As western cities continue to grow and western ranges continue to disappear, the dangers of "frontier engineering" increase. Moreover, those dangers can no longer be dismissed because they only affect a distant ethnic other. The population

explosions in the West over the last fifty years make it virtually impossible to imagine another atomic experiment on the same scale as the 1950s. Migration and urbanization have done what westerners could never manage on their own: the West is now almost fully incorporated into the American mainstream. That process could protect westerners and their land from worse harm, but it will not protect them from themselves.

As we have seen, during the twentieth century several competing narratives about the West arose, although not all survived their co-optation into the mainstream. Neal Campbell notes even more versions of the western narrative are circulating the globe today, making it more important than ever that western scholars expand their discipline beyond its previous limits. The West is now thoroughly implicated in “an emerging planetary culture” that operates more like “fluid graffiti” than like pioneer settlement.<sup>15</sup> If we haven’t already fallen into that stream of graffiti, it might well be time to jump in and swim. But like Ed Abbey we also need to climb out of the stream once in a while just to make sure we still can.

### Notes

1. Hutcheon, *A Poetics of Postmodernism*.
2. Timothy Merton, *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, Mass.: Harvard Univ. Press, 2007).
3. Merton, *Ecology without Nature*, 201.
4. Masco, *Nuclear Borderlands*, 229.
5. Survivance was discussed in Chapter 5. The term comes from Gerald Vizenor, who was describing a specific kind of Native American resistance (*Survivance*). The metaphor of a pebble in the river is mine.
6. Kuletz, *The Tainted Desert*.

7. Cheryll Glotfelty, ed., *Literary Nevada: Writings from the Silver State* (Reno: Univ. of Nevada Press, 2008), 427-84.
8. Miller, *Under the Cloud*; Miller, *U.S. Atlas of Nuclear Fallout*.
9. Udall, *The Myths of August*.
10. Brugge et al., *The Navajo People and Uranium Mining*.
11. Masco, *The Nuclear Borderlands*.
12. Campbell, *The Rhizomatic West*.
13. Worster, *Rivers of Empire*.
14. LeCain, *Mass Destruction*.
15. Campbell, *Rhizomatic West*, 323, 5.

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