

Section I: Global Health and Childhood

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Radiation Suffering and Patriotic Body Politics in the 1970s and 1980s

Abstract

The human body was at the center of multiple protest movements after 1968. This essay considers one particular type of body that entered political space in the 1970s and 1980s: the cancer-afflicted bodies of those who had been exposed to radiation from the manufacture, testing, and detonation of atomic weapons in the late 1940s and 1950s. Beginning in the late 1970s, radiation sufferers and their relatives became politically mobilized: they created a national support network, testified to the pain unleashed by radiation-induced illness, and pursued avenues for gaining financial compensation for their suffering. This essay argues that these sufferers were crucial mediating figures who simultaneously incorporated elements from the anti-war movement of the 1960s and reflected the ascendancy of conservatism. They mobilized a “patriotic body politics” that linked physical illness to a growing conviction that the state had abandoned its most patriotic citizens. In the process, even as they drew on the left for inspiration, radiation sufferers advanced a vision that would prove enduring within the late twentieth century conservative imaginary: that of a deceptive government that had turned its back on the very citizens who had been most willing to incur sacrifices on its behalf. The essay thus uses the case of radiation activism to highlight the ways in which post-Vietnam conservatism incorporated elements from the very anti-war movement it ostensibly opposed, including its core insight that the state had the capacity to transform bodies into fodder.

During the 1970s and 1980s an array of political activists turned their attention to bodily pleasure, health, and injury. Feminists insisted that control over their own reproductive and sexual lives was essential to women’s pursuit of freedom, bringing rape, harassment, and unwanted pregnancy out of the shadows. Women’s and black health activists established medical screenings and clinics for people within their own communities. *Our Bodies, Ourselves*, a 1971 primer for women’s health, became a bestselling feminist classic. After 1969, gay men celebrated their bodies as sites of pride, sexual pleasure, and excitation. By the early 1980s, they were confronting a mysterious, fatal sexually transmitted disease. Meanwhile, doctors diagnosed children at Love Canal with low blood cell counts, their bodies remade into barometers of toxic waste. The explosive currents released after 1968

transformed the human body into an iconic political object that signified subjectivity and identity, liberation and oppression, life and death.¹

The 1970s and 1980s were also the years when the country shifted from a liberal to a conservative hegemony. Yet when historians speak of the body in this period, they speak largely of feminism, gay liberation, and the ecology movement. The body is often absent from the historiography of post-1968 conservatism. Or, to put the matter somewhat differently, the bodies that animate the historiography of the political right are the same bodies that animate the historiography of the left: the independent female body, the proud queer body, and the youthful body in the throes of sexual pleasure, only now these have been reconfigured as threats. If there is such a thing as a “conservative body,” it is perhaps the figure of “Rambo”—the hyper-masculine, muscular hard body of Reagan-era Hollywood film who symbolized the revival of Cold War militarism in the 1980s. This is a body that feels pain and suffers, but only at the hands of a vilified foreign enemy and in the service of an ultimately recuperated US nationalism.² What does this shift from the bivalent, polysemic body-centered politics of the 1970s to the militarized hard body politics of the 1980s tell us about the emergence of conservatism after 1968?

This essay takes up this question by considering another body image that entered political space in the same years: the sickly, cancer-afflicted body of those who had been exposed to radiation from the manufacture, testing, and detonation of atomic weapons during the early Cold War.³ This image had first appeared in the public eye in the 1950s, but it was not until the late 1970s that activists fully mobilized it. I contend that this image *mediated* between the liberated feminist and queer bodies of the early 1970s and the militarized hard bodies of the mid-1980s. Those bodies all flourished against the background of relatively hegemonic political cultures: leftist in the former case, conservative in the latter. By contrast, the image of the radiation sufferer came to the fore during a period of ambiguity in American political life—that is, it emerged at an interregnum in which the country hovered between left and right. The radiation sufferer embodied this moment of transition and thus belonged wholly to neither side. On the contrary, as I will show, this sufferer was a politically ambiguous figure who simultaneously embodied the legacy of the social movements of the 1960s *and* facilitated the nation’s rightward shift.

Understanding the radiation sufferer as a mediating figure requires taking a close look at radiation activism during this period. In the late 1970s, radiation sufferers and their relatives created a “community of suffering” that traversed divisions of race, citizenship, and geography by linking together victims at various stages of the nuclear cycle. This community included Native American uranium miners in the U.S. Southwest, workers in Rocky Flats and Hanford who toiled in nuclear enrichment, fuel, and weapons facilities, civilians who lived downwind from the Nevada Test Site, and Marshall Islanders who had been exposed to fallout from testing conducted at the Pacific Proving Grounds. The community also encompassed military veterans who had participated in nuclear weapon detonations and the Japanese victims of the bombings at Hiroshima and Nagasaki.⁴ Together these victims-turned-activists brought to light the considerable physical and psychological pain that had been unleashed by radiation-induced illness. They also pursued legal and legislative avenues for gaining financial compensation for themselves and their families. Uniting these groups was a collective sense

of betrayal. Over and over again, sufferers and their relatives recounted how officials from the Atomic Energy Commission (AEC) assured them that radiation exposure posed no danger to public health, assurances belied by cancer years or even decades later. As a consequence, a once steadfast faith in government had been shattered, a loss of faith every bit as traumatic as the onset of illness itself. Radiation victims portrayed themselves as patriots whose encounters with toxicity undermined both bodily health and political trust.

By linking physical illness to a collapse of trust, radiation victims were giving shape to what I call a post-Vietnam “patriotic body politics” that combined fear of bodily injury with wounded patriotism and suspicion of government duplicity. This politics was fueled not by party loyalty or partisanship. Rather it was fueled by what historian Michael J. Allen has described as a “politics of loss” rooted in the conviction that the state had abandoned its most patriotic citizens.⁵ The term “patriotic body politics” elaborates on Allen’s earlier formulation by placing physical illness and the suffering body at the center of a politics of loss that hinged on the belief that the government had turned its back on those most willing to incur sacrifices on its behalf.

The Vietnam War provided the crucial historical backdrop for patriotic body politics. That war was both the first modern military defeat in U.S. history and the last major intervention in which the military deployed the draft. The call to military service was the moment when men were asked to give up their lives—indeed, to sacrifice their *bodies*—on behalf of their nation. The tactical and strategic failure of the war, combined with its divisiveness both on the home front and within the military, raised the question of whether that sacrifice had been for nothing. This question haunted not only the families of the soldiers who had died in Vietnam, but many others, as well. Prisoners of war and missing-in-action in Southeast Asia, disabled Vietnam veterans, US soldiers exposed to Agent Orange during combat: narratives recounting the suffering of these men tethered physical illness to lost patriotism and disillusionment with the country. These suffering bodies would be at the center of a struggle over the entwined fates of U.S. military power, patriotism, and nationalism after Vietnam.

While patriotic body politics had emerged out of the war, it also drew inspiration from the era’s social movements. From pacifism patriotic body politics took the insight that militarization permeated every aspect of life; from the ecology movement it took the warning (issued most influentially by Rachel Carson) that human health could be threatened by environmental assaults; and from the black and women’s health movements it took the awareness that sickness could have political meaning. Above all, it took from the anti-war movement the revelation that the government could deceive its own people, even in matters of life and death. In different ways, all of these movements cast the government as reckless and irresponsible, and radiation activists leveled the same accusation. But what distinguished the patriotic body politics of the radiation sufferers was a sense of bodily victimization inseparable from a wounded sense of American national identity.

It was this wounded nationalism, almost corporeal in character, which distinguished patriotic body politics from the antiwar movement with which it otherwise shared a great deal. While the antiwar movement took direct aim at US military and imperialist policies, patriotic body politics centered not on policy *per se*, but rather on the sickened patriot whose love of country had been badly

shaken and who wanted both his physical health and his patriotism restored. Ultimately, radiation activists advanced a vision that would prove crucial to the late twentieth century conservative imaginary: that of a deceptive, callous government that had turned its back on its most loyal citizens. The figure of the enervated, poisoned body of the radiation sufferer, then, provided a crucial mediation in the shift from the antiwar sentiment of the late 1960s to the conservative ascendancy of the late 1970s and 1980s.⁶ In this liminal figure, we can see that the post-Vietnam rightward shift hinged less on a wholesale rejection of the antiwar movement (and the larger political Left of which it was a part) and more on a capacity to appropriate and retool its powerful message of mistrust and betrayal. The patriotic body politics of radiation sufferers helped to make this appropriation and retooling possible.

The emergence of a distinct community of radiation sufferers has a long history. When chemists first discovered radium in 1898 they heralded it as an elixir. Its capacity to glow and generate heat convinced some scientists that it held the secret of life.⁷ But the dangers of radiation exposure became increasingly evident in the 1920s, and the death of Marie Curie from radiation exposure in 1934 brought those dangers into terrifying relief. In 1945, the dropping of two atomic bombs at Hiroshima and Nagasaki created what Norman Cousins called "a primitive fear, the fear of the unknown [which] has burst out of the subconscious and into the conscious, filling the mind with primordial apprehensions."⁸ With the acceleration of nuclear testing in the United States in the 1950s, scientists warned that radiation could seep into the atmosphere and harm human, animal, and plant life.

Testing was endemic to the Cold War. Between 1945 and 1976, the military tested five hundred and eighty-eight nuclear and thermonuclear weapons, nearly a third of them above ground.⁹ Between 1946 and the signing of the Limited Test Ban Treaty in August 1963, the AEC oversaw several test series, including Operation Crossroads (July 1946), Operation Greenhouse (May 1951), the Ivy-Mike nuclear test (November 1952), Castle Bravo (March 1954), Operation Teapot (1955), Operation Redwing (May 1956), Operation Plumbob (May 1957), Operation Hardtack I and II (April-October 1958), Operation Argus (August 1958), and Operation Dominic (May 1962). According to anthropologist Joseph Masco, "Nuclear devices were exploded on towers, dropped from planes, suspended from balloons, floated on barges, placed in craters, buried in shafts and tunnels, launched from submarines, shot from cannons, and loaded into increasingly powerful missiles."¹⁰ The AEC conducted tests in one of two locations, either the Pacific Proving Grounds (an umbrella term that referred to sites in the Marshall Islands and other parts of the Pacific) and the Nevada Test Site (NTS), a 1350 square mile range located ninety miles north of Las Vegas. Although the earliest postwar tests were conducted in the Pacific, President Truman approved the Nevada site in December 1950 ostensibly in response to China's invasion of Korea two months earlier. That event supposedly convinced him of the need for a secure test site within the territorial boundaries of the United States. The geography of nuclear testing thus established a connection between two topographically distinct locations: the water-bound atolls of the Pacific Ocean and the arid desert of the U.S. Southwest. Both sites were remote and relatively depopulated, chosen by the AEC for minimizing risks. But these

places were not empty, and residents of the Pacific atolls and the U.S. Southwest bore the brunt of atomic dangers disproportionate to their populations.

The problem was that fallout from testing could not be spatially contained and did not follow a predictable path. Between 1951 and 1962, radioactive fallout drifted from test sites over one hundred times. In 1951 scientists detected it in snowfall as far away as Rochester, New York. The same year, the AEC began to receive letters reporting that fallout was disrupting weather patterns around the world.¹¹ In March 1953, stockmen in Utah blamed nuclear testing in neighboring Nevada for the deaths of over one thousand ewes and lambs. The following year, the Bravo explosion spread radioactive ash over seven thousand square miles of the Pacific Ocean, exposing over 250 people on the Marshall Islands to radiation poisoning. A Japanese fishing boat was in the plume's path, and twenty-three fishermen suffered radiation illness; one of them, a man named Aikichi Kuboyama, died. In 1954 and 1955, radioactive rain fell in Troy, NY and Chicago, two cities located well over a thousand miles from the NTS.

Strontium-90, an isotope that mimics calcium and can lodge in the bones, was a special problem. In 1957, scientists detected Strontium-90 in wheat and milk, suggesting that fallout had entered the food chain through cows grazing on exposed pasture. A government study published in June 1959 found that in some parts of the country, the Strontium-90 content in milk had approached the proposed maximum permissible dose.¹² This finding was so troubling not only because exposure to Strontium-90 increased the risk of developing bone cancer, but because the isotope had a half-life of twenty-eight years (a half-life refers to the time it takes for fifty percent of an isotope to dissipate). Congress received letters from thousands of citizens worried about the milk supply. Throughout the late 1950s, scientists warned that radiation could cause leukemia, bone cancer, and genetic damage, citizens groups conducted local studies on radiation exposure, and *The Saturday Evening Post* named radioactive fallout "the silent killer."¹³

By the mid-1960s, however, public fears of radiation had receded into the background. The signing of the Limited Test Ban Treaty in 1963, which prohibited above-ground weapons testing, and the widening of U.S. military involvement in Southeast Asia compelled pacifist groups to turn their attention to the escalating war in Vietnam. Meanwhile, the publication of Rachel Carson's *Silent Spring* in 1962 channeled earlier concerns about radiation into the dangers of pesticides like DDT. Carson opened her jeremiad with a description of Strontium-90's potentially lethal journey from fallout to soil to grass to bones, observing "chemicals are the sinister and little-recognized partners of radiation in changing the very nature of the world."¹⁴ During the 1960s, the politics of radiation thus moved from the center to the periphery of public concern with the test ban treaty, the escalating Vietnam War, and the turn to industrial pollutants.

The story was different for citizens living downwind from the NTS.¹⁵ By the mid-1950s residents of southern Nevada and Southwestern Utah were hearing stories about friends, neighbors, and acquaintances being stricken with cancer. In 1980 Preston Truman, a native of Southern Utah and a lymphoma survivor-turned-activist, recalled how these stories circulated throughout his community when he was a child:

I remember one morning going to the store with a friend of mine to cash in pop bottles—this would have been in 1956 or 1957—and listening to some people

from the town talk about a boy our age who was dying of leukemia and listening to the details of the nose bleeds and the suffering he was going through. And this was a shock. I remember talking with my friend and wanting to know; we didn't know that little children could die, we had never seen that. I remember asking some people why the little boy was dying. We were told that it was his time and that God wanted the little boy back in heaven. We asked if we could get the same thing and we could die too. And we were told that yes, if it was our time to go. I remember when the little boy died, and I remember within a couple of years of that time there were the stories of similar cases in the surrounding areas, from Parowan, Utah, about seventy miles east, and St. George, thirty eight miles south—ranchers who were friends of my father, and the father of the boy my sister dated, he suffered from leukemia. . . . And the suspicion began to grow then, and those of us who used to ride horses together, we started to refer to the atomic bomb as a demon, that was our pet term.¹⁶

Such anecdotes were soon buttressed by scientific evidence. Between 1960 and 1970 studies confirmed what residents had intuited: their communities were becoming places where, as Republican Senator Orrin Hatch would put it at a congressional hearing in 1979, “cancer borders on being the rule rather than the exception.”¹⁷ A 1963 study concluded that infants and children living downwind from the NTS had received hundreds of roentgens of Iodine-131, which can accumulate in the thyroid and cause cancer. A 1965 study found higher-than-expected rates of cancer in two Utah counties downwind from the NTS. And a 1969 study revealed a fourfold increase in thyroid cancer in the state of Utah, primarily among people between the ages of twenty and twenty-nine.¹⁸ Taken together, the findings undermined the legitimacy of AEC officials who had assured downwinders that the amounts of radiation emitted from testing had never exceeded a safe, permissible dose. That assurance reflected one side of an ongoing scientific debate that hinged not on whether radiation at high doses posed a health risk (a well-established fact), but on whether there was such a thing as a “safe threshold” of radiation.¹⁹ The lack of a scientific consensus about the safety of low-level radiation exposure, combined with mounting cancer diagnoses in Nevada and Utah, meant that downwinders never had the reprieve from radiation fear that the broader public had enjoyed in the 1960s.

But over the course of the 1970s, downwinders and other radiation victims were transformed into what historian Michael Foley calls “accidental activists”—men and women drawn into political struggle not out of partisan loyalties, but rather because of threats to their communities.²⁰ There were several reasons for the transformation. By the mid-1970s fears of radiation had returned, this time centered on nuclear power plants, which had been licensed at a steady clip between 1958 and 1974. The lingering debate about the risks of low-level radiation exposure, confined largely to scientific circles during the postwar period, erupted as dissident scientists challenged the AEC's concept of a permissible dose, engineers warned that the industry was downplaying the risks of nuclear technology, and anti-nuclear activists occupied plant sites at Seabrook, New Hampshire, Diablo Canyon, California, and elsewhere. Meanwhile, investigative journalists kept the radiation issue in the public eye by covering news stories like the suspicious death of chemical technician and union organizer Karen Silkwood in November 1974 and the accident at Three Mile Island outside of Harrisburg, Pennsylvania in March 1979. As a result, earlier radiation fears were revived and

redirected away from atomic weapons and toward nuclear power—what Ralph Nader dubbed “our domestic Vietnam.” The revival of the issue created an opening for radiation sufferers to call attention to their plight.

As they did so, the public sphere was filled with new information. During the 1950s, downwinders observed more and more cancer within their own communities, but it was only in the 1970s that the contours of an epidemic came into view. Some radiation-induced leukemias became manifest soon after exposure, while other cancers could lie dormant for years and even decades. Starkly put, by the mid-1970s more downwinders had fallen ill and died, and as a result, their survivors had accrued a larger and more damning body of evidence against the AEC. In addition, the Utah Cancer Registry only started compiling cancer mortality information in the late 1960s. Its official findings, first published in 1972 and 1975, confirmed what downwinders knew viscerally: acute leukemia and cancer rates had increased significantly in those counties closest to the NTS. A 1979 article published in the *New England Journal of Medicine* buttressed the registry data. It found that rates of pediatric leukemia had risen sharply in Southern Utah between 1951 and 1958.²¹ Finally, a number of the most damning studies on the dangers of low-level radiation had been completed in the 1960s but not released by the AEC at the time. Those studies were finally made available to the public in 1978 and 1979 after investigative journalists filed FOIA requests with the Department of Energy.²² What all of this meant was that by the late 1970s, downwinders were armed with considerably more evidence of radiological injury than even a decade earlier.

While these mounting statistics were crucial to the emergence of a politicized community of radiation sufferers, the formation of this community can only be understood in the context of the Vietnam War. The “credibility gap” created by U.S. policy in Southeast Asia—the devastating revelation that the government could lie to and deceive its own people—had profoundly shifted the terrain of the political culture, not simply among anti-war activists who had fought to end the war, but also among patriots and defenders of U.S. militarism who had at first supported it. The gradual realization over the course of the 1970s that the United States had blundered and lied itself into a war, which it then lost, generated a specter that resonated powerfully with downwinders and other radiation sufferers: that of the young patriot whose body was viewed by the government as disposable and who had died needlessly. Refracting their experiences of illness through the lens of a failed war, radiation sufferers and their families came to damning conclusions. A bureaucratic, callous government had kept secrets and lied to its own citizens, those most willing to incur the greatest sacrifices were most expendable, and people they loved had died meaningless, gratuitous, preventable deaths. As one downwind activist put it, “We were used as fodder, the same as our young men were used in Vietnam.”²³

In the aftermath of the war, radiation sufferers and their families became politically mobilized. In the late 1970s and early 1980s they founded a number of organizations based in the U.S. Southwest, including Citizens Call, formed in 1978 by a Utah woman whose brother had died at the age of twenty-seven from pancreatic cancer, Downwinders, a Salt Lake City group formed in 1980 by a southern Utah native and cancer survivor, and the NTS Radiation Victims Association, launched on behalf of military personnel who had worked at the site and subsequently fallen ill. Activists founded organizations for members of the

U.S. military and their families, such as the Committee for US Veterans of Hiroshima and Nagasaki, the National Association of Atomic Veterans, and an organization called Atomic Widows, which assisted the wives of deceased veterans who were convinced that their husbands' deaths had been caused by radiation exposure sustained during their service. There were also organizations like the National Committee for Radiation Victims and the National Association of Radiation Survivors that created a national network by bringing hundreds of radiation victims together under a shared umbrella. These groups engaged in political and cultural work along several different axes. At the local level, radiation activists—not unlike women's and black health activists at the time (and later AIDS activists)—sought to provide healthcare services within their communities through locating sufferers, providing mobile health screenings, ensuring adequate care, disseminating medical information, and providing referrals and assistance. At the wider level of the public sphere, activists worked to keep the radiation issue alive through publishing newsletters, launching letter-writing campaigns, responding to newspapers whenever an article or editorial on the topic appeared, holding conferences and hearings, and providing congressional testimony. Finally, they fought to incorporate radiation suffering into the fabric of Cold War commemoration by holding candlelight vigils at the NTS and calling for a National Radiation Victims Day.

Activists also fought for financial redress through pursuing class-action lawsuits on behalf of thousands of sufferers and calling for federal compensation legislation. The routes for winning compensation varied among the victims. Atomic veterans, for example, demanded that the Veterans Administration recognize radiological injuries as a legitimate form of war-incurred disability, while downwinders relied more on tort litigation. But within the legislative and legal arenas, the essential line of argument was the same: radiation victims and their families deserved compensatory justice. The AEC had failed to level with citizens about the risks of radiation exposure, and as a result, people had sickened and died. Radiation was invisible and could lie dormant for years and even decades, but its injuries could in the end prove even more lethal than a gunshot wound sustained in battle. As one veteran explained it at a National Citizens Hearings held in Washington DC in April 1980, "Although our claims are difficult to prove because we cannot feel, taste, hear or smell radiation, it is more deadly than bullets or shrapnel."²⁴ Victims should no longer be asked to prove that their illnesses had been caused by radiation exposure sustained years in the past (a virtually impossible task). Instead, it was time for the government to acknowledge what it had long denied: that certain populations had shouldered the burdens of the atomic age without their full consent.

The anti-war movement had set the stage for radiation activism, and as we shall see, this activism would gradually take on a conservative cast. But in the late 1970s, this community of radiation sufferers could be categorized as neither "left" nor "right." It defied both of these classifications because of what might be termed its extra-political inclusiveness. Virtually anyone who had sustained radiological injury or who had lost a loved one to radiation illness could be counted as a member of this late-twentieth century, Cold War population. There were uranium millers and miners, as well as civilians who lived downwind from testing sites, nuclear weapons production facilities, and nuclear power plants. The group included atomic veterans and military personnel who had been dispatched to

Hiroshima and Nagasaki after the detonations or who had participated in nuclear war games at the NTS or in the Pacific during the 1950s. There were also workers from uranium enrichment plants, power plants, nuclear shipyards, and nuclear waste sites. Membership was even transnational and included the “Hibakusha,” the Japanese survivors of the dropping of two atomic bombs in August 1945 (Figure 1).

Extra-political though it may have been, by bringing such diverse actors together under a rubric of shared suffering, the radiation movement implicitly challenged a Cold War logic that had relied on a shaky and ultimately unsustainable series of binary distinctions: between nuclear plants and atomic bombs, between martial and civilian applications of atomic energy, and between the testing of weapons during peacetime and their detonation during war. At the heart of this



Figure 1. Photo Montage from April 1980 Hearing of National Committee for Radiation Victims. Copyright held by National Committee for Radiation Victims. Photo courtesy of Swarthmore College Peace Collection.

dissociative logic was the fallacy that U.S. civilians could somehow be shielded from radiation's dangers while its military wielded a nuclear arsenal comprised of bombs, missiles, submarines, and doomsday devices. By bringing together radiation victims from every stage of the nuclear fuel cycle, activists belied that claim. Whereas the binary distinctions of the Cold War relied on projecting evil outside the country, radiation erupted inside. This internal blowback affected two sites: the body of the American people as a whole, and the bodies of individual sufferers.

Sufferers' challenge to the binary logic of the Cold War converged with the efforts of anti-nuclear activists to reveal what the Clamshell Alliance called the "malignant connection" between plants and bombs.²⁵ When anti-nuclear activists occupied a power plant site or weapons facility, they were not simply engaging in a struggle for community control; they were marking those places in space, thus revealing an intricate but nonetheless decipherable nuclear geography in which uranium mining, weapons manufacturing, power plants, atomic testing, and nuclear waste were represented as a totality—part of a single, integrated system (Figure 2).²⁶ Physicist Niels Bohr told scientist Edward Teller that building the atomic bomb would require remaking the United States into one huge factory. Bohr later reportedly told Teller, "You have done just that."²⁷ Radiation sufferers joined with anti-nuclear activists in exposing both the scope and scale of this factory, which had been hiding in plain sight.

As a result, pacifist, anti-war, and environmental organizations recognized the significance of the radiation movement and supported it. For example, the sponsors of an April 1980 conference for radiation victims included SANE, Women Strike for Peace, and the War Resister's League, and the steering committee for the National Committee for Radiation Victims included SANE, the American Friends Service Committee, and the Environmental Policy Center. These rosters capture the extent to which the radiation issue could create alliances between those who had fought in wars and those who had opposed them.²⁸



Figure 2. Map of Manmade Radiation Hazards, published in SANE WORLD, May 1979. Copyright held by Women Strike for Peace. Photo courtesy of Swarthmore College Peace Collection.

At the same time, there were crucial distinctions between the left-inflected movements that flourished in the 1960s and the new community of radiation sufferers and its patriotic body politics. The sufferers were primarily concerned with the recuperation of their lost patriotism in ways that the left-inflected movements were not. This meant that questions about imperialism and violence raised so acutely by the antiwar movement fell from view. In April 1980, a Japanese survivor of the 1945 bombing at Nagasaki told a room full of radiation sufferers that “We are all witnesses of the dangers of the nuclear program”—a generous declaration that no doubt contained a certain truth.²⁹ Yet the declaration overlooked gradations within the community along axes of culpability and victimhood. Accordingly, tensions sometimes rose to the surface. At the same 1980 gathering, Thomas Saffer, a member of the Marine Corps and the coordinator of the National Association of Atomic Veterans, expressed anger that foreign fallout victims had received federal compensation while Americans had not. “Why would our government award nearly \$3 million to the Marshallese and the Japanese who were involved in fallout as a result of the Eniwetok tests and deny us so severely?” he asked in frustration. “Those folks were not even US citizens.”³⁰ The government, in his view, had its priorities backward. “There is not one of us in the Association who does not love his country or who would not put on a uniform to defend it . . . We men who should have been decorated for our valor in partaking of what we were forced to do are dying as rejected and forgotten persons.”³¹

Saffer’s statement crystallizes the mistrust of government that animated the movement by 1980. Over and over again, radiation sufferers and their relatives portrayed themselves as patriots whose encounters with physical illness shattered their faith in the government. At a Congressional hearing in April 1979, Senator Edward Kennedy observed that the people of Utah had “always prided themselves on their patriotism,” but had come to feel they “were misled, even deceived” by their own government. Utah Senator Orrin Hatch concurred: “These are good, modest, patriotic people who are suffering. These are people who obey the law and pay their taxes, and who are now losing, if they have not already lost, faith in a Federal Government which failed to prevent or make amends for this catastrophe.”³² For their part, downwinders insisted that one of the most painful dimensions of their entire story was that they would have willingly accepted the risks required for national security had they only been told the truth. As downwinder Elizabeth Catalan told Congress in 1979:

I feel used. I feel like we did what we were asked to do by the Government, and the community went all out. And in return, you were used, you were conned. They knew. They knew, and they did not tell us. And I feel that had they told us, I feel that people would have—you know, had we known, we still had patriotism, there was still patriotism. People would have cooperated, but I feel that we had a right to know. I mean, for myself, you know, I will always live with the apprehension of “am I going to die of cancer some day?”³³

Let us note that Catalan herself was not a cancer sufferer but instead was apprehensive about getting sick in the future, placing anticipatory anxiety at the center of the downwinder experience. A psychiatrist affiliated with Physicians for Social Responsibility coined a term for a new syndrome, “atomic veterans syndrome.” “A healthy man,” he explained, “becomes an unhealthy man, an

unquestioning patriot becomes angry at the government, and focuses his life on that anger."³⁴ The main emotion fueling the movement was thus disillusionment—a sense of having been betrayed by a government that had downplayed or concealed the dangers of radiation in the rush to test weapons. (Downwinders often quoted AEC Chairman Thomas Murray who in 1955 declared “we must not let anything interfere with this series of tests, nothing.”³⁵)

In their disillusion, one can discern a distinct patriotic body politics. Radiation activism was populated by “people from America’s heartland,” observed a SANE newsletter, “the soldiers, the housewives, the workers. Not protestors, not skeptics—to begin with. But their bruising encounters with government irresponsibility . . . have worked a remarkable transformation. They have become activists, researchers, one-person investigating teams.”³⁶ This community of sufferers was certainly indebted to the antiwar movement, but it also deviated from it. Where the antiwar movement brought questions of moral culpability to the fore, radiation activists bracketed distinctions between sufferers, including those between civilians and members of the military, and between wartime victims and perpetrators. Whereas the anti-war movement was animated by a sense of violated principles, radiation sufferers were animated by a sense of injury and victimization—at once rooted in the body and reverberating beyond it—which created and sustained it as a community. Radiation sufferers also broke with the earlier movement in their insistence on the “accidental” origins of their activism. They described themselves as “reluctant activists” whose encounters with illness had left them with no alternative than to embrace an antagonistic stance vis-à-vis the government. This was a stance, they maintained, that they found uncomfortable—indeed, it was anathema to their true political proclivities, which ran in the opposite direction. This appeal to “reluctant activism” simultaneously acknowledged and disavowed the very protest culture that had presaged mobilization. The motivations of anti-war activists were often specious and self-seeking, radiation sufferers seemed to imply, but the motivation behind radiation activism was pure, precisely because this activism had been arrived at only with great reluctance. The repeated claim by radiation sufferers that they had turned to activism as a last resort drew an implicit line between “good” and “bad” activism, bad activists being those who embraced radical politics without apology or qualification.

The most significant divergence between the anti-war movement and the radiation movement hinged on which kinds of bodies would count as worthy of mourning and commemoration. For anti-war activists, the Orwellian and morally repugnant “body count” through which the US described its intervention obscured the broad, transnational character of the dead. To be sure, the dead included the mounting numbers of American soldiers coming home in body bags, but it also included the self-immolated Buddhist monks, the bodies of young college students shot down by the National Guard, and perhaps above all, the bodies of Vietnamese men, women, and children, which the US government disowned through its pseudo-objective, deceptive, distancing reportage. Anti-war activists thereby rejected a nationalist logic that viewed American lives alone as worth mourning. Radiation activists moved in the opposite direction. The government’s true crime, they suggested, was not that it had devalued human bodies in a universal sense, but that it had turned *American* bodies into fodder.

Even so, American nationalism was not a sufficient solvent for all the differences among radiation sufferers. At the April 1980 gathering, Lakota Hardin, a

representative of the Black Hills Alliance and the Women of All Red Nations, made it clear that for Native Americans who had gotten sick from uranium mining, this was simply the latest chapter in a history of governmental assaults. “They’re not going to do anything for us,” she predicted. “We’ve been going through this for 200 years.”³⁷ During her testimony, she directly addressed downwinders and atomic veterans, expressing both a halting compassion for their suffering and impatience with their political naivete:

All of these things I’ve heard you say here today, it’s hard for me to really, I guess it’s hard for me to feel sorry for you because . . . I mean, I feel sorry for you, but we have been struggling with this kind of thing that you are dealing with, with the cover-up, with the backs turned on you, with the door slammed in your face, for generations. I’m just a long line down of generations of Indian people who have come here for councils to talk to this government person or this agency for some kind of compensation, whether it be through education, religion, all of these things we’ve been affected in . . . and I just want you to know that now you realize what it is like to come and try to talk to this government . . . And I’m not here just to tell you all of this stuff. I’m here to ask you, what are you going to do if they don’t listen to you?³⁸

Hardin’s statement, colored by ambivalence and anger, exposes the fragility of the social bonds forged by illness. Radiation sickness could create a community of victims, but it could not always translate that community into a coherent politics. Hardin breaks the illusion of unity when she eschews the “we” for the “you,” placing herself apart and reminding her listeners that for at least some radiation victims, this violation has not led to a “moment of truth,” but instead constituted a historical same.

Hardin’s frustration also stemmed from the fact that some victims were accorded greater visibility than others within radiation activism. To be sure, anyone could be stricken with radiation-induced illness, as evinced by the testimonies that somberly catalogued the premature deaths of mothers, fathers, sons, daughters, sisters, brothers, aunts, and uncles. But within the iconography of suffering, there were two victims who assumed special prominence: the veteran and the child. As to the first, newsletters regularly featured photographs of the cancer-ridden veteran, sometimes accompanied by a World War II-era photograph of the same man years earlier, a handsome, strapping youth flanked by his army buddies (Figure 3). Placed in juxtaposition, the two photographs documented the radiation-induced leukemias, myelomas, and lymphomas that disproportionately afflicted veterans. This iconography of the cancer-sufferer punctured the image of the World War II soldier as strong, virile, and ennobled by his experience of combat in a morally unambiguous war. What risks had these soldiers incurred without their knowledge? How much radiation had they been exposed to? What invisible processes of cellular decay were already underway when the original photo was taken? As more and more veterans became sick, the weakening of white, masculine, militarized self-possession contributed to a growing perception of national decline after Vietnam.³⁹ Photographic images of enervated masculinity captured the contradictions contained within radiation activism. On the one hand, these images were indebted to the anti-war movement, which had held up the bodies of disabled soldiers as evidence of political criminality. On the other, the same images implicitly advanced the claim that there was something uniquely tragic about the stricken bodies of patriots.



Harold Joseph Ralph (center), 1945
A U.S. Marine in Nagasaki amid officially-
"harmless" radiation levels six weeks after
the atomic bombing.



Harold Joseph Ralph, 1978 Fifty-four years old, he died of multiple myeloma bone
marrow cancer in a Chicago hospital.

Figure 3. Harold Joseph Ralph in 1945 and 1978. Copyright held by National Citizens Hearings for Radiation Victims. Photo courtesy of Swarthmore College Peace Collection.

In addition to the atomic veteran, the young child emerged as a prominent symbol of radiation's dangers. While postwar scientists disagreed about whether there was a permissible dose of radiation, there was consensus that babies and young children were especially vulnerable to radiological injury. Developing tissue, organs, and bones were more susceptible to the absorption of radioactive isotopes like Strontium-90, and children's life spans meant that they had more time to suffer cumulative effects. One of the first suspected civilian casualties of fallout in the

United States was Martin Laird, who had been three years old in 1951 when weapons testing began seventy miles away from his home in Carson City, Nevada. He died of leukemia four years later. In 1958, Martin's mother, Martha Laird, appeared on Edward Murrow's nationally syndicated television show to argue that fallout had caused her son's death. "We are forgotten guinea pigs," she later charged at a 1979 Congressional hearing in Las Vegas, "We were feeding our children and families poisons from those bombs." Nevada Republican Senator George Malone accused her of pedaling "Communist-inspired scare stories."⁴⁰ But the tactic did nothing to staunch the painful testimonials from mothers and fathers who recalled how they had believed AEC assurances so completely that they had thought nothing of letting their children watch detonations and play in radioactive ash and uranium piles. The result was that downwind and mining communities became sacrificial zones where premature death was routine. Grandparents watched as grandchildren were diagnosed with thyroid cancer, leukemia, and tumors. Teenagers attended funerals for peers who sickened and died before graduating from high school. And parents like Martha Laird buried their children.⁴¹

This casting of both male veterans and young children as paradigmatic radiation victims propelled women, particularly in their capacities as wives and mothers, into prominence within the movement (Figure 4). At Congressional hearings and panels, women often held up photos of deceased children or husbands who had either died or were too sick to provide testimony on their own behalf. In the process, women emerged as powerful proxies for the sick, the dying, and the dead. The role of women as surrogates for missing (often but not always male) relatives illuminated a significant mode of women's political mobilization during the 1970s and 1980s, mirrored in the activism of both the wives, mothers, and sisters of POWs and MIAs in Southeast Asia and the women relatives of U.S. embassy personnel held hostage in Iran from November 1979 through January 1981.⁴² In all three cases, women sought to strategically muddy the waters between public and private life by bringing private, familial suffering into the public sphere. In the case of radiation activism, women were revealing not just any suffering, but one unleashed by cancer, a disease that remained culturally and morally stigmatized in the late 1970s.⁴³ When women talked about their husbands' experiences on a cancer ward or described how chemotherapy had ravaged a child or insisted on removing a wig while on the witness stand, they were participating in a larger project of "breaking the silence" surrounding cancer.⁴⁴ In the process, they were attacking the government for its failure to come clean with the public about radiation exposure and for robbing parents of their children or depriving a family of a male breadwinner. The issue of lost earnings was especially pertinent in the case of atomic veterans since their fight revolved around whether the VA would recognize radiological injury as a war-related disability and thus award payments to survivors.

Women's prominence within radiation activism also reflected the influence of the women's liberation movement. That movement, which had been propelled by both the vitality of the antiwar movement and the perception of sexism within it, flourished throughout the 1970s. In the broadest sense, women's visibility in the community of sufferers testified to the transformation of a once-male-dominated public sphere. More specifically, women radiation activists were tapping into what by the late 1970s had emerged as a significant vein of feminist politics: the revelation that what happened to women's *bodies*—including assaults

Joe Harding with wife Clara, the last evening of his life.



Figure 4. Photo of Joe and Clara Harding. Copyright held by National Citizens Hearings for Radiation Victims. Photo courtesy of Swarthmore College Peace Collection.

on health from invisible streams of toxicity from a debased or irradiated environment—had political meaning. Within the radiation sufferer’s movement, women activists brought this feminist insight to bear on their own revisionist histories of the Cold War. For example, in the epilogue of her 1992 memoir *Refuge: An Unnatural History of Family and Place*, Utah native Terry Tempest Williams writes that she belongs to a “Clan of One-Breasted Women.” Her mother, her grandmothers, and six of her aunts all had mastectomies. Seven of them died from breast cancer. She recalls what she had long assumed was a recurring childhood dream of a “flash of light in the night in the desert.” Years later, her father clarified that the dream was a memory from the 1957 Operation Plumbbob test series: “We were driving north, past Las Vegas. It was an hour or so before dawn, when this explosion went off. We not only heard it, but felt it. . . . We pulled over and suddenly, rising from the desert floor, we saw it, clearly, this gold-stemmed cloud, the mushroom. The sky seemed to vibrate with an eerie pink glow. Within a few minutes, a light ash was raining on the car.” Williams grew up in a Mormon culture that had placed a heavy premium on deference to authority; she had been

told as a child not to “make waves” or to “rock the boat.” But the experience of witnessing the deaths of the women in her family had finally convinced her that “the price of obedience” had “become too high.”⁴⁵ Perhaps the most widely read memoir about radiation exposure in the American West, *Refuge* is simultaneously a feminist and environmentalist chronicle of sickness, a naturalist account of region and place, and a critical reappraisal of Cold War militarism.

But just as radiation activism deviated from the anti-war movement, it also broke with the women’s liberation movement in revealing ways. In contrast to feminists, women radiation activists identified as patriotic, they were often affiliated with the military, and, as we have already seen, they took pains to define themselves as reluctant activists. Crucially, they saw themselves as protectors of the family against a government that had failed it—first through haste and rashness and later through neglect and a refusal to own up to their mistakes. *Contra* feminists who often critiqued the family as a locus of patriarchy and gender oppression, these women positioned themselves as *defenders* of the traditional family against a callous government. In the process, they contributed to a discourse of family decline that, as I have argued elsewhere, was closely bound up with fears of national decline during these years and that contributed to the conservative resurgence.⁴⁶ They consistently spoke of their love of country, but they voiced a deep mistrust of the government and expressed skepticism about Cold War militarism and the ways that officials had made reckless decisions in the name of national security. Like radiation activism more broadly, their politics cannot be neatly characterized as either “left” or “right.” Rather, these women stood at a political crossroads: they articulated a patriotic body politics that served as a *mediation* as the country’s politics mutated from “left” (anti-war) to “right” (Reaganesque).

Let us conclude. The story of radiation activism complicates the historical axiom that the Vietnam War led to the political divisions of the 1970s. As antiwar activists squared off against working class patriots and hardhats, scholars have argued, Republican politicians recognized that they could woo white, working-class voters away from the Democratic Party not by addressing bread-and-butter economic issues, but instead by appealing to patriotism and militarism. The polarization thesis contains elements of truth, but it overlooks what the anti-war movement had in common with the new right: a widening mistrust of the government. Many atomic veterans and downwinders may have condemned the anti-war movement for its perceived elitism, but they shared its critique of governmental duplicity and its horror that men were dying in a military conflict that lacked a clear moral and political objective. After all, not unlike those who had borne the brunt of atomic testing, it was working class communities of all races whose sons had shouldered the burden of the war. A fireman who lost his son in Vietnam expressed a sentiment that could easily have come from a down-winder: “I’m bitter. You bet your goddam dollar I’m bitter. It’s people like us who give up our sons for the country.”⁴⁷ Radiation sufferers keenly understood that some communities had been asked to bear the costs of the Cold War more than others and that it was government policies that were to blame. Over the course of the 1970s, the intense mistrust of government that had fueled the antiwar movement circulated from political left to right and back again. In this circulation, the symbol of the body-as-fodder supplied a crucial mediation.

If we trace the movement of this symbol across the political spectrum, we can see that the subsequent successes of post-Vietnam conservatism relied less

on an overt rejection of the left and more on the creative appropriation of some of its core imagery. The contradictions contained within the radiation movement make this clear. These “reluctant activists” were driven not by partisanship, but by a shared identity rooted in a collective sense of injury and victimization. They were eager to differentiate themselves from other activists whose motivations seemed suspect. Energized in part by the very forces they sought to disavow, they created a culture of protest that extended the reach of governmental mistrust into communities that had once seen themselves as immune to political dissent. By locating all radiation victims along a continuum of suffering, activists insisted that uranium mines, munitions factories, power plants, testing sites, and nuclear waste disposal facilities were part of a single integrated system. In the process, they challenged a Cold War dissociative logic that had demarcated sharply between plants and bombs, and between the civilian and military applications of atomic power. They thus found themselves provisionally in accord with pacifists, environmentalists, and anti-nuclear activists, who saw radiation sufferers as allies in their struggle against both atomic weaponry and the spread of nuclear power plants. But they differed from 1960s activists in their sense of a wounded nationalism and above all, in their repeatedly expressed desire to recuperate a patriotic ideal.

By foregrounding the body-in-pain, then, the community of radiation sufferers helped to translate the antiwar movement’s universalist, justice-based condemnation of war death into a conservative discourse that was at once anti-government and patriotic. What made the radiation sufferer a crucial mediating figure was not that so much that his patriotism had been shaken, but rather that *in the wake of a bodily trauma he longed for it to be restored*. The earlier antiwar movement sought not the recuperation or recovery of a lost patriotism, but a reappraisal of American power. Bringing together bodily injury and political trauma, the community of sufferers tethered the bodies of the dying veteran, the cancer-afflicted child, and the grieving widow to a condemnatory vision of government. The government had concealed and deceived, had harbored secrets, and most importantly, had betrayed its most loyal citizens. But ultimately, this patriotic body politics held to the deeply conservative idea that radiation sufferers were true Americans who could do what the nation as a whole would have to do after the Vietnam War: overcome an earlier betrayal.

The theme of betrayal—so central to radiation politics—was *the* operative emotion that coursed through the conservative resurgence of the 1970s. This theme may have had its origins in the anti-war movement, but it was gradually transformed into a conservative tenet. From the theory that the American government had abandoned MIAs overseas to the charge that US policymakers had adopted a defeatist, weakened stance in the wake of Vietnam; from the perception that liberal legislators and judges supported the interests of newly empowered women, gay people, and racial minorities over those of white, law-abiding tax payers to the accusation that the courts were eroding traditional family values and sacrificing the lives of the unborn in the rush to endorse feminist goals. These indictments all implicitly advanced the claim that an overly-liberal state, in collusion with an adolescent culture, had disowned the nation’s most loyal and unsailable citizens: soldiers, military men, traditional husbands and wives, workers and law-abiding tax-payers, the unborn. The radiation sufferer was another such loyal citizen who had been abandoned and betrayed.

For too long, scholars have confined their discussions of “body politics” to those issues most frequently associated with the culture wars of the 1980s and 1990s: abortion and reproductive rights, women’s sexual freedom, and gay liberation. Given how polarizing those issues remain, the attention is warranted. But it has also led to a truncated understanding of post-1960s body politics, one that casts traditional, middle Americans as solely interested in regulating and controlling the bodies of others. But these Americans also possessed bodies, and in the case of radiation sufferers, the sickly body emerged as a damning symbol of a government that had turned its back on patriots. This symbol fueled the conservative imaginary well before—and perhaps more deeply—than the metastatic militarized hard bodies of 1980s Hollywood film. During the 1970s and 1980s, struggles over illness and wellness played out at women’s and black health clinics, in queer urban neighborhoods, on the steps of capitol buildings where abortion opponents and defenders of choice squared off, and in front of the headquarters of the Food and Drug Administration and the National Institute of Health, where AIDS activists demanded that the government respond to a disease it had too long ignored. But the struggle also played out in the uranium mines, munitions factories, and testing sites of the U.S. southwest and west. Against a late Cold War landscape, those who had borne the burdens of the atomic age waged a fight that was all their own, but that also—precisely because it sought a redemption that the anti-war movement could not promise—paved the way for a new, conservative politics.

Endnotes

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1. On the body as a locus of sexual pleasure within the women’s movement, see Alice Echols, *Daring to Be Bad: Radical Feminism in America, 1967–1975* (University of Minnesota, 1989); Jane Gerhard, *Desiring Revolution: Second Wave Feminism and the Rewriting of American Sexual Thought, 1920–1982* (Columbia, 2001), and Kathy Peiss and Christina Simmons, eds., *Passion and Power: Sexuality in History* (Temple, 1989). On the history of the women’s health movement, see Kathy Davis, *The Making of Our Bodies, Ourselves: How Feminism Travels Across Borders* (Duke, 2007), Wendy Kline, *Bodies of Knowledge: Sexuality, Reproduction, and Women’s Health in the Second Wave* (University of Chicago, 2012), and Sandra Morgen, *Into Our Own Hands: The Women’s Health Movement in the United States, 1969–1990* (Rutgers, 2002). On the centrality of medical discrimination within the black power movement, see Alondra Nelson, *Body and Soul: The Black Panther Party and the Fight Against Medical Discrimination* (University of Minnesota, 2011). On Love Canal, see Elizabeth Blum, *Love Canal Revisited: Race, Class, and Gender in Environmental Activism* (University Press of Kansas, 2008). On toxicity and the body more broadly, see Nancy Langston, *Toxic Bodies: Hormone Disruptors and the Legacy of DES* (Yale, 2011) and Linda Nash, *Inescapable Ecologies: A History of Environment, Disease, and Knowledge* (University of California, 2006). On the politicization of science and health throughout the AIDS crisis, see Steven Epstein, *Impure Science: AIDS, Activism, and the Politics of Knowledge* (University of California, 1996) and Debra Gould, *Moving Politics: Emotion and ACT-UP’s Fight Against AIDS* (University of Chicago, 2009). Books that explore grassroots health movements and popular epidemiology more broadly include

Jason Corburn, *Street Science: Community Knowledge and Environmental Health Justice* (MIT, 2005) and Steve Kroll Smith, Phil Brown, and Valerie J. Gunter (eds.), *Illness and the Environment: A Reader in Contested Medicine* (New York University, 2000).

2. See Susan Jeffords, *Hard Bodies: Hollywood Masculinity in the Reagan Era* (Rutgers, 1993). Other cultural studies works that take up this figure include David Savran, *Taking It Like a Man: White Masculinity, Masochism, and Contemporary American Culture* (Princeton, 1998); Peter Lehman, ed., *Masculinity: Bodies, Movies, Culture* (Routledge, 2001); Kaja Silverman, *Male Subjectivity at the Margins* (Routledge 1992), and Sarah Hagelin, *Reel Vulnerability: Power, Pain, and Gender in Contemporary American Film and Television* (Rutgers, 2013).

3. In addition to causing cancer, exposure to radiation could also have mutagenic and teratogenic effects on the developing fetus, including mental retardation and microcephaly. This essay focuses on radiation's carcinogenic effects because this assault on health was prominent throughout the radiation activism of the late 1970s and early 1980s. But the place of fetal injury in debates about radiation risk is also an important story and is taken up at length in my book-in-progress, *The Accident: Three Mile Island and the Transformation of American Politics*.

4. On the NTS in particular and the American West as a site of nuclear toxicity more broadly, see Valerie Kuletz, *The Tainted Desert: Environmental Ruin in the American West* (Routledge, 1998) and "Invisible Spaces, Violent Places: Cold War Nuclear and Militarized Landscapes," in Nancy Lee Peluso and Michael Watts, eds., *Violent Environments* (Cornell, 2001), 237–260. Also see John Beck, *Dirty Wars: Landscape, Power, and Waste in Western American Literature* (University of Nebraska, 2009), Kevin Ferlund, ed., *The Cold War American West* (University of New Mexico, 1998), Tom Vanderbilt, *Survival City: Adventures Among the Ruins of Atomic America* (Princeton Architectural Press 2002), and Peter C. van Wyck, *Signs of Danger: Waste, Trauma, and Nuclear Threat* (University of Minnesota, 2005). On the history of the plutonium industry in Hanford, see Hill Williams, *Made in Hanford: The Bomb that Changed the World* (Washington State University, 2011), Kate Brown, *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters* (Oxford, 2013), and William J. Kinsella and Jay Mullen, "Becoming Hanford Downwinders: Producing Community and Challenging Discursive Containment," in Bryan C. Taylor et al., eds., *Nuclear Legacies: Communication, Controversy, and the US Nuclear Weapons Complex* (Lexington Books, 2007). On Rocky Flats, see Len Ackland, *Making a Real Killing: Rocky Flats and the Nuclear West* (The University of New Mexico, 1999), Kristin Iverson, *Full Body Burden: Growing Up in the Shadow of Rocky Flats* (Broadway Books, 2013), and Shiloh R. Krupar, *Hot Spotter's Report: Military Fables of Toxic Waste* (University of Minnesota, 2013). On atomic veterans, see Eileen Welsome, *The Plutonium Files: America's Secret Medical Experiments in the Cold War* (Dial Press, 1999). The NTS, Rocky Flats, and Hanford are all analyzed as sites of Cold War commemoration in Jon Weiner, *How We Forgot the Cold War: A Historical Journey Across America* (University of California, 2012).

5. See Michael J. Allen, *Until the Last Man Comes Home: POWs, MIAs, and the Unending Vietnam War* (University of North Carolina, 2011).

6. The cultural, social, and intellectual significance of the "body in pain" is the subject of Elaine Scarry's now classic book *The Body in Pain: The Making and Unmaking of the World* (Oxford, 1987). Also see Cindy Linden, "Fleshly Evils: Clinical and Cultural (Il)logics of the Chronic Pain Subject in Contemporary US Society," in Zoe Detsi Diamanti, Katerina Kitsi-Mitakou, and Effie Yiannapoulou, *The Future of Flesh: A Cultural Survey of the Body* (Palgrave, 2009), 79–93.

7. For good overviews of the history of ionizing radiation, see Catherine Caufield, *Multiple Exposures: Chronicles of the Radiation Age* (University of Chicago, 1989) and Marjorie Malley, *Radioactivity: A History of a Mysterious Science* (Oxford, 2011). On the entwined

histories of radiation and radium, see Lawrence Badash, "Radium, Radioactivity, and the Popularity of Scientific Discovery," *Proceedings of the American Philosophical Society* 122 (1978): 145–154; Luis Campos, "The Birth of Living Radium," *Representations* 97 (Winter 2007): 1–27; and Carolyn de La Pena, *The Body Electric: How Strange Machines Built the Modern American* (New York University, 2005), 173–4. On radiation safety considerations during the Manhattan Project, see Barton Hacker, *The Dragon's Tail: Radiation Safety in the Manhattan Project, 1942–1946* (University of California, 1987). On the history of radiation protection, see J. Samuel Walker, *Permissible Dose: A History of Radiation Protection in the Twentieth Century* (University of California, 2000). On the ways in which the 1945 dropping of the atomic bombs advanced research into the health effects of radiation exposure, see M. Susan Lindee, *Suffering Made Real: American Science and the Survivors of Hiroshima* (University of Chicago, 1994).

8. Quoted in William Graebner, *The Age of Doubt: American Thought and Culture in the 1940s* (Twayne Publishers, 1991), 20.

9. On the history of atomic weapons testing and the radiation scares of the 1950s, see Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (The University of North Carolina, 1994), *Fallout: A Historian Reflects on America's Half-Century Encounter with Nuclear Weapons* (Ohio State, 1998), and "From Activism to Apathy: The American People and Nuclear Weapons, 1963–1980," *The Journal of American History* 70:4 (March 1984): 821–844; Robert A. Divine, *Blowing on the Wind: The Nuclear Test Ban Debate, 1954–1960* (Oxford, 1978); Milton Katz, *Ban the Bomb: A History of SANE, 1957–1985* (Greenwood Press, 1986); and Joseph Masco, *Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico* (Princeton, 2006), 43–98.

10. Masco, *Nuclear Borderlands*, 60.

11. Spencer R. Weart, *Nuclear Fear: A History of Images* (Harvard, 1989, 2012), 187.

12. Joint Committee on Atomic Energy, *Fallout from Nuclear Weapons Tests: Summary-Analysis of Hearings Before the Special Subcommittee on Radiation*, 86th Cong., 1st sess., June 22–26, 1959.

13. See for examples, "Atomic Fallout—How Bad? The Facts and the Intrigue," *Newsweek* (April 6, 1959): 36–8; "These Precious Days," *New Yorker* (May 16, 1959): 180; and "The Silent Killer," *Saturday Evening Post* (August 29, 1959): 25; The September 1959 edition of *Scientific American* was devoted to the theme of ionizing radiation.

14. Rachel Carson, *Silent Spring* (Houghton-Mifflin, 1962), 6.

15. On the specific history of downwinders, see Howard Ball, *Justice Downwind: America's Atomic Testing Program in the 1950s* (Oxford, 1986); Philip Fradkin, *Fallout: An American Nuclear Tragedy* (University of Arizona, 1989); Carole Gallagher, *American Ground Zero: the Secret Nuclear War in the West* (MIT, 1993); and Richard L. Miller, *Under the Cloud: the Decades of Nuclear Testing* (Two Sixty Press, 1999).

16. Transcript of testimony of Preston Truman presented before the Citizens' Commission Panel, Washington DC, April 11–14, 1980, SANE, Inc. Records, Series G, Box 137, Files of E. Glennon, Folder: Radiation Victims, 1980–3, Swarthmore College Peace Collection (hereafter referred to as SCPC).

17. Subcommittee on Oversight and Investigations of Committee on Interstate and Foreign Commerce House of Representatives and the Health and Scientific Research Subcommittee of the Labor and Human Resources Committee and the Committee on the Judiciary US Senate, *Health Effects of Low-level Radiation, Vol. 1*, 96th Cong., 1st sess., April 19, 1979, 8.

18. These studies are discussed at length in the SANE, Inc. Records, DG 58, Series G, Box 140, Files of SANE Publications Directors, 1978–1985, Folder: Low Level Radiation:

Reference Material, 1978–1980, SCPC. On children’s particular vulnerability to radiation exposure, see Divine, *Blowing on the Wind*, 274.

19. The debate about whether or not there was such a thing as a “permissible dose” was accompanied by a second, closely related debate about whether or not radiation exposures were cumulative (i.e. did low-level exposures to radiation accumulate inside the body over an extended period of time, or did they dissipate?). On this debate, see Ball, *Justice Downwind*, 62–3.

20. See Michael Foley, *Front Porch Politics: The Forgotten Heyday of American Activism in the 1970s and 1980s*, (Hill and Wang, 2013).

21. Lyon, Joseph L., et al., “Childhood Leukemias Associated with Fallout from Nuclear Testing,” *New England Journal of Medicine* 300 (February 22, 1979): 397–402.

22. See Ball, *Justice Downwind*, 45.

23. “A Flinty Grandmother Battles for the Victims of Utah’s Nuclear Tragedy,” *People Magazine* 12:14 (October 1, 1979): 26–28.

24. Transcript of testimony of OT Weeks presented before the Citizens’ Commission Panel, National Citizens’ Hearings for Radiation Victims, Washington DC, April 11–14, 1980, SANE, Inc. Records, Series G, Box 137, Files of E. Glennon, Folder: Radiation Victims, 1980–3, SCPC. Howard Ball discusses several of these organizations in *Justice Downwind*. The invisibility and dormancy of radiation’s injuries make it an example of what literary scholar Rob Nixon has called slow violence, forms of violence that are accretive and slow-moving and thus cannot be easily represented or captured visually (in contrast to more spectacular forms of violence such as terrorism). See Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Harvard, 2011).

25. “Declaration of Nuclear Resistance,” Clamshell Alliance, Papers of the Clamshell Alliance, unprocessed, SCPC.

26. This attempt to capture both the breadth and interconnectedness of a nuclear geography has also been pursued by photographers. See, for example, Richard Misrach, *Bravo 20: The Bombing of the American West* (Johns Hopkins University, 1990) and Peter Goin, *Nuclear Landscapes* (Johns Hopkins University, 1991). Also see Patrick Nagatani and Parry Janis, *Nuclear Enchantment* (University of New Mexico, 1991).

27. Quoted in Krupar, *Hot Spotter’s Report: Military Fables of Toxic Waste*, 160.

28. “A Call for Citizens’ Hearings,” Washington DC, April 11–14, 1980, SANE, Inc. Records, Series G, Box 137, Files of E. Glennon, Folder Name: Radiation Victims, 1980–3, SCPC Papers.

29. “Invisible Violence: Proceedings for the National Citizens for Radiation Victims, April 1980,” SANE, Inc. Records, Series G, Box 139, Files of SANE Publications Directors, 1978–1985, Folder: Invisible Violence: Hearing Proceedings, April 11–14, 1980, SCPC.

30. A federal compensation program for Marshall Islanders began in 1956.

31. Transcript of testimony of Thomas H. Saffer, National Coordinator of the National Association of Atomic Veterans, Citizens’ Commission Panel, National Citizens’ Hearings for Radiation Victims, Washington DC, April 11–14, 1980, SANE, Inc. Records, Series G, Box 137, Files of E. Glennon, Folder: Radiation Victims, 1980–3, SCPC.

32. *Health Effects of Low Level Radiation*, Vol. I, 2, 8.

33. *Ibid*, Statement of Elizabeth Catalan, 245.

34. Transcript of testimony of Dr. Henry Vyner, psychiatrist and member of Physicians for Social Responsibility, Citizens' Commission Panel, National Citizens' Hearings for Radiation Victims, Washington DC, April 11–14, 1980, SANE, Inc. Records, Series G, Box 137, Files of E. Glennon, Folder: Radiation Victims, 1980–3, SCPC.
35. For example, see Terry Tempest Williams, *Refuge: An Unnatural History of Family and Place* (Vintage, 1991), 284.
36. Report on National Citizens Hearings for Radiation Victims, April 11–14, 1980, *SANE World* (September 1979), Periodicals Collection, SANE World, January 1965–October 1986, SCPC.
37. Quoted in William Sweet, "Human Fallout from the Atomic Age," *Environmental Action* (June 1980). SANE, Inc. Records, Series G, Box 139, Files of SANE Publications Directors, 1978–1985, Folder: Citizens Hearings for Radiation Victims, 1980, SCPC.
38. Transcript of testimony of Lakota Hardin, Citizens' Commission Panel, National Citizens' Hearings for Radiation Victims, Washington DC, April 11–14, 1980, SANE, Inc. Records, Series G, Box 137, Files of E. Glennon, Folder: Radiation Victims, 1980–3, SCPC.
39. By 1980, no less of an icon of World War II martial masculinity than John Wayne had been identified as a potential radiation victim. By that time, his surviving family members publicly expressed their fear that his death from stomach cancer in June 1979 had been caused by fallout exposure he had received on the set of the 1956 film *The Conquerors*, which had been shot only 137 miles from the NTS. By November 1980, ninety-one cast and crew from the film had been diagnosed with cancer, and forty-six of them (including Wayne and his costar Susan Hayward) had died. See "The Children of John Wayne, Susan Hayward, and Dick Powell Fear that Fallout Killed Their Parents," *People Magazine* 14:19 (November 10, 1980), 42–3.
40. "Nevada Woman Says Nuclear Fallout Made Family Guinea Pigs," *New York Times* (April 24, 1979): A16.
41. These accounts illuminate the unique place of cancer—and pediatric cancer in particular—in the postwar cultural and social imaginary. On the cultural history of cancer, see Siddhartha Mukherjee, *The Emperor of All Maladies: A Biography of Cancer* (Scribner, 2011); and James T. Patterson, *The Dread Disease: Cancer and Modern American Culture* (Harvard, 1987). On the ways that politics has shaped our scientific understanding of cancer, see Robert N. Proctor, *Cancer Wars: How Politics Shapes What We Know and Don't Know About Cancer* (Basic Books, 1995).
42. On women as proxies for missing men throughout the POW/MIA controversy, see again Allen, *Until the Last Man Comes Home*, and Natasha Zaretsky, *No Direction Home: The American Family and the Fear of National Decline, 1968–1980* (The University of North Carolina, 2007), 25–70. On the parallel role of women relatives of embassy staff held hostage during the Iranian hostage crisis of 1979–80, see Melani McAlister, *Epic Encounters: Culture, Media and U.S. Interests in the Middle East, 1945–2000* (University of California, 2001), 198–234. This mode of women's political mobilization was not confined to the United States. On the contrary, it found its most vivid expression in the context of human rights resistance to the Latin American dictatorships of the mid-1970s and early 1980s. See, for example, Marguerite Guzman, *Revolutionizing Motherhood: The Mothers of the Plaza de Mayo* (Rowman and Littlefield, 2002).
43. On the cultural stigma surrounding cancer, see Susan Sontag, *Illness as Metaphor* (Farrar, Strauss, and Giroux, 1988).
44. The wig incident is described in Ball, *Justice Downwind*, 182.

45. Tempest Williams, *Refuge*, 281–286. I conducted a Google search and found that Williams' *Refuge* has been assigned in classes on Nature Writing, Environmentalism, Women and Creativity, and Ecofeminism, suggesting the ways in which works like hers bridge feminism and radiation activism. In *Justice Downwind*, Ball repeatedly emphasizes that many Utah downwinders were also practicing Mormons, and the theme is also taken up in downwinder portraits like Carole Gallagher's *American Ground Zero*. I have not explored the Mormon dimensions of the radiation movement in this essay, because throughout the sources I have explored here (primarily Congressional and conference testimonies), radiation sufferers themselves made little mention of Mormon identity, emphasizing instead their patriotism. This begs the question of whether or not this downplaying of Mormon identity represented a deliberate, conscious strategy among downwinders as they prepared their testimonies (a question for which my own research provided no clear answer).

46. See Zaretsky, *No Direction Home*.

47. Quoted in Eli Zaretsky, *Why America Needs a Left: A Historical Argument* (Polity, 2012), 145.

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