

An Archive of Threat

History cannot occur without the event of language [and] without the corresponding emergence of an image.

— Eduardo Cadava, *Words of Light: Theses on the Photography of History*



1. Radium Gilbert. Photograph by author.

1. Invitation

Several months ago I received a curious invitation. Could you please make something like “a mutant crossing of Robert Smithson’s ‘Monuments of Passaic’/‘Mirror Travels in the Yucatan’ crossed with Chris Marker’s *La Jetée*?” wrote a curious and complimentary journal editor. What a lovely, perfect, and vexing image. And what a perfect impossibility. Marker’s poetic photographic essay and Smithson’s geopoetics. Something that might “account for your journey across both books, and which would consist of your photographs and images for *Highway of the Atom* and *Signs of Danger* (and some that didn’t make it into those books?), as well as some of the designs produced for the WIPP monument that appear in *Signs of Danger*.” In other words, “tennis courts, highways, plaques, maps, trees, barges, warning signs, stones, obelisks, deserts, symbols, drawings.”

No stray dogs. No suckling pigs.

I confess that the analogy here may be less along the Marker/Smithson axis and more reminiscent of Hollis Frampton. This would perhaps convey the parallel but disjunctive itineraries of the images and the text that follow.

2. Images

Like all archives, this small collection of images and captions articulates with a long story, by which I mean many long



2. Motor Dump. Photograph by author.

stories. Some of them true. Of all of the possible beginnings, or all the possible gestures that might constitute a beginning, I will choose this one.

A history written not with lightning, but close; a history written with the energy of restless, recalcitrant matter, matter seeking its own repose, struggling toward the mute lifelessness of lead.

I wish to convey some small piece of the story of the nuclear, at least as I have been following it. For this, to paraphrase Stengers, is not simply a matter of power but an affair of a process or processes that one must *follow*.¹

If I were to try to situate myself in relation to all of this, it might be to say that my concern has been about the constellation of effects wrought by atomic and nuclear threats and disaster. In particular, I am interested in aspects of memory in relation to traumatic transformations of place, of landscape.

What follows is an unfinished text, in relation to the curious invitation, driven by images (some of which have appeared in print, others not) taken from two book projects: *Signs of Danger: Waste, Trauma, and Nuclear Threat*, and *Highway of the Atom*. This is not so much a dialogue with the images as it is a set of reflections or captions *occasioned* by the images. I should point out—although this will be clear—that I am not a photographer. My photographs are simply vague testimony, bookmarks, gestures, and suggestions.



3. Fused Sand. NWT Archives/
Busse/N-1979-052: 4877.

3. Site

Great Bear Lake in Canada's Northwest Territories is a vast inland sea, nearly thirty-one thousand square kilometers. On the far eastern shore, where no one lives today, just below where the tree-line cuts across the immense glacial body of the lake, carved into barely fathomable depths sometime in the late Pleistocene, at the far end of what is now called McTavish Arm, buttressed in ancient granites by the very western edge of the Precambrian Shield, lies Port Radium. This land, home to the Sahtú Dene for some number of millennia, is also a site of considerable significance to Canada's atomic history. A point of origin, one might say, where a frontier economy, with its currency of fur, shifted awkwardly toward the very contemporary projects of an atomic modernity. From here, on Great Bear Lake, uranium ore was transported south by river and rail, leaking as it went, for processing at Port Hope, Ontario, and then into the productive centers of World War II — The Manhattan Project as it is conventionally known — subsequently extending itself over the clear morning skies of Hiroshima and Nagasaki, and back again into the Dene community at Déline in the form of cancers, stories, addictions, and depression.

4. Field Note: Yellowknife, August 2004

The morning spent with a Borgesian map of Great Bear Lake, by the Mundy Map Company of Edmonton. It was produced about the time that the radium boom took place on Great Bear Lake. Probably 1931 or so. There is no date. It was produced quickly,



4. Radium Trail.



5. *Astro-Digest*. NWT Archives/Bruce Hunter/ N-1998-015: 0121.

likely in response to the influx of would-be claim stakers—many, refugees from the Yukon gold rush and the economic depression in the south—most, looking to relieve the Precambrian cliffs of Great Bear Lake of pitchblende, the source of radium.

You could smell it, they said.

5. Punctum

And then this. Taken at Port Radium in the 1930s, this image like many in the archive, is undated. The people, unnamed.

This one though, is striking. It is hard to know how to address it. A simple staged photograph. The snow makes it look like spring. Both reading. One, a look of consternation, or is it disbelief? The other, partially perched on a shipping drum, with a look of amusement, delight. They do not appear to be Dene; the parkas suggest they are Inuit, visitors from (further) north, the Inuvialuit region.² Perhaps the Coppermine area. Why were they there? They may have had been visiting Caribou Point—Edaiila, as the Dene call it—one of four headlands that physically divide the arms of Great Bear Lake.³

In any case, from there it would have been just a short trek across the ice to Port Radium.

Seeking to know more about these anonymous people posed at the site of the radium and uranium mine, I inquired with the archive in Yellowknife. Could they, I asked, take a

closer look at the negative and tell me perhaps the date on the *Astro-Digest* (it looks like it appears on the lower right of the cover), and was there any other information about the image itself or the unnamed readers pictured? A couple of hours later, I received this reply:

Hi. The only caption we have was added by the Archivist:
[Unidentified man and woman reading magazines at Port Radium.]

And it's actually a print so I'm not able to make out the cover information either, sorry.

So much for that. What is it that strikes me here? The glasses? The pose? Their anonymity? The heavy gloves? The likelihood that neither of them would possess the mode of literacy that now pervaded their place. The advertisement for the notorious border-blaster radio station XEAW. The chilling dramatic irony of the just-visible supertitle, "Tomorrow's Headlines."⁴

It's none of this, exactly. Or it's all of it, *and* that they *were* there, *and* that the photographer wanted to bring together in such a way two "marginal curiosities." A perfect performance of the interesting yet ultimately fruitless re-search cul-de-sac.



6. Marker, Cameron Bay, Great Bear Lake. Photograph by author.

6. Index

Chafed by the real—yes, we have no dispute here. But not exhausted by it. One must know something more.



7. Radium G. Photograph by author.

7. Eldorado

Another way to tell this story is one that begins (or ends) at a place quite far from here, at Library and Archives Canada where there is a vast repository of such objects as one might wish to relay into concepts. Of particular interest to me, this archive is home to some thirty-four meters of objects—more often called records—belonging to Eldorado Nuclear Limited.

From the *terra nullius* of the mid-Depression Canadian North, Eldorado was to invent a decidedly modern North, not once but twice, from a site on Great Bear Lake, at a place known to some as Port Radium. From this place, Eldorado pioneered two uniquely modern Canadian staples—staples that created strange loops between the premodern fur-trade routes and the very deadly projects of atomic modernity.

This particular North began in 1930 with one of the richest mines in the world—a “mineral museum,” it was called, featuring an *abécédaire* of minerals and metals, but most valuable of all was the radium-bearing pitchblende. At the time, radium—the most valuable commodity on earth—was held to be a substance of miraculous power; it was *action* at a distance, a tonic for health, scourge of the cancerous cell. And in the second instance, this time at the dawn of the Second World War—with an Eldorado transformed and fortified as a Corporation of the Crown—as an Allied source of strategic uranium, ore that made its transformed debut at Alamogordo in July of 1945, and then reprised shortly thereafter, over Hiroshima and Nagasaki.

The aptly named Eldorado archive is a kind of black box, a grail, on the Highway of the Atom. Largely inaccessible to researchers since the time of its deposit, it contains papers—the reports, minutes, and drafts, the marginalia and maps, and photographs, sketches, tables, and figures—that collectively

might, one could imagine, divulge something about the details of Canada's involvement in a war effort to invent something that promised to eradicate war itself.

It is thus a repository—a fantastic abridgment of testimonies and stories—of considerable interest to those who may wish to understand this time through the optic of what was kept and concealed, of the remains. And although I have barely begun to traverse this potlatch of objects, what I know already is what is *not* contained in this archive, or what is made present only as an absence, as the inductive terminus of a *via negativa*.

Like so many projects that have and continue to take place in the North of Canada, this archival absence refers to the stories of those people who actually live there, who labored on the Highway of the Atom, who watched as their lands were contorted into a site of “national self-realization.” Yet their story, their stories, remain closed for us in different ways as well. Of course they are inaccessible, if by that we mean geographically remote; a pious and ironic alibi. But more than this, they are closed because we have not had ears with which to hear them.

But this wasn't just a story of the dynamics of margin and center in the development of a staple (although it is certainly that). Nor is it just a vignette within the larger arc of Canada's atomic history (although it is that, too). There is more. The Dene never really realized what they were up to. There were white guys and machines; it was very busy, and there was money. In any case, having already undergone the catastrophe of the church, and finding themselves more or less permanently ensconced in a village, the mining was just *another thing* happening on their land. It wasn't until much, much later—the 1990s—that the Dene came to realize that the project they had become involved in was in fact killing them *and* had culminated in the massacre of over 227,000 Japanese civilians and 30,000 or so Korean laborers.

8. Noeme

The blind field is in some way constituted by something that remains outside of the image. Or perhaps just certain images—“a kind of subtle beyond—as if the image launched desire beyond what it permits us to see.”⁵ Beyond the image, yet occasioned by it. Its lineage does not derive from the operator/photographer/author/tourist/agent/whatever. It begins there, one might suppose, but this beginning is also the moment of its occlusion. Nor does it derive from the ontological claims of the noeme; always in some manner a dispute about the image's motivation, its mode of indexicality. Where Peirce might point to a “blind compulsion,” evoking an existential bond,



8. Port Hole #9, Mackenzie River.
Photograph by author.

and for Barthes, the “that-has-been,” as a nominal certification of something, the blind field leads us outside; its itinerary is an elsewhere of the image.⁶ The blind field, a ghostly intrusion, a disturbance, a return of the dead.

9. Wounds

To approach the history of the nuclear is in a way to deal with a blind field of culture.

In “A Difficulty in the Path of Psychoanalysis,” Freud wrote about the great wounds of Western civilization, that is, the wounds that undermined the “universal narcissism of men” — the “three severe blows from the researches of science.”⁷ The first had to do with the dwelling-place, earth, the *oikos*, and its place in the cosmos as its unmoving center. This, he said, is associated in our minds with the name and work of Copernicus . . . [the] first blow, was thus, the *cosmological* one.”⁸

The second wound concerns animals, and the gulf presumed between our nature and theirs. “We all know,” wrote Freud, “that little more than half a century ago Charles Darwin and his collaborators . . . put an end to this presumption on the part of man.”⁹ This was the second great wound, the *biological* blow.

The third, the most wounding of all, he thought, was psychological in nature. This, of course was his own theory of the unconscious. Scandalously, *the ego is not master in its own house*.¹⁰

The cosmological, the biological, and the psychological. The *oikos* wounded; the exception effaced; the subject divided. And with this trinity of injury, one can posit a fourth. With the advent of the nuclear, the security of the future — as a pact of temporal continuity — is rendered an anachronous piece of



social mythology (if not outright abolished) in two key senses. First, as the future itself is no longer secure from threats of a nuclear or toxic origin. No guarantees. The decisive accident may *already* have taken place. And paradoxically, because of this, the future itself comes under the dominion of the present as the projective field of its ethical responsibility—a temporal pact that we know very well is always and already broken. A responsibility that hinges not on our continuity but on the security of the future from placeless, toxic matter!

The fourth wound we may say, is ontological.

10. Disaster

Until quite recently the Dene of Great Bear Lake, and many others along the Highway, knew nothing of radioactivity. Why would they? How would one even translate such a concept? In Inuktitut language, I am told, the concept of half-life translates as half-human. In Slavey, the language of the Dene, there are just no words to translate this. Today, that is, by now, many other translations have been invented, some conceptual and linguistic, and some decidedly material and corporeal. This of course is only one sense of *translate*.

For the Dene, as it appears to me at a distance, all of this was instrumental in a process of completely resignifying the preceding half century. Memory itself came under siege by a knowledge that had the power to rewrite and resignify. It is not that the pieces started to fall into place; there were just pieces. Falling. An imperceptible tide of suspicion washed over the past. In a stroke, lives lived in and around the mine, on the



10. Earth Angel. Courtesy of Peter Goin, from *Changing Mines in America*, 2004.

river, the portage, and the lake, were transformed into something quite different. The health and abundance of fish and game, the unimaginably vast lake, the land, upon which everything depends—all this was thrown into question. Domestic life, the very intimacy of the home, the *oikos*, was also and retroactively contaminated. Families began to recall that they had been living with radioactive ore dust, ore bags repurposed for domestic and sanitary uses, contaminated building materials scavenged and used elsewhere. Details gathered new and grave significance. Dust and dirt became “tailings.” Hands not washed became precautions not taken. Caribou and fish were freighted with risk. Even, and perhaps particularly, the deaths of those who had already passed were no longer secure. Symbolic death was denied to the dead.

In this way, the past, their past, was itself rendered toxic by virtue of a retroactive catastrophe of knowledge, a traumatic reversal toward events not experienced as traumatic in the first place.

If we are to say that to experience a trauma is to experience a *causeless* effect (causeless, because the traumatic event exceeds the subject’s capacity to experience it in the first place), then in this case there was, until recently, in a sense neither cause *or* effect.

Time and knowledge delivered both: not a history of disaster but history *as* disaster.



11. Pochon's Lab.

11. Gift

The story also begins in the future. A future organized by the present, of course. This could be in the great American desert, at a nuclear waste burial site, the Waste Isolation Pilot Plant, WIPP, it's called, where transuranic nuclear waste is now being interred with the promise of its security from human intrusion for three hundred generations. Ten thousand years. In the rear-view mirror, this would be the end of the last glaciation, more or less. Or Finland, where the negative gift of the nuclear waste requires the counter-gift of one hundred thousand years.

Or perhaps it will begin in Japan in the Fukushima Prefecture where a little over a year ago a catastrophic clusterfuck of events began to unfold, leaving us to watch a remarkable global exercise in crowdsourcing, involving thousands of people doing the research and analysis to try to understand a situation in which the perpetrator, TEPCO, was also the prime source of information, and where the regulatory function concerned with safety is subservient to regulatory function concerned with the promotion of nuclear power.¹¹



12. Landscape of Thorns, WIPP Design—concept by Michael Brill and art by Safdar Abidi.

12. Accident

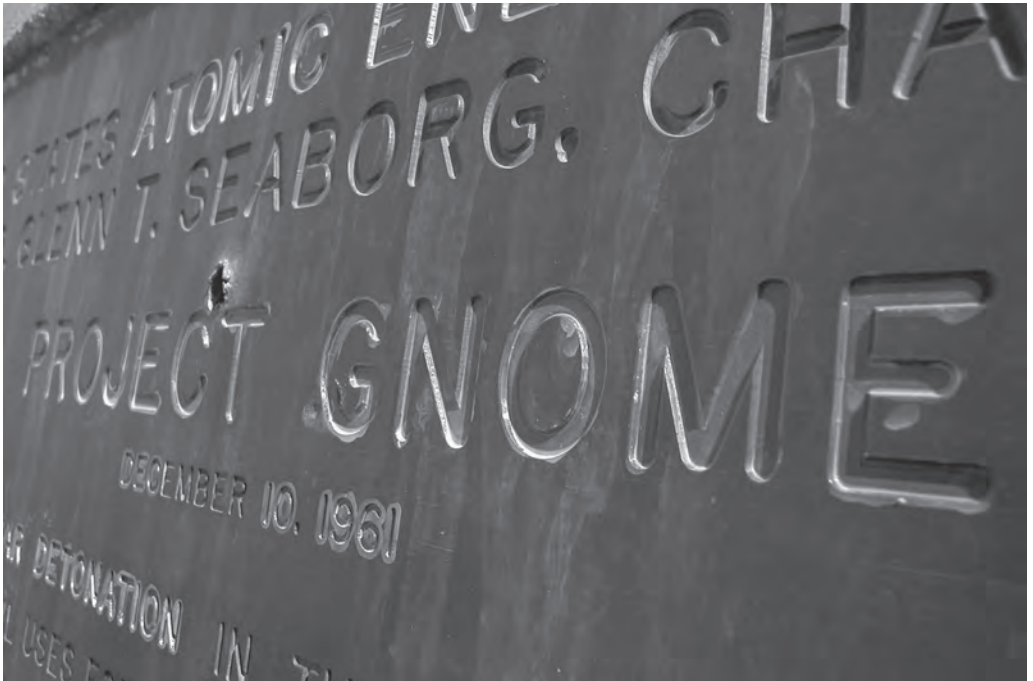
At the time I was writing *Signs of Danger*, there were then two great nuclear indices—Three Mile Island (1979) and Chernobyl (1986). Hiroshima and Nagasaki are a kind of third index, concatenated in a proprietary piece of geo-ethical disavowal, a mendacious metonymy. In North America, at least, these events stand as repressed adventures particular to wartime endeavors. In a word, they were not *accidents*.¹² Today, things have changed, although it is at this point difficult to say precisely how. It has certainly become clear that an earthquake-and-tsunami zone, crowded with 127 million people, is a risky site for fifty-four aging nuclear reactors (only one of which is presently in operation, one notes).

And this anxiety of course reverberates elsewhere: in the United States for example there are twenty-three identical Fukushima-style GE Mark-1 reactors at sixteen sites—in Alabama, Georgia, Illinois, Iowa, Massachusetts, Minnesota, Missouri, New Jersey, New York, North Carolina, Pennsylvania, and Vermont.

13. Gnome

Project Gnome was the first of twenty-seven domestic nuclear detonation experiments conducted under the auspices of the Atomic Energy Commission, now the Department of Energy—Operation Ploughshares it was called.

Located within sight of the future Waste Isolation Pilot Plant—Carlsbad and Loving, New Mexico, are the closest



13. Loving, New Mexico. Photograph by author.

towns—the Gnome detonation involved a three-kiloton nuclear device buried 1184 feet below ground in sedimentary salt. The detonation was met with great local fanfare, featuring Edward Teller giving an inspirational talk at the high school in Carlsbad, and busses to bring more than five hundred visitors to observe the event. Teller’s cheerleading for peaceful nukes was well honed; he had previously lured a crowd in Alaska by saying that nuclear explosives could be so controlled as to dig a harbor in the shape of a polar bear, if desired.”¹³

The experiment took place on December 1, 1961. And although it was intended as a fully contained explosion, within several minutes of the detonation vapor began venting into the atmosphere, sending a radioactive cloud across the region.¹⁴ It wasn’t until 1977 that the Department of Energy began to decontaminate the site.¹⁵

An hour down the road, you can have lunch underground—at the “spectacular” Carlsbad Caverns, run by the National Parks Service.

14. WIPP

The corresponding problem for which the WIPP is now the answer in perpetuity began as a pressing bureaucratic problem in the 1950s, when Congress realized that the steady growth of military nuclear infrastructure made no provision whatsoever for the disposal of its nuclear wastes. Over the next decades, technical and geo-scientific research suggested that a permanent repository was called for and, furthermore, that one of a



14. McDonald Ranch, White Sands Missile Range. Photograph by author.

handful of large sedimentary salt formations located across the nation would make an appropriate and secure location.

Wastes from commercial reactors has been handled differently. Yucca Mountain was to have been the long-term storage site. It could have contained seventy thousand metric tons of spent fuel, slightly more than what is already stored at reactor sites across the nation. But in 2010, 10 billion dollars later and in the face of irresolvable design and environmental problems, President Obama canceled the program.

For the WIPP, no one was particularly concerned that the interred waste be recoverable; the main concern was that the geological matrix be predictably stable over a (very) long period of time. The EPA, which became responsible for the oversight of any nuclear waste disposal, subsequently added a layer of complexity to the decidedly material problem of stability and (relative) permanence. They decreed that any waste repository must be marked with signs—the “most permanent markers”—the purpose of which would be to deter “inadvertent human intrusion” into the repository for a regulatory period of ten thousand years. An impossible duration of future—exceeding the very accumulation of past (if that’s the right word), of historical past; and a purely arbitrary legislated duration from the point of view of the toxicity of the materials to be interred.



15. WIPP Sign. Photograph by author.

15. Future

What began as a more or less technical question of telluric certitudes permuted into a cluster of semiotic aporias.

16. Threat

Nuclear threats are awkward and dangerous and lively and very difficult to picture. Like “natural” disasters, they cannot be adequately contained within an arithmetic of risk and probability. As ecological threats—issuing in part from technosocial practices—they threaten the very basis of what supports organic life, and they threaten too the very symbolic universe within which threat itself has meaning. Such threats are, therefore, irreducibly ethical as well.

Traditionally we would say that risk is the term that mediates between cost and benefit. Risk, above all, is calculable. To speak of ecological risks we must also allow that there exists some degree of objective ground upon which to make a comparison between costs and benefits. But to evaluate a cost, one must have a conceptual grasp of its lineaments; one must be able to point to an activity and say *this exceeds*, in its distributive character, *any possible benefit*. But no such judgment can be made on the order of costs and benefits. Such judgments operate on incommensurables. Effects can exceed causes temporally, spatially, and proportionally. Small cause. Big effect. Has the disaster already happened?

Unmoored from these coordinates, effects run amuck. Causally, the picture can exceed any standard image of a forensic accounting: not simply a complex and cascading



16. Eldorado, Port Hope. Photograph by author.

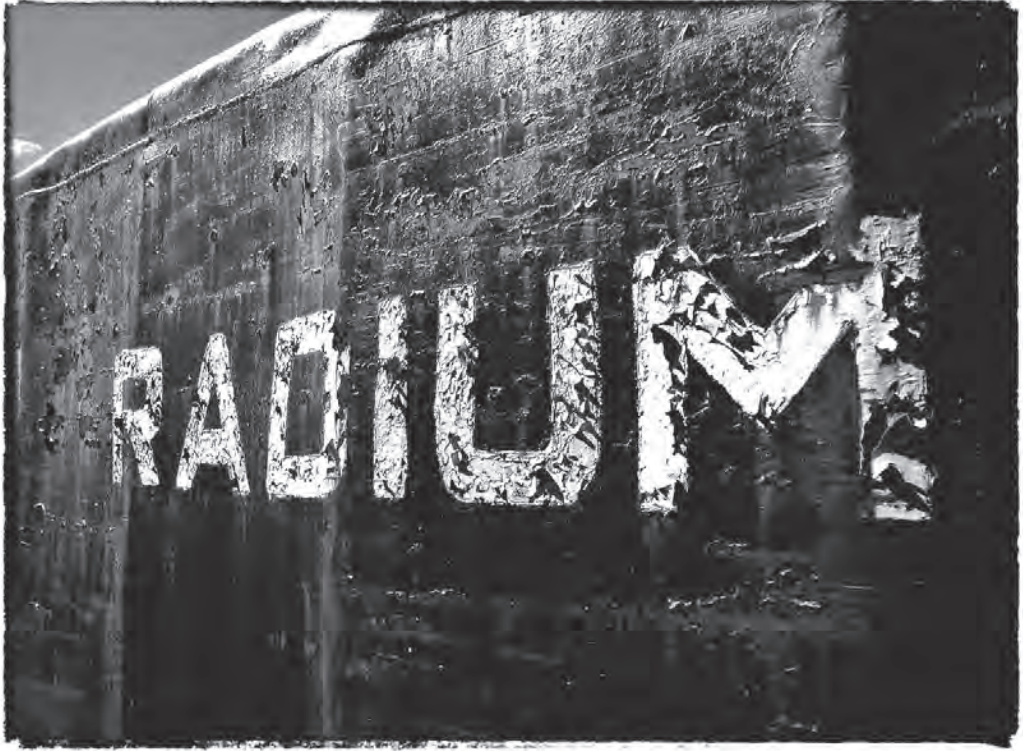
causality in which causes cause causes to cause causes (Wilden) — which ultimately remains a (big) causality in linear mode — but a situation in which, I would argue, figuring causality as such becomes less important than the ability, and the call, to creatively intervene within and among effects. A call for writing, “or thought, or research, or critique — so that our position as respondents to a crisis is not simply one of observing from a safe distance, but of being caught up in the machinations of the event.”¹⁶

What is dangerous and what is safe, what dosage is hazardous and what is not — such thresholds and limits obscure the fact that they are at foremost creatures of politics and not of the laboratory; objects of persuasion, not measurement. Ecological threats are chimerical.

17. Signs

In the media universe, the ongoing tragic events in Japan spawned a kind of new comparative arithmetic of nuclear disaster. Fukushima equals Three Mile Island plus a staggeringly large earthquake and equally staggering tsunami. Or, Fukushima equals Chernobyl, minus its graphite and insanely dangerous reactor design. *It's not Chernobyl*, Japanese authorities were chanting for weeks even as the International Nuclear Event Scale ratcheted up to seven, and the unmistakable signature of fission isotopes scattered across Japan and the Pacific, and then North America and beyond.

TEPCO, the Tokyo Electric Power Company, in keeping with their well-documented practices of concealment and mis-



17. Radium Barge, Hay River.
Photograph by author.

information, scrambled to understand the magnitude of the catastrophe but would not acknowledge that the situation was completely out of control or that, within three days, the disaster had *already* taken place.

For the Japanese, there was nothing there, nothing to be “seen,” leaving them dependent on others (the same others, that is, the same institutions that produced the threats) to determine the appropriate semiotic means (instrumentation) with which to represent it back to them, and for them. Just signs, in the wind.¹⁷

Quipped an Oregon dairy farmer a few weeks into the event, “for the time being, we produce cheesium.”

18. Tsunami

Japan. One of the world’s most nuclearized nations, a nation that in every conceivable way has internalized the atom, attempted to master its traumatic history with the atom, as producer, champion, as apologist, as perpetrator, and, as victim, again.¹⁸

(I didn’t realize when I was working on *Highway of the Atom* what a straight, strong, and strange line there is between Japan’s victim past and its atomic present.)

And, living as they do at the tectonic confluence poetically known as the Pacific Ring of Fire, they are also one of the world’s most-prepared nations for large seismic events.



Yet the unimaginable arrived, predictably—the land lurched into motion, matter feigning liquid; moments later, a horrifying gesture of ocean—with a run-up height of over 120 feet in places—disavowed the land entirely; the black box of containment of the reactors became (and perhaps remains) transparent to their environments.

A restive catfish and a feral dragon—the absolute repose of the inorganic belongs not to the earth but only to death.

19. Field Note: Tsiigehtchic (Arctic Red River)—6 August 2005

The Norweta, the Mackenzie river boat I have been travelling on, arrives mid-day. Fourteen eagles sunning themselves at the mouth of the river. I think it was fourteen (notwithstanding Borges' Argumentum Ornithologicum). I can find no fish being smoked. No bales tied and waiting for transport to Aklavik (all that Innis saw on his visit). It is hot. There is an inviting pond on the large delta area at the confluence of the Red and Mackenzie rivers. High above stands the village. Walking through town, I stop and speak with an old woman who is standing near the church. I ask her about swimming in this pond. "No," she says, and then tells me a long story. After one of the innumerable battles between the Gwitch'in and the Inuit, scores of Inuit were thrown into the lake, the wounded to drown, and all the bodies were just left in the lake. Ever since this time, she said, the eagles wait for the bodies to rise, but all that emerge are ghosts. The lake is full of ghosts, too full, so there is just no room to swim. She uses a Slavey word to describe when this happened; I think it means the really long-ago time. Too many ghosts.



19. *Radium Charles*. Photograph by author.

In the wake of their realization — as it appears to me, at least — the Dene came to interpret their role in what seems to me a most complex manner; that is, as both accomplice *and* victim. One can see something of this in stories that have circulated in recent years.

I paraphrase a story told by the late George Blondin that references an ancient Dene prohibition about the very site of Port Radium:¹⁹

The Dene had always known it was bad medicine to travel in front of the area now known as Port Radium; it was said that loud noises came from within it. For some reason a group of Dene hunters had camped there, and in the morning the medicine man told them of his dream in which he saw white people going into a large hole in the ground with machines. He saw boats on the lake and huge flying birds loaded with things. They were making something long, like a stick, which they dropped on people, burning everyone. This was the future, he said, and it will happen long after we are all dead.²⁰

In counterpoint to the *if only we had listened to what we already knew* tone of this story, another began circulating — a kind of creation story — in which the genesis of the mine itself was predicated on a theft of a pitchblende-bearing rock. In this story it is Gilbert Labine — the main protagonist in white mining mythology — who steals a rock by trickery from a Dene man by the name of Bayonne. The rock unlocked the secret of the radium and uranium, for which the Dene, of course, were never compensated. Victim *and* accomplice.

To the former they sought recognition and compensation from the government of Canada. Their land claim negotiations were underway, and this needed to be a piece of accounting.²¹

But to the latter they disavowed the vortex of history and archive, and also the vortical administrative discussions of sovereignty, rights, and self-government, and moved directly into the ethical. In 1998, on the anniversary of the bombings of Nagasaki and Hiroshima, the Dene did something exemplary, unthinkable: they organized a formal expedition to Japan to make a call for peace and apologize to the *hibakusha* (the bomb survivors) for their role: their labor, their complicity, unknowing as it was, and foremost, their land—the territorial archive that was now indelibly stained with the record of their collusion.

But more than all of the tragic details that came to light—the stories of white and Dene children playing in sandboxes filled with uranium mine tailing, discarded ore sacks used to repair tents and clothing, the contaminated materials, the accidents and spills—more than all of this, the apology on the part of the Dene is incomprehensible, unfathomable.²² Taking responsibility *for* an other. A singular work of cultural care. Of mourning.

What was being acted upon, insofar as I can comprehend any of this, was a kind of *imperative*, an ethical imperative. Perhaps it really is the case that the ethical and the traumatic spring from the same place, from the same wound; for the Dene, the historical trauma is invented in the same instant as an ethical proceeding is undertaken.²³ It's complicated. The archive ratified a memory of a trauma never experienced as such, and the Dene saw in their own suffering an ethical inducement toward a responsibility *for* the other. The mind reels; or mine does.

20. Homonym

Recently I was invited to attend and respond to a screening of *Into Eternity*, Michael Madsen's documentary. This film is about a site in Finland where an extremely large underground storage facility for high-level nuclear waste is being hewn into stable, crystalline granite rock.

The film—which falls perhaps a bit too much to the side of aestheticizing the political—is a beautiful piece of Scandinavian poetics: part Bergman, with the formal self-consciousness of something one might identify as Jeff Wall. It tells the story of the Finnish initiative to inter its commercial high-level nuclear wastes on the island of Olkiluoto (ookal oh- tow)—adjacent to the Olkiluoto Nuclear Power Plant. An amendment to the Nation's Nuclear Energy Act in 1994 specified that “Nuclear waste generated in connection with or as a result of use of nuclear



20. Sawmill Bay. Photograph by author.

energy in Finland shall be handled, stored, and permanently disposed of in Finland.”²⁴

Onkalo, they say, is a Finnish word for hiding place—although in a more direct translation, it means cavity or cave.²⁵ It is a massive, private-sector project that, when complete around 2020, will, over a period of one hundred years, be filled with thousands of specially designed copper canisters of highly radioactive spent fuel.

The site itself is now in the early phase of bedrock characterization. But if the correct constituencies and bodies can be persuaded of the stability of the rock, and if it can obtain the many licensing and permitting clearances it must receive, then the final question will be *how it needs to be marked*.

What manner of sign is appropriate for a one-hundred-thousand-year repository?

A hiding place, almost sure to be forgotten, *Onkalo*—the duration of its mandate—an order of magnitude beyond that of the WIPP.

21. Keeping Place

As Jonathan Bordo put it,

Let me call a site of memory that in principle gives dominance to living witnesses a “keeping place” and thus distinguish it from all those depositories of memory where preservation takes precedence over recollection—museums, galleries, archives, and so on. . . . “Keeping place” as a designation opens up the possibility for a



21. Bunk house, Port Radium. NWT Archives/Bruce Hunter/N- 1998-015: 0070.

division between a *heritage* or generalized legacy, and a *lieu de mémoire*, requiring interested, engaged, and culturally specific custodian-witnesses . . . Such sites are marked by a continuing contestation over custodianship between a hegemonic state-sanctioned practice of memory that acts as if there are no living witnesses, and practices of memory that acknowledge living witnesses who claim these traces to be theirs to curate.²⁶

Of course, this is it, isn't it? The living witness, imperiled through the practices themselves—the accident—through a custodial practice (and public secret) that disavows any witness, and through a pure temporality that makes the very possibility of a living witness almost, but not quite, unfathomable. Here we are dealing with telluric time, the time of the biosphere.

Madsen said,

Even if the cave is never marked in any sense, it will be a sign itself. The very construction will be a sign. Deep into time, even the canisters will be gone, but there will still be the scars in the bedrock. . . . The bedrock will still have this hollow, spiral, triangular entry. There will be these symmetrical deposits of high-level or radioactive material. . . . So any creature in the future will understand that this has been *made*. In this sense it will always be a sign.²⁷

Well, yes and no. It is what Peirce would call a Firstness—just a quality, not yet an index. An index in suspension. No interpretant. The sign is in no relation with its object that could reveal something to us. To anyone. Other than the assertion: Here! An anthropomorphic trace.



22. Tennis Court, Port Radium.
Photograph by author.

22. Emphatic Geography

At Port Radium, there is an abandoned tennis court. It stands atop the sheer granite cliffs right at the point where they plunge into the blue unfathomable depths of Great Bear Lake. This court, this ruin, is surfaced in a remarkable concrete made from pulverized uranium mine tailings. It overlooks another ruin: the decommissioned—that is, bulldozed and abandoned—uranium mine. *Homo ludens* meets *Homo faber*. It is difficult to convey the strangeness of standing there, listening to a Geiger counter rendering sonorous the material history of this place. Translating the abstract invisibility of energetic matter seeking its own repose . . .²⁸

An emphatic geography, as I would come to call it.



23. Plaque, Port Radium. Photograph by author.



24. Whale, Port Radium. Photograph by author.

23. Recto

Detail of the bronze plaque affixed to a five-foot concrete marker at Port Radium. It tells the story of Gilbert Labine, the radium discovery, the wartime switch to uranium, the bomb—no mention of its purpose, no mention of Japan—its significance to the mining community and to the North.

24. Verso

The other side of the monument contains two more bronze plaques and one inscription—all interlopers. The first is a commemorative plaque for John Zigarlick of Echo Bay Mines, who reinvented Eldorado’s abandoned uranium mine as a high-grade silver mine in 1963.

Beneath this, incredibly, another plaque to Zigarlick’s wife, “A true Northern Hostess” and a “Proud Northerner.”

I have no idea what the third inscription is. It looks like a whale.

25. Stones

The Sanriku coastline of northeastern Japan has a particular geomorphology that amplifies the tsunamis that regularly engulf it.

In 1896, a thirty-three-meter wave.

Twenty-three meters in 1933.

869, 901, 1585, 1611, 1677, 1689, 1793, 1836, 1896 (Meiji 29), 1933 (Showa 8)

And in 1993 a thirty-meter wave poured over Okushira Island.

Again and again.

Then, March 2011.

And yet, as if the wall of tsunami rocketing toward the coast was not enough, the coastline itself—in a kind of elastic rebound toward the epicenter—the coast itself sunk about three



25. Hwy 62, New Mexico. Photograph by author.

feet, as though bowing toward the oncoming water, rendering the already modest tsunami defenses three feet lower.

Within minutes of the second wave's arrival—which easily surmounted the thirty-three-foot seawall—the Fukushima Daiichi plant was in a state of total station blackout. They were literally in the dark.

Twenty thousand people died that day, perhaps more. More than this is speculation. The glow boys, jumpers, Fukushima 50, nuclear samurai, dose fodder, gamma sponges—all the sacrificial cleanup labor at the nuclear plant—the eighty thousand evacuees, the exclusion zone. The virtual body count for what has become the most expensive “natural” disaster in history—estimates vary but figures approaching \$310 billion are not uncommon.

In the days and weeks following the tsunami, even as the nuclear disaster eclipsed the coastal crisis, something remarkable happened.

Survivors began to rediscover “gnarled stone tablets”—I’m quoting Evan Osnos, here, from a piece in the *New Yorker*—“Some of them hundreds of years old, which had been left by . . . ancestors at precise points along the shore to indicate the high-water marks of previous tsunamis. The inscriptions implored future generations never to build closer to the water again.”²⁹

Writes Japanese poet Mariko Nagai:



26. Witness Stake, Port Radium.
Photograph by author.

The warning did come in time, but some did not remember. The warning blared after the earthquake, the tsunami warning that came out of nearly every village and town hall, *There is a tsunami warning, please evacuate to high ground. This is a tsunami warning, please evacuate to high ground.* They were too used to it, too used to the warnings that came nearly every year, the warning that did not amount to anything more than a mere splash. Those who did not heed the warning went back to retrieve their memories, their past, what they deemed important . . .

They did not remember that this coastline has been plagued with the angry waves as long as written words have existed, each devastation chiseled into stones. It is grief impressed upon the pages and stone tablets that dot the coast of Sanriku area. It is regrets contained in these words, regrets that translate into warnings for the future, for the present. But some had forgotten. So instead, they went home, thinking they have enough time.³⁰

What is the threshold—the semiotic dosage—in the present, to ensure the transmission to the future? If you remind us too much, we will not listen, and thus forget. And if you do not remind us, there will have been nothing to listen to, and we shall certainly have already forgotten.

One stone from 1933 reads:

Houses built on hills will bring peace to the children and grandchildren. With the thought of devastation of the great tsunami, Remember never to build houses below this marker. Both in Meiji 29 and Showa 8, the waves came to this very point. And the entire village was destroyed; only two survived in Meiji 29, and four in Showa 8. No matter how many years may pass, do not forget this warning.³¹

Do not forget this warning. Another emphatic geography. Tsunami stones they are called.

26. Two Contrasting Markers

1. In Canada's Northwest Territories, mining regulations specify that, "Where, because of the presence of a body of water or any other natural obstruction in an area . . . it is not practicable or permitted to erect one of the four legal posts required by subsection 14(1), a witness post shall be erected on each boundary line . . . as near as possible to the place where the legal post would otherwise have been erected."³²

2. In Japan, near the Anraku temple in Hiroshima, there is a plaque to commemorate a Ginkgo tree survivor of the atomic bomb. The tree itself is very old, grown from a cutting taken

from a twelfth-century tree at Zenpuku Temple in Tokyo. It reads: “This Gingko withstood the atomic bombing on August 6th, 1945. There are still scorch marks on the upper part of the trunk from the blast.”³³ The temple, destroyed on that August day, was rebuilt around the tree, to protect it.

Witness post.

A figure. An interesting thought.

—Montréal, June 2012

Biography

Peter C. van Wyck is professor of communication studies and Media Studies graduate program director in the Department of Communication Studies at Concordia University in Montréal. His academic formation is broadly interdisciplinary, with training in forestry, ecological theory, philosophy, cultural studies, and environmental and communication theory. His abiding research interests are in the theoretical and practical relations among culture, environment, landscape, and memory. His two recent monographs—*Signs of Danger: Waste, Trauma, and Nuclear Threat* (Minnesota, 2004), and *Highway of the Atom* (2010)—were both the recipient of the Gertrude J. Robinson book award for the best new book in communication studies, awarded annually by the Canadian Communication Association.

Notes

¹ Isabelle Stengers, *The Invention of Modern Science*, trans. Daniel W. Smith (Minneapolis: University of Minnesota Press, 2000), 144; quoted in Nigel Clark, *Inhuman Nature: Sociable Life on a Dynamic Planet* (London: Sage, 2011), 39.

² Déline resident Deborah Simmons pointed this out to me.

³ This particular arm of the lake contains a record of persistent occupation and use stretching back some seven thousand years. See Marc G. Stevenson, *Compilation and Review of Existing Cultural Research and Documentation Relating to Edaiilla (Caribou Point), Great Bear Lake, NWT: Final Report* (Yellowknife, NT: Indian and Northern Affairs Canada, 2007), 18. “For the Dene of Déline it was the ‘store,’ a place where food and material for clothing and tools could be found.” Sahtu Heritage Places and Sites Joint Working Group, *Rakee Gok’e Godi: Places We Take Care Of* (Tulita, NT: Sahtu Heritage Places and Sites Joint Working Group, 2001). “It has also witnessed many episodes of contact with the Copper Inuit, some of which were violent encounters. Indeed the Copper Inuit used the area for many of the same reasons, and also to gather wood for use as fuel and raw material for making tools.” Stevenson, *Compilation and Review of Existing Cultural Research*, 11.

⁴ This issue of the magazine was either April or May 1937. A marginal detail, I now know, thanks to David Gartrell, archivist at the UCSB Library.

⁵ Roland Barthes, *Camera Lucida: Reflections on Photography*, trans. Richard Howard (New York: Hill and Wang, 1981), 59.

⁶ *Ibid.*, 57. “Yet once there is a punctum a blind field is created (is divined).”

⁷ Sigmund Freud, “Fetishism” [1917], “A Difficulty in the Path of Psychoanalysis,” in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, edited by James Strachey, 24 vols., 17:149–57 (London: The Hogarth Press and the Institute of Psycho-Analysis, 1973), 139.

⁸ *Ibid.*, 140.

⁹ *Ibid.*, 140–41.

¹⁰ “You behave like an absolute ruler who is content with the information supplied him by his highest officials and never goes among the people to hear their voice. Turn your eyes inward, look into your own depths, learn first to know yourself! Then you will understand why you were bound to fall ill. . . .” He continues, “No wonder, then, that the ego does not look favourably upon psycho-analysis and obstinately refuses to believe in it.” *Ibid.*, 141. It is here that one sees clearly the capacity for the theory of psychoanalysis to account for and absorb its own opponents.

¹¹ See Charles Perrow, “Fukushima and the Inevitability of Accidents” *Bulletin of the Atomic Scientists* 67, no. 6: 44–52.

¹² Parenthetically, it is hard to know what to make of the Japanese insistence, repeated over several days on NHK World following the earthquake and disaster, that it amounted to the worst “natural” disaster suffered by Japan since World War II.

¹³ Paul Brookes, Joseph Foote, “The Disturbing Story of Project Chariot,” *Harper’s*, April 1962, 62.

¹⁴ See Scott Kirsch, *Proving Grounds: Project Plowshare and the Unrealized Dream of Nuclear Earthmoving* (New Brunswick, N.J.: Rutgers University Press, 2005), 113.

¹⁵ See Ferenc M. Szasz, *Larger Than Life: New Mexico in the Twentieth Century* (Albuquerque: University of New Mexico Press, 2006), 158–67.

¹⁶ Clark, *Inhuman Nature*, 58

¹⁷ “Tokyo Electric Power Co. stunned lawyers by saying the utility was not responsible for decontamination because it no longer ‘owned’ the radioactive substances.” Tomohiro Iwata, “TEPCO: Radioactive Substances Belong to Landowners, Not Us,” *Asahi Shimbun Weekly AERA*, November 24, 2011, http://ajw.asahi.com/article/behind_news/social_affairs/AJ201111240030.

¹⁸ But it’s complicated: “While we are the victims, we are also the perpetrators,” wrote Haruki Murakami, “we must fix our eyes on this fact.” Appears in Evan Osnos, “Letter from Fukushima: The Fallout,” *The New Yorker*, October 17, 2011.

¹⁹ George Blondin died on October 12, 2008. Both he and his father worked at Port Radium. This particular story is attributed to the Dene prophet Louis Ayah, Grandfather as he was called (1858–1940).

²⁰ George Blondin, *When the World Was New: Stories of the Sahtú Dene* (Yellowknife, NT: Outcrop, 1990), 78–79.

²¹ See Canada-Déline Uranium Table, *Canada-Déline Uranium Table Final Report: Concerning Health and Environmental Issues Related to the Port Radium Mine* (Ottawa, ON: Ministry of Indian Affairs and Northern Development, 2005), 27.

²² Peter Blow’s documentary followed them on their journey to Japan and captured this astonishing moment of cultural exchange. Peter Blow, *Village of Widows* (Toronto: Lindum Films, 1998), 52 min., video.

²³ I think that Derrida was of this opinion in his later years, and I think here of his beautiful and melancholic writings on Kierkegaard’s Abraham. See Jacques Derrida, “Whom to Give to (Knowing Not to Know),” in *The Gift of Death*, 53–81 (Chicago: University of Chicago Press, 1995).

²⁴ Ministry of Trade and Industry, Finland, Nuclear Energy Act, 990/1987, amendments up to 342/2008 included, <http://www.finlex.fi/en/laki/kaannokset/1987/en19870990.pdf>.

²⁵ “From an etymological perspective the Sámi **onka* is the same as the root of the Finnish *onkalo* ‘cave’, ‘cavity’ (where *-lo* is a bound morpheme) . . . place names featuring the elements *Onka-* and *Onkamo-* arose through contact between the Karelian and Sámi populations from the Middle Ages until the 16th century.” Alpo Räisänen, “*Kostamo*, *Onkamo*, and Other Place Names,” http://www.kotikielenseura.fi/virittaja/hakemistot/jutut/raisanen4_2010.html.

²⁶ Jonathan Bordo, “The Keeping Place (Arising from an Incident on the Land),” in *Monuments and Memory, Made and Unmade*, ed. Robert S. Nelson and Margaret Rose Olin, 157–82 (Chicago: University of Chicago Press, 2003).

²⁷ “It has been very interesting for me to think about how this sign will survive as a sign — but as a sign that has never been intended in any sort of metaphysical or religious sense — which has been the case previously, in what you may call ‘eternity encounters.’ In this, I mean places such as cathedrals and burial sites. These have all been made in a religious context. But *Onkalo* is purely, sort of profane, there are no such concerns involved in the facility. And in that way, this is a pure expression, at least, of our time in the Western world.” Conversation with Michael Madsen, director of Into Eternity, Friends of the Pleistocene, <http://fopnews.wordpress.com/2011/01/31/conversation-with-michael-madsen-director-of-into-eternity/>.

²⁸ Peter C. van Wyck, *Highway of the Atom* (Montréal: McGill-Queen’s University Press), 138.

²⁹ Evan Osnos, “Letter from Fukushima: The Fallout,” *New Yorker*, October 17, 2011.

³⁰ Mariko Nagai, “The Forgetting Stone,” *Foreign Policy*, July 27, 2001, http://www.foreignpolicy.com/articles/2011/07/27/the_forgetting_stone.

³¹ *Ibid.*

³² Northwest Territories and Nunavut Mining Regulations. C.R.C., c. 1516.

³³ A-bombed Ginkgo trees in Hiroshima, Japan, <http://kwanten.home.xs4all.nl/hiroshima.htm>. See also Mandy Conti and David Petersen, *Survivors: The A-bombed Trees of Hiroshima* (Morrisville, N.C.: Lulu Press, 2008), 179–81.