

Fukushima Daiichi: a Never-Ending Story of Pain or Outrage?

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The cosmopolitan cause of curriculum studies calls upon us to contradict the inevitable provincialism of knowing only one's own field. (William Pinar)

There's been a quantum leap technologically in our age, but unless there's another quantum leap in human relations, unless we learn to live in a new way towards one another, there will be a catastrophe. (Albert Einstein)

Cosmopolitanism and education is a recent and quickly growing area of scholarship. "Educational cosmopolitanism" – as Hansen (2008) has coined this work – has been variously portrayed as a form of governmentality which includes some students and excludes the rest in its school reform design (Popkewitz, 2008), critiqued as a top-down project for human rights education (Todd, 2009), communicated as a subjective sense of worldliness that can be cultivated through education (Pinar, 2009), and celebrated as an orientation in which teachers live morally and ethically, locally and globally in the world (Hansen, 2011). A rich and diverse area of conceptual research, cosmopolitanism and education has, nevertheless, paid minimal attention to *particular* environmental concerns of global proportion. This paper aims to address this omission and will do so by taking up the Fukushima Daiichi nuclear disaster – and the human responses and lack thereof to the disaster – as a case of the "cosmopolitanization of reality" (Beck, 2004, p. 131). Such actually existing cosmopolitanism, I argue, requires a new global ethics of responsibility to humanity and the planet.

Due to the nature of this still unfolding news topic, over half of the sources that I draw from in this article come from mass media. While there are certain limitations that mass media offers to the work of scholarly writing, these sources – ranging in "legitimacy" from *The New York Times* to Japanese blogs which transcribe and translate news and updates devoted to the subject of Fukushima – have nevertheless been important in gathering information on this topic and presenting it in a way that is recognizable to an academic audience.² Given that my research is situated within Curriculum and Pedagogy, I also draw from a range of scholarly sources in and beyond this domain which help in theorizing this catastrophic environmental event. One of the problems we face with radioactive fallout from Fukushima is the lack of information coming from "experts." Indeed, there has been a global media blackout, a "deadly silence on Fukushima" (Norris, 2011) which has to do, as I see it, with two issues. Firstly, science still does not have the technological or methodological understanding to clean up the disaster (Magwood, 2012) which has leaked into the Pacific Ocean and spread throughout the northern hemisphere by way of wind and rain. This invisible truth is so incomprehensible that it is easier to pretend it doesn't exist.



Secondly, the Japanese government and Tokyo Electric Power Company (TEPCO) have not been forthcoming about the extent of the nuclear disaster, a disaster that could have been avoided if those in charge had acted more responsibly (Tabuchi, 2012). In short, not knowing the extent of the problem combined with the suppression of information about the problem makes for difficult research. That said, in collecting and assembling small pieces of information on Fukushima – or what Arendt (1968) refers to as “thought fragments,” fragments of history that are “subject to the ruin of time” (p. 206), e.g., governmental reports, documentaries, news articles, blogs, fiction, poetry, political theory, world risk theory, and curriculum theory, I have worked to create a cohesive narrative which focuses upon ways the world has responded to the cosmopolitan catastrophe that is Fukushima and one which encourages a greater sense of responsibility to humanity and the planet.

There have been reports that since the Fukushima Daiichi nuclear plant meltdown began, many Japanese citizens no longer trust what the government says or does because of the way it and TEPCO have responded to the nuclear disaster (see Dusenberre, 2011; Varma, 2012); i.e., with little empathy, displacement of responsibility, and denial toward the dangers of the ongoing radiation emissions to the extent of burning radioactive debris back up into the atmosphere (Mochizuki, 2011) as if it were nothing other than firewood. In effect, this has led to “recreating Fukushima all over again” (Gundersen, 2011b). Here is the logic: make the rubble – estimated at 22.53 million tons (Varma, 2012) – disappear into thin air even if it (re)contaminates areas such as schools that were either safe to begin with or were previously decontaminated. Get it out of sight so we do not have to think about it. This is a dangerous case of “presentism” (see Pinar, 2012, p. 225-227): thinking short term because thinking long term does not compute economically, politically, or psychically. One might surmise that such presentism is tied not only to the government’s denial toward the present Fukushima radiation emissions but also to a previous version of denial, and one which ignored warning signs that a nuclear meltdown at Fukushima could happen. Indeed, an independent investigating commission has declared Fukushima “a profoundly man-made disaster – that could and should have been foreseen and prevented” (Kurokawa as cited in Tabuchi, 2012).

Pretending away the ongoing existence of the Fukushima nuclear disaster, however, not only prolongs it but re/distributes it as in the case involving the United States government not so “secretly” continuing to buy food from Japan without properly testing it for radioactive materials (Dupre, 2011a). Given that Japan has one of the world’s largest fishing fleets, accounting for 15% of the global catch (Central Intelligence Agency, 2012) and that 60%-80% of Japanese fish catches since the Fukushima Daiichi fallout began have consistently been contaminated with radioactive cesium (Roslin, 2012a) – some of which has been exported to Canada (Roslin, 2012b) – it might not be a good idea to eat fish if you do not know for certain where it was caught. But then again, *place* as a static, bounded concept does not make much difference given the fact that migrating Bluefin tuna caught off the coast of San Diego have shown elevated amounts of manmade radioactive isotopes – cesium-134 and cesium-137 – directly linked to Fukushima, raising concerns for human health (Amos, 2012). In effect, citizens of Japan, the United States, and perhaps other countries could be buying cancer or other un/known illnesses at grocery line checkout counters. One suspects that it is a lack of concern for the health of a nation’s citizens and a great deal of concern for a nation’s economy that contributes to selling possibly radioactive foods. When Nina Abbott, a farmer out of Newfoundland and Labrador, requested that her land be tested to ensure she is selling safe products, neither private companies, the government, nor universities were interested “getting involved” (Stein, 2011). Indeed, the



Canadian Food Inspection Agency (as cited in Roslin, 2012a) says “the amounts of cesium detected are small” despite the fact that Health Canada has recorded radioactive iodine levels 300 times higher in a suburb of Victoria and 1,000 times higher in areas of Nunavut (Roslin, 2011) due to Fukushima. No doubt, there is a conflict of interest at work given that Canada is the largest producer of uranium in the world (Natural Resources Canada, 2009) and that Canadian uranium mining companies such as Cameco are spreading their wings, recently acquiring Yeelirrie, “one of Australia’s largest undeveloped uranium deposits” (Cameco, 2012).

What is novel about these crimes against humanity and the planet is that if/when life threatening illnesses in the form of cancers and genetic mutations in a humanity yet to be born begin manifesting at greater rates in areas affected by Fukushima – with hot particles found in places as far away as Seattle (Gundersen, 2011a), St. Louis (Dupre, 2011b), and Boston, (Gundersen, 2011c) – who or what is to blame? In cases such as these, notions of responsibility begin to lose their meaning. Hannah Arendt (2003) once wrote that society has a “fear of passing judgment, of naming names, of fixing blame—especially, alas, upon people in power and high position” (p. 21). Even if society did not have this fear, in the case of fallout from Fukushima, who is to judge, name, blame, and be held accountable? Beck (2009) contends that when it comes to the “cosmopolitan moment of the ecological crisis...allocating responsibility – causality and blame – [is] breaking down” (p. 91). Because of this breakdown “dangers grow *as a result of* being made anonymous.” At the one-year anniversary of 3/11, Prime Minister Yoshihiko Noda (as cited in Griffith, 2012) announced: “Rather than blaming any individual person I believe everyone has to share the pain of responsibility and learn this lesson.” The problem with this belief, as Arendt (2003) succinctly put it, “where all are guilty, no one is” (p. 21).

Despite Noda’s public announcement that no one in particular should be held responsible for the nuclear disaster, steps toward allocating responsibility have been taken. An independent Japanese parliamentary report recently concluded that the government, in collusion with industry, attempted “to avoid responsibility by putting all the blame on the unexpected (the tsunami)” (Tabuchi, 2012). Yet, the aim of the parliamentary report was to tell factual truths (in the face of great lies) about why Fukushima happened. As Arendt (1954/2006) clarifies, however, simply reporting facts does not mean that action will be taken (p. 246). In contrast to the non-action of truth-telling, “the liar is free to fashion his ‘facts’ to fit the profit and pleasure...of his audience.” In this way, it is the teller of falsehoods more so than the teller of truths who acts upon the world. Truth-telling, moreover, “offends profit and pleasure” (p. 247) as in the case of exposing ugly truths about pretty countries.

Ignoring, hiding, and falsifying the warning signs of a self-generated, imminent nuclear disaster led to the Fukushima catastrophe. This is not to say that Fukushima can be explained away through simple cause-effect accusations either. As Beck (2009) makes clear, when it comes to the “organized irresponsibility” (p. 27-29) of global risks, a labyrinth of responsibility (p. 193) exists thereby making Noda’s statement of non-responsibility and victimization palatable to a world audience. While a thinker like Arendt devoted her life’s work to writing about detecting warning signs for the unprecedented – indeed, Young-Bruehl (2006) has called *The Origins of Totalitarianism*, *The Human Condition*, and *The Life of the Mind* books that teach us to “judge future totalitarianisms” (p. 35), to be mindful toward “the danger of conformism and its threat to freedom” (Arendt, 1954/1994, p. 425), and to identify “a particular kind of lying and lack of judgment” (Young-Bruehl, 2006, p. 161), respectively – we are still a long way off from paying

the kind of heedful attention to warning signs in the way Arendt believes is vital to sustain the future of our planet.

The novelty of Fukushima is worth noting. A new and improved version of the original atomic plague is spreading across the planet through earth, air, fire, and water – yet it cannot be seen, heard, tasted, smelled, or touched. It has become part of the atmosphere. As Japanese educator Tsunesaburo Makiguchi (2002) noted over one hundred years ago, because of its “gaseous substance...most people are oblivious to the atmosphere and the important role it plays in our lives” (p. 139). An environmental phenomenon that we often do not pay attention to, Makiguchi also describes the importance that wind plays in sustaining human life: “Wind not only moderates heat and cold, but also cleanses the air and makes it suitable for humans to breathe” (p. 148). We can forgive Makiguchi for not knowing in advance how the wind could one day bring with it lethal, human manufactured radioisotopes. The wind that begins off the coast of Japan, no less, typically travels eastward across the Pacific Ocean making its way to the west coast of North America, which is what happened immediately after the Fukushima Daiichi reactor explosions. When those radioactive dust clouds turn into rain, the radionuclides become absorbed in the soil and, subsequently, the food chain.

In *Writing for an Endangered World*, Lawrence Buell (2001) argues that “there never was an is without a where” (p. 55) when discussing environmental toxification. Buell contends that “what gives definition, force, persuasion, *embodiment* to toxic concern are events happening at specific times in specific locations to specific beings.” In the case of Fukushima, however, such specificity or particularity begins to lose its force of persuasion given the way that the fallout functions, drifting with the wind, migrating by way of fish and untold other processes. This is not to say that the people outside of the Fukushima prefecture or Japan have experienced fallout with the same visceral immediacy as those hit hardest by the facticity of the event; that said, Fukushima is not only a local phenomenon. While cosmopolitan-minded educators like Appiah (2006), Pinar (2009), and Hansen (2011) have argued for the importance of rootedness, subjectivity, and home, respectively, when speaking upon cosmopolitanism, following Ulrich Beck, we might also consider the ways in which cosmopolitan catastrophes like Fukushima recall the unlikely specter of rootlessness cosmopolitan/ism.³ When understood as a phenomenological reality, cosmopolitanism seems more rootless than it does rooted. What can be learned from studying the free floating phenomena – literally free floating given the massive amounts of flotsam buoying eastward across the Pacific Ocean, now washing ashore onto Vancouver Island (Hopper, 2011) – of Fukushima as pedagogy?

In what ways might studying – and Pinar (in press) puts “study” at the heart of the cosmopolitan curriculum enterprise (p. 6) – poetry of the past teach us to understand our present environmental circumstances? T. S. Eliot’s (1922/2002) prophesy in *The Waste Land*: “Fear death by water” (p. 39) takes on phenomenological immediacy in the case of Fukushima as does his oft cited phrase: “I will show you fear in a handful of dust.” Sixty years after the first nuclear test was detonated in the desert landscape of Nevada, artist/educators Elizabeth Ellsworth and Jamie Kruse (2010) went on an educational tour of the Nevada Test Site, a place of “sensational public pedagogy” (p. 268).⁴ They worry about the wind and dust: “Indications of the smallest of breezes trigger tinges of nausea” (p. 277). While there are many ways to interpret a poem of *The Waste Land*’s magnitude and which go well beyond the scope of my work here, it might be said that the great poem points to a particular and universal, a local and global future reality that is our present radioactive contaminated condition.



“Of all things of thought,” says Arendt (1958/1998), “poetry is closest to thought, and a poem is less a thing than any other work of art.” Ironically, scientists and utilitarian philosophers “have never tired of pointing out how entirely ‘useless’ thought is” (p. 170) because thought thinks for its own sake rather than for producing verifiable results through tests and more tests. Indeed, the obsession with testing that currently characterizes public education and school reforms has been around for quite some time. At the Nevada Test Site, whose name was rechristened in 2010 to the Nevada National Security Site for what are no doubt political and semantic reasons – and a name I choose not to use here for ethical and memorial reasons – 1,021 nuclear tests were carried out between 1951 and 1992. These tests were detonated “in the name of safety and progress” (Ellsworth & Kruse, 2010, p. 276). Are lands where these tests were set off and the atmosphere that is shared with other lands safer now than before 1951? Has humankind “progressed” since Operation Ranger, the first of the 45 atomic test series?

What does a radioactive atmosphere mean for *sensus communis*, which is the “one faculty [that] extends to all objects of the five senses” (Aquinas as cited in Arendt, 1978, 1: p. 50)? Common sense, the “mysterious ‘sixth sense’” allows us to break free from subjectivism. As such, the sixth sense provides human beings with a sense of “worldly reality” (Arendt, 1978, 1: p. 52) in ways that using one or two senses or the Cartesian *cogito ergo sum* do not. What would the world be like if using our senses no longer helped us make sense of the world? Fukushima requires that we ask this question. The ongoing nuclear fallout is a paradigmatic case of the actually existing cosmopolitanism yet is cosmopolitan transformation, which opens up the possibility for new beginnings, occurring in the ways Beck (2009, p. 48) thinks it might? As Tabuchi (2012) notes, the very fact that there was an independent commission examining what went wrong at Fukushima attests to “break[ing] with precedent in Japan.” While Germany plans to fully shut down their nuclear plants by 2022 (Baetz, 2011), the United Kingdom and Canada have tried to downplay Fukushima so that their plans to build nuclear power plants will not be derailed (Edwards, 2011; Mitsui, 2012). The United States government, moreover, has not done testing for hazardous radionuclides that have contaminated its soil since the Fukushima disaster began (Kaltofen, 2011). Here is the paradox: As a cosmopolitan catastrophe, Fukushima Daiichi is simultaneously enforced and denied. It is enforced in that we cannot run away from radiation that has already crossed over the entire northern hemisphere. What about the Japanese people whose homeland is a series of islands? Our world, for that matter, is an island. Where to run? Where to hide? What to do? At the same time, official reports have denied the extent of this boundary-transgressing catastrophe in both overt and covert ways. One year after Fukushima began, National Public Radio reported that “trauma, not radiation is [the] key concern in Japan” (Harris, 2012). Trauma is obviously a serious issue, and one that is not being addressed sufficiently based on the few news articles being reported on this subject. At the same time, focusing upon trauma as being more worrisome than possible effects of radiation contamination deflects from the crime that created the trauma to begin with, a crime that will last days, decades, and millennia into the future depending on what type of radionuclide we are talking about. This paradox – of Fukushima being at once enforced and denied – sets humanity on a course of global destruction, begging us to remember the key theme in Hannah Arendt’s (1958/1998) book *The Human Condition*: “think what we are doing” (p. 5).

In light of the way that the Japanese government has been dealing with the nuclear crisis, some citizens have taken their health into their own hands by buying Geiger counters to measure radiation levels. Rather than empathizing with concerned citizens about their anxieties, the Japanese government has responded by calling for a stop to citizens taking radiation



measurements because the instruments, they say, might not show accurate readings (Mochizuki, 2011). It has also been reported that the Japanese government blocked 25,000 Geiger counters from coming into the country (Noland, 2011). In another instance, the government has attempted to quell the fears of citizens living in Minamisoma, Fukushima, by trimming two inches of topsoil off an elementary school baseball field. The school principal promises that the field will see sports action in April 2012 (MacLeod, 2012); yet citizens are not convinced that trimming topsoil will solve the problem of radiation contamination. Another elementary school in Ishinomaki, Japan, lost 74 children and 10 teachers to the tsunami; a disaster that could have been prevented if the teachers would have taken the children up onto a nearby hill. Kazutaka Sato, a father of one of the children who died when the tsunami hit the school, is still waiting for a “heartfelt apology” from school officials (MacLeod, 2012). If the heart cannot heal, how can it move on? In yet another instance, at the Japanese Upper House Budget Committee meeting (2011), female politician Akira Matsu tells the story of several Fukushima school children, who had already tested positive for cesium, being “treated like traitors during the war” for not drinking what might have been cesium contaminated school milk. In other words, patriotism for a child from Fukushima means that s/he must be ready and willing to die for its prefecture before disgracing it. As Matsu tells this story, she says to Chief Cabinet Secretary, Osamu Fujimura, “Chief Cabinet Secretary, listen to me without laughing! Please listen to me carefully, this is very important. Please do not laugh at me, this is no laughing matter.”

Beck (2009) speaks of “the planetary sense of pain” (p. 69) the world felt after the 2004 Asian tsunami. The images pouring out into people’s living rooms across the world – of people drowning, of homes being wiped away, of corpses and coffins, “breaks the world’s collective heart,” Beck adds. Watching a massive wave wipe out entire towns and villages does shock and sadden the human heart, but the heart can heal when those same towns and villages are rebuilt and people have the freedom to return to where they and their ancestors have spent their lives. 3/11, which is an earthquake, tsunami, and nuclear disaster wrapped up in one, is a different story. Unlike the experience of watching the wave, humanity sees explosions all the time. Just turn on the television. Just go to the movies. Just play a video game. The world has become immune to seeing explosions. Herein lays the irony. The people from Fukushima will not be rebuilding their homes after their explosion. They cannot start over or hit the replay button. Rather, they are forced to live in other regions, some still clinging to the belief that they will be able to one day go home. In a perverse twist of circumstances, it might be safer for former Fukushima residents to return to the 20 kilometer no-go zone than live out their lives in a ‘safer’ zone because these people are being victimized and criminalized by others in their new prefectures. There are reports of school children from Fukushima who have since relocated to other schools being bullied by other students for being “contaminated” (Jacobs, 2011; Hartmann, 2011). Cars with Fukushima license plates are being vandalized (Jacobs, 2012) and have been denied gas station service in other prefectures (Jacobs, 2011). At *The Fukushima Nuclear Disaster – One Year Later* conference, I witnessed Aya Marumori, the Executive Director of Health at the Japanese non-profit group called CRMS, stand at the front of the conference auditorium, only to begin her story with an apology for what Fukushima has done to the world. “I have known the danger of nuclear power plants, but I have not acted enough to stop it. I like to apologize that this has happened, and radiation has been defusing to the world” (see Radio Ecoshock, 2012). Her opening words broke the collective heart of everyone in that room. Refugees flee places in order to seek refuge. Derrida (2001) speaks upon the creation of “cities of refuge,” or safe havens, for the stateless or displaced person. What happens when fleeing



danger turns into more danger, but of a totally different, un/anticipated kind? Where to go? What to do? How to feel safe? Not only have tens of thousands of people lost their belongings, their right to belong has been left in/definitely in abeyance.

The stories of the triple disaster ought to break the human heart like the 2004 Asian tsunami did, but its “symbolic code” (Beck, 2009, p. 67-71) makes people mad more than it does sad. When Dr. Helen Caldicott (1978/1994) wrote her book *Nuclear Madness*, she was referring to the insanity of building and using nuclear power. The book’s title takes on new meaning in the case of Fukushima where the threat of radiation contamination is making everyday people turn on each other, senselessly. This madness is being directed at the people of Fukushima who are being scapegoated for criminal acts of which they are the victims. We have seen this happen before not only in fact but in fiction. In the patriarchal, environmentally hazardous world of Margaret Atwood’s (1985/1998) novel *The Handmaid’s Tale*, women turn on women rather than on those who oppress them. After the “exploding atomic power plants, along the San Andreas fault, nobody’s fault, during the earthquakes, and the mutant strain of syphilis no mold could touch. Some [women]...had themselves tied shut” (p. 112) because they were afraid of giving birth to “unbabies” (p. 113). These women are referred to by other women as “Jezebels” for taking possession of their own bodies, “scorning God’s gifts!” (p. 112).

When Atwood’s book was published in 1985, it was read as fiction. When we read it today, alongside what we know about Chernobyl’s radiation effects on human health (see Busby & Yablokov, 2006) and the scientifically confirmed cases of “serious mutation-related health effects in Fallujah” (Busby, Hamden, & Ariabi, 2010) after the second Persian Gulf War where novel chemical weapons were used by the United States military, perhaps containing depleted uranium (DU),⁵ fiction has become fact, and the imagined future written about in the past has become the present in hypermodern, not hyperreal, real time. The soaring rate of birth defects in children of Fallujah (Fisk, 2012a, 2012b), particular those of the heart are similar to those novel defects found in children from Belarus and Ukraine as recounted in the noted documentary film, *Chernobyl Heart* (DeLeo, 2003). The decision to use chemical weapons and to cut safety corners when using nuclear power for energy purposes is both thoughtless in the Arendtian sense, and heartless, in the sense that spent nuclear fuel – fuel that is no longer useful for energy purposes but is highly useful when making chemical weapons – is literally giving birth to deformed hearts. “The miracle that saves the world,” says Arendt (1958/1998, p. 247) is natality, “love’s own product.” Yet when love becomes contaminated in the form of chromosomal abnormalities by way of human manufactured radiation (Briffa, 1996) lovers can quite literally give birth to unspeakable kinds of child deform.

As mentioned, it is difficult, perhaps impossible, to draw an empirical link between genetic deformities via radiation contamination and “school deform” (Pinar, 2012) via back-to-basics policies and procedures which centers education on rote learning and memorization of information. That said, Maxine Greene (1995) reminds us of the importance that using one’s imagination plays in ethical considerations. Former student of Arendt whose analysis of the faculty of the imagination is well noted (see Arendt, 1978), Greene (1995) suggests that “the recovery of imagination lessens the social paralysis we see around us and restores the sense that something can be done in the name of what is decent and humane” (p. 35). In this way, imagination acts as a metaphoric bridge between heart deform and school deform. Pinar (2012) speaks of school deform as those American educational reforms that have been in action since the Soviets launched Sputnik in 1957, prompting the United States to turn public education into “an instrument of military and industrial recruitment” (Lasch as cited in Pinar, 2012, p. 103-104),



a political agenda which is “anti-intellectual and undemocratic” (p. 103). We have more news on the front of federal school reforms in a letter sent to President Obama by The President’s Council of Advisors on Science and Technology (2012), of which I cite the opening paragraph:

Dear Mr. President,

We are pleased to present you with this report, *Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics*, prepared for you by the President’s Council of Advisors on Science and Technology (PCAST). This report provides a strategy for improving STEM education during the first two years of college that we believe is responsive to both the challenges and the opportunities that this crucial stage in the STEM education pathway presents.

Dramatist Friedrich Durrenmatt (as cited in Beck, 2009) states that “[i]f you start out with a story you must think it through to its conclusion” (p. 129). Following Durrenmatt, the story I propose to tell is that school deforms can lead to other kinds of deforms as gruesome as those found in the children of Chernobyl and Fallujah. The worst case scenario of producing one million new college graduates trained under STEM, which begins well before college, is to produce scientists whose main mission is not so different than Mary Shelley’s Victor Frankenstein or Alfred Lord Tennyson’s Ulysses who ends his dramatic monologue with those imposing words: “to strive, to seek, to find, and not to yield.” Shelley understood all too well what is at stake in not yielding to the acquisition of new knowledge at any cost. Working inside the most radioactive areas of Chernobyl’s sarcophagus, nuclear physicist Konstantin Chercherov (as cited in Briffa, 1996) explains the feeling he experienced when he and his team of scientists had finally discovered where the nuclear fuel (corium) was radiating from and what it looked like:

Maybe it is bad of me, but I must admit as a researcher, I was filled with joy – when I realized exactly what I found, it was sheer delight. It’s comparable to the excitement of a scientist studying volcanic lava. It’s incredibly interesting. Inspirational.

We do know one thing for certain: Chercherov knows how to feel. How his heart has been formed over the course of his life’s education, nonetheless, remains uncertain. What fills the scientist’s heart with joy – the discovery of new information – can be said to stand at odds with the heart of the poet – whose joys are found in making meaningful, aesthetic objects with words. Arendt (1958/1998) explains that if a poem is memorable, it will also be durable and, therefore, “permanently fixed in the recollection of humanity” (p. 170). Written near the end of the 8th century B.C., Homer’s epic poetry has lasted a long time. So have the Egyptian pyramids, built approximately 2,600 B.C. While we have yet to see images of what Fukushima Daiichi’s ruins and relics look like on the inside, Chernobyl’s can be seen in the many photographs taken by scientists of the stalactite and stalagmite lava formations of corium, a material that is created from the most serious level of nuclear accidents. These highly radioactive art works, such as the prized “Elephant’s foot,” nicknamed by scientists for its shape, will radiate into the future for 100,000 years. Indeed, the scientist’s work has a good chance of outlasting that of even the greatest of poems, the greatest of sculptures. It is only the scientist, however, who cares to wander through the chambers of Chernobyl’s sarcophagus as if it were that of King Tut’s.



The country of Finland has come up with a novel way of dealing with their radioactive waste from the Onkalo Nuclear Power Plant. They are burying it in Russian-doll like canisters 1,000 feet below the earth's surface. Because the material emits deadly levels of radiation for 100,000 years, the scientists involved with working on the deep geological repository are in disagreement over the ways to let future generations know to stay away from this underground site, referred to as "the chamber you must always remember to forget" (Lense-Møller, 2010) in the documentary film on its subject, *Into Eternity*. Some want to cover up their tracks completely as if no repository exists, hoping that it will never be discovered by future generations; others want to create an ornate system of complex warning signs at the mouth of the repository and down into the different tunnels. Studies show, however, that a skull and crossbones, for example, means different things to different people. And the universal symbol for radiation has also been interpreted as that of an angel, an image that exists in many world religions. Moreover, human curiosity, at least since the 16th century when archeological digging began, wants to know what secrets lay below the earth's surface. Perhaps because of human curiosity, proposals have been made "to establish a nuclear priesthood, which would hand down the sacred knowledge from generation to generation" (Solnit as cited in Ellsworth & Kruse, 2010, p. 277). In short, there is no consensus on what to do with a problem beyond the human capacity to deal responsibly with it.

Despite the silence on Fukushima, stories of its survivors and the crimes surrounding the nuclear disaster are being leaked, mostly in the form of indymedia (Dupre, 2011b) such as blogs that transcribe and translate reports from Japanese into English (e.g., EX-SKF: Covering Fukushima I [Daiichi] Nuclear Accident since March 11, 2011). These blogs call out to the world: *Please read me, think about me, feel me, and listen to me. This is happening to you, too.* In her book *If you Love this Planet: A Plan to Save the Earth*, Helen Caldicott (2009) states that "the only cure" to healing the planet "is love" (p. 235). At the same time, Caldicott is a long time anti-nuclear activist who calls on the public and government for legislation reforms. Yet the lies and complicity between the nuclear industry, Japanese government, and researchers from universities – which is referred to in Japan as the "nuclear power village" to connote "the nontransparent, collusive interests" (Onishi & Belson, 2011) of those in power whose "philosophy is economy comes first" (Naka as cited in Hano, 2012) – are not interested in curing the world through love or legislation. In other words, loving the planet, which includes loving our fellow human beings and other in/sentient beings and loving profit and pleasure appear to be working at counter purposes.

I appreciate Beck's (2009) point that "allocating responsibility – causality and blame" (p. 91) for ecological crises is difficult. At the same time, building nuclear power plants on top of or near fault lines – which has been the case not only in Japan but in the United States and China, too (see Casselman and Spegele, 2011) – is an outrage to common sense, an outrage that the ancient Greek tragedians warned mankind against in their critiques of hubris. More outrageous is that TEPCO has forged documents, falsified data, and faked repairs on its nuclear plants for decades (*Spiegel Online*, 2011; Suguako as cited in Hano, 2012). As Reed (2008) notes, Japan has a "serious corruption problem" at the highest levels (p. 398) and a long history of corruption broadly speaking dating back to the Heian period (Mitchell as cited in Pascha, 1999, p. 6). Apart from the problem of national corruption, it was the United States that brought nuclear energy to Japan, first by bombing Hiroshima and Nagasaki and then as Eisenhowerian "atoms for peace" in the form of electricity. Such "peaceful" uses of atomic power, however, "were pursued within a violent reality—that of a nation capable of bombing its own land and people in the name of



safety and progress” (Ellsworth & Kruse, 2010, p. 276), the Nevada Test Site and Hanford Site in Washington State being the most potent of places. American corporation General Electric (GE), no less, built the faultily designed “Mark I” reactor in Fukushima Daiichi which has likely contributed to the ongoing catastrophe (Zeller, 2011). The same defective Mark I design, by the way, has twenty-three sister reactors scattered throughout the United States (Dedman, 2011). GE’s longtime trademark slogan, “we bring good things to life,” and its recent rebranding to “imagination at work” are mottos as ironic as any words ever spoken by King Oedipus. Such coopting of the term imagination adds yet another layer of irony to what Maxine Greene (1995) had in mind when writing on this subject. Indeed, assigning causality and blame for ecological risks turned crises is complicated. Yet, of all nations, it is Australia who has acknowledged “special responsibility” (Ludlam, 2012) for the Fukushima disaster. On the one year anniversary, Senator Scott Ludlam of Western Australia spoke these words to the public:

Where did the iodine come from? We know where it came from: uranium from Kakadu and Central South Australia, shipped under humid Darwin skies, refined and loaded into Japanese nuclear reactors; uranium broken in fission reactors into isotopes previously unknown on the planet—cesium 137, iodine 131, strontium 90 and plutonium 29...The Australian government took seven months to disclose that Australian uranium was in each of the reactors at Fukushima—Australian fission products poisoning the ocean, the food chain and the gene pool of Japan’s Pacific coast. That is the worst nightmare of all for the Aboriginal elders and campaigners and their supporters, who have dedicated their lives to preventing precisely this kind of horror.

In juxtaposition to Ludlam’s speech, Prime Minister Noda (as cited in Garnaut, 2012) had these words to say at the 2012 nuclear security summit. Japan was “lulled into a ‘myth of safety’,” adding, a “man-caused act of sabotage will test our imaginations far more than any natural disaster.” Certainly Tohoko was a natural disaster, but let us not be lulled into believing that Tohoko and Fukushima are one in the same thing even though Noda and the Japanese government have packaged it as such. In the words of former Japanese Prime Minister Naoto Kan (as cited in Hano, 2012), the Fukushima nuclear disaster “is a mistake of those responsible. They simply did not do what was required. The cause of the catastrophe was not the earthquake and tsunami.” While Kan recognizes that mistakes were made (as the political expression goes), his words do not make clear who is responsible. We know that since then, an independent investigating committee has placed collective blame on industry-government in its report. Still, no individuals have been held accountable.

It seems rather unlikely that politicians or scientists will form book clubs to read and contemplate together how drama, poetry, and other genres of literature could, along with legislation and scientific knowledge-acquisition, help save us from ourselves and the planet from us. Broadly speaking, scientists are trained to think literally, to use the scientific method to study and experiment upon the physical world, and to continually refine these practices. Moreover, the more orthodox social scientists, like James Gregor (as cited in Luban, 1984), contend that using metaphors in one’s work is akin to second-rate research. Using narrative inquiry in political science, Gregor says, cannot “predict events” (p. 247) but only helps us to understand past events. While narrative thinking certainly does allow us to reflect on the past, narrative has also helped humanity to foresee things to come whether in the form of political theorizing, dystopian fictions, Greek tragedy, or modern poetry. What can be said about such narratives is that the



writers behind the narratives – e.g., Hannah Arendt, Ulrich Beck, Margaret Atwood, Sophocles, and T.S. Eliot to name the writers I cite in my work here – each use their minds (through the process of thinking) *and* hearts (through the less process-oriented experience of feeling) in writing works designed to provoke their readers to act thoughtfully and lovingly upon the world – not to dominate it or ourselves. The various narratives that might be called “field manuals” – to recall Young-Bruehl’s (2006) description of *The Origins of Totalitarianism* – for detecting warning signs of a future yet to come, nevertheless, do not predict the future in the same ways that science attempts to control it. Reading such field manuals carefully requires not only studying the language of the texts closely but imagining the ways in which the stories recounted resonate with the concerns that sociological risk theory raises. Risk theory, we are reminded, aims to predict the unpredictable.

In the language of risk theory, a correlation exists between the worst case scenario and “organized irresponsibility” (Beck, 2009, p. 28). Under the “three pillars of the risk calculus” (p. 28): 1. “irreparable global harms...cannot be limited”; 2. “precautionary aftercare...is impossible” because outcomes cannot be gauged in advance; 3. it is “an event with a beginning but no end.” In the same way that lying leads to more lies to cover up the initial lie in ways that cannot be predicted, organized irresponsibility becomes a trap in which more organized irresponsibility ensues. Kant (1785) contends that lying and telling the truth is under no condition a matter of taste or preference. In the case of the Fukushima disaster, which is but a series of cover-ups, forgeries, and lies, the categorical imperative would seem to hold universal appeal.

Though stories about Fukushima are being leaked, many are being muzzled not only by the central government who has abandoned the villagers of Namie but by non-Fukushima Japanese citizens who see the people of Fukushima as the culprits. What happens when the stories of Fukushima are not told because no one is interested in listening to them? How can the world start anew? Arendt via Saint Augustine contends that beginning the world anew occurs through acts of “friendship, forgiveness, and social bonding,” otherwise known as neighborly love (Scott & Stark, 1996, p. 181). Sayomi (as cited in BBC, 2012), a mother of one of the children who died in the Tohoko earthquake and tsunami, tells us who listen to her story: “For people in authority as long as it’s not their own child who’s dead, as long as they are not the ones living in radioactive areas, they don’t care.” The ethics of care Sayomi is in/directly calling for is resonant with the kind of global ethics of responsibility I summon as part of the work of a cosmopolitan education. While I have argued that cosmopolitanism ought to also be understood as globally significant phenomenon, a cosmopolitan education centralizes ethical responsibility to our close and not-so-distant world neighbors and to our home, planet Earth.

There are tragic events that have brought the world together as in the case of the 2004 tsunami. Moreover, stories, which are shared with people in a community, are crucial for the survival of that community. As Appiah (2006) reminds, “we wouldn’t recognize a community as human if it had no stories” (p. 29). Concerned that the young people of Ukraine are forgetting about the story of Chernobyl due to daily life demands, historian Natalja Baranowskaja (as cited in de Halleux, 2011) states, “a man lives and remains a man as long as he remembers.” That said, in the distant future, there will be an earth-shattering story that must not be remembered; it is told to us today in the refrain found in the documentary film on Finland’s nuclear waste repository: *The chamber you must always remember to forget* (Lense-Møller, 2010). If this story is not forgotten, if it gets out and is spread to all of humanity, it will be the last story humankind is to

tell. In this way, what it means to be a human being will be, if it is not already, totally and forever transformed.

Notes

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² Additionally, I attended *The Fukushima Nuclear Disaster – One Year Later* conference held at Simon Fraser University, March 10-12, 2012. At the conference, I spoke with a variety of presenters and participants on reliable sources of information on Fukushima and have drawn from many of the recommended resources in this paper.

³ As “rooted cosmopolitan” thinker Appiah (2007, p. 213) notes, it was Hitler and Stalin who used the code language “rootless cosmopolitans” for anti-Semitism. Stalin claimed that cosmopolitans were “anti-patriot[ic]” (see Azadovskii & Egorov, 2002, p. 67) Jewish intellectuals who must be purged.

⁴ Reputed ecopedagogue, Richard Kahn (2008b) has likewise written a compelling article in the domain of pedagogy on the “[t]echnoscientific marvels” (p. 4) conducted at the Nevada Test Site. He juxtaposes the so-called “objective” and “universal” (p. 2) findings done here by atomic weapons experts with the medicinal research and practices of indigenous populations located in the same region whose aims are “community healing” (p. 1). Kahn’s (2008a) ecopedagogy has its roots in Freirian critical pedagogy, an orientation that goes beyond the scope of my own in this paper. Nevertheless, his articulation of an ecopedagogy which is premised upon a universal ecological ethic (p. 8) is highly compelling given the factual truth of ecological and environmental devastations that have never-ending effects upon a universal-global environmental reality.

⁵ While the United States government has denied using DU in their weapons during the war, there have been reports to suggest otherwise (see Wagner & Thurn, 2004). If this toxic metal was used, this would be a novel way of getting rid of a country’s radioactive waste. Of course, it is never really gotten rid of given that the halflife of uranium-238 is 4.48 billion years and for uranium-235 it is 700 million years. That said, the World Health Organization’s (2003) most up-to-date fact sheet on DU indicates that there are no reproductive or development effects on human beings exposed to this metal through inhaling dust particles or otherwise. Baverstock (2006), however, points out that there have been no long term studies done on uranium toxicity. Moreover, his research indicates that “uranium is potentially genotoxic and therefore probably a carcinogen” (p. 5). The debates surrounding the risks associated with using and being exposed to DU act as an example for what Beck (2009) calls the unpredictability, uncertainty, and indeterminability of a world at risk.

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