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Fighting through the Fallout

Maternal and Feminist Resistance and the Fukushima Nuclear Disaster

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Oral histories by Heidi Hutner with Sachiko Sato of Fukushima City,
September 21, 2011, and April 23, 2017

In March 2011, Japan experienced both a magnitude 9.0 earthquake and the meltdown of the Fukushima Daiichi Nuclear Power Plant. This oral history project focuses on the female, maternal, and domestic experience of these events. Women's voices are traditionally silenced in Japanese culture, so these female oral narratives disclose important accounts of the disaster that might not otherwise be recorded. Sachiko Sato, a mother of six and an organic farmer, provides the central point of emphasis. Through her narrative, we gain a deeper understanding of the complex domestic, social, economic, health, and gendered impacts of the of March 11, 2011 accident. Additional Japanese mothers' narratives are included as well; they echo and expand upon the Sato family's experiences.

The initial interview with Sachiko Sato came after her public talk at the Ethical Culture Society in New York City in September 2011, where she appeared with her two youngest children, her seventeen-year-old son Yuki and thirteen-year-old daughter Mina. Sato spoke of her family's experience after The Great Japanese Earthquake on March 11th, the resulting tsunami and Fukushima nuclear disaster, and the ongoing hardships her family faces. She spoke about evacuating her children from their home and her current concern for the safety and fate of Fukushima's children. She described the pain of having to walk away from her family's organic farm, a thirty-year investment that she and her husband had made—a decision that would last “forever” due to the high levels of cesium 137 contamination. Sato and her husband had built their

sustainable farm and educational center from the ground up. But, after that day, it was all taken away.

*Her children spoke of the impact the evacuation had on them. The youngest, Mina, cried about losing her home, friends, and community, and talked about her difficulties living so far from their farming community. Yuki, her son, spoke solemnly about how losing the farm also meant losing his work, present and future; he had helped his mother with everything. In that first meeting with the Satos, the family's grief was palpable, particularly the children's. With fierceness, Sato said she had come to New York as a mother to warn the world about the dangers of radiation and to protest her government's failed attempts to protect the people of Fukushima. During that visit, she also met with various environmental advocacy groups and protested in front of the United Nations, where Prime Minister Naoto Kan spoke about the Fukushima disaster. At the end of the Ethical Culture Society event, I met with Sato and her translator, Aileen Mioko Smith, a mother, grandmother, and executive director of Green Action Japan. Smith is co-author of *Minamata: The Story of the Poisoning of a City and People Who Chose to Carry the Burden of Courage*, the book that exposed the damaging health effects of mercury pollution in Minamata Bay, Japan.¹*



*“As a mother and farmer who lost my home and land because of the Fukushima nuclear disaster, I had to step up and warn the world.” Sachiko Sato joined a demonstration at the UN in New York City September 2011, warning the world about the severity of the Fukushima meltdowns. Photograph by Linda Pentz Gunter, *Beyond Nuclear**

On April 23, 2017, six years after our first meeting, I interviewed Sato for a second time. I was in New York and she was in Fukushima City, where she now lives and works, ninety kilometers from the nuclear disaster site. We spoke on Skype with the assistance of a translator, Rachel Clark.

HUTNER: Sachiko-san, could you describe what the day of March 11, 2011 was like for you and your family?

SATO: March 11 was a Friday. When the earthquake began, I was at work, a place called Helper Station Ohayo, which means something like “Good Morning Helper Station.” Helper Station Ohayo, located in Fukushima City, is a facility where we help handicapped and elderly people. At the time of the earthquake, I was at the office doing administrative work. I’ve never experienced such a long earthquake and it was a big shock. All the staff members gathered to talk and determine what we should do. Then, there was a power outage and our cell phones stopped working. We received information through radios. Some of us went out to visit our clients at home—handicapped people and injured people in the community; we visited these clients individually, one by one, in their households. Some had been evacuated to various public facilities. We visited them where they had power, so we were able to watch television. What we saw on the screens was like scenes from a movie—all those images of the huge tsunami engulfing the houses.

Around 11 p.m. that same day I went home to our family farm. On my way, I filled my car with gas. I don’t know why, but the idea that I should fill my gas tank up came to my mind. That was very lucky. I was right. A few days later, we began having heavy gas shortages.

At midnight, I arrived home and I took my youngest son, Yuki, and my youngest daughter, Mina, to my eldest daughter Maya’s home in Fukushima City. Maya was married. After the disaster, our home, where my farm was located in Kawabata-machi, had no electricity or running water, and I was worried about the Fukushima nuclear plants and potential accidents. We were not able to get any information about the nuclear power plants, but I kept thinking about the Chernobyl accident and the possibility of a nuclear accident in Fukushima because of the earthquake and tsunami. If the Fukushima nuclear plants were to have a meltdown or to explode, I intended to evacuate my children far from the plants.

On March 12th, we found out that the Fukushima nuclear power plants had exploded. On that same day, I had returned to my farm because we had chickens. I needed to feed them and collect their eggs. I received a call from my older daughter Maya, and she told me what happened to the nuclear power plants. As soon I heard this news, I called one of my friends, Mr. Toshihiro Ito, who lived in Yamagata City, one hundred kilometers away from the nuclear power plant. Luckily, Mr. Ito told me to come to his home, as soon as possible, with my family and friends. I called my daughter Maya and told her to get away immediately and go to my friend's home in Yamagata. Maya told me that her husband could not leave because of his job. I yelled at her, "What is more important, his work or your lives?" She replied, "Just give me one more day." Maya said she needed to wait until her husband negotiated with his bosses to take a few days off from work.

HUTNER: What happened after that first day?

SATO: On the night of the 12th, I didn't go to Maya's home; instead, I spent the night with my friends and colleagues at my second home in Ino-machi, where my house had electrical power. Most places had power outages and everyone was in a state of fear. My friends and colleagues and I had dinner together and discussed what to do. One of the staff members, a young mother, had a baby that had been born in January of that year—still a tiny baby, right? She said that she would like to evacuate with her baby, and I told her to go with the others to Mr. Ito's. One of the other staff members was from Iitate Village, which had been contaminated. She also had two young children. I told her that she should go to Yamagata together with the rest of the group.

On the morning of March 13th, my third boy, second boy, second daughter, and the staff members I just mentioned—all went to Yamagata. My daughter Maya went to Yamagata, also, a day later with her husband and family. The road to Yamagata was very, very congested with the people who were evacuating. Usually, it takes two hours, but it took the group six hours to get there. When they arrived, they called me. When I heard the news, I felt so relieved. Several of my colleagues went to Tokyo, and one family, Miwa and Todoroki (wife and husband), went to Hiroshima, where Miwa's parents live. Miwa is a second-generation Hibakusha.²

They had a small baby born just two months prior to the accident. The baby had just been diagnosed with Hashimoto's Disease—possibly this was hereditary as the grandparents were exposed to radiation from

the Hiroshima bomb. Ironically, they evacuated from Fukushima to Hiroshima, as they feared being exposed to radiation. There was another staff member from my job who was pregnant at that time. Her name was Hideko Yoshikawa. I also told her that she should evacuate, but she had a grandmother who was terminally ill and about to die, and so Hideko, who also had a toddler, decided to stay with her grandmother—putting herself, her toddler, and her unborn child at risk. I told her to put masks and raincoats on herself and her child whenever she had to go outside.

As for me, I went to Mr. Ito's place in Yamagata on the 17th. I couldn't go right away with the others, because my boss had gone to Tokyo and I couldn't leave our sick and elderly clients—they couldn't evacuate, so someone had to stay. We were very short-staffed. Also, my husband was in India and my children and I needed the income. Whenever I went outside I wore a mask and jacket and hat all the time. I left these coverings outside of whatever buildings I entered; that's the best I could do. My job was very demanding, and I could not leave the people who needed me. I soon decided to rent another friend's house that was located close to Mr. Ito's. My children and some of my staff families from work lived in this new place together. I went there only on the weekends, as it was a two-and-a-half-hour commute from Fukushima City, where I work, to Yamagata. My eldest daughter, Maya, and my second son Kota, who went to Mr. Ito's place, were over there for a week, but then they heard that Kota's and Maya's husband's work resumed. Maya's husband went back to work in Fukushima and Maya stayed in Yamagata; she got her own apartment there. So, the couple began living apart.

HUTNER: Could you describe more about what was happening at your family farm and how this affected where your family would live?

SATO: At the time of the accident, my son Yuki and I had been running our family farm, and my husband was living in India. Yuki left on March 13th with Mina, as I said. On March 31, we sent soil samples from the farm to a laboratory in France to be tested. The test results showed that the radiation levels were high—6,000 becquerels per kilogram. At that time, the government was only doing radiation air tests, not soil tests. I had a friend who was doing other soil testing, so I sent my soil in to be tested, as well. We didn't expect the results to be so high. Because of the high radiation levels, we decided to abandon the farm on April 28th, and the children never went back. No one lives there now. For a long time, I was the only caretaker of the farm, and as we had chickens, I had to go back to take

care of them. After that, the Iitate and Yamakiya areas became mandatory evacuation zones. The Onami area in Fukushima City showed the highest level of contamination. My organic farmer friends who used to live near to our farm all left. They never returned. I told you that my farm's soil samples showed the 6,000 becquerels per kilogram, right? At that time the government announced that any farms where they showed over 5,000 becquerels per kilogram should not grow any vegetables or fruit. Even before this announcement was made, I had stopped everything. My husband had come back from India in mid-April and we shut down the whole farm. We killed all 250 chickens.

Our income from farming became zero at that point. My only income source was the job at the Helper Station Ohayo. My work at Ohayo was very, very painstaking because many of the helpers had evacuated. Many of the elderly people and handicapped were not able to evacuate, so we were overloaded with extra work. We also had to dispatch a number of our helpers to the evacuation stations where they needed assistance. Our staff families were broken up—wives living separately from husbands, in Yamagata or Tokyo. I moved my family eventually from Yamagata to Yonezawa City (only an hour from Fukushima City), so that my commute would be shorter and I could be with my youngest children. After closing the farm, my husband went to Okayama; it is far away from Fukushima or Yamagata—to the west of Honshu Island. He purchased another farm there and decided never to come back. I will never go back to our old farm either; I started farming at Takahata-machi and providing healthy food for the patients where I work, for the staff members and their families, and for my family. Let me tell you a little bit more about my family.

During the first four months after March 11, after I had made my two younger children evacuate from our farm, it was very difficult for me to visit them as I had to keep working and my job was far away. Mina and Yuki were living together for four months, and Mina was not in school. They knew how to grow food, as I had taught them these skills on our farm, but they were living alone and not getting along. Once I got the new place in Yonezawa, closer to where I work, I was able to go back home every day and they began to get along. But Mina refused to go back to school. She tried to go to school in Yonezawa, but the day she started she called me from school to say that she would never go back there again. She had fallen behind and they wouldn't accommodate her needs, and

they were not doing enough to protect the children from radiation in the food. I decided not to force her to go to school.

During that time, I was doing activities to protect the children in Fukushima from radiation. Mina observed what I was doing and it upset her. “You are protecting the Fukushima children instead of me, your own daughter,” Mina told me. “So maybe I should disappear from this world. That would be better because that would eliminate one extra worry for you.” Mina had written these words on her public blog, too. A friend of mine read it and said to me: “Don’t you think your daughter is more important than the children of Fukushima?”

Despite my concern for Mina, it was impossible for me to stop my activities. When Mina was supposed to begin the last year of middle school, she told me that she wanted to go back to the Kawamata School—the school she had attended before the Fukushima disaster. I was worried about Mina for many reasons and so, although I didn’t want her to live in our original home in Kawamata which was now contaminated with radiation, I decided to let her commute from our other apartment in Fukushima City, where my eldest daughter Maya used to live. There, it would be safer in terms of radiation exposure. The radiation levels inside that apartment were 0.05 microsievert³ per hour, which is not too bad—the concrete walls probably provided a barrier from the higher levels outside. I gave Mina certain conditions: (1) She should never eat lunch or drink the milk provided by the school; (2) If she felt any kind of change in her body, she should let me know. Mina was very happy in her last year of middle school.

Now, my other child, Yuki, remained in Yonezawa in Yamagata prefecture, and he was alone. My workload at the Helper Station Ohayo became more and more intense. I wanted Yuki to come back to help me. At that point, I moved with Yuki to the Fukushima City apartment and we lived with Mina. That’s where we live now. After Mina graduated from her middle school, I wanted her to go to a boarding school in Oguni-Machi, Yamagata Prefecture, where there was an independent Christian Academy. It was safer there (less radiation), and we went to visit the school to see if she would like it. On the ride home, Mina said, “I’m sorry, I don’t want to go.” She began to cry and say that I loved the Fukushima children more than I loved her. I told Mina that she is much more important to me than children in Fukushima and that’s why I asked her to evacuate in the night of March 11th in 2011. I told her: “You might not be

able to go back to your original home, but it is more important to protect your life; and that's why I asked you to evacuate." In the car, Mina listened to my story with tears in her eyes. After our talk, she decided to take the entrance exam for the boarding school and she got in. Once Mina was enrolled and began living at the school, she told me that she was truly suffering and wondering if the school was the right place for her.

In September 2013, there was a Mass at the Christian Academy. At one point during the service, each student was supposed to tell a story about herself. When it came to Mina's turn, she suddenly understood why she had to attend this school: to be protected from the threat of radiation, and that's what she spoke about. Up until this point, Mina had tried very hard not to think about radiation and the Fukushima disaster, but on that day, she faced the issue. Mina thought about her own life, and her future children's and grandchildren's lives, and she finally understood that the nuclear disaster was the reason she had to go to boarding school. Mina explained all of this to her classmates in her speech. She said that she could not live in denial anymore about radiation. To her classmates and teachers, she said, "You cannot pretend, 'Oh, I don't know anything about nuclear power plants and their dangers.' You're just trying to escape from the reality if you do so. It's a sin to say, 'I don't know.'" Now Mina wants to do whatever she can do to make up for the denial she lived with up until this time. It was a very big moment for her.

I put this story into a little book called, *Letters from Mina*. I will send it to you. I want you to share it with others. Since this experience of telling her radiation story in Mass at school, Mina has been much happier and she has become very, very outgoing. Mina really used to love her life in Kawabata where she grew up. She misses the farm and her friends and living there very much. She plans to find a new place and start a farm life like we used to have. She is nineteen years old now. Yuki, now twenty-three, works with me at the Helper Station Ohayo. Today, the workload at Ohayo keeps mounting and mounting.

HUTNER: What about the other children? What was happening with them during this time?

SATO: There is my son, Masashi. I have not told you about him yet. On the day of March 11, 2011, he was in Tokyo. Since then, he came back to Fukushima. One of his friend's companies in Fukushima was very short-handed, and he came back to help. After this, he got married. He and his wife live in Fukushima City. Maya, who evacuated Fukushima, remained

in Yonezawa and got divorced. Her husband had no knowledge, no understanding, no will to learn about the dangers of radiation from the disaster. She remarried a newspaper reporter in her new home. She also had a baby with her new husband. My second son, Kota, was married in 2014. He did not want to raise children in Fukushima after he got married because of the danger of radiation exposures. In 2016, in March, he moved with his wife to Yamagata Prefecture. In March 2017, this young couple had a baby.

HUTNER: What about your husband? Where was he during this time?

SATO: I am divorced from my husband now. Since 2010, my husband had been saying that he wanted to restart a new life somewhere else. Until then, he had been an organic farmer. He wanted to do same thing in a different way and place. He said he didn't want to spend any money. He wanted to form a new community. That's why he was in India at the time of the disaster. I think he would have lived in India at that time if it had been possible. After the earthquake and Fukushima disaster, he moved from India to Okayama. He purchased a piece of land on a mountain called Genkai Shuraku. There, he started a community with other Fukushima evacuees. When my husband first told me that he wanted to start a brand-new community, it sounded to me as if he were abandoning the life that we had built together up until this point. We had been together for thirty years. The Yamanami farm, our home, was regarded as a wonderful place by our neighbors; it was totally sustainable and we produced 90 percent of our food needs. We had many interns and trainees from across the nation who came to live and learn from us. We built it all from scratch: every building, every structure—including our home—and housing for the interns. We knew nothing about building when we started and we had no money. Selling chicken eggs would not pay for a new house or other structures. So, it took us seven years to build our house, which we did by hand, and we basically camped during that time. All the effort that we poured into this farm was completely denied by my husband in 2010, and his desire to leave it all was a tremendous shock to me—much more so than the March 11, 2011 disaster. So, when the people all around me fell apart on March 11, I was the opposite—the worst had already happened to me—and I knew what to do. For the safety of future generations, I believed that we should close down all the nuclear power plants. We have to protect the children from radiation, and that has been my purpose ever since then.

HUTNER: Could you say more about your new purpose of protecting the children from radiation and your concerns about health impacts of radiation in Japan post-disaster?

SATO: In March 2011, after the disaster, I went to my family's cemetery, to see my mother who was sleeping there. My mother passed away twenty years prior to the accident. She actually committed suicide. She had suffered from depression. At the cemetery, I thought about babies and young children and the dangers of radiation to their health. In the year of the Chernobyl accident, both my younger sister and I gave birth. My younger sister's child was born prematurely. This baby was born with water accumulated in the brain, hydrocephalus. At that time, we never thought that this could have been related to the radiation from Chernobyl. In my sister's room at the hospital, two other babies and their mothers shared the space with her. In addition to my sister's baby, there was a baby with a hole in his heart, and there was a super-small premie baby, only 650 grams, really tiny. Japan was several thousand kilometers away from Chernobyl, so we never thought these birth defects were related to the nuclear accident.

These days, post-Fukushima, I encounter many women and their infants, and many of these babies have heart problems—holes in their hearts. I have met more mothers who had children right after the Chernobyl accident, and they, too, gave birth to babies with heart problems and hydrocephalus. This could be due to the Chernobyl radiation, or to the fathers' exposure to radiation at the nuclear power plants in Japan, or both (many fathers in the area work at the nuclear plants). These concerns are all over Twitter and Facebook; Japanese mothers share information about their children's illnesses and birth defects on social media. I think the officials are trying to cover things up. The few studies that are going on regarding children and thyroid disease, for example, use questionable methods. We have found problems concerning the way the studies are being conducted and their results, and I don't think the numbers are accurate. There have also been strange sudden deaths. Some teenagers, healthy teenagers, adults, and I see this at my work, too—people dropping dead suddenly in the year of the accident. At my job, I see many sick people, very weak people, much more so than before the disaster; and others in our community—many strange sicknesses. The doctors don't know how to diagnose them—or they say they don't; perhaps they are not allowed to say these illnesses are related to radiation. Daycare centers are

seeing many more sick children in school; the children born after 2011 are weaker—so my friend tells me who runs a daycare center.

As far as the health of my family, I have it the worst so far. Several times a year I feel a terrible pain starting from my chest through my throat and into the interior of my ear. I have not gone for medical tests even though the doctor says I should. When it comes to the thyroid cancer checkups, I don't let my children go to the one run by the Fukushima Medical University; we built our own clinic called the Fukushima Mutual Clinic. That's the place where I send my children for thyroid checkups.

In our family, we get our food from various sources. The rice comes from Shimane Prefecture and the Takahata area in Yamagata Prefecture. The vegetables, I cultivate locally, because it's impossible to get everything from entirely outside the prefecture. We have no choice. We have to eat some locally produced food. We also have our own radiation test facility that I organized. In our home, yes, we have a Geiger counter.

As my interview with Sato ended, I recalled our first conversation, which took place six years earlier in New York City. She asked me how far I lived from a nuclear power plant. I said I lived about thirty-five miles from Indian Point nuclear power plant, located in Buchanan, New York, just twenty-five miles north of where we were standing. Sato and her translator Smith exchanged knowing glances and spoke to each other in Japanese—their heads bowed as if in serious conference. Then Smith turned to me and said that I should put my own affairs in order—“Are both your job and your home nearby to the plant? If so, you should think about selling your house now; because when there is a nuclear accident you will lose your income and your home and then how will you survive? Have two weeks' worth of water and canned food saved in your basement. Wait two weeks to evacuate, because the roads will be jammed, so it will be safer to stay inside until the roads are all clear. And, then, say goodbye to your home. Forever.”⁴

Commentary

On March 11, 2011, the Tohoku region of Japan was struck by an earthquake, measuring nine on the ten-point Richter scale, the most powerful earthquake to hit Japan in recorded history. A treacherous tsunami ensued, resulting in a power outage and the meltdown of three out of the six nuclear reactors at

the Fukushima Daiichi Nuclear Power Plant. All three cores melted through the steel of the reactors and made their way into containment vessels. Water contact with the zirconium-clad exterior of the fuel rods caused reactor units 1, 2, 3, and 4 to have hydrogen explosions. As a result of the meltdowns and explosions, massive amounts of radiation escaped into the atmosphere, including cesium 137, tritium, iodine, strontium 90, plutonium, americium, rubidium, and noble gases (argon, xenon 133, and krypton). Twenty percent of the poisonous releases dispersed over mainland Japan, and 80 percent traveled offshore to the Pacific. According to official data, the event contaminated 4,500 square miles with radiation above Japan's (then) allowable exposure limit of one millisievert (mSv) per year.

The Japanese government did not reveal the status of the reactors or the extent to which radiation had been released from the March 11 meltdowns until May 17. During that same period, the government minimized the number of evacuation zones by changing its definition of acceptable radiation from 1 mSv to 20 mSv. Together, these two factors contributed significantly to rising citizen mistrust about radiation safety. Many believe that the elevation of radiation limits put their health at risk, and they remain concerned about the accuracy of information around radiation contamination in the media and elsewhere. The general fear of future nuclear meltdowns and this information-related distrust led to a surge in antinuclear opposition after the Fukushima accident.⁵

While large-scale protests, sit-ins, occupations, and other mass public displays of protest largely subsided within approximately four years after the meltdowns, Japanese citizen mistrust of the government's radiation policy still lingers among those I have interviewed. Mothers continue to file lawsuits over being forced to return to evacuated areas, remain vigilant in food protection for their families, participate in citizen science, take part in health studies and receive medical care at non-government facilities, and persist in their efforts to keep nuclear reactors shut down. For the most part, evacuees have not returned to contaminated prefectures, and the radiation-concerned expats I have interviewed intend to remain overseas. Many families stayed put in questionable areas of Tohoku and Fukushima due to the cost and challenge of moving away. As Aileen Mioko Smith explains, "It's easy for outsiders to say, 'evacuate, move away' or 'don't return home' to those from Fukushima, but finding jobs and new homes may not be possible. Without jobs, how are families to feed their children, and where are they going to live?"⁶

As of March 1, 2017, the Japanese government ordered subsidized evacuees to return to communities with contamination levels of twenty mSv or less, and most government support for such evacuees has ended. Concerned parents continue to demand that the government restore the maximum safety limit to one mSv; they argue that, even if an individual home has been decontaminated, hotspots remain surrounding the house, making it unsafe for children to play outside. Additionally, as Mioko Smith points out, such cleanups are not permanent: there is an endless supply of radiation waste from the disaster, and the wind blows radioactive material back into buildings, homes, and yards.⁷

According to Kendra Ulrich of Greenpeace Japan, women and children have suffered unequal impacts post-disaster; women have experienced increased violence and domestic abuse, divorce, economic hardship, negative health consequences, and social exclusion.⁸ Fukushima mothers and their children experience the social stigma of radiation-affiliation—they are the modern-day *Hibakusha*,⁹ a term originally used to describe survivors of Hiroshima and Nagasaki. Some women who were pregnant during the bombings in 1945 gave birth to children with congenital defects. As a result, they were seen as unfit for marriage and motherhood.¹⁰ Analyses of radiation health studies by Mary Olson and Arjun Makhijani show that women and children are most vulnerable to radiation exposures, and fetuses are the most vulnerable of all.¹¹ Adult women are twice as likely to develop cancer from the same exposure to ionizing radiation as adult men, and children are five to seven times as likely to develop cancer from the same exposure to ionizing radiation as adult men (girls more so than boys). Despite our understanding of these statistics, radiation safety standards continued to be measured using the model of a white adult male body—the “Reference Man.” So far, no studies account for racial differences in respect to radiation impact.¹² Additionally, the 2006 report by the National Academy of Sciences does not include the long-term effects of internal contamination, and such exposures may have significant negative health consequences.¹³ The result and concern for women and children in Japan post-disaster: women and children have a disproportionate health and safety disadvantage in relation to all radiation disaster, home, and workplace exposures.

In *Radiation Brain Moms and Citizen Scientists*, Aya Hirata Kimura looks at the double bind mothers experience in post-Fukushima Japan. If they do not trust the government’s commitment to radiation safety (and, in particular, food safety), they are often viewed as hysterical and lacking an education

in science. They are dubbed “radiation brain moms.”¹⁴ Yet, providing beneficial and safe nutrition and protecting their children’s health is significant to the ideology of good mothering in Japan. Cindy Folkers sees this critique of mothers as “radiophobia,” a misogynist construct. Radiophobia-baiting dates back to the Cold War era, Folkers suggests, when the US government aimed to persuade the general public that atmospheric bomb testing was safe. Folkers (and Hutner) suggest that labeling mothers and women as radiophobic normalizes ionizing radiation and leads to female self-censoring and silencing. Radiophobia also contributes to the cultural denial of legitimate concerns regarding radiation health safety.¹⁵

Unexpectedly, the nuclear accident gave rise to a nascent feminism. Large numbers of women responded to the accident by publicly protesting nuclear power, challenging food and medical safety, and, in some cases, evacuating with their children to safer locations against their spouse’s will.¹⁶ These separations and differing views between men and women about radiation safety resulted in what is commonly referred to as “atomic divorce.”¹⁷ Mioko Smith says, “in general, men don’t take radiation dangers as seriously as do the women—men worry more about finances, while women worry about their children’s safety—where they play and what they eat. This may be because it’s the women who have to deal with the day-to-day of the children’s needs.”¹⁸ In a highly conformist culture such as Japan, where women are expected to be subservient, silent, and submissive, this female-driven movement against the status quo reflects the deep social impact of the disaster: the nuclear meltdowns led to the radicalization of many women.

A similar radicalization of women took place in the United States in the 1950s, when Dagmar Wilson and Bella Abzug formed the antinuclear group Women Strike for Peace. That group has been credited with stopping atmospheric atomic testing in the United States.¹⁹ Other historical examples include the work of German Green Party feminists, such as Petra Kelly, who linked nuclear weapons with misogyny. After Hiroshima and Nagasaki, and the bombing of Bikini Atoll and the contamination of the Japanese commercial fishing boat, the *Lucky Dragon*, the Hibakusha and mothers (as food-keepers) were radicalized as well. The Hibakusha (both female and male) have served as representative antinuclear and global peacekeepers since the 1950s.²⁰ In Japan, Mioko Smith and her cohort have been active since the 1980s, breaking gender roles by pushing against traditional male authority in a myriad of strategic ways. After years of antinuclear activism, Mioko Smith says she often refers to the American antinuclear group Women Strike

for Peace as a positive model for Japanese activists, “I always tell groups of women: if the mothers of Women Strike For Peace could do it, so can we.”²¹

Sachiko Sato is an important example of such female radicalization. She became an antinuclear activist after the Fukushima accident, and this is now her primary focus—to protect children from radiation and to put an end to nuclear power. Sato became outspoken and challenged the dominant ideology of female subservience and trust in male authority—in this case, the government’s silencing of citizen radiation concerns and the promoting of nuclear power. In Japanese culture, Sato’s many actions are significant, but she is not alone.

Japan is a highly “conformist culture; no one should be allowed to be different,” Ikuko Nitta, a single, divorced mother explains. “But, after the disaster, I had to get over my fears and speak out against nuclear power.”²² I interviewed Nitta in 2011, and we corresponded, and spoke again in 2017. As the challenges of the disaster increasingly affected Nitta’s family, she became an activist. Nitta and Cathy Iwane (another mother I interviewed in 2011), who lived in Wakayama prefecture after the disaster, did not want their children to eat school lunches, as they were concerned about possible radiation in the food. However, school administrators frowned upon these parents’ wishes to control their children’s diet, as Japanese children all eat what is served in the school cafeteria. Parents do not break this rule, but Nitta and Iwane did. These two mothers’ testimonies are echoed in the stories in *Radiation Brain Mom* and Ian Nash’s documentary *A2-BC*, a film exploring the challenges and fears of mothers and children living in the Fukushima area. The mothers in Nash’s film struggle with the problems of wanting to protect their children from eating tainted food and attending schools in contaminated areas.²³ Several of the mothers in the film stand up firmly to the school administrators. In all cases, there is the risk of becoming socially outcast for speaking out and doing things differently—both for the mothers and their children. Most of the mothers I have interviewed prioritize protecting their children over fitting in, but that is not true of everyone. Those who are concerned about belonging socially might be less inclined to speak with me, an outsider, and to acknowledge their fears, concerns, or criticism about the government’s or nuclear industry’s management of the disaster.

After the disaster, Sato and Kaori Izumi created what they called “nature camps,” safe places for children to live and spend time away from their homes in contaminated areas. Sato and Izumi called the children’s temporary evacuation in safe areas “nature camps” so that parents could avoid being critiqued

or judged by family members, friends, and neighbors, as in many communities it was not acceptable to publicly acknowledge one's fear of the radiation. Izumi worked to protect these children while she suffered through terminal cancer, spending her final days as an activist. She invested her own funds in the legal fight to keep the Tomari Nuclear Plant shut down.²⁴ Izumi, Smith, and hundreds of thousands of mothers, fathers, and grandparents marched repeatedly in Tokyo in 2011 and 2012. Masses camped out in front of the Ministry of Economy, Trade, and Industry for ten months and ten days. Ten months and ten days—the gestation period of a child in the womb, according to the Japanese—was meant to draw attention to the harmful impact of radiation on the fetus in the womb.

Other women I interviewed, including Tomoi Zeimer, Ikuko Nitta, and Cathy Iwane, fought to stop the burning of radioactive rubble across Japan. In 2011, the government announced a plan to burn rubble in various prefectures across the country as a means to dispose of the radioactive waste materials. Mothers delivered an anti-rubble-burning petition to Japanese consulates globally, including locations in Europe and the United States. Mothers argued that this was unsafe and would pollute uncontaminated areas with ionizing radiation. The protest had been devised by Zeimer, a Japanese mother living in New York City, who had adopted a baby from the Fukushima area just before the disaster. Zeimer's immediate and extended family—her parents, two sisters, and their families—lived in Japan; she felt she “had to do something to help” her relatives at home.²⁵ She was also concerned about her daughter's young biological mother, who attended a contaminated high school after the disaster. Zeimer worked on another antinuclear action as well; with Yuko Tonohora, she led a massive antinuclear street protest in New York City to commemorate the first anniversary of Fukushima on March 11, 2012. In Japan, Iwane, Nitta, and others continued Zeimer's activist work to stop the burning of radioactive rubble. These mothers spoke at local politicians' offices, protested, and wrote letters to officials.

When Iwane and Nitta lost the anti-rubble-burning fight, both decided to leave the country to protect their children. Iwane took her two daughters to the United States, where she held citizenship, while her husband stayed in Japan to work and support his family. In the United States, Iwane continued her activism, joining the efforts to help shut down the failing San Onofre nuclear plant in California. Nitta also decided to leave Japan, although her evacuation route was more circuitous; it began right after March 11, 2011, when she first moved from Fukushima to Kimono Town in the Wakayama

Prefecture. In the family's first new home, Nitta's eldest child Hikaru, a twelve-year-old boy, became exceedingly depressed and anxious. Nitta explains:

When the one-year memorial for the accident was approaching, the TV broadcast many documentaries about Fukushima, and that stimulated Hikaru's traumatized memories. He was also bullied at school, and one boy called him, "Fukushima boy!"—so he was hurt much at the time. Hikaru often covered himself in a blanket from toe to head and cried in the blanket. He often said, "I can't breathe," when he happened to hear or see news about Fukushima or the earthquake. He also said he wanted to throw raw eggs in a field and scream loudly and crazily. Katsumi and Jun [his younger siblings] were also unhappy about being separated from their friends in Fukushima. They said they were depressed sometimes. But Hikaru had the most difficulty in getting used to the new situation and new friends.²⁶

Although Nitta was very careful about the food she provided for her family after the accident, her children still showed signs of potential radiation sickness. It turned out that Nitta had mistakenly given her children contaminated rice brought from her home in Fukushima one month after the accident. She had judged it as safe because the "bag was sealed, all the windows and a fan window of the house were closed during the evacuation, and the rice bag was placed at the corner of my kitchen, which was the farthest place from the kitchen windows.

"But the rice was actually contaminated through the paper bag." After eating the rice, the children had "stomach-aches, diarrhea, ear pain, headaches, runny noses, and rashes." Nitta experienced a "tingling feeling" in her throat, and she was "thirsty all the time," despite drinking a lot of water. Additionally, Nitta's hands became itchy, the skin on her fingers peeled off, and there were many cracks in the skin on her palms. She began to suspect the rice. Nitta had it tested for radiation contamination, and the results confirmed her fears. She "cried in shock" and apologized to her children. Nitta then had two of her children tested for ionizing radiation exposures and the tests showed that both were internally contaminated with cesium 137. When Prime Minister Noda announced he would begin burning radioactive rubble all over Japan, Nitta said, "I felt like I was falling down to a dark deep hole. I did not want my children to be contaminated again. I could not put up with the situation in Japan." She then decided to leave the country altogether. First, she traveled to Malaysia, and then to Winnipeg,

Canada, where she now lives. Nitta says, “Leaving was the best decision I ever made.”²⁷ To date, large groups of Japanese women and their families have evacuated to Malaysia, Canada, and Okinawa, among other locations. There is a growing support network of evacuee mothers and, according to Nitta, they find each other on Twitter and establish group homes and support communities abroad. Nitta has created a group home for evacuees in Winnipeg, Canada, and she was part of such a home in Malaysia as well.²⁸

Many mothers and fathers I have interviewed found, and continue to find, solace and support in these Japanese expatriate communities. They help ease the burden of retraining for careers, learning a new language, and assimilating. “Starting over isn’t easy,” said one father, who now lives in Canada.

I was a professor in Japan. Here, I’m a cook. At first, it was my wife who really wanted to leave to protect our daughter. We had a good life. I had a very good job. One day, while watching my daughter at a birthday party, it hit me. While some of the children were swimming, my little girl was covered from head to toe in clothing and she wore a facemask. My daughter stood there quietly while the other children were swimming. When I saw my child standing there, unable to play freely, I knew we had to go. What kind of life is that for a child? Soon after, we left Japan.²⁹

As the father finished telling me this story, he broke into sobs.

A number of the evacuees I have interviewed do not want to disclose their names for fear of retribution or alienating and harming their families at home. They told me of their children’s health issues—nosebleeds and slowed growth. They said their children’s health has improved since they left Japan, but parents continue to watch closely for possible cancers and other health issues. As the documentaries *A2-B-C* show, excessive nosebleeds are common in children exposed to radiation, and the children and parents in Nash’s film greatly fear their diagnoses of pre-thyroid-cancer disease. All three of Nitta’s children are doing well so far, and her eldest son’s anxieties and fears about the disaster have largely subsided.

While some parents have evacuated to other countries, Sato continues to stay put in Fukushima City and fight for radiation safety. Since 2011, she has sacrificed her own health to protect and aid children, the disabled, and elderly. Sato continues to grow and provide “safe” food for her community, to participate in citizen science, and to support an independent medical facility. As Sato says, after the Fukushima nuclear accident, protecting the

future generations of Japan became her primary mission. As for her youngest daughter Mina, who struggled in the first two years following the disaster, she has anxiety about developing cancer, as cysts have been found on her thyroid gland and she has been diagnosed as “A2,” a pre-cancerous condition. Mina plans to build a new Yanamani farm in the future, in a new location. In her letters to her mother from boarding school, Mina writes that it was on the Yanamani farm that she had been “the happiest person on earth,” as she followed her mother “with little steps” in the rich “green field[s].” But, Mina says, with the nuclear disaster, “everything was broken.” Notably, like her mother and many other women in Japan, Mina has become an antinuclear proponent. In a public talk in 2014, Mina described the Fukushima disaster as “a black rain like Hiroshima.” And, she asserted, as “long as there are nuclear power plants in Japan, no Japanese [person] should be ignorant. . . . The black rain may fall upon you or on the beautiful Mount Fuji.”³⁰

Sachiko Sato’s oral narrative and the interviews with the other Japanese mothers inform us of important issues that remain invisible in dominant patriarchal accounts of the March 11, 2011 nuclear disaster. Mainstream records of the accident focus on the physical structure of the Fukushima nuclear plants and the ability or inability to contain the leaking radiation, and on the economics of the nuclear industry and Japan post-Fukushima.

Sato’s and other women’s nuclear narratives disclose a rising feminist movement and the changing roles of women in Japanese society, as well as the fracturing of the domestic world: divorce, separated family members, lost communities and homes, compromised reproduction and overall health, and contaminated landscapes. We learn about what happens to the young, the aged, the disabled—the traditionally invisible. We uncover tales of diasporic families who have fled Japan and formed new communities bound by international underground female support. We learn about the unequal gender impacts of the disaster, and we see the many ways women act to combat these inequities.

As second-wave American feminists note, the personal is political, meaning what happens to women, children, the elderly, the disabled, the other—what happens in the domestic sphere—matters to all. In Japanese patriarchal culture and in nuclear history, there is all too often a false dichotomy between private and public. Families’ needs and experiences must be accounted for in political and corporate nuclear energy realms. Putting these important women’s stories into print, making them visible, is a feminist act of resistance. Oral histories give voice to the oppressed.

Notes

1. W. Eugene Smith and Aileen M. Smith, *Minamata: The Story of the Poisoning of a City, and of the People Who Chose to Carry the Burden of Courage* (New York: Henry Holt, 1975).
2. *Hibakusha*: a survivor of the Hiroshima or Nagasaki atomic bombs.
3. A sievert, or SI, is the unit of radiation defined as producing the same biologic effect of high energy X-rays. One sievert is equivalent to one hundred rem. One sievert, if absorbed all at once, will cause severe illness; eight sieverts will cause death. Japan's allowable safety limits have been set to millisieverts (mSv). Twenty mSv and under are now considered officially safe by the Japanese government for long-term exposure (although prior to the nuclear accident, that number had been one mSv). Twenty millisieverts is equivalent to one thousand chest X-rays per year, or three chest X-rays every day per year. Steven Starr, senior scientist with Physicians for Social Responsibility, states that as a result of the twenty millisieverts external exposures, we can expect to see "about 1000 additional cases of cancer in female infants and 500 cases of cancer in infant boys per 100,000 in their age groups. There will be an additional 100 cases of cancer in 30-year-old males per 100,000 in this age peer group." Ingestion of contaminated food and drink poses an even higher risk, and cesium-137, released in significant quantities from the accident, biomagnifies as it moves up the food chain. Predator species (humans), thus will be exposed to high concentrations when eating contaminated milk, fish, and meat. In "The Implication of the Massive Contamination of Japan with Radioactive Cesium" found here <https://ratical.org/radiation/Fukushima/StevenStarr.html>, Starr also notes that children and fetuses are at greatest health risk. In the 1950s, British epidemiologist Alice Stewart discovered that a single X-ray to the womb doubled the fetus's chance of acquiring cancer as a child; she argued there is no safe dose of radiation. On the life and work of Alice Stewart, see Gayle Greene, *The Woman Who Knew Too Much: Alice Stewart and the Secrets of Radiation* (Ann Arbor: University of Michigan Press, 1999).
4. Sachiko Sato and Aileen Mioko Smith, Interview with Heidi Hutner, New York, NY, September 21, 2011.
5. As of 2022, only five reactors are back on line in Japan: two reactors at Sendai, one reactor at Ikata, and two reactors at Takahama.
6. Aileen Mioko Smith, Interview with Heidi Hutner, Kyoto, February 22, 2014.
7. Smith, Interview, 2014.
8. Kendra Ulrich, *Unequal Impact: Women and Children's Violations and the Fukushima Nuclear Disaster* (Greenpeace Japan, March 2017), https://www.greenpeace.de/sites/www.greenpeace.de/files/publications/20170303_greenpeace_report_fukushima_women_unequal_impact_engl.pdf.
9. Robert Jacobs, "Social Fallout, Marginalization after the Nuclear Meltdown," *Asia Pacific*, November 16, 2013.
10. Becky Alexis-Martin, "The Chernobyl Necklace: The Psychosocial Experiences of Female Radiation Emergency Survivors," *Belgeo* 1 (2015): 1–12.

11. Mary Olson, "Radiation is More Harmful to Women" (<https://www.nirs.org/wp-content/uploads/radiation/radhealth/radiationwomen.pdf>); Mary Olson, "Gender Matters in the Atomic Age," in *Crisis without End, the Medical and Ecological Consequences of the Fukushima Disaster*, ed. Helen Caldicott (New York: New Press, 2014), 187–92; Arjun Makhijani, "The Standard Reference Man in Radiation Protection Standards and Guidance with Recommendations for Change," December 2008, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.394.358&rep=rep1&type=pdf>; also, see: Heidi Hutner, "Invisible Victims," in *Ms. Magazine* (Summer 2015): 14–15. On unequal gender and radiation health dangers in animals, see: Philipp Lehmann et al., "Fitness Costs of Increased Cataract Frequency and Cumulative Radiation Dose in Natural Mammalian Populations from Chernobyl," *Scientific Reports* 6: 19974. DOI:10.1038/srep19974, 2016; A. P. Møller et al., "Elevated Mortality among Birds in Chernobyl As Judged from Biased Sex and Age Ratios," *PLoS One* 7(4):e35223, 2012; A. P. Møller et al., "Chernobyl Birds Have Smaller Brains," *Public Library of Science – One* 6 (2): Art. No. e16862. DOI: 10.1371/journal.pone.0016862, 2012; A. P. Møller et al., "Condition, Reproduction and Survival of Barn Swallows from Chernobyl," *Journal of Animal Ecology* 74 (2005): 1102–11. Tim Mousseau explains that the research team is currently studying these effects in Japan post-Fukushima 3/11 and has determined similar findings regarding gender and radiation (greater harm to female animals); in Tim Mousseau, Correspondence with Heidi Hutner, Columbia, SC, June 28, 2015, and April 2, 2017.
12. Makhijani, "Reference Man."
13. Mary Olson, Interview with Heidi Hutner, New York, NY, June 21, 2017.
14. Aya Hirata Kimura, *Radiation Brain Moms and Citizen Scientists: The Gender Politics of Food Contamination after Fukushima* (Durham, NC: Duke University Press, 2016).
15. Cindy Folkers, "Normalizing Radiation Exposure Demeans Women and Kids and Risks Their Health," in *Counterpunch*, March 6, 2017. For more on radiophobia, see Elizabeth J. Bromet, "Lessons Learned from Radiation Disasters," *World Psychiatry* 10 (2011): 83–84; Elizabeth J. Bromet, and J. M. Havenaar, "Psychological and Perceived Health Effects of the Chernobyl Disaster: A 20-year Review," *Health Physics* 93 (2007): 516–21. Also, see Heidi Hutner and Cindy Folkers, "Radiophobia, Nuclear Advocacy, and the Silencing of Women" (forthcoming). Our essay examines the history and origin of the term *radiophobia* and its health, discursive, and gender implications.
16. Heidi Hutner, "Women and Antinuclear Activism after the Fukushima Accident," in *Sustainability Handbook*, ed. Robert Brinkmann (New York: Palgrave, 2018), 283–97.
17. Ulrich, *Unequal Impact*.
18. Smith, Interview, 2014.
19. Ann Swerdlow, *Women Strike for Peace: Traditional Motherhood and Radical Politics in the 1960s* (Chicago: University of Chicago Press, 1993). On my mother Shirley R. Hutner's (and her cohort's) maternalist antinuclear and civil rights work, see Raymond A. Mohl and Matilda Bobbi Graff, *South of the South: Jewish Activists and the Civil Rights Movement in Miami, 1945–1960* (Gainesville: University Press of Florida, 2003).

20. Toshihiro Higuchi, "An Environmental Origin of Antinuclear Activism in Japan, 1954–1963: The Government, the Grassroots Movement, and the Politics of Risk," *Peace & Change* 33 (2008): 333–67.
21. Smith, Interview, 2014.
22. Ikuko Nitta, correspondence with Heidi Hutner, April 23, 2017.
23. *A2-B-C*, Documentary. Director Ian Nash (Tokyo, 2013). Feature Video.
24. Kaori Izumi, Skype interview with Heidi Hutner, Tokyo, November 9, 2011.
25. Tomoi Zeimer, Interview with Heidi Hutner, New York, NY, April 23, 2017.
26. Nitta, Correspondence, 2017.
27. Ibid.
28. Ibid.
29. Anonymous, Skype interview with Heidi Hutner, Anonymous Location, March 23, 2017.
30. Mina Sato, correspondence with Sachiko Sato, May 1, 2014 and October 12, 2014.