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Author(s): Maya Todeschini

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The bomb is not a matter of survival, it is a matter of living.

—Yamamoto Mitsuko, A-bomb victim

THE A-BOMBS THAT WERE DROPPED on Hiroshima and Nagasaki on August 6 and 9, 1945, not only caused the destruction of two communities and the deaths of countless people but also “created” a new group of human beings—hibakusha, literally “A-bombed persons.”¹ Now that more than half a century has passed since the bombings, they may seem like a distant past to many, but they are a living, and painful, reality to the people who survived the explosion and who have since struggled to come to terms with their experiences. Hibakusha share not only traumatic memories of the A-bomb explosion itself but also, and above all, a common identity as the “radiation-exposed,” living with the reality and perpetual threat of delayed radiation effects.² The feeling that they are carrying an “unexploded bomb” inside their bodies has not abated over the decades, and despite scientific assertions that deny the existence of genetic effects (a point I shall come back to later), such fears extend to their children and to future generations.

Even if the psychological effects of radiation exposure are to a certain extent cross-culturally shared, hibakushas’ experiences of radiation illnesses did not take place in a vacuum; they

Maya Todeschini is research associate at the Center for Japanese Studies, Ecole des Hautes Etudes en Sciences Sociales, Paris.

were shaped by the values, beliefs, and symbols of their culture, as well as by the history and politics of their society.³ “Radiation” came to be perceived as a polluting, defiling substance, and thus became integrated in a larger system of beliefs about purity and pollution, which are highly developed and systematized in Japanese society and rooted in Shintô and Buddhist conceptions. Contamination fears are an integral theme in community reactions to hibakusha, who are suspected of “transmitting” the impurity of death through genetic transmission or through “contagion” via bodily contact; this motivates discrimination in marriage and the workplace. In this regard, majority attitudes to A-bomb victims bear similarities to those toward other minorities in Japan, such as the Burakumin, who are perceived as “impure” because of their traditional association with “defiling” professions, or AIDS patients, who present a modern form of fatal defilement.⁴

Yet “radiation pollution” poses some unique problems to the community. Because of its man-made nature (at least in connection with warfare), its still “mysterious” character, and the historical and social contexts in which it developed—the occupation, Japan’s path to prosperity, and the Cold War—it became charged with highly political meanings, in addition to presenting undeniable scientific interest and intractable medical problems.

In this essay, I examine the ways in which scientists, doctors, and government officials responded to A-bomb victims, and “radiation illness” in particular, and explore the effects of scientific and legal discourses on hibakusha. As I shall show, “biomedicine,” deployed by both the Japanese and American scientific and political community, emerged as a hegemonic force in shaping definitions of hibakusha; in the process, victims’ own experiences and needs, as well as the social and moral questions they raised by their very existence, were repressed and denied. This process—which epitomizes other approaches to massive, man-made suffering in the contemporary age⁵—continues today, since hibakushas’ children, “second-generation victims,” have inherited their aging parents’ burden and are likely to pass it to their progeny in turn. They, even

more than their parents, tell us that no bombs are needed to create and perpetuate the dilemmas posed by radiation.

HIBAKUSHA NARRATIVES: A VOICE OF THEIR OWN

The objectifying logic of scientific and legal discourses is best brought out by victims' personal accounts. For my understanding of the issues in this essay, I relied principally on hibakusha narratives, and particularly women's testimonies, from published autobiographical writings but also from more "informal" accounts, such as grassroots publications, oral testimonies, and my own interviews with hibakusha carried out in Hiroshima and other cities between 1991 and 1993. Of special relevance for this essay are the writings by and interviews with Hayashi Kyôko, a prominent author and Nagasaki survivor who lives in Tokyo, and two women's groups—the Osaka Association of Female A-bomb Victims and the Yamashita Group in Hiroshima—that formed in the late 1960s as forums for female self-expression and activism.⁶ These hibakusha have been active for over thirty years, and they have provided extensive life histories that relate their experiences from the time of the bombings up through the present day.

The women were adolescents when the bombings occurred, and they have lived with their identity as hibakusha throughout their adult lives. Unlike the majority of hibakusha testimonies, their narratives focus not so much on the bombings themselves but on "what came later," in conjunction with the reality and risks of bomb-related illnesses: the loss of educational and professional opportunities, discrimination in marriage and in the workplace, the fear of bearing children, the disruption of family life, and often material poverty. Thus they draw attention to not only some of the more problematic aspects of Japanese society, revealed in its treatment of disenfranchised minorities, but also the social and cultural construction of hibakusha experience, through gender, class, indigenous conceptions of the body, health, and sickness, as well as local historical and political contexts.

The women vividly describe their encounters with scientists, doctors, and state officials and the sense of anger and revolt

they often took away from such encounters. Their experiences show that hibakusha and radiation illnesses are contested categories, with scientific, biomedical, and judicial discourses often at odds with victims' own interpretations.

"AN ILLEGAL DISEASE": EMERGING INTERPRETATIONS

Any discussion of the scientific and political reactions to hibakusha must begin in the immediate postbomb period. How did Japanese and American authorities and scientists respond to the emergence of A-bomb victims and the effects of radiation? The atomic explosions caused instantaneous devastation and massive injury to the human body, but their most terrifying aspect was acute radiation illness, which led to the deaths of countless survivors who seemed apparently uninjured. Neither fourteen-year-old Hayashi Kyôko, the hibakusha author-to-be, nor seventeen-year-old Takagi Shizuko, who became a cofounder of the Osaka group, sustained serious external injuries, but they received extensive doses of radiation because they were less than 2 kilometers from the hypocenter. Both suffered from acute radiation symptoms (including diarrhea, purpura, high fever, and hair loss). Such hibakusha were desperate for information and medical care, but the authorities, both Japanese and American, did little to alleviate their plight in the days and weeks that followed the bombings. On August 14, the Japanese government announced that the two bombs were "new type atomic bombs," without any further explanation on the nature and dangers of radiation. Japanese scientific survey teams had entered Hiroshima as early as August 6, and pathological autopsies were initiated on August 10, indicating that government officials were well informed about the effects of radiation.⁷

Until the institution of the national hibakusha relief law more than a decade later (in 1957), the state did nothing to help or inform the victims; hibakusha were left to their own devices, and the care of inexperienced local doctors and hospitals. Such neglect contrasted with the early and continuing interest displayed by Japanese scientists; although a national narrative attributes the scientific appropriation of hibakusha solely to "Americans," Japanese scientists demonstrated just as much

interest, even if it became constrained by occupation censorship (see below).

The American government began investigating the effects of the bombing on the day of Japan's surrender, August 15. In its initial official pronouncements, it staunchly denied the existence of radiation effects, attributing radiation deaths to "Japanese propaganda."⁸ In effect, American officials attempted to treat the bomb as "just another," if particularly powerful, bomb and to minimize the politically bothersome possibility of delayed radiation effects. Such interpretations were easily accepted by a Japanese government that was eager not to anger the powerful occupier and that wanted to emphasize its "re-birth" from militarism.

When the radiation effects became too glaring to be denied any longer, the U.S. government established a censorship code (the so-called Press Code) on all information relating to the bomb, and particularly radiation effects, believed to be disruptive to "public peace and morals." The code remained in effect until 1952, when the San Francisco Treaty was signed. All the while, scientists continued their studies on hibakusha, now firmly under GHQ supervision. However, most of the data collected from Japanese physicians working "on the ground" were now labeled "top secret" and sent to the United States for analysis.⁹

If the overall impact and efficacy of censorship remain controversial, it doubtlessly prevented hibakusha from learning more about the consequences of their A-bomb exposure and from sharing their experiences with others.¹⁰ Many literary accounts of the bomb and the suffering inflicted were censored or prohibited. For example, author Ôta Yôko's pioneering account, written in late 1945, with its graphic description of radiation illnesses and passages criticizing both Japanese and American officials, was partly censored and its publication delayed.¹¹

Equally seriously, the Press Code also inhibited the circulation of valuable medical material among local doctors, who were overwhelmed by the demands of treating the new, mysterious illnesses caused by radiation. As Hayashi Kyôko put it, "For the local doctors, we hibakusha were the 'unknown' (*michi*

no mono). They didn't know how to treat us, and often they couldn't say much more than 'please eat good food.'"¹² Another woman relates the same feeling: "One month after the bombing, my friend and I went to get our blood examined; by that time doctors knew that survivors had problems with their blood. We were told that our white blood corpuscles had abnormally increased, but we had no idea what this meant, but neither did the doctor! At the time we didn't have any health problems, so we just said, 'thank you,' and went home."

Among the radiation effects that caused the greatest agony in the community were those related to human reproduction. In general, young and proliferating cells and tissues are very sensitive to radiation, and radiation damage to babies born to women who were exposed while pregnant was particularly serious: many were stillborn, born with major congenital abnormalities (especially microcephaly), or suffered from growth disorders.¹³ There were also frequent cases of miscarriage and premature birth among exposed pregnant women.¹⁴ It was no wonder that many hibakusha feared that their reproductive functions had become "perverted" or even destroyed by radiation. Hayashi writes that she came to see her pubescent body as a "shrunk, worm-eaten apple," devoured from the inside by radiation; she added that "Nagasaki's barren landscape reflected my own self."¹⁵ She and many of her friends also dreaded the onset of menarche—which they associated with massive hemorrhaging, one of the symptoms of radiation illness—and confessed their fears about childbearing in the face of rumors of "monstrous" babies quietly disposed of by their mothers: "We were afraid we'd give birth to abnormal children. It was such a contradiction: More than most people, we were aware of the value and weight of human life, its preciousness, yet we were terrified that we should nip unborn life in the bud."¹⁶ Thus, from the very beginning, bodily anxieties extended beyond the self and encompassed the child to come.

Such feelings must also be placed against the larger context of traditional pollution beliefs and the perception of radiation as the "pollution of death." Such beliefs have special relevance for women. Women's bodies, and especially their reproductive capacities and blood, are considered to be ritually polluted in

Japan (as is the case in many other societies), and female hibakusha, who “combined” the impurity of death (radiation) and that of blood (reproduction), were perceived as “doubly dangerous,” and thus evoked contamination anxieties that were particularly intense.¹⁷ Moreover, in another pattern that applies cross-culturally, it is women, rather than men, who are blamed for sterility or abnormality in offspring.¹⁸

A pervasive link was established in the popular imagination between the dangers of radiation and the “contaminated blood” of hibakusha women; one account compared Nagasaki girls to “outcasts” who “never stop bleeding” and whom “nobody wants to marry.”¹⁹ Such beliefs did not always operate at a conscious level, but they could be very potent, especially in rural areas, and were magnified when women bore burn scars (these scars, called keloids, were taken as “evidence” of bodily contamination).²⁰ In popular narratives on hibakusha, including films and novels, leukemia (the prime symbol for “contaminated blood”) is often singled out as a “female” disease, just as hysteria was in nineteenth-century Europe.²¹ Such beliefs and images contributed to marriage discrimination in a society that above all values women’s “nurturing” and life-giving capacities. The Osaka group has several members who were unable to marry though they very much desired to do so, and many of my informants’ daughters face similar problems today.

To a certain extent, beliefs about hibakusha women’s “contaminated bodies” were, and continue to be, internalized by the victims themselves; their narratives express an acute preoccupation with blood disorders (“impure blood”), often in conjunction with menstrual ailments, and fears in connection with childbirth and children’s health. Hayashi’s experiences of pregnancy and childbirth were less than idyllic, and in her writings she repeatedly asks her son to “forgive her” for “having marked him with my stain.”

The theme of “perverted blood” provides a constant undercurrent in hibakusha women’s health histories. According to recent unpublished statistics by medical social workers in Hiroshima, “blood disorders” are the most frequently cited “subjective symptom” by women who apply for medical aid,

and a comparatively higher number of female victims complain of such ailments than their male counterparts.²²

Female “vulnerability” to radiation was not merely “imagined” or subjectively experienced; women’s reproductive organs were highly sensitive to radiation damage, resulting in abnormally high levels of ovarian, uterine, and breast cancers among exposed women.²³ Such data, the significance of which fully appeared only two decades after the bombing or even later (due to the long incubation periods of these cancers), led Hayashi to conclude that “radiation was particularly bent on destroying women’s reproductive organs.”²⁴

Disturbances in reproductive function, both male and female, were also the subject of intense scientific curiosity from a very early period.²⁵ Hayashi, for example, recalls that she and her classmates were interrogated in embarrassing detail about their menstruations by a team of Japanese researchers: “Are your menstrual periods heavy? How frequent are they? Have they stopped altogether? Did you get your first period after you were exposed to radiation?”²⁶

Scientists concluded that fertility, whether male or female, was not lastingly affected by radiation (except among those who were exposed to extremely high doses, many of whom died in the weeks or months after the bombing) and that the high incidence of abnormal births was limited to fetuses exposed in utero.²⁷ But aside from the fact that such studies were unavailable to hibakusha at the time, it makes little sense to contrast this “scientific truth” with victims’ own interpretations; the very fact that their reproductive functions attracted scientific scrutiny sent the implicit message that there was a problem, and it was inevitable that hibakusha should be lastingly affected by, and identify with, the tragic experiences of fellow victims and their offspring.

The cultural potency of pollution beliefs is also revealed in the popular image of radiation as a “poison,” a “substance” that could be transmitted but also potentially expelled from the body. Suggestive in this regard is the widespread use of folk remedies (such as herbal and moxa treatments), based on Shintô beliefs designed to “purge” and “expel” polluted states. Some of my informants are still firmly convinced that they owe their

survival and health to this day to such popular remedies, especially when they were administered by loved ones; families, and especially mothers, emerged as a kind of symbolic counterpoint to the “coldness” displayed by scientists.

Many hibakusha also believed that bodily “elimination processes,” such as bleeding and vomiting, and “purgative” techniques, such as bathing and profuse sweating, could contribute to “flushing the poison out” of their bodies. The same “detoxifying” function was attributed to external injuries, especially burn wounds; as one woman who sustained extensive burns said, “I believe even now that the radiation in my body was expelled through blood, pus, and sweat.”

Such deeply held convictions about radiation illnesses emerged at the very time when official reactions sought to minimize or deny them, and they remain undeterred by scientific arguments to the contrary. This is true for both anxieties surrounding reproductive function (particularly with respect to women’s bodies) and the view of radiation as a “poison” deep inside victims’ cells that waits to “become active” if purgative methods fail. Above all, these cultural/symbolic responses can be seen as a way of giving meaning to the mystery of radiation, “cutting it down” to the manageable, human size of impurities and poisonous substances. For my informants, they became an embodied memory of suffering and loss, and a form of resistance against official responses that denied the victims both understanding and legitimacy—a process that continues to this day.

HIBAKUSHA AND “SCIENCE”: FROM VICTIMS TO GUINEA PIGS

With respect to scientific discourses on hibakusha and their political uses, the Atomic Bomb Casualty Commission (ABCC) dispatched by the U.S. government in 1946 for the expressed purpose of researching “long-term radiation effects on survivors” (including cancers, leukemia, sterility, and genetic alterations) as well as the ABCC’s contemporary equivalent, the Radiation Effects Research Foundation (RERF), which continues scientific studies in Hiroshima today, occupy a central place.

The ABCC-RERF's studies are widely considered to be the most important and extensive data on radiation effects, held to be both reliable and accurate. Given occupation censorship, the ABCC occupied a virtual monopoly in studies of delayed radiation effects for nearly a decade and has played an instrumental role in the elaboration of medical laws concerning hibakusha. The RERF has continued this "tradition" since 1975 and is one of the institutions habilitated for carrying out routine medical examinations of hibakusha. The ABCC-RERF has important links with the government and the scientific elite, both American and Japanese, making it directly related to political authority in both countries.²⁸ As a result, critical scrutiny of this organism and the manner in which it practices "science" seems all the more important.

When the ABCC set up an impressive research institution atop a hill overlooking Hiroshima city in 1950, the victims initially hoped that they could get much-needed treatment and learn more about the consequences of their A-bomb exposure. However, as it turned out, the ABCC only "investigated" the bomb's medical effects and as a matter of policy refused to provide treatment to victims, claiming that this was the responsibility of local physicians. Ultimately, it seems that medical care was not provided because this would have been construed, by both the Americans and the Japanese, as a form of "atonement" and an admission of guilt; this interpretation would have delegitimized the use of the bombs and was thus unacceptable to the U.S. government.²⁹

At any rate, it was inevitable that the ABCC's no-treatment policy would become the primary bone of contention in the community. Since hibakusha were only "examined," they came to feel that they were being used as "guinea pigs" for scientific research or, even worse, for the preparation of future nuclear wars—a suspicion that was seemingly corroborated by the fact that the ABCC was supported by funding from the Atomic Energy Commission. The ABCC's "aggressive" diagnostic policies—carrying out detailed physical examinations, including taking blood and urine samples and X-rays, as well as postmortem examinations—exacerbated this charge and contributed to the sense that hibakushas' bodies were misappropriated and

objectified. Accusations of the ABCC as a sinister, even diabolical, institution must be placed within this context.

The RERF self-defensively emphasizes in its introductory brochure that “the objective of the RERF is to conduct research and studies for peaceful purposes,” but it has never quite managed to get rid of its negative reputation.³⁰ Concluding his extensive report on the ABCC-RERF, Matsuzaka Yoshimasa states that local citizens still feel uncomfortable with the RERF (“Who knows what’s really going on there?”) and ends with an evocative appeal for the institution to “come down the mountain” (*yama kara kudari yo*) and shorten the geographical and metaphorical distance that separates it from hibakusha.³¹

The ABCC remains one of the most vivid memories among my informants. It became a focus of resentment not only against the bomb, but also against “science” and the manner in which it was used to dehumanize the victims. As a member of the Yamashita group relates, “I always had this feeling of great loneliness when I went there. I was scared of that place. . . .”

Her friend recalls:

They were always polite and friendly, asking me about “how I was feeling,” etc., and giving me coffee and sandwiches. But they never told me about the results. Young and married as I was, I had to undress and put on a white cloth, and they’d examine me thoroughly. I had problems with my uterus and they wanted to keep examining it. And they took countless X-rays, despite the fact that I’d received so much radiation anyway! I wasn’t allowed to wear socks, and my feet would get cold. They just told me that I was extremely anemic and gave me some sort of medicine, but it made me terribly sick and I stopped taking it. Perhaps they were testing the medicine, too? It gradually dawned on me, why as a victim, do I help the aggressor? Why do I have to get examined, give my urine and blood? You feel uncomfortable and cold. You don’t know what’s going on. Indeed, I was stupid.

Being subjected to humiliating examinations is a recurrent theme in hibakushas’ narratives on the ABCC (and other scientific groups), and particularly in the women’s accounts. One can readily imagine that such exams could be traumatizing to women raised in the prewar education system, who had been taught to be chaste and to fear Americans as “devils.” I vividly

remember speaking to a Hiroshima resident who, after a few glasses of sake, confessed that he felt “unspeakable hate” to this day for the American scientists who had examined his mother nude. The theme of the “violation” of women’s bodies at the hands of foreign scientists reverberates to this day and is one example of the manner in which the scientific response to hibakusha became “gendered,” as well as conflated with race, in individual and collective memory—women’s violation can also be read as “penetration” of Japanese culture by the foreign “other.”

The way in which the ABCC managed its research materials also became a contentious issue in the community. Given its closed character, the ABCC was generally protective of its information, making it difficult for victims, doctors, and non-ABCC scientists to gain access to medical materials. Moreover, in line with general occupation policy, it tended to minimize the effects of radiation, issuing soothing official statements to this effect and sometimes “reassuring” hibakusha that their complaints had nothing to do with radiation. Several scientists observed that the ABCC underplayed both acute and delayed radiation effects in its publications.³² An extreme case is that of a mother who took her microcephalic son (irradiated in utero) to the ABCC only to be told that her son’s illness was due to “malnutrition.” She further writes that she was given some money, rather than advice or consolation, after her son’s examination. Hers was not an isolated incidence, since the ABCC had a tendency to ascribe hibakushas’ health problems to their poverty and low socioeconomic status, which, according to ABCC officials, predated the bombings. One critic’s observation that many ABCC officials (who were drawn from the scientific elite, both American and Japanese) looked “down” upon the victims and imputed their protests to the “ignorance” they associated with poverty rings true in the face of such examples.³³

The ABCC’s tendency to deploy “science” with sometimes covertly political motives appears most clearly in the area of genetic effects. The ABCC followed a consistent policy of denying the existence of genetic mutations and contributed to an extremely “optimistic” image of delayed radiation effects, an

image that is perpetuated by the RERF and often used to advertise the bomb's supposed "harmlessness" in affecting victims over time, including succeeding generations.

In fact, as Susan Lindee's analysis shows persuasively, the "genetics study" was shaped as much by Cold War politics and public concerns about radiation as it was by "pure science." The very manner in which "genetic mutations" were defined and studied was highly selective to begin with, and the study's planners were pressured to downplay genetic alterations in their official publications due to rising public awareness about radiation risks.³⁴ For example, the authors of a 1953 report chose to discount stillbirth effects and minimize "sex ratio effects" to "avoid misinterpretation by the popular press." The American press readily reported (and often exaggerated) such statements: for example, after an interview with then-ABCC director Robert Holmes, *U.S. News and World Report* in 1955 ran the exuberant headline "Thousands of Babies, No A-bomb Effects."

Other critics also point out a whole series of methodological problems with the genetic study, including insufficiently sensitive research methods and the possibility of recessive mutations that could show up in later generations.³⁵ ABCC-RERF officials are well aware of such problems, even if they choose not to emphasize them in official publications. For example, the RERF's American chief of research, whom I interviewed in 1992, admitted that an "overly crude test methodology" might have played a role in the fact that his team had found "absolutely nothing" on genetic effects in the second generation. He stated matter-of-factly, "It all depends on your research methodology, and on the manner in which you interpret the facts; science is nothing else but a public consensus." It seemed to be a surprisingly accurate and candid assessment of the manner in which the ABCC-RERF has handled "science" despite its official assertions of scientific "objectivity."

At any rate, scientific "reassurances" in the 1950s with respect to the "lack" of genetic effects were of little consolation to hibakusha, who were alarmed by the high incidence of leukemia during that period, particularly among those who were exposed close to the hypocenter.³⁶ Scientists denied that

the children of such hibakusha were at a higher than average risk, but there were some tragic, well-publicized cases of children of hibakusha who died of leukemia, and it was only natural that even one such case should prove devastating to parents who felt guilty about having given birth at all. The experiences of two Osaka women hibakusha who lost their adolescent children to leukemia were a primary motivating factor for founding the Osaka group. As the group concludes in a brochure, which chronicles the death of one of the children, "The number of second-generation victims who suffer from fatal diseases is not important. Even one case of hereditary effects of radioactive matter constitutes an unforgivable sin against justice and humanity."

Anxieties about radiation damage were further provoked by a historic event, the "Lucky Dragon" incident in 1954, in which a Japanese fishing boat was contaminated by radioactive fallout; a member of the crew died from acute radiation illness. Hayashi Kyôko connected the man's death immediately with the health of her then-one-year-old son.

After [the fisherman] died . . . we became frightened about the health of our children. I grabbed the wrist of my son, who was playing with a truck, and searched for his pulse. The weak pulsations reached my fingertips. They seemed too feeble to support a life, and I was afraid that they should stop beating. I was worried whether my son had the life energy to grow up to be an adult.³⁷

Hayashi's observation about "life energy" is suggestive with respect to another culturally patterned reaction to radiation illness that is related to a key notion in East Asian medical tradition, that of *ch'i* (*ki* in Japanese: vital essence, breath, or energy). The "loss" or "blockage" of this energy is believed to cause all kinds of illnesses and disturbances, both within the person's body and in interpersonal relationships. To Hayashi, her own *ki*, that of her son, and that of other radiation victims is experientially connected.

Her fears of "transmitting" an illness to her son must also be related to the strong cultural emphasis on the "unbreakable" mother-child tie (Takie Lebra calls it "mammalian symbiosis"); it is common to see the child literally as a "split part" (*bunshin*)

of the mother's body.³⁸ This makes it difficult for women to conceive that their own children might be in perfect health if they themselves are not (and vice versa).

These are only a few examples to demonstrate that hibakusha tend to use the terms "hereditary" and "disease" in a very wide sense in connection with radiation damage, encompassing experiential, cultural, and social aspects beyond purely "medical" factors. However, ABCC scientists had little interest in discovering such problems; their interactions with their inappropriately named "patients" were limited to physical examinations and the collection of blood and cell samples. If they were unable to discover "objective evidence" of biological damage, the victims were declared "healthy" regardless of their own interpretations. This tendency, of course, was not limited to the ABCC-RERF, but applies to the scientific/biomedical approach to radiation illness in general.

Within the ABCC, the pressure to discount individual suffering was apparently so strong that it prevented individual physicians from having any meaningful contact with their patients. In a highly revealing unpublished report completed in 1955, a former ABCC doctor writes that he realized that "none of us working here really knew any of the patients."³⁹ He decided to carry out "lengthy conversations" with a number of hibakusha (albeit without ABCC permission) after having noticed that "much valuable information could be obtained" with the help of good interpreters and genuine interest for the patients. He discovered that most patients "live in fear" and suffer from the "negative influence of friends and relatives who treat them as 'invalid' (sic) and 'useless'"; he summarizes such problems as "Atomic Bomb Stress," adding that the ABCC is "completely unaware" of such issues. Suggesting that "nothing comparable to Atomic Bomb Stress exists in the history of man," he maintained that it is necessary to "delve deeply into people's histories" and requested an "additional six months" at the ABCC as well as funding to pursue his project. His request was denied, and the project was discontinued. Thus, individual ABCC members were pressured to "abstain" from studying victims' experiences altogether. Even if such pressures have abated over the years, things do not seem to have changed that much, judging

from my recent interview with the U.S. chief of research, who admitted that he has “never once talked to hibakusha personally,” although he had been in Hiroshima for over five years.

Arguably, the distancing processes that operate in day-to-day interactions with hibakusha and in the scientific discourses that are applied to them have remained an integral part in the RERF, and indeed characterize much of the “production” of scientific/medical knowledge on hibakusha. As Lindee put it, “[M]aking the suffering at Hiroshima and Nagasaki disappear . . . was . . . a long-term act of scientific work.”⁴⁰

In 1980, Hayashi raised the following rhetorical question: “Are we women living witnesses to the inhumanity of the bomb, or living proofs of its harmlessness? Will we be used as ‘medicine’ against the nuclear allergy?”⁴¹ Judging from recent scientific reports, her question remains an open one. Researchers have issued reassuring statements about the “unexpected longevity of hibakusha” and the “lack” of genetic effects on hibakusha offspring; studies that give higher risk rates are belittled as “advocacy documents.” The RERF reported in 1991 that the overall risk of death from cancer among bomb survivors “has proved only [sic] 2.5 percent higher than normal.” A former director of the department of statistics and epidemiology at the National Academy of Sciences concluded in 1995—not coincidentally, the bomb’s fiftieth anniversary—that “only [sic] about 1,500 people have died from radiation-caused cancers in fifty years,” and “that the original fears of other long-term effects like accelerated aging and genetic damage among the survivors and their children have proven almost entirely unfounded.”⁴² Perhaps the most glaring example, which also illustrates the dehumanizing effects of scientific jargon, is a 1992 article that appeared in *Science*. It claimed that “radiation emitted by the bomb was less effective in producing cancer than has been assumed” and that the “bomb’s radioactive output needs recalculating,” making it seem as though the “experiment” needed to be repeated all over again to allow scientists to make the correct calculations this time.⁴³ These reports neglect to mention that much uncertainty persists in measuring the medical effects of radiation (for example, “permissible” radiation doses are much debated), and that today’s nuclear

weapons make such claims regarding the bomb's "innocuousness" painfully obsolete.

My informants are little impressed by such reports, which they dismiss as "one more expression of scientific perversion." Today, they continue to denounce the bomb and radiation in writings that might be scientifically "inaccurate" but that reflect a deeply felt conviction that human beings and A-bombs cannot coexist. As Hayashi wrote, "Our wounds have been inflicted deliberately, by calculation. . . . And because of these calculations, we and our children continue to suffer."⁴⁴

No matter what "science" says about hibakushas' "wounds"—which are as much individual as collective—victims' testimonies will remain as the "power of the word" in its most primal, original sense: the making of humanness, for both self and others, and the "re-membering" of human bodies that have been, or are threatening to become, dis-membered.

"PROBLEM PATIENTS": THE DILEMMAS OF MEDICALIZATION

I have focused on hibakusha as "research objects," but what if we think of them as "patients"? With the institution of a hibakusha relief law in 1957, the state took on a growing role in providing medical coverage for hibakusha, and over the decades specialized institutions were created to provide medical checkups and treatment. Doctors became expert in diagnosing and treating hibakusha. Nevertheless, the "hibakusha health-care complex" inherited the fundamental problem epitomized by the ABCC-RERF: a narrowly biomedical orientation, which tended to focus on "objective symptoms" and neglect the various psychological and sociocultural factors that influence victims' experiences. If we use a key distinction in the medical anthropological literature, researchers and doctors have focused only on "disease" (a core of bodily symptoms believed to be related to the bomb) and neglected "illness."

When applied to bomb-induced illnesses, however, a biomedical approach is all the more problematic since there is no type of specific clinical pathology of radiation illness; a radiation-induced cancer is no different "in form" from another cancer. Doctors can thus only *infer* that their patients' illness is

due to radiation, and most often only by comparing a case to averages taken from the nonhibakusha controls and other “objective data.” However, as Ôta Yôko wrote in 1955, hibakusha are “incurable” (*fuchi*) and thus resemble terminally ill patients, but many “are not even sick” and thus cannot “marshal” the data that are needed by physicians.⁴⁵

It is no wonder that encounters between hibakusha and doctors are often very tense affairs. Hibakusha tend to feel that doctors minimize, underestimate, or even deny their symptoms, while doctors often characterize hibakusha as “difficult” patients whose complaints are either unwarranted or cannot be adequately diagnosed and treated; hibakusha are proverbial “problem patients” to their medical system.

The problems generated by a narrow reliance on the biomedical model were heightened by the institution of the hibakusha relief laws, which provided free health checkups and medical treatment as well as financial allowances for certain designated illnesses; this put added pressure on hibakusha (and well-meaning doctors) to transform “subjective complaints” into objective, verifiable symptoms and may have led many victims to overemphasize their bodily complaints in order to receive treatment and qualify for benefits. Bodily complaints, thus, can *also* be interpreted as a form of resistance against normative biomedical definitions of illness, which tend to exclude many subjective symptoms.⁴⁶

The laws also allocated a disproportionate amount of power to doctors, who effectively determine a patient’s eligibility for medical treatment and economic benefits. The patients’ “stakes” for having their complaints legitimized thus acquired a starkly material dimension in addition to the medical, moral, and psychological ones. Many of my informants, who already felt uncomfortable about asking for “free” treatment and benefits, were offended by the unsympathetic attitudes of their doctors. One member of the Osaka group recalls her experience when she applied for a particular allowance:

The young doctor I consulted told me: “There are many people, older than you, who suffer from more severe illnesses—we can’t give you special treatment just because you’re a hibakusha. If you

really want that allowance, I can do it for you but you should be aware that many people are worse off." So I backed off: what are you supposed to do when someone talks to you like this?

Hibakusha, and perhaps women especially, are often reluctant to challenge their doctors, who are perceived as being far "superior" in the social hierarchy and in their technical knowledge. As one woman said, "We'd been raised to consider doctors as eminent people, worthy of respect." The term used to address doctors in Japan is "*sensei*" (master), the same as for professors and other well-regarded professions.

The institution of biannual checkups was welcomed by most victims, but it also had the paradoxical effect of perpetuating the impression among some hibakusha that they were *bound* to develop a serious illness sooner or later; this was all the more ironic since scientists, who continued their studies throughout this period (via the ABCC-RERF or other research institutions), tended to insist that delayed effects, and especially genetic effects, were "not as bad" as initially feared. In the case of second-generation hibakusha, this contradiction was the most obvious: the Health and Welfare Ministry instituted routine checkups for this group in 1973, while claiming that there were "no genetic effects" on second-generation victims and that these checkups were "purely a research activity" with no medical justification. Hibakusha children and their parents did not share this impression.

This leads us to another important issue in medical discourses on hibakusha. How did medical experts respond to and label hibakushas' anxieties about their health and that of their children? All too frequently, these were imputed to a "neurotic" preoccupation with the bomb, to an "unhealthy" obsession that created problems where they did not exist. Hiroshima physicians even coined a new expression for this, "A-bomb neurosis" (*genbaku-noirooze*). Believed to have close parallels with hypochondriasis, phobias, and sometimes psychosis, the term, as described by Robert Lifton, indicates "a lifelong preoccupation with 'A-bomb disease'—with blood counts and bodily complaints, particularly that of weakness, to the extent of greatly restricting their lives or even becoming bedridden."⁴⁷ Lifton

argues that “A-bomb neurosis” is an integral part of an “atomic bomb mythology which attributes all death to radiation effects,” adding that hibakusha “resist clarification” on the issue of such effects.

Such concepts seem to be embraced by many Japanese physicians, even if they are not expressed explicitly; “A-bomb neurosis” has become a set expression to designate hibakushas’ anxieties and supposed tendency to “blame everything” on the bomb. Incidentally, similarly “pathological behavior” has been observed among other radiation victims, including U.S. atomic veterans.⁴⁸

Charges by the medical community that hibakusha were “neurotic” could only exacerbate the sense among victims that they had to give their suffering a “biological” basis in order to be taken seriously. As a result of this vicious circle, many hibakusha have grown increasingly frustrated and defensive with doctors. As Ôta wrote, “I know something is wrong with my body. I know my body better than any medical equipment. . . . The term ‘A-bomb neurosis’ is just a sly label for something doctors can’t figure out.”⁴⁹ She also recounts that she was diagnosed with severe anemia but that her doctors denied it had any link to the bomb; one ascribed it to her “unhealthy” writer’s lifestyle, “writing at night and sleeping during the day.” The author became so exasperated in her search to have her symptoms recognized as bomb-related that she came to envy women with keloids, who at least had “something to show for it.”

Ôta’s discomfort with the “psychologization” of her complaints is emblematic of that of my informants who feel that their illness experiences, including anxieties about their health and that of their offspring, are transformed by specialists into pathological “syndromes” to be overcome. Beneath such psychiatric categories seems to lurk the assumption that hibakushas’ fears are irrational and counterproductive, and that to “get on” with their lives they “should” be able to forget their bodily anxieties.⁵⁰ In fact, the use of the term “neurosis” is highly questionable in connection with hibakusha. Ordinary neuroses spring from intrapsychic conflicts (believed to block accurate perception of reality) or suppressed impulses; none of this is

applicable to hibakusha, whose anxieties are rooted in devastatingly “real” experiences of the bombing and radiation illnesses. Moreover, the focus on intrapsychic conflict confines the “pathology” to the individual, with suffering cut loose from the social and political context that reproduces it. In this, the psychiatric idiom is not necessarily more humane than the biomedical/scientific discourse used by ABCC researchers.

If doctors were ready to point out “neurotic” tendencies among their patients, medical care did not provide the therapeutic framework that would have allowed the patients to discuss their problems; consultations were limited to “purely medical” issues. The stigma associated with mental illness in Japan probably further discouraged many victims from seeking out professional aid; mental problems, often regarded as signs of “moral weakness,” were supposed to be resolved by the individual alone or within the family, which in most cases meant that they remained unmentioned. It was only in extreme cases, when the victim became dysfunctional or was rejected by family members, that hibakusha were hospitalized in mental institutions, which provided mostly drugs rather than therapy. Recent reports have drawn attention to the serious problems in Japan’s mental health-care system, including overcrowded wards, involuntary and extremely long hospitalizations, the lack of rehabilitation facilities, and rampant patient abuse.⁵¹ It is obviously not in the hibakushas’ interest to be classified and treated as a mental patient.

The basic problems in hibakusha health care—an exclusively medical orientation and the lack of appropriate counseling facilities—are reflected in the institutions that have been set up in the two A-bombed cities to deal specifically with hibakushas’ medical needs. Until recently, the Hiroshima A-bomb hospital, and other hibakusha health centers, provided only medical treatment and free medical exams; hibakusha without “a real illness” had no one to turn to to discuss their problems or to cope with the trauma that could be caused by negative examination results. It was not until the 1980s that a group of medical social workers in Hiroshima began counseling hibakusha in Hiroshima hospitals; however, because of an endemic lack of personnel and facilities, few hibakusha can even take advan-

tage of such counseling. An interview with the A-bomb hospital's sole social worker, who treats nonhibakusha as well, revealed that she is clearly overwhelmed by her caseload and feels frustrated with the fact that there are no psychiatrists at her hospital that specialize in hibakusha issues.

Today, it is undeniable that a great deal of money is being spent on health-care and diagnostic facilities for hibakusha, even if they are still considered inadequate by many hibakusha and their advocates. The Welfare Ministry's budget for these expenses totaled over 126 billion yen (about \$870 million) in 1990; for 1995, it has risen above 145 billion yen (almost \$1.5 billion). The municipal government spent the equivalent of \$229 million in 1990.⁵² However, the money is not necessarily well spent. For example, a luxurious home for the aged was built in the Hiroshima outskirts in 1992 at the cost of 5.5 billion yen, with funds from both the prefectural and municipal governments. It is well staffed and utilizes the newest equipment. Aside from the fact that this effort is seen as far from sufficient—the home has space for only three hundred, and there are thousands of aging hibakusha waiting—the very luxuriousness of the facilities has given rise to criticism among hibakusha that they are being “bought off” with money. One member of the Yamashita group said that the government uses the old people's home as a showcase: “See how well we are treating hibakusha!” Referring to the fact that the home is located at a considerable distance from the city center, the Osaka group compared it to the practice of “abandoning old women” (*obasute*), and as a way of “getting rid” of hibakusha.⁵³

Such criticism reflects a pervasive sense among hibakusha that a medical approach, no matter how well funded, is insufficient for dealing with their problems if their social and psychological needs remain unrecognized. One example of this effect is provided by an aging hibakusha mother and her microcephalic daughter (exposed to radiation while in utero): given the daughter's total dependence upon her, the mother wanted to enter the old people's home with her and be treated as “one unit” (*hito-kumi*), but the city's bureaucratic provisions do not allow for this. To her, it is far more important to share a room

with her daughter than to benefit from the newest, state-of-the-art equipment.

EXPELLING POLITICS: BIOMEDICINE AS A “SOLUTION”

Government-sponsored medical responses to hibakusha must be placed in a larger social and political context, and particularly against the background of unresolved problems in the collective memory of the war. I have examined the political uses of medicine in conjunction with the ABCC, which is more closely identified with the United States, but medicine’s “usefulness” to the political community is no less apparent in looking at the attitudes of the Japanese state.

As I noted, from 1945 to 1957 the government eschewed any acknowledgment of responsibility for hibakusha; in many ways, occupation policies, including censorship, were consistent with the Japanese government’s vision of the war as a “great folly,” brought to a merciful end by the bombs. As the emphasis shifted from reform to economic reconstruction, society’s weakest members were left behind, and hibakusha became only one among other disadvantaged groups left out in Japan’s plan to become a superpower.

If fears of “radiation contagion,” propelled by powerful pollution beliefs, were widely shared, the difficulties and living conditions of hibakusha went ignored and undocumented. The country reveled in its spectacular rise from wartime ruins to ever-growing prosperity, an atmosphere that also spread to the two A-bombed cities: by the beginning of the 1950s, the cities had been entirely reconstructed, and hibakusha were a minority among the more vigorous newcomers. Expensive memorials were erected to commemorate those killed in the bombings, but victims struggling in the here and now were left to their own devices. It is noteworthy that many hibakusha worked as day laborers in this period, and a disproportionate number among them were women;⁵⁴ ironically, many were involved in the construction of Hiroshima’s Peace Park, destined to become the “haut-lieu de mémoire” of the bomb and the epitome of the sanitized, ahistorical memory that has become dominant in the city.⁵⁵

In the mid-1950s, observers commented that the “reconstructed” Hiroshima, with its large avenues and extended parks, looked “more beautiful” than it had in its prebomb state. Clearly, such statements could not apply to hibakusha, whose failing bodies not only were recalcitrant reminders of the destruction but attested to the fact that the bombs continued to kill in a time of “peace and prosperity.” Their bodies became a threat to the ideology of renewal, which sought to erase the past and to stigmatize any sign of deficiency as a “burden” to the healthy and vigorous. Such attitudes were also welcomed by Americans, who saw in Hiroshima’s spectacular “rebirth” yet another sign of the bomb’s harmlessness, even usefulness.

The situation—at least apparently—changed after the mid-1950s, with the escalation of the Cold War and growing public concern with radiation risks, particularly after the 1954 “Lucky Dragon” incident. The government began adopting an overtly “antinuclear” stance, insisting on its identity as the “sole A-bombed country” and non-nuclearized nation to emphasize its moral stature in a world of nuclear weapons. However, little of this nationalistic discourse had to do with a recognition and acknowledgment of hibakushas’ difficulties; by then, the absence of medical aid had become a national embarrassment for a state that could well afford to provide this care. For the hibakusha relief laws, the government relied uncritically on the biomedical studies that were available and expressed little interest in investigating hibakushas’ situation on its own; the first national survey of A-bomb victims was carried out only in 1965, and its results were largely statistical.

Today, victims are eligible for all kinds of allowances, dispensed according to the illness categories that they suffer from—the more serious the illness, the greater (at least theoretically) the amount the sufferers are entitled to. Aside from medical allowances, hibakusha are also eligible for other economic benefits, such as a “nursing allowance,” a “health-management allowance,” and even a “funeral allowance.” Even if such benefits are very much needed by the most disenfranchised victims, this seems to be a way of “paying off” hibakusha. In its recent publications, the Health and Welfare Ministry has advertised its conviction that hibakusha are well taken care of,

and that their medical and financial needs are being fully addressed by a government that is cognizant of and acting in an “antinuclear spirit.”⁵⁶ This impression seems to be shared by many Japanese, who tend to feel that hibakusha get “special treatment” and are singled out for all kinds of benefits.

In reality, these allowances are surrounded by so much bureaucratic red tape that many victims are prevented from receiving or even applying for them; the most “generous” allowance, which provides a benefit of about \$1000 a month for the duration of the treatment of the illness in question, currently goes to less than 1 percent of the hibakusha population; the majority of hibakusha receive a more modest benefit (the health-management allowance) of about \$300 a month. The government is willing to spend money on individual hibakusha, but not that much.

Moreover, most of these allowances are subjected to an income limit, and thus amount to social-welfare provisions. Hibakusha are thus treated like welfare recipients, who are despised in Japanese society (less than 1 percent of the population in Japan is on welfare today). My informants tell me that they are often treated with considerable contempt by government officials when they apply for the provisions; they feel humiliated that they are forced to ask for “charity” (*omegumi*) under the present system. In effect, the law requires them to be both “sick” and “deficient” to fit into the medical and judicial categories of “institutionalized hibakushahood.” It is not surprising that many of my informants refuse to apply for the benefits despite being eligible.

In fact, the medical/bureaucratic orientation of the relief laws provided a convenient solution to a moral and political dilemma: they allowed the government to “respond” to the existence of hibakusha while continuing to eschew a moral reflection on its historic responsibility for the war.⁵⁷ By transforming hibakushas’ suffering into “just another disease,” and thus the bomb into an event without actors, a medical approach serves to suppress the questions that are integral to a historically and politically informed understanding of the A-bomb experience. Moreover, a medical orientation perpetuates the false belief—albeit one that underlies the very concept of

“hibakusha medical science”—that radiation can be effectively treated, even “cured,” by modern medicine.

Significantly in this context, the relief laws deflect attention away from a fundamental moral issue, that of government compensation based on the principle of collective responsibility. Hibakusha groups have struggled for several decades for what they consider to be a “genuine relief law,” based on state compensation and a public commitment to the elimination of nuclear weapons; many of the Osaka group’s publications deal with this problem. However, the government has consistently refused to pay compensation, claiming that “hibakusha should not be given special treatment.” The U.S. government, on its part, considers that the issue of compensation for civilian war victims has been settled by the San Francisco Treaty. As a matter of policy, the Japanese state does not pay damages to war victims, in contrast to its treatment of former military personnel, who are entitled to generous compensations and pensions as well as benefits that dwarf those currently available for hibakusha.⁵⁸ This is suggestive with respect to the state’s view on the war, which came into the open in a revealing 1980 report by the Health and Welfare Ministry: military personnel are “rewarded” for their service on behalf of the nation, while civilian war victims, including hibakusha, are asked to “endure.”⁵⁹

Yet—and this is where “medicine” plays the role of the *deus ex machina*—the state conceded in this report that hibakusha, unlike other war victims, suffer from “special medical conditions” due to “radiation damage,” and that “relief measures” (*engo-taisaku*) should be taken to assist them; it is these “special medical conditions” that provide the official justification for the relief laws.⁶⁰ This implies that once hibakushas’ medical and economic needs are “taken care of,” the differences between them and other war victims are effectively canceled out, allowing the government to reestablish a “balance” between these groups and subsume both into a larger discourse of “collective war sacrifice.” As one section in the report states, “In wartime, in extreme situations, when the very existence of the nation is at stake, it is inevitable that the population should be victimized, losing their lives, bodies or property; but the popu-

lation should accept these losses, in the name of the 'general sacrifice' (*ippan no gisei*) that all citizens must pay. . . ."⁶¹

This legalistic discourse, which reveals the hypocrisy of the government's professed "antinuclear spirit," is no different from the American discourse that celebrates the bombs. In fact, both governments have reacted in very much the same way to compensation claims by radiation victims in their respective countries. When a group of Nevada residents who were contaminated by radioactive fallout from U.S. nuclear testing sued the government for damages in 1982, the government rejected their claims on the grounds that it is "immune to damage claims" when "doing research for the benefit of the public. . . ."⁶² Survivors of the Chernobyl disaster and of fallout from Russian and French nuclear testing have been met with a similar abdication of responsibility when making claims for state-sponsored care and compensation. Clearly, the discourses on the bomb and radiation transcend national boundaries.

Today, the Osaka group considers compensation one of the most urgent issues to be addressed, especially in view of the aging of the hibakusha population; otherwise, they say, hibakushas' experiences will recede into oblivion, and their significance for this and future generations will be repressed. The disinterest of the Japanese (and foreign) media in this important issue is striking; A-bomb victim compensation was debated by the Murayama cabinet in 1994, but this debate went largely unnoticed.⁶³ This contrasts sharply with the international media coverage attracted by the problem of compensation and restitution for Holocaust victims—differential treatment that says much about the place of "Auschwitz" and "Hiroshima" in the collective memory, with the latter's "place in memory" being far more ambiguous.⁶⁴

Even today, as the century draws to a close, we cannot seem to decide whether the A-bombings were "beneficial" or crimes against humanity. This, it would seem, is another important question that has become suppressed by the logic of "science" and "law." Yet it is a question to which women like Hayashi Kyôko and the resolute members of the Osaka and Yamashita groups tirelessly lead us back by presenting the bomb as it

really is: a weapon of mass destruction, designed to injure and destroy human bodies, instantaneously and over time.

CODA: “DUSTBINS FOR ETERNITY”?

In 1978, at the occasion of a diet session held in Tokyo on the “problem of medical relief for second-generation hibakusha,” a municipal assemblyman said:

I wonder whether there is not a way to wipe out hibakusha (*zetsumetsu no hôhô*). In view of the hereditary risks of “A-bomb disease,” we should think about applying the Eugenics law, and the city should initiate policies to prevent hibakusha from bearing children. This would also be better from the point of view of government finances.⁶⁵

The diet member’s remarks caused quite a stir in the “A-bombed nation,” but they epitomize two major themes in the responses to hibakusha that have emerged in this essay: the deployment of “science” to “wipe out” human beings and the application of “medical laws” to contain the human, as well as more down-to-earth financial, consequences of man-made actions. The politician’s remarks are simply an honest expression of the mixture of denial, thinly veiled hostility, pragmatism, and hypocrisy that has characterized much of the collective reaction to hibakusha on both sides of the Pacific.

There is, however, a more general undercurrent in this statement, which cannot be easily dismissed: in the politician’s eugenistic “fantasy of elimination,” we can read the echoes of humanity’s ancient dread for the “impure,” something that becomes projected on hibakushas’ irradiated bodies. This fantasy could stand for our own wishful thinking that the forces unleashed by radiation can be “domesticated” and that this “modern impurity,” created through our own making, can be expelled or controlled by technical or scientific means. This holds true for both the military and civil uses of the atom. Yet even if the risk of nuclear war has receded (or so we are told), the atom is here to stay. We know that radioactive substances have life spans that dwarf our very concept of time; they can only be buried as nuclear waste, with hopes that the monster

might never emerge in our lifetime. Françoise Zonabend, in her anthropological study of a nuclear waste-disposal plant in France's La Hague, characterizes radioactivity as "a waste that will never be eliminated, a lethal substance that will last forever: in sum, an eternal impurity (*une souillure éternelle*)."⁶⁶ Hibakusha have also become the wastebins of our collective imagination; they and their children carry "radioactive pollution," and the specter of wholesale devastation that it conjures, on behalf of all of us.

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ENDNOTES

¹The term "hibakusha" includes people who were in the two cities at the time of the bombings, those who were contaminated by radioactive fallout in the days following the explosion, and people affected in utero. There are about 350,000 officially registered hibakusha in Japan today, and they include foreign nationals (especially Koreans). Today, the same term (though written differently in Japanese characters) is applied increasingly to other radiation victims and survivors of nuclear fallout or power-plant accidents all over the world. It is in the same spirit that I use the term as it is, without italics.

²Among the most serious after-effects are cancers, blood disorders including leukemia, and eye cataracts. A large group of "divergent conditions" are attributed to ionizing radiation, including keloids (hypertrophic burn scars), anemia, liver diseases, endocrine and skin disorders, impairment of central nervous system function, and general weakness. For a detailed summary of the bomb's physical effects, see Committee for the Compilation of Materials on Damage Caused by the Atomic Bombs in Hiroshima and Nagasaki (henceforth, Committee), *Hiroshima and Nagasaki—The Physical, Medical, and Social Effects of the Atomic Bombings*, trans. Eisei Ishikawa and David L. Swain (New York: Basic Books, 1981), 105–334.

³Henry Vyner's study of "atomic veterans," for example, bears out many similarities in psychological responses between U.S. and Japanese radiation victims. "The Psychological Effects of Ionizing Radiation," *Culture, Medicine and Psychiatry* 7 (3) (1983).

⁴Burakumin are associated with trades that have an intimate relationship with the pollution of blood and death, such as butchery, tanning, and the disposal of corpses.

⁵Cf. the *Dædalus* issue on "Social Suffering" 125 (1) (Winter 1996), which presents recent scholarly work on contemporary experiences and appropriations of suffering in a variety of cultural contexts.

⁶Hayashi is one of the most prolific hibakusha authors today. She has produced several autobiographical collections centering on the experiences of hibakusha women. The Osaka group, founded by three women in 1967, is currently one of the most active self-help groups in Japan. It not only publishes members' experiences but also is involved in advocacy and counseling on behalf of hibakusha. The Yamashita group, also founded in 1967, has published a series of booklets in which members tell of the bomb's impact on their daily lives and also level a larger critique against Japanese society: *Asa* (Morning) (1967–1985: privately published).

⁷See Committee, *Hiroshima and Nagasaki*, 503–504.

⁸See Wilfred Burchett, *Shadows of Hiroshima* (London: Verso, 1983), 19–20.

⁹See Committee, *Hiroshima and Nagasaki*, 509, and Averill A. Liebow, *Encounter with Disaster: A Medical Diary of Hiroshima, 1945* (New York: Norton, 1985).

¹⁰For analyses of censorship, see Monica Braw, *The Atomic Bomb Suppressed* (New York: Sharpe, 1990) and Jay Rubin, "La bombe 'outil de paix,'" in Maya Todeschini, ed., *Hiroshima 50 ans: Japon-Amérique, mémoires au nucléaire* (Paris: Autrement, 1995).

¹¹*City of Corpses* (Shikabane no machi, 1948), trans. and presented by Richard H. Minear, *Hiroshima: Three Witnesses* (Princeton: Princeton University Press, 1990).

¹²Hayashi Kyôko, "Naki ga gotoki" (As Though Nothing, 1980), in Kaku-sensô no kiken o uttaeru bungakusha no seimei no shômeisha, eds., *Nihon no genbaku bungaku* (Japanese A-bomb Literature) (Tokyo: Horupu Shuppan, 1983), vol. 3, 367.

¹³In one study on pregnant women exposed within 2,000 meters of the hypocenter, nearly 25 percent of the fetuses were stillborn, 26 percent died at birth or shortly thereafter, and 25 percent exhibited mental retardation. Committee, *Hiroshima and Nagasaki*, 218–219.

¹⁴*Ibid.*, 156, 219.

¹⁵"Shôwa nijûnen no natsu" (Summer 1945), in Kaku-sensô no kiken o uttaeru bungakusha no seimei no shômeisha, *Nihon no genbaku bungaku*, vol. 3, 258–276, and *Naki ga gotoki*, 291.

¹⁶Hayashi, *Naki ga gotoki*, 339.

¹⁷For discussions of pollution beliefs in connection with illness, see Emiko Namihira, "Pollution in the Folk Belief System," *Current Anthropology* 28 (4) (1987): 65–74; Emiko Ohnuki-Tierney, *Illness and Culture in Contemporary Japan* (Cambridge: Cambridge University Press, 1984); and Margaret Lock, *East Asian Medicine in Urban Japan* (Berkeley: University of California Press, 1980).

- ¹⁸Françoise Héritier argues that sterility and other disorders of reproductive function are almost universally attributed to women. "Stérilité, aridité, sécheresse," in Marc Augé and Claudine Herzlich, eds., *Le Sens du mal, Anthropologie, histoire, sociologie de la malaide* (Paris: Editions des Archives Contemporaines, 1984), 129–133.
- ¹⁹Mitsuharu Inoue, "The House of Hands," in Kenzaburo Oe, ed., *The Crazy Iris and Other Stories of the Atomic Aftermath* (New York: Grove Press, 1985), 145.
- ²⁰Kamisaka Fuyuko, *Amami no genbaku otome* (The A-bomb Maidens of Amami) (Tokyo: Chûôkôron, 1987), focuses on a group of keloid-scarred young women, natives from a small rural community on Amami Island, who are excluded by villagers who feared that their keloids could be transmitted by airborne infection.
- ²¹For an examination of depictions in film of leukemic female hibakusha, see Maya Todeschini, "Death and the Maiden: Female Hibakusha as Cultural Heroines, and the Politics of A-bomb Memory," in Mick Broderick, ed., *Hibakusha Cinema: Hiroshima, Nagasaki, and the Nuclear Image in Japanese Film* (London and New York: Kegan Paul International, 1996).
- ²²The 1993 statistics reveal that a third of all female hibakusha applied for medical aid with complaints of blood disorders, compared to 10 percent of male hibakusha.
- ²³Cf. Committee, *Hiroshima and Nagasaki*, 293–296, and Hôshasen-hibakusha-iryô-kokusai-kyôryoku-suishin-kyôgikai, ed., *Genbaku-hôshasen no jintai-eikyô* (A-bomb Radiation Effects on the Human Body) (Tokyo: Igaku-shoshû-shuppansha, 1992).
- ²⁴Hayashi, *Naki ga gotoki*, 145.
- ²⁵Studies focused on spermatogenesis, menstrual function, and disorders of pregnancy and childbirth. In all cases, reproductive functions, both male and female, were found to have been at least temporarily disturbed. See Committee, *Hiroshima and Nagasaki*, 151–156.
- ²⁶"Procession on a Cloudy Day," trans. Kashiwagi Hirosuke, *Bulletin of Concerned Asian Scholars* 25 (1) (1993): 61.
- ²⁷Cf. Committee, *Hiroshima and Nagasaki*, 212–214.
- ²⁸The ABCC was established by presidential directives, placed under the direction of the National Academy of Sciences, and supported by funds from the Armed Forces and the Atomic Energy Commission. The RERF is funded by the U.S. Department of Energy, the National Academy of Sciences, and the Japanese Ministry of Health and Welfare.
- ²⁹See M. Susan Lindee, *Suffering Made Real: American Science and the Survivors of Hiroshima* (Chicago: University of Chicago Press, 1994), 122.
- ³⁰RERF, *Radiation Effects Research Foundation: A Brief Description* (Hiroshima: RERF, 1991).
- ³¹Matsuzaka Yoshimasa, "ABCC ni kansuru kenkyû-nôto" (Research Notes on the ABCC), *Hiroshima igaku* 35 (4) (1982): 551.

- ³²See, especially, Nakagawa Yasuo, "Hiroshima-Nagasaki no genbaku hôshasen eikyô kenkyû: Kyûsei-shôgai no kashô-hyôka" (A Historical Reexamination of the Investigations into Atomic Radiation Effects in Hiroshima and Nagasaki: The Underestimation of Acute Radiation Effects, Including Acute Radiation Death), *Kagakushi-kenyû* 25 (1986): 20–34; and Sugihara Yasuo, "ABCC mondai ni tsuite" (On the Problem of the ABCC), *Nihon no kagakusha* 2 (3) (1967): 232.
- ³³Nakagawa Yasuo, "Hiroshima-Nagasaki no genbaku hôshasen eikyô kenkyû: Kyûsei-shôgai no kashô-hyôka," 131.
- ³⁴For example, researchers chose to focus only on mutations believed to be "threatening for the future survival of the species," and thus investigated certain indicators (such as sex ratio, lower birth weight or retarded growth, and higher rates of malformation, stillbirth, and neonatal death) while rejecting others (such as reduced fertility or sterility, early spontaneous abortion, and minor malformations). Lindee, *Suffering Made Real*, 178–179, 223, 228.
- ³⁵Cf. Frank Barnaby, "The Continuing Body Count at Hiroshima and Nagasaki," *Bulletin of the Atomic Scientists* (December 1977).
- ³⁶Mortality from leukemia peaked between 1950 and 1954; for those exposed to high doses of radiation, it was more than thirty times higher compared with those who were not exposed. The incidence of leukemia declined steadily afterwards but remained seven times higher between 1965 and 1971. See Committee, *Hiroshima and Nagasaki*, 240, 255–261.
- ³⁷Hayashi, *Naki ga gotoki*, 366.
- ³⁸See Takie Sugiyama Lebra, *Japanese Women: Constraint and Fulfillment* (Honolulu: University of Hawaii Press, 1984), 175–185.
- ³⁹George M. Naglehurst, "An Appraisal of Atomic Bomb Stress and Its Possible Relationship to Present Health and Longevity of People Exposed in Hiroshima Ten Years Ago," 1955, unpublished report, courtesy of the Hiroshima/Nagasaki Memorial Collection, Wilmington College, Ohio.
- ⁴⁰Lindee, *Suffering Made Real*, 257. The same point is made in Hugh Gusterson's study of nuclear weapons scientists, *Nuclear Rites: A Weapons Laboratory at the End of the Cold War* (Berkeley: University of California Press, 1995).
- ⁴¹Hayashi, *Naki ga gotoki*, 316.
- ⁴²Quoted in "50 Years Later, Scope of A-bombs' Horror is Unclear," *International Herald Tribune*, 7 August 1995.
- ⁴³Elliot Marshall, "Study Casts Doubt on Hiroshima Data," *Science* 258 (16 October 1992): 394.
- ⁴⁴Hayashi, "No ni" (In the Field), *Gyaman Biidoro* (Cut Glass, 1978), in *Kaku-sensô no kiken o uttaeru bungakusha no seimei no shômeisha*, *Nihon no genbaku bungaku*, vol. 3, 243.
- ⁴⁵"Watashi no genbaku-shô" (My A-bomb Disease, 1955), in *Kaku-sensô no kiken o uttaeru bungakusha no seimei no shômeisha*, *Nihon no genbaku bungaku*, vol. 2, 305.

- ⁴⁶See Margaret Lock, "Protests of a Good Wife and Wise Mother: The Medicalization of Distress in Japan," in E. Norbeck and M. Lock, eds., *Health, Illness, and Medical Care in Japan: Cultural and Social Dimensions* (Honolulu: University of Hawaii Press, 1987).
- ⁴⁷Robert Jay Lifton, *Death in Life: Survivors of Hiroshima* (New York: Basic Books, 1967), 119.
- ⁴⁸Henry Vyner argues that U.S. atomic veterans suffer from a pathological disorder due to their anxieties about radiation effects, the "Radiation Response Syndrome" (RRS). He notes the similarities between RRS and "A-bomb Neurosis." Vyner, "The Psychological Effects of Ionizing Radiation."
- ⁴⁹Ôta, "Watashi no genbaku-shô," 305–306.
- ⁵⁰Cf. Arthur Kleinman and Joan Kleinman, "Suffering and Its Professional Transformation," *Culture, Medicine, and Psychiatry* 15 (3) (1991): 275–301.
- ⁵¹Cf. Stephan Salzberg, "In a Dark Corner: Care for the Mentally Ill in Japan," *Social Science in Japan* (2) (1994).
- ⁵²Kôseishô-hoken-iryô-kyoku-kikaku-ka (Welfare Ministry Health Protection Section), *Atarashii hibakusha engo-hô no pointo* (The Important Points in the New Hibakusha Relief Law) (Tokyo: Gyôsei, 1995), 38. This amount includes medical and economic benefits for hibakusha.
- ⁵³This refers to an old custom in some poor mountain villages where old people were apparently left to die by the villagers. The well-known movie *Ballads of Narayama* fictionalizes this theme.
- ⁵⁴Committee, *Hiroshima and Nagasaki*, 428, 458.
- ⁵⁵For an anthropological analysis of the politics of memory in Hiroshima, see Lisa Yoneyama, "Taming the Memoryscape: Hiroshima's Urban Renewal," in J. Boyarin, ed., *Remapping Memory: The Politics of Time/Space* (Minneapolis: University of Minnesota Press, 1994).
- ⁵⁶Kôseishô-hoken-iryô-kyoku-kikaku-ka, *Atarashii hibakusha engo-hô no pointo*.
- ⁵⁷Cf. Ian Buruma, *Wages of Guilt: Memories of War in Germany and Japan* (New York: Farrar, Strauss and Giroux, 1994).
- ⁵⁸Cf. Nihon-gensuibaku-higaisha-dantai-kyôgikai (Hidankyô: Japan Confederation of A- and H-Bomb Sufferers), *Hibakusha engo-hô: 20-mon, 20-tô* (The Hibakusha Relief Law: 20 Questions, 20 Answers), Tokyo, 1992.
- ⁵⁹For a summary and critique of the report, see Ishida Chû, *Genbaku to ningen: Engo-hô to wa nani ka* (The A-bomb and Human Beings: The Meaning of the Relief Law) (Tokyo: Kikanshi-rengô-tsûshinsha, 1983), 22–26.
- ⁶⁰Kôseishô-hoken-iryô-kyoku-kikaku-ka, *Atarashii engo-hô no pointo*, 1.
- ⁶¹Quoted in Ishida, *Genbaku to ningen*, 23.
- ⁶²Cf. "Nevada's Nuclear Legacy," *Boston Globe*, 26 February 1989.
- ⁶³Cf. "Atomic bomb victim bill touted," *Asahi Evening News*, 29 August 1994.

⁶⁴For comparative analyses of Hiroshima and Auschwitz, see Richard H. Minear, "Holocauste atomique, holocauste nazi," and Alain Brossat, "Epilogue: Si loin, si près, Hiroshima et Auschwitz," in Todeschini ed., *Hiroshima 50 ans*, 147–159, 217–233.

⁶⁵*Mainichi shinbun*, 2 July 1978.

⁶⁶Françoise Zonabend, *La presque île au nucléaire* (Paris: Editions Odile Jacob, 1989), 185.