Voices of Nagasaki after 75 Years
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ABSTRACT
Soon after the second atomic bombing in 1945, hibakusha in Nagasaki saw the dawn of the Cold War, along with the Soviet Union’s possession of atomic bombs. The Cuban Missile Crisis in 1962 created a real fear of nuclear war capable of destroying all of humanity. The Partial Test Ban Treaty in 1963 and the Nuclear Nonproliferation Treaty (NPT) in 1968 were a good sign of hope. The Intermediate-Range Nuclear Forces Treaty, signed in 1987, also succeeded in reducing nuclear warheads in the 1990s. However, we have also seen nuclear deterrence strategies of the nuclear powers firmly established. The Cold War ended in 1989, but its nuclear deterrence policies have persisted. Unfortunately, the NPT regime has gradually begun to weaken since 2010. Hibakusha and non-governmental organizations such as the International Campaign to Abolish Nuclear Weapons have stood firmly in strong solidarity and in 2017, succeeded in establishing the Treaty on the Prohibition of Nuclear Weapons (TPNW), which entered into force on 22 January 2021. Even now, hibakusha continue to suffer lifelong radiation-induced cancers and leukemia. Hibakusha must face a new stage in the abolition of nuclear weapons under a dangerous divide between NPT supporters and TPNW promoters. To overcome this divide, we need to increase the power of civil society around the world.

The Experiences Nagasaki Has Had since 1945
The First Victim of Nuclear Detonations

Seventy-five years ago, on August 6 and 9, 1945, when the atomic bombings of two medium-sized Japanese cities opened the nuclear-weapon age, we were in the final stage of World War II. Nuclear weapons later proved to be the most devastating weapon in history, capable of destroying humanity.

In Nagasaki, almost 73,000 citizens were killed instantaneously or within five months due to the blast wind, high-dose radiation, and severe skin burns. The city’s infrastructure was totally demolished.

Approximately 74,000 hibakusha survived the immediate aftermath of the detonation. We hibakusha soon experienced leukemia, the first radiation-induced malignant
disorder. Decades later, various types of cancer gradually developed among the high-dose exposure group.

**Lifelong Health Effects Persist Even after 75 Years**

Even now, the radiation-induced disorders continue to distress the elderly hibakusha, whose average age is about 83. Therefore, the total number of casualties cannot yet be calculated. The radiation-induced humanitarian consequences are apparently a lifelong phenomenon.

Recent medical research employing molecular technology has proved that the lifelong persistence of disorders is derived from the damage to DNA caused by high-dose radiation exposure within one minute of the detonation. The damage to DNA led to additional genetic events in some cells, creating cancer cells. Then tumors appeared. These changes sometimes took place several decades after the exposure.

There also exists a fear of genetic transmission of malignant disorders from survivor parents to their children. A series of large-scale epidemiological studies have been conducted, but none of them have formally proved genetic transmission. More sophisticated technology for whole DNA (genome) analysis called “whole genome sequencing” is now available (Horai et al. 2017). A recent preliminary analysis again yielded a negative result with regard to genetic transmission. However, animal experiments often yield positive results, a threatening finding for parent survivors and their children.

**The Cold War and Nuclear Rivalries**

Within a few years after the start of the nuclear age, the Cold War began between the United States and the Soviet Union, accompanied by an extensive nuclear competition. The United Kingdom, France, and China, soon followed – an apparent beginning of nuclear proliferation. Later on, as Israel, India, Pakistan, and, more recently, North Korea joined, the number of nuclear states reached nine. These states maintain nuclear weapons for national security. The worldwide inventory of nuclear warheads peaked at around 75,000 in the mid-1980s.

Also, atmospheric nuclear tests continued to be conducted. Thermonuclear weapons were added to the nuclear arsenal with the first test in the Marshall Islands in 1952, followed by the one in Bikini Atoll in 1954. The latter test caused large-scale radioactive fallout around the atoll, where many Japanese tuna fishermen were exposed. In Japan, the Bikini incident provoked a nationwide anti-nuclear movement.

**Hibakusha Start a Movement to Abolish Nuclear Weapons**

While nuclear competition intensified between the nuclear powers, hibakusha were living under continuing fear and the threat of radiation-induced disorders. In 1955, young survivors such as Senji Yamaguchi and Chieko Watanabe of Nagasaki, who had various health problems, founded a group to oppose nuclear weapons. In Hiroshima, a similar movement also started and then spread nationwide. This is because many hibakusha had already moved to larger cities such as Tokyo to gain jobs, find a better life, and avoid discrimination. The anti-nuclear movement of hibakusha also stimulated the rest of civil
society in Japan and gradually expanded to other countries all over the world. Hibakusha groups also started a campaign to gain national aid for their health care.

In those days, hibakusha could not protest directly to the US government for its anti-humanitarian use of new nuclear weapons – without prior warning, the bombs were dropped on the two cities whose residents were largely noncombatants. Only once – a day after the Nagasaki bombing, through the Swiss government – did the Japanese government protest to the US government. Because of Japan’s unconditional surrender on August 14, hibakusha had no way to lodge a protest with the United States afterward. In the mid-1950s, young survivors therefore decided to do so by making the anti-humanitarian nature of the bombs known to the world. These activists held the nuclear-weapon states, especially the United States, responsible for the development of atomic bombs and for the first use of such weapons.

**The Reconstruction of the City and the Measures to Sustain Hibakusha**

Meanwhile, civil society in Nagasaki took on the tough reconstruction job of reviving city infrastructure and sought financial and health-care support for hibakusha’s daily life. Nagasaki City authorities gained support thanks to a new national law for building an International Cultural City that effectively turned Nagasaki from a devastated atomic field into a regenerated city. The government’s financial support for hibakusha’s daily health care and its medical support for those who suffered diseases such as leukemia and cancers started in 1957. The total amount of medical and social aid has progressively increased, reaching 129 billion yen ($10.7 billion) per year recently.

As hibakusha grew older and their economic situation improved, they began to go abroad to attend UN meetings, conferences in Geneva, and other meetings of nongovernmental organizations (NGOs) for the abolition of nuclear weapons and the prohibition of nuclear tests. Such international activities of hibakusha groups accelerated a collaborative anti-nuclear movement and later succeeded in establishing wider and stronger international networks such as the International Campaign to Abolish Nuclear Weapons (ICAN), promoting strengthened solidarity among antinuclear-weapon states that have worked passionately for the realization of a nuclear-free world.

The Cuban Missile Crisis had a great impact on the Japanese people in 1962. Because the crisis occurred when TV broadcasting had already begun, the entire country flocked to TV screens for two weeks, fearful of the beginning of the first world nuclear war between two superpowers. Hibakusha were the only ones on the earth who knew the reality of nuclear war. Their anti-nuclear movement grew dramatically.

**PTBT: The First Treaty for the Prohibition of Nuclear Tests**

In 1963, hibakusha welcomed the Partial Test Ban Treaty established by the initiative of US President John F. Kennedy. He clearly understood the dangerous health consequences from the fallout of nuclear tests. For example, the United States proved through a medical analysis that strontium accumulated in children’s teeth. The hibakusha movement to stop nuclear tests was accelerated by the partial ban.
Mutually Assured Destruction as a Basis of Nuclear Deterrence Strategy

When the Cuban Missile Crisis took place, there was no firm international norm to prevent the third use of nuclear weapons. The total number of nuclear warheads increased rapidly so that the principle of deterrence was founded on the notion that a nuclear attack by one superpower would be met with an overwhelming nuclear counterattack such that both the attacker and the defender would be annihilated. This is called mutually assured destruction. But this strategy still involves the threat of first use of nuclear weapons. China adopted a no-first-use policy, but no other nuclear states followed.

Nagasaki’s hibakusha considered that the world was now on the brink of global extinction. They worked much more actively for the abolition of nuclear weapons in the period of balanced nuclear deterrence. This phase lasted a few decades, during which the young hibakusha generation grew up.

The Adoption of the NPT

In 1970, hibakusha enthusiastically welcomed the entry into force of the Nuclear Nonproliferation Treaty (NPT), the first international treaty for nuclear disarmament. Hibakusha viewed the NPT as the first visible political and legal achievement gained by their movement.

However, real nuclear disarmament had to await the entry into force in 1988 of the Intermediate-Range Nuclear Forces (INF) Treaty between the United States and the Soviet Union. It took another eight years to achieve the Comprehensive Test Ban Treaty (CTBT) in 1996 although the Soviet Union had officially dissolved in December 1991. As of 2020, the CTBT had not entered into force, with eight states, including the United States and China, not ratifying the treaty.

INF Treaty: The Most Effective Treaty Ever to Reduce Nuclear Warheads

Hibakusha saw the relevance of the INF Treaty in its success in markedly reducing the number of nuclear warheads held by the United States and the newly born Russia. In the 1990s, the combined number of warheads was brought down to less than 50,000.

However, in 2019, US President Donald Trump and Russian President Vladimir Putin separately withdrew from the INF Treaty after accusing each other of violating the treaty. We hibakusha were deeply disappointed to see this concrete sign of hope for the abolition of nuclear weapons suddenly cease to exist after 32 years.

The Soviet Union Collapses, the Cold War Ends, but the Nuclear Age Continues

In 1991 the Cold War ended as the Soviet Union collapsed. Hibakusha were hopeful that this would mark the end of nuclear rivalries as well. But the nine nuclear-armed states still maintain a nuclear deterrence strategy. Larger nuclear-weapon states such as the United States, Russia, and China are now changing their nuclear posture by developing smaller nuclear weapons and hypersonic missiles. They call these changes “modernization.”
Obama’s Prague Address and the First Presidential Visit to Hiroshima

In 2009, hibakusha enthusiastically welcomed President Barack Obama’s address in Prague several months after his inauguration. Later in 2009, he was awarded the Nobel Peace Prize. In 2016, Obama also visited Hiroshima, the first time that a sitting US president did so. These events made hibakusha confident of the firm resolution of the US president to achieve the abolition of nuclear weapons. To the disappointment of hibakusha, however, Obama failed to make any progress in nuclear disarmament in the eight years of his administration. In Hiroshima, Obama emphasized that we human beings still lack the wisdom of ethics to abandon nuclear weapons. Obama’s failure indicates how difficult the realization of a nuclear-free world is. In the final year of his administration, he tried to propose a no-first-use policy in the US nuclear posture, but Japan and other allied nations did not support it because they were afraid of weakening the nuclear umbrella.

Fifty States’ Ratification of the TPNW

Three large international conferences were held for intensive discussions on the humanitarian aspect of nuclear weapons in Norway, Mexico, and Austria in 2013 and 2014. Many hibakusha and NGOs including ICAN attended the conferences and made a pledge for a nuclear-free world. The author, as a medical researcher in Nagasaki, delivered a report about the lifelong persistence of radiation-induced malignant disorders for the first time at an international conference.

Hibakusha have cooperated with global NGOs such as ICAN and non-nuclear-weapon states that have worked passionately for the prohibition of nuclear weapons. They often have attended UN assemblies and conferences on nuclear disarmament held in Geneva. Young people including undergraduates and high school students also attended these gatherings. The activities of hibakusha and the youth of Nagasaki have reached new heights.

The Treaty on the Prohibition of Nuclear Weapons (TPNW) was adopted by 122 states at a UN meeting in 2017.

However, the Japanese government has not signed the treaty because, Japanese officials argue, the nuclear umbrella policy based on the US–Japan Security Treaty does not allow Japan to join. Hibakusha are deeply disappointed by the Japanese government’s refusal to sign the TPNW, in spite of the fact that it is the only nation that experienced wartime nuclear attacks and has the best knowledge of the consequences of the use of nuclear weapons. Since 2017, we have pressed the Japanese government to sign the TPNW and the Parliament to ratify it. Since 2016, a hibakusha network has carried out a global petition campaign to promote the ratification of the treaty. In Nagasaki, we have successfully collected over 500,000 signatures, which means that more than half of the voters in Nagasaki have endorsed the campaign.

On 22 January 2021, the treaty entered into force, having met the requirement that 50 states ratify it. Hibakusha and mayors of the two A-bombed cities have also welcomed the move.
The Nuclear Posture of the US and Russia Reversed

We hibakusha are now confronting a trend against nuclear disarmament, which we see is almost dying. The US nuclear posture review by President Trump in 2017–2018 and a shift in Russian nuclear policy promoted by President Putin demonstrate that these two major nuclear-weapon states are heading for the modernization of nuclear weapons by increasing the numbers of missiles with small warheads to make them much easier to use. The advocates of this approach argue that these missiles will be used only on military targets, thus minimizing human casualties. Hibakusha have been extremely disappointed by this retrograde attitude on a new nuclear arms race. Moreover, China continues to strengthen its nuclear arsenal by modernizing nuclear bombs and hypersonic missiles. The world is now facing a revival of nuclear competition between major nuclear-weapon-possessing countries.

Voices from Nagasaki: Can the City Be the Last One to Suffer from Atomic Bombing?

New Measures for a Nuclear-free World under a Dangerous Divide between NPT Supporters and TPNW Promoters

What can we do to overcome the present divide? Can Nagasaki’s voice effectively push back against a trend of increasing the numbers of nuclear weapons with small warheads? In Article 6 of the NPT, all the state parties are obliged to make efforts to realize a nuclear-weapon-free world. How can we make this supreme desire of the world move forward after the TPNW enters into force? The most difficult issue is how to encourage nuclear-weapon states and nuclear umbrella states to participate in the negotiation and dialogue with a view to signing the TPNW.

Overcoming the divide between nuclear-weapon states and non-nuclear-weapon states seems to be the biggest challenge. Hibakusha must cooperate with global NGOs such as ICAN as well as with non-nuclear-weapon states. Such solidarity was instrumental in realizing the TPNW in 2017. The first review conference for the TPNW, which is required to take place within a year of the treaty’s entry into force, will be a crucial forum to build confidence and promote dialogue between the two opposing groups. Under the TPNW, it is possible to invite nuclear-weapon states and umbrella states to take part in review conferences as observers.

The voices of the hibakusha of Hiroshima and Nagasaki as well as of the broader civil society of Japan, the only nation that has experienced nuclear detonations, must be heard by nuclear-weapon states. In forums such as those mentioned above, we hibakusha must emphasize the lifelong effects of radiation-induced malignant diseases such as cancers and leukemia, which still exist even now. This is what nuclear weapons do.

The malignant disorders are apparently caused by gene abnormalities induced by the damage to DNA. The exposure to radiation released from the atomic bomb causes damage in all organ cells. This phenomenon has affected hibakusha over half a century. In addition, the genetic transmission for the second generation is an ongoing problem. The extreme anti-humanitarian nature of nuclear weapons cannot be resolved unless nuclear-weapon states and umbrella states join in the TPNW.
**The Civil Society of Nuclear-Weapon States Must Listen to Nagasaki’s Voice**

If hibakusha can successfully affect the people of nuclear-weapon states, the people would urge their governments to attend the TPNW review conferences as observers. In particular, the nine nuclear-armed states must take the people’s voice seriously. Also, hibakusha must redouble their efforts to strengthen the movement against nuclear weapons, especially aiming at the younger generation living in the nuclear-armed states. Reportedly, more than half of young citizens, especially those of the United States, consider that their nuclear policy should gradually shift toward the abolition of nuclear weapons.

**The Complementarity of the NPT and the TPNW**

The NPT has no provision for the abolition of nuclear weapons. The combined effects of the NPT and the TPNW can make all the state parties, especially nuclear-weapon states and umbrella states, proceed to the final stage for a nuclear-weapon-free world. During this process, the nuclear-dependent states must deeply understand and seriously acknowledge the 75 years of experiences of the hibakusha as the most profound legacy of the use of nuclear weapons.

If the nuclear-weapon states continue to boycott the TPNW, the non-nuclear-weapon states and all global citizens will hold the nuclear-weapon states responsible for possessing the arsenals. The United States has a double responsibility, as the country that created the first nuclear weapons and also used them on human beings for the first time. In this context, an advisory opinion of the International Court of Justice (ICJ) on the legality of nuclear weapons in 1996 must be recalled. The advisory opinion did not come to a definite conclusion on whether the use of or threat to use nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defense in which the very survival of a state would be at stake. Now the TPNW seems to provide a definite answer to the ICJ opinion.

At present, the nuclear policies of most nuclear powers employ a first-use strategy by targeting many large cities of their opponents. The cities are not virtual ones without citizens but are full of real human beings numbering in the millions. As victims of the first use of nuclear weapons on Hiroshima and Nagasaki, we have a right to insist that the first-use strategy is unlawful.

The nuclear-weapon states maintain that they have a right to possess nuclear weapons for the protection of their nations and the lives of their citizens. But the enemy’s cities are also full of citizens. We have lived under this cruel political condition for 75 years; nuclear-weapon states must abandon their first-use strategy. This ethical wisdom, presented by President Obama in Hiroshima in 2016, can jump-start an endeavor toward the realization of a nuclear-weapon-free world.

Every nation on earth is responsible for keeping the planet safe for human survival in the future. This can be achieved by creating international solidarity, building confidence, promoting intimate dialogues, sharing recent scientific developments such as vaccines to overcome pandemics like COVID-19, and, most importantly, abandoning nuclear weapons to avoid a global nuclear war.
Disclosure Statement

No potential conflict of interest was reported by the author.

Notes on Contributor

Dr. Masao Tomonaga is a hibakusha exposed 2.5 kilometers from the hypocenter. After graduation from Nagasaki University Medical School in 1968, he became a physician and hematologist specializing in leukemia treatment. He also continued research on how radiation exposure induces malignancy. After retirement, he was appointed the director of the Japanese Red Cross Nagasaki Atomic Bomb Hospital. Since 2012, he has worked with elderly hibakusha at Megumino-Oka Nagasaki Atomic Bomb Survivor Nursery Home as director of clinics.

In 2020, he was also appointed president of the Nagasaki Prefecture Hibakusha Association, which has 2,000 members. He is a vice president of IPPNW (which was awarded the Nobel Peace Prize in 1985) for the North Asia region, the representative of Nagasaki Global Citizens Assembly for Nuclear Abolition (ICAN member), and director of Nyokonokai, a group to pay tribute to Dr Takashi Nagai, hibakusha radiologist and the author of The Bells of Nagasaki.

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