Peace Now!

The Bulletin of the Coalition for Nuclear Disarmament & Peace

special issue

On 60th anniversary of Hiroshima and Nagasaki

Contents

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Editorial

Zia Mian and Smitu Kothari

This special issue of Peace Now marks the 60th anniversary of the destruction of Hiroshima and Nagasaki.

When he was told on August 6, 1945, that America's new atom bomb had destroyed its first target, the Japanese city of Hiroshima, U.S. President Harry Truman declared "This is the greatest thing in history."

Three days later, on August 9, another atom bomb destroyed the city of Nagasaki.

A 1946 survey by the Hiroshima City Council on the casualties of the atomic bombing found that out of a civilian population of 320,081 inhabitants on the day of the explosion: 118,661 were killed, 30,524 seriously injured, 48,606 slightly injured, and 3,677 missing. In December 1945, the Nagasaki City Commission determined that because of the bombing 73,884 people had been killed and 74,909 injured. The injured continued to die, including from radiation sickness. Pregnant women who were affected produced children who were severely physically and mentally retarded.

In those early days of the nuclear age, while some celebrated victory and a new found power, others saw how grave a challenge the bomb had created for humanity.

The French writer Albert Camus wrote on August 6, 1945: "technological civilization has just reached its final degree of savagery... Faced with the terrifying perspectives which are opening up to humanity, we can perceive even better that peace is the only battle worth waging. It is no longer a prayer, but an order, which must rise up from peoples to their governments - the order to choose finally between hell and reason."

The American sociologist and critic Lewis Mumford wrote some months later: "We in America are living among madmen. Madmen govern our affairs in the name of order and security. The chief madmen claim the titles of general, admiral, senator, scientist, administrator, Secretary of State, even President. And the fatal symptom of their madness is this: they have been carrying through a series of acts which will lead eventually to the destruction of mankind, under the solemn conviction that they are normal responsible people, living sane lives, and working for reasonable ends."

That was sixty years ago. Since then, the madmen in America have been joined by madmen in Russia, Britain, France, China, Israel, India and Pakistan. They all mumble the same nonsense about "threats," and "defense," and "deterrence," and scare everyone around them. These symptoms are emerging in men in North Korea and in Iran and, in all likelihood, will erupt elsewhere.

Kenzaburo Oe, the Nobel Prize winning writer from Japan, tells a story from the 1964 Olympic Games, held in Tokyo, Japan. The last runner to carry the Olympic Torch and light the flame in the ceremony that marks the start of the Games was to be a young man born in Hiroshima. Some Americans were upset by this choice. Oe saw the problem more broadly. He wrote "this preference occurs not only to the American mind. Do not all leaders and peoples who at present possess nuclear weapons also wish to erase Hiroshima from their memories?"

For anti-nuclear activists and the larger peace movement over the past sixty years, it has been important to keep Hiroshima

in mind. This memory, we feel, should remain even when the last atom bomb is gone. It should be a marker to remind us all that we as a human society are capable of such horror.

We begin this special issue of Peace Now with James Kirkup's poem, "No More Hiroshimas." It calls on us to remember the all too human details of the people who died there, the things that cannot be captured by just evoking a name or a place or a time.

The survivors of the atomic bombing call themselves the Hibakusha. They have played a profound role in the past six decades in giving witness around the world to their terrible experiences. They have been nominated for the Nobel Peace Prize more than once. We publish their declaration for the 21st century.

Beyond the dead and injured of Hiroshima and Nagasaki, there are countless others afflicted by the efforts around the world to build and test nuclear weapons over the past six decades. Joseph Gerson's article describes their suffering and how they have been reaching out to each other to build international networks of those who have been hurt most often not by 'enemies' but by their own governments in the pursuit of a nuclear-armed 'national security.'

These governments and the state structures through which they exercise power are at the very center of the politics of the bomb - a politics that often overwhelms even those who would be critics. Andrew Lichterman, a veteran American anti-nuclear activist, describes his first visit to Hiroshima. He reflects on the need for an anti-nuclear politics that is grounded in the perspective of "those who are looking up at power, up at the planes, up at the mushroom cloud". It is a politics that challenges and seeks alternatives to the interests and authority of all states.

The shadow of the bomb falls over those who are intended as its victims and those who have sought the bomb and plan to use it. Mahatma Gandhi recognised this straight away. After the American bombing of Hiroshima and Nagasaki, he observed that one could see what Japan had suffered, but that "what has happened to the soul of the destroying nation is yet too early too see."

In his essay, M.V. Ramana describes how the scientists who built and tested and used the American bomb treated the destruction of the Japanese cities as experiments. He shows how this sensibility has spread to similar madmen in India, quoting a leading Department of Atomic Energy scientist as saying: "Hiroshima provided us with a fortunate opportunity to study radiation effects!"

The effects of the bomb on the United States continue till today. Zia Mian argues that the bomb was always more than just a weapon. It is a way of thinking. He shows how the logic of the bomb has pushed over one moral barrier after another in the past sixty years. The nuclear complex that builds the bomb, and gains power from this activity, has defied all sense of limits. It now seeks to dominate the future.

The sixty-year history of the nuclear age is also a history of protest and resistance. This year is the fiftieth anniversary of one the most famous and enduring efforts to organise resistance against the bomb. We reprint here the 1955 Russell-Einstein Manifesto, in which Bertrand Russell and Albert Einstein joined by a group of other Nobel Prize winners called on fellow scientists to rise up and confront the nuclear threat. The nuclear problem, as they put it, was "stark and dreadful and inescapable". The challenge as they saw it was: "Shall we put an end to the human race; or shall mankind renounce war?"

Forty years after the Russell Einstein Manifesto, in 1995, the Nobel Peace Prize was awarded to Pugwash, the organisation

created to encourage scientists to work to rid the world of nuclear weapons, and its founder and President Joseph Rotblat. He is the last survivor of the original signatories of the Manifesto. In his Nobel Peace Prize speech, Rotblat explains why the Russell-Einstein manifesto and the Pugwash movement have always emphasised that the only solution to the nuclear threat is that "War must cease to be an admissible social institution. We must learn to resolve our disputes by means other than military confrontation."

Pugwash was only one of many initiatives against the bomb. People everywhere have risen against it. Most of these movements have slipped from public memory, except among those who were involved. Lawrence Wittner has led the way in recovering the history of the anti-nuclear movement. In his amazing three volume series The Struggle against the Bomb: a History of the World Nuclear Disarmament Movement he has shown how the peace movement has forced restraint on political leaders again and again. We reprint here a long essay in which he surveys the history of the American anti-nuclear movement and how the "power of protest" has been central to preventing another Hiroshima.

There are courageous activists in the United States who continue resist the bomb in all its expressions. We publish a powerful essay by Greg Mello, whose organization, the Los Alamos Study Group, has been resisting the Los Alamos Nuclear Weapons Laboratory - the place where the bomb was first built and now perhaps the largest nuclear weapons laboratory in the world. It is a first-hand account of anti-nuclear politics in the very heart of the beast.

Tragically, the world is still far from being at peace. Freed from the constraints of the Cold War, the United States has embraced a global imperial role, with a goal ofx creating enduring global dominance. After the attacks of September 11, 2001, it has resorted to massive violence, invasion and occupation. Nuclear weapons played a central role in the Cold War, and are now offered as a justification for new wars. Ken Coates traces how the "ultimate weapon" has always spawned the "ultimate lie".

If another catastrophe is to be prevented, the nuclear weapons states will have to disarm. They promised to do so as part of the 1970 Nuclear Nonproliferation Treaty (NPT). Rebecca Johnson explains the profound failure that took place in New York a few months ago as diplomats from 153 countries gathered under the auspices of the NPT and talked for weeks without agreeing to anything, in large measure because of the power and obduracy of the United States.

The bomb was once, briefly, an American monopoly. But the power to destroy a city in an instant has spread. First it spread to a handful of powerful industrialized nations. Now it is in the hands of much less industrialized states, like India, Pakistan and North Korea. Soon the bomb may no longer even be the preserve of states. Pervez Hoodbhoy and Zia Mian assess the grave new challenge that is raised by the conflict between American imperialism and radical Islam and the prospect that it may go nuclear.

American nuclear policy is not just opposed by peace and anti-nuclear activists. It is now seen as folly by even those who once shaped it. Robert McNamara, former U.S. Defense Secretary and nuclear Cold warrior, wrote in 2005: "I would characterize current U.S. nuclear weapons policy as immoral, illegal, militarily unnecessary, and dreadfully dangerous." The same can be said, indeed must be said, about all nuclear weapons states.

(HIROSHIMA, NEW YEAR, 1960)

No More Hiroshimas

James Kirkup

At the station exit, my bundle in hand,
Early the winter afternoon's wet snow
Falls thinly round me, out of a crudded sun.
I had forgotten to remember where I was.
Looking about, I see it might be anywhere -
A station, a town like any other in Japan,
Ramshackle, muddy, noisy, drab; a cheerfully
Shallow impermanence: peeling concrete, litter, 'Atomic
Lotion, for hair fall-out,' a flimsy department store;
Racks and towers of neon, flashy over tiled and tilted waves
Of little roofs, shacks cascading lemons and persimmons,
Oranges and dark-red apples, shanties awash with rainbows
Of squid and octopus, shellfish, slabs of tuna, oysters, ice,
Ablaze with fans of soiled nude-picture books
Thumbed abstractedly by schoolboys, with second-hand looks.

The river remains unchanged, sad, refusing rehabilitation.
In this long, wide, empty official boulevard
The new trees are still small, the office blocks
Basely functional. The bridge a slick abstraction.
But the river remains unchanged, sad, refusing rehabilitation.

In the city centre, far from the station's lively squalor,
A kind of life goes on, in cinemas and hi-fi coffee bars,
In the shuffling racket of pin-table palaces and parlours,
The souvenir shops piled high with junk, kimonoed kewpie dolls,
Models of the bombed Industry Promotion Hall, memorial ruin
Tricked out with glitter-frost and artificial pearls.

Set in an awful emptiness, the modern tourist hotel is trimmed
With jaded Christmas frippery, flatulent balloons; in the hall,
A giant dingy iced cake in the shape of a Cinderella coach.
The contemporary stairs are treacherous, the corridors
Deserted, my room an overheated morgue, the bar in darkness.

Punctually, the electric chimes ring out across the tidy waste
Their doleful public hymn - the tune unrecognizable, evangelist.

Here atomic peace is geared to meet the tourist trade.
Let it remain like this, for all the world to see,
Without nobility or loveliness, and dogged with shame
That is beyond all hope of indignation. Anger, too, is dead.
And why should memorials of what was far
From pleasant have the grace that helps us to forget?

In the dying afternoon, I wander dying round the Park of Peace.
It is right, this squat, dead place, with its left-over air
Of an abandoned International Trade and Tourist Fair.
The stunted trees are wrapped in straw against the cold.
The gardeners are old, old women in blue bloomers, white aprons,
Survivors weeding the dead brown lawns around the Children's Monument.

A hideous pile, the Atomic Bomb Explosion Centre, freezing cold,
'Includes the Peace Tower, a museum containing
Atomic-melted slates and bricks, photos showing
What the Atomic Desert looked like, and other
Relics of the catastrophe.'

The other relics:
The ones that made me weep;
The bits of burnt clothing,
The stopped watches, the torn shirts,
The twisted buttons,
The stained and tattered vests and drawers,
The ripped kimonos and charred boots,
The white blouse polka-dotted with atomic rain, indelible,
The cotton summer pants the blasted boys crawled home in, to bleed
And slowly die.

Remember only these.
They are the memorials we need.

(published in No More Hiroshimas, by James Kirkup, Spokesman, 2004)

FOR A WORLD WITHOUT WAR AND NUCLEAR WEAPONS

Hibakusha Declaration for the 21st Century

"No more Hibakushas!" We, the Hibakusha, have had to carry this call into the 21st century.

It was the 6th and the 9th of August in 1945. Two atomic bombs dropped by the U.S. instantly turned Hiroshima and Nagasaki into cities of death. Those who barely survived but unable to save their loved ones who were burned alive, later fell one after another, devoured by radiation. It was a disaster that no one had believed could happen in a human world. Those of us who survived the "atomic hell" continue to this day to be tortured in our bodies and minds. How long will the radiation damage of the atomic bombs be passed down from generation to generation?

The atomic bomb does not allow people either to die, or to live in dignity as human beings. It is a weapon of absolute evil, aimed solely at annihilation. The only way for the Hibakusha to live on as humans is to totally reject atomic bombs.

Over the last half century, the Hibakusha have overcome their pain, told the realities of the damage of the atomic bombing and conveyed their call "No More Hibakushas!" to the world. Their call has mobilized public opinion and movements in favor of the "elimination of nuclear weapons". Their message has spread around the world and become a major current in political affairs. Since Hiroshima and Nagasaki, the use of nuclear weapons in war has been prevented. It is actually public opinion and the anti-nuclear movement throughout the world that have worked as deterrents to nuclear war.

Abolish Nuclear Weapons Now!

The world carried over some 30,000 nuclear weapons into the 21st century. The U.S. and other nuclear-weapon states still cling to these weapons and maintain the "nuclear deterrence" policy. The U.S. does not exclude the first nuclear strike option.

The dropping of the atomic bombs by the U.S. constitutes a serious crime against the human community. The tragedy of nuclear war must not be repeated. The U.S. must recognize that it committed a crime against humanity in violation of international law and apologize. We believe this should be the very first step towards the elimination of nuclear weapons, the way for the U.S. to assume its responsibility for the 21st century.

All nuclear-weapon states without exception, in the process of development, manufacturing and testing of their nuclear weapons, have been causing environmental destruction, creating innumerable Hibakusha all over the world and exposing all human beings to the "nuclear terror". This is also an act equally criminal as the dropping of the atomic bombs and these states must be held responsible for it.

Many of these Hibakusha have been left to subsist in extremely poor conditions and with unbearable pain. They badly and

urgently need relief and compensation.

The U.S. should immediately put an end to its nuclear deterrence policy and embark on the elimination of nuclear weapons. It should take the lead and call on other nuclear states to join in the effort to abolish nuclear arsenals. This is the only way for the U.S. to atone for its crime of the atomic bombing.

The government of Japan has never held the U.S. responsible for having dropped the bombs. On the contrary, it has aligned itself with the U.S. in its attempt to put off the achievement of nuclear abolition to an indefinite future. We cannot accept the fact that the Japanese government cooperates with the U.S. in the implementation of its nuclear policy and supports the "nuclear umbrella". This actually makes Japan a nuclear-armed country. Japan, once victim of atomic bombing, is becoming a nuclear perpetrator. We cannot close our eyes to this perilous situation.

We demand that Japan get out from under the nuclear umbrella. We demand that Japan cancel the secret nuclear agreement with the U.S. and observe and establish the Three Non-Nuclear Principles as law. This is also the way for Japan to make good use of its Constitution and contribute to world peace, in a manner worthy of the A-bombed country, and as a "non-nuclear country".

The cry of the Hibakusha, "Down with nuclear weapons" has grown into a strong public opinion. It has driven the nuclear weapon states into isolation and, as the 20th century was drawing to its end, forced them to agree on the "unequivocal undertaking of achieving the total elimination of their nuclear arsenals". In order to make them honor their "undertaking", we demand that they commence without delay international negotiations leading to the abolition of nuclear weapons.

Provide State Compensation for the A-bomb Damage!

The Japanese government has adopted a policy that takes for granted that the people should accept and endure the damage incurred in wars. It even tries to impose the acceptance of A-bomb damage on the victims. Against such a policy, we set forth the "Atomic Bomb Victims Demand (1984)" and have called for the "elimination of nuclear weapons" and "State compensation for the A-bomb damage" so that there will be "No More Hibakusha". The call of the Hibakusha gained support from the Japanese people and the movement for peace and the demand for State compensation have spread widely. This in turn has significantly improved the State measures for the Hibakusha.

However, in the "Law on the Relief of Atomic Bomb Sufferers" instituted in 1994 pressed for with powerful popular support, the government rejected the provision of State compensation to the sufferers, even to the dead who were the greatest victims.

The A-bomb damage was caused by the war launched and prolonged by the Japanese Government. It is therefore natural that the State compensate for that damage. Those who died, the greatest victims, can rest in peace as the "Cornerstones for Peace" only when nuclear weapons disappear from the earth.

The Japanese Constitution, born out of the reflection on the past world war, shows the nation's resolve to prevent the recurrence of the scourge of war by an act of the government. The policy imposing the acceptance of war damage on the people tramples upon the people's aspirations for peace embodied in the Constitution.

The recognition of responsibility for the

war by the State and the delivery of compensation for the A-bomb damage will lead to an institution which does not allow the imposed acceptance of nuclear war damage and the establishment of the "right to refuse nuclear war". We believe that this right will form the foundation for guaranteeing the "right to live in peace" in the nuclear era and open the way for a compensation system for any war damage, including the damage suffered by the peoples in Asia.

We want to open the "Door to Peace" before our lives end, to a Japan where the constitutional ideals prevail and a 21st century without war or nuclear weapons.

The Door should lead to a Japanese Government that will acknowledge its responsibility for war, provide State compensation for the A-bomb damage and establish the country as a nation rejecting nuclear weapons and war. And it should lead to a U.S. that will apologize for dropping the atomic bombs and embark on the abolition of nuclear weapons.

We, the Hibakusha, will continue to strive to live, tell, call and fight until we open the Door.

Declaration adopted at Japan Confederation of A-and H-Bomb Sufferers Organizations (Nihon Hidankyo), 2001.

For more on Nihon Hidankyo, see
www.ne.jp/asahi/hidankyo/nihon/english.

The Globalization of Hibakusha

Joseph Gerson

We know Hibakusha as the witness/survivors of Hiroshima and Nagasaki atomic bombings. Yet, as the numbers and circumstances of Cold War era and Post-Cold War era nuclear weapons victims come to light, Japanese Hibakusha, doctors, peace museums and the peace movement have reached out to embrace the non-Japanese Hibakusha. For the last several years, Hibakusha from the Marshall Islands, Kazakhstan, Russia, the United States and Tahiti have participated in the annual World Conference Against A & H Bombs in Hiroshima and Nagasaki, sharing their agonies and joining in the call for No More Hiroshimas! No More Nagasakis! No more Hibakusha!

A recent conference opened with a report by Nori Tohei, a Hiroshima Hibakusha. Before turning to denounce the Indian and Pakistani nuclear weapons "tests" and describing her organization's work for nuclear weapons abolition, she grounded the Conference in the hell she remembered:

> "I had been on student mobilization working at a factory located about 4 kilometers to the east of here. At 8:15 am, I saw a strong flash and felt intense heat...the window panes in the factory blew up with a huge sound and women screamed in the workshop...People who were near the widows were bathed in blood. I thought that a bomb [had] directly hit the factory...
>
> "To the west, a mushroom cloud was forming over the city of Hiroshima. It was snow-white and rising fast up in the air...While we were telling each other that something terrible had happened... and discussing what we should do, crowds of people fleeing the city came in our direction...We were speechless at the sight of this strange procession. People looked like they were wearing rags, but what we thought to be rags was actually their peeling skin. As they walked on with wobbly steps, blood dripped from their wounds, deep and wide open, as if somebody scraped out parts of their flesh...
>
> "We...departed for the city to rescue survivors. Hiroshima had been turned into a hell. When I tried to help up a man lying on the ground, his burnt skin peeled and stuck to my hands. I found a man groaning under a fallen house, but I could not save him because of the approaching fire. Bodies burnt black, injured people lying dead on the ground like objects, in agony or already dead...I spent several days in that hell trying to rescue people. In mid-September, I suddenly developed acute A-bomb disease and began suffering from high fever, bleeding and loss of hair. The atomic bomb is a weapon of the devil. It does not allow people either to live or to die in dignity as humans. It is a weapon of absolute evil, designed only to annihilate. It must not coexist with humans."

Ties between the Japanese peace movement and Marshall Islanders are deep for historical reasons. Fifteen seconds before U.S. technicians detonated the world's first Hydrogen bomb, on March 1, 1954, they learned that the wind had changed

direction and was blowing toward the inhabited island of Rongelap. Rather than delay the test, a warhead 750 times more powerful than the Hiroshima bomb was detonated. 239 Marshallese were exposed to deadly radiation, many of whom have since died.

One hundred miles away, the crew of the Japanese fishing boat Fifth Luck Dragon was confused when the sun seemed to rise in the west and the sea rumbled. They wondered if they had seen an atomic explosion. They too were showered with fallout that fell like tropical snow. By the time they returned to port, they were suffering from radiation disease. This "third atomic bombing" of Japanese ignited the Japanese peace movement.

Nelson Anjain, long the mayor of the people of Rongelap has repeatedly described their suffering from the initial fall out, how despite U.S. promises of safety they were twice forced to evacuate Rongelap, and how they are confined to Mejatto, a small nearly barren island where food and medical care are scarce and dependence has subverted their traditional life.

Urkys Ilieva, who is active with Women of the Orient, a Kazakh environmental organization, returned to Hiroshima this year. She was struggling against yet another cancer and saw Japanese doctors before and after the World Conference. Between 1949 and 1989, the Soviet Union conducted 160 atmospheric and 350 underground nuclear weapons tests (one third of which released gaseous radiation into the air) in Kazakhstan. Evidence indicates that Kazakhs are also suffering from China's nuclear weapons tests at Lop Nor. Twice, during the conference Urkys stood before us with barely controlled passion, to show us photographs of deformed infants and other dying Kazakh children while her compatriot Maidan Abishev described what the Kazakh people are suffering:

> "The extent of the nuclear massacre of the Kazakh people has not been determined by scientists and doctors due to the high cost involved in scientific, medical, genetic and demographic studies...people affected by the tests died from esophageal cancer, gastric cancer, intestinal cancer, lung cancer or leukemia. We still have a high mortality rate among children who live in the vicinity of the test site. We have a number of children with deformities...Estimates of the number of people considered to have been directly affected vary from 500,000 to 7 or 8 million."

An activist from the Hiroshima Municipal Workers' Union quoted a woman he met in the Kazakh community Zharkent, near Lop Nor: "We used to grieve at the death of people each time. But so many people die nowadays that we no longer have deep sorrow for them."

U.S. Hibakusha are estimated to number a million or more people: Western down winders poisoned by fallout and venting from nuclear weapons tests, Native Americans exposed to radiation in the mining and milling of uranium, "atomic vets" many of whom were used as guinea pigs in nuclear experimentation, and workers in warhead assembly plants like Pantex in Texas.

On the fiftieth anniversary of the Hiroshima and Nagasaki atomic bombings, Claudia Peterson of Saint George Utah told her story of being socialized to fear the Russians, of her husband who was 13 years old when his father died of lung cancer because no one had warned miners about the radon gas in the mines, of her father and her daughter dying from cancers caused by fallout, of her sister suffering from cancer, of how her story "is but one of many that can be told

by other families in [her] community," and that "We will never stop working to prevent a repeat of the mistakes and suffering at Hiroshima and Nagasaki."

Dorothy Purley, a Native American of the Navajo people from New Mexico, was accompanied in Hiroshima by her daughter Carletta Garcia. Dorothy, who has struggled with cancer, read her speech haltingly. She described how the government and the mining companies "never told the Laguna people what the uranium would be used for. They never informed my people that mining uranium ore would be dangerous." She explained that a uranium mine was opened 1,000 yards from her village and that "Everyday, the people of Laguna still endure the harmful effects of the open pit mine." Dorothy has been exposed to radiation since her birth in 1939, and when she needed money to support her daughter, she worked as a truck driver delivering uranium ore to the milling site.

The vision, wisdom and courage of Dorothy's closing words moved me deeply: "I would like to encourage all of you survivors and your loved ones to stand strong and tall. Help us to teach the rest of the world that no good can come from such mass destruction and that there are never really any winners but only victims of war. Let us leave the earth in peace and bounty. And when we pass on to the Great Spirit we will meet him with straight eyes."

Two months later, via Email from Tokyo came news: Carletta returned to the U.S. to learn that she is suffering from melanoma (a kind of cancer).

There are so many other tragic stories of women and men, boys and girls, civilians and soldiers, Central and East Asians, North Americans and Pacific Islanders, soon to be joined by those of Indian, Pakistani and Iraqi Hibakusha. Several years ago, under pine trees in Maine, a leading Japanese Hibakusha asked if people will remember the Hibakusha after they have died.

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For more on AFSC see
www.afsc.org/newengland/nepeace.htm.

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Hiroshima Unknown

Andrew Lichterman

For a long-time U.S. peace activist, a first visit to the Hiroshima Peace Memorial Museum is both momentous and paradoxical. Much that might move or shock a casual American visitor already is familiar, from the terrible images of human suffering to the facts and figures about the enormous arsenals of weapons of mass destruction still held by the world's nuclear powers. But there also is much which remains unknown, and perhaps unknowable, about the horror of the use of an atomic bomb against a city, about the annihilation of a community and its people in an instant, leaving behind a sea of ashes amidst a wider circle of suffering survivors and damaged nature.

Turning a corner in the Hiroshima Museum, I was confronted by a series of large photographs taken from a perspective seldom seen in the United States. In the country that dropped the bomb, the most common views of the Hiroshima holocaust are of the mushroom cloud, viewed from above and from a safe distance. These photos were taken from near the blast center, perhaps as close as a human being with a camera could have been and have survived. They show the mushroom cloud from below, blocking out the sky above the conflagration consuming the city's remains.

I made my visit to the Museum just before attending an arms control and disarmament conference. As I sat listening to the speakers, most of them professionals in the field, I felt a long-familiar frustration with the dry logic and sanitizing language of force and counter-force, of "deterrence," preemption, and the abstract focus on the contending interests of nation-states. Most of the presenters were people strongly committed to disarmament, but for a variety of reasons they had come over time to speak the language of arms control and to channel their energies into its forums and institutions. Stripped to the essentials, arms control is the view from the plane: it is about where, when, and how to use the bomb. Disarmament, in contrast, is the view from the ground: it is about how to keep the bomb from being dropped on you or anyone else-and how to get rid of it forever. One would hope the latter would have at least equal status with the former, since in the age of nuclear weapons, we all are potential victims. But in most "arms control and disarmament" contexts, it is the language and assumptions of arms control which prevail.

Most intellectual disciplines view the world from the perspective of those who seek to wield power to control both nature and society. This prevailing viewpoint is far more powerful than the intentions of any individual professional or "expert." It is inherent in the structure of the disciplines: what is considered important to think about, what questions can and cannot be asked. There are many disciplines designed to inform the various tasks of deploying state and corporate power, from law and criminology to public relations, finance and management to the many forms of engineering to the military sciences and arms control. There are few disciplines designed to

inform (or even to make visible) the experience of those who are the objects of state and private power: those who are sold to, taxed, propagandized, managed, disciplined, displaced, punished, tortured, and, if those in command find it necessary, annihilated. This too is no mystery. For bank robbers, banks are where the money is. For knowledge workers, the money is in the huge, increasingly interpenetrated organizations of private capital and the state.

And so it goes on. Endless conferences are held, papers presented, grants applied for and received, careers begun and retired from in the disciplines of arms control and "national security," now with histories, traditions, institutions, and material interests of their own. At the end of every process that begins within this world, the rationalized needs of one or another State, and of all states and the elites which control them, triumph over the clear existential demands of every human individual: to no longer live each day under the threat of extermination. For those on the inside, removing this threat simply is not important enough to step outside the comfortable business-as-usual of this, or any other, set of organizations that dominate modern life.

The extreme example of nuclear weapons only exposes the irrationality of the whole. We all must breathe this planet's air, drink its water, and walk the streets of cities where the violence of poverty and oppression may at any moment evoke a violent response. We will begin to make progress towards the elimination of nuclear weapons-and of the other socially-created dangers that threaten our future--only when our societies shift their priorities towards new kinds of disciplines and institutions, shaped by new kinds of thinking. These new ways of thinking must be grounded in the perspective of those who are looking up at power, up at the planes, up at the mushroom cloud.

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For more on the Western States Legal Foundation, see www.wslfweb.org.

Hiroshima and Nagasaki: Experiments in Nuclear Mass Murder

M. V. Ramana

In 1997, I gave a seminar at Jawaharlal Nehru University, Delhi where I presented my preliminary results on what would happen if a nuclear weapon were to explode over Bombay. While describing my scenario, I mentioned that the explosive yield of the hypothetical weapon I had assumed was 15 kilotons, about the same as the weapon that was dropped on Hiroshima. It was also, I told the audience, around the same as the stated yield of the "device" tested by India in 1974 in Pokharan (although there is some suggestion that the yield of this test was significantly smaller). During the question/answer session, one of the students in the audience asked me how I could possibly compare the two. Hiroshima was a barbaric attack on a civilian population; that Pokharan was a careful scientific experiment, was the gist of the student's argument.

My response at that time focused on the political implications of the 1974 test and why that was not compatible with the notion of a purely scientific experiment. Later a different answer came to me. Both Pokharan and Hiroshima were perceived in very similar ways by many people, especially scientists and engineers. In their perception, not only Pokharan but also Hiroshima and Nagasaki were experiments.

The view that the nuclear explosions over Japan were experiments was not limited to scientists who worked in the Manhattan project that developed the first nuclear weapons. An appropriate if unfortunate example comes from the 1989 debate over the construction of the Kaiga reactor held at the Indian Institute of Science, Bangalore, when a leading Department of Atomic Energy scientist reportedly said: "Hiroshima provided us with a fortunate opportunity to study radiation effects!" (Reddy, 2003) With such an attitude it is no surprise that the DAE continued with the construction of the Kaiga reactor despite the dangers to the environment and public health that the reactor posed. Or for matter with the many other nuclear fuel cycle facilities that have exposed populations to radiation with unfortunate health impacts.

Thinking about the explosions as experiments is evident both in planning for the bombing and in the sheer thoroughness with which various measurements were carried out after. Some of the thinking is on evidence in the deliberations of the US Government's "Interim Committee" which was charged with developing advice for President Harry Truman on how the new atomic bombs were to be used. The committee included academics like James Conant and Karl Compton, Presidents of Harvard University and Massachusetts Institute of Technology respectively, apart from Secretary of War Henry Stimson and Secretary of State designee James Byrnes. It also invited a panel of four scientists - Enrico Fermi, Arthur Compton, Ernest Lawrence, and Robert Oppenheimer - to advise it. Also included was the head of the Manhattan Project, Major-General Leslie Groves.

In the meetings of the Interim Committee, we have, for example, James

Conant argue that the "most desirable target" of the nuclear weapons be "a war plant employing a large number of workers and closely surrounded by workers' houses". Such a target would expose both people and a wide variety of structures to the bombs. Hiroshima and Nagasaki were therefore spared attacks with conventional bombs as part of the large scale bombing attacks that the US Air Force had undertaken over other Japanese cities, most spectacularly and destructively the fire bombing of Tokyo that killed close to a hundred thousand people. Groves opposed the idea of several simultaneous strikes on the grounds that it would forfeit "the advantage of gaining additional knowledge concerning the weapon at each successive bombing". All of these requirements reflect more the desire to learn as much as possible about the effects of these weapons rather than some kind of deliberate cruelty to Japanese civilians. What is remarkable is the absence of discussion about the likely horrific impact on civilians.

The Science Advisory Panel to the interim committee also ruled out the possibility of not targeting civilians. In its words, "The opinions of our scientific colleagues on the initial use of these weapons... range from the proposal of a purely technical demonstration to that of the military application best designed to induce surrender. Those who advocate a purely technical demonstration would wish to outlaw the use of atomic weapons and have feared that if we use the weapons now our position in future negotiations will be prejudiced. Others emphasize the opportunity of saving American lives by immediate military use, and believe that such use will improve the international prospects, in that they are more concerned with the prevention of war than the elimination of this special weapon. We find ourselves closer to these latter views; we can propose no technical demonstration likely to bring an end to the war; we can see no alternative to direct military use" (Smith, 1970, p. 50).

There was clearly much that scientists hoped to learn from the bombings. The bomb that exploded over Hiroshima was an untested design made of uranium. While few doubted that the weapon would go off, there was some uncertainty about the yield and other characteristics. The plutonium weapon dropped on Nagasaki was a tested design, but it was being exploded in the sky over a city with different structures - a setting quite different from the test site in the New Mexico desert. Finally, there were numerous questions about the effects of the explosions on people and physical objects.

The attitude of scientists to the first nuclear test at Alamogordo in July 1945 was also in accordance with thinking of it as an experiment without reflecting on the potential consequences. Though the immediate response to the explosion was one of awe, the first spoken remarks were mostly along the lines of: "well, it worked." Indeed, according to Oppenheimer's brother Frank, Robert simply exclaimed: "It worked". It was only later that Oppenheimer claimed that he had thought of the quotation from the Bhagvad Gita (for more on this, see Ramana, 2001). The chemist George Kistiakowsky rushed up to Oppenheimer to remind him of a bet they had struck on the outcome: "Oppie, you owe me ten dollars."

The immediate reactions to the bombing from the scientists at the Manhattan project are best captured by the description offered by Laura Fermi, the wife of the nuclear physicist Enrico Fermi, of the scene at the Los Alamos Laboratory when news of the explosion over Hiroshima reached them: one physicist burst into the room shouting "Our stuff worked". It was as though an experiment

had succeeded. And just as there were many who, without thinking sufficiently about the consequences of what had just been done, profusely congratulated the scientists and engineers who tested nuclear weapons in Pokharan, both in 1974 and 1998, so were there many who simply thought of the bombings of the Japanese cities as the successful culmination of many years of intense technical effort to develop these weapons. As Oppenheimer famously remarked in 1954, "When you see something that is technically sweet, you go ahead and do it and you argue about what to do about it only after you have had your technical success...That's the way it was with the atomic bomb."

And as the horrific effects of the bombing became more apparent, thanks in part to the efforts of some scientists to educate the public about the dangers posed by these new and extremely destructive weapons, other scientists tried to justify the bombings through various means. James Conant, for example, persuaded Henry Stimson to write an article in Harper's Magazine in 1947 suggesting that the atomic attacks had prevented one million casualties - the number that formed the basis for others' claims of US lives saved by the bomb (Walker, 1996).

There was, in fact, no basis for this claim. Military estimates of the number of US lives that may be lost in the first scheduled invasion, of the island of Kyushu planned for November 1, 1945, were only 31,000. Massive invasion of the country was only scheduled for Spring 1946, eight months after the bombs were dropped (Alperovitz, 1970). It is now clear without doubt that Japan would have surrendered well before these invasions without the use of atomic bombs. And yet myths once promoted stay on in popular and even "expert" memory. Fifty years later Hans Bethe, often held out as an example of a dove and a promoter of arms control, continued to justify the bombings on the basis of the baseless and discredited one million figure that Stimson offered.

As Gar Alperovitz argues, "[If] one regards what we take as the evidence of what men did at that time, on the one hand we have brilliant scientific work...These same men who diligently worked in their laboratories to find out precisely how to make the bomb had no diligence, the great majority of them, in finding out precisely what its use was to be; whether, in fact, it was as necessary as other secretaries of war and defense at that time said it was" (Alperovitz, 1970). To be sure, there were exceptions. People like Leo Szilard, Niels Bohr, James Franck, and Eugene Rabinowitch did question the necessity of the bombs and their use, and how to stop them. But they were few and did not have the power to stop the flow of events.

But other scientists took off where the Manhattan project left off. The Atomic Bomb Casualty Commission (ABCC) was established by the US government in Japan in the beginning of 1947 exclusively to collect scientific data on the long-term biological effects of the bombs. To many Japanese, the ABCC earned the onus of simply treating the hibakusha as experimental subjects a second time (Dower, 1996). As one of the foremost Japanese experts on radiation and its effects at the time of the bombing, Prof. Tsuzuki, said while presenting Phillip Morrison, who was part of the contingent of scientists sent to Japan in September 1945, with a copy of his 1926 paper on his study of radiation effects on rabbits: "Ah, but the Americans - they are wonderful. It has remained for them to conduct the human experiment!" (Wyden, 1984, p.323).

The Americans may have been the first

in experimenting on humans with massive amounts of radiation, but unfortunately the victims at Hiroshima and Nagasaki have not been the last. Since then we have had numerous instances of excessive radiation exposures - Lucky Dragon, Chernobyl, Tokai, and Kalpakkam are just some examples. The list will continue unless we achieve a world free of nuclear weapons and the technology that is inextricably tied to these weapons - nuclear energy.

Notes:

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The Monster in our Midst

Zia Mian

Writing about nuclear weapons and the United States, the American novelist E. L. Doctorow observed that "We have had the bomb on our minds since 1945. It was first our weaponry and then our diplomacy, and now it's our economy. How can we suppose that something so monstrously powerful would not, after years, compose our identity?"

This captures an important truth. But the bomb does not start from scratch in imposing its influence on a state, a society, an economy, and a culture. It works with things that are already there. It is made possible by a particular system of power and a way of living in the world. With the bomb in hand, this system grows and becomes stronger. In time, there emerges an entire nuclear complex of scientists, engineers, workers, soldiers, intellectuals, and politicians that sustain the bomb and are sustained by it. They owe each other their existence and purpose [1].

To rid ourselves of nuclear weapons means understanding both the bomb and its social, economic and cultural support system and how together they work in our world. The story of the bomb in American has much to teach us in this regard. It is a story that is longer than the sixty years since the destruction of Hiroshima and Nagasaki.

Before the Bomb

As World War II broke out in Europe, America watched. In September 1939, U.S. president Franklin Roosevelt denounced the bombing of cities and appealed to the leaders of Germany, Britain, France, Italy, and Poland to desist. Roosevelt wrote to them that "The ruthless bombing from the air of civilians in unfortified centers of population during the course of the hostilities" had "sickened the hearts of every civilized man and woman, and has profoundly shocked the conscience of humanity." He said:

"If resort is had to this form of inhuman barbarism during the period of the tragic conflagration with which the world is now confronted, hundreds of thousands of innocent human beings who have no responsibility for, and who are not even remotely participating in, the hostilities which have now broken out, will lose their lives. I am therefore addressing this urgent appeal to every government which may be engaged in hostilities publicly to affirm its determination that its armed forces shall in no event, and under no circumstances, undertake the bombardment from the air of civilian populations or of unfortified cities."

While no American city was ever subject to such bombardment, when America entered the war it joined Britain in the bombing of German cities. Then it bombed Japanese cities. In a recent film The Fog of War, former U.S. Secretary of Defense Robert McNamara explains that the U.S. bombing campaign killed 50-90% of the people in 67 Japanese cities. It was a small step from this systematic mass destruction to the development and use of the atom bomb.

Mass Destruction

The scientists who built the first atom bomb knew they were preparing a more efficient weapon of mass destruction. One particular incident sheds light on how the scientists thought about the scale of destruction that

was within reach and the most efficient ways of getting there.

In April 1943, the Italian physicist Enrico Fermi proposed to Robert Oppenheimer, the scientific head of the U.S. atomic bomb program, that a nuclear reactor might be used to produce radioactive isotopes not just for the bomb, but in large quantities to poison German food supplies. Oppenheimer found the idea "promising." But, Oppenheimer wrote to Fermi, "We should not attempt a plan unless we can poison food sufficient to kill half a million men" [2]

Other kinds of violence were unleashed too. As part of the Manhattan Project, scientists were working with unprecedented amounts and kinds of radioactive materials. They needed to know what levels of radiation exposure might be safe and what would be fatal for scientists and engineers on the project, if no one else. They started to create knowledge about radiation effects on health. They started by irradiating animals. But this was only the beginning. In the next thirty years, over 23,000 people in the United States were the subjects for 1,400 radiation experiments, in many cases without their informed consent. When details were released in December 1993, U.S. Secretary of Energy Hazel O'Leary was moved to exclaim that, "The only thing I could think of was Nazi Germany" [3].

On July 16, 1945, the world's first atomic explosion burst over the New Mexico desert. The Trinity test was conducted at a place fatefully called Jornada del Muerto (the Journey of Death). Robert Oppenheimer watched the test and famously declared "I am become death, the destroyer of worlds." The physicist I. I. Rabi had a similar but less known reflection about what scientists, including himself, had wrought [4]:

> "At first I was thrilled. It was a vision. Then a few minutes afterwards, I had gooseflesh all over me when I realized what this meant for the future of humanity. Up until then, humanity was, after all, a limited factor in the evolution and process of nature. The vast oceans, lakes and rivers, the atmosphere were not very much affected by the existence of mankind. The new powers represented a threat not only to mankind but to all forms of life: the seas and the air. One could foresee that nothing was immune from the tremendous power of these new forces."

On August 5, 1945, the United States used its atom bombs to destroy the Japanese city of Hiroshima, and on August 9, the city of Nagasaki. Over 200,000 people died immediately or within weeks from injuries. More died in subsequent months and years; the exact toll is not known. In announcing the first use of the atom bomb, President Harry Truman warned on August 6: "We are now prepared to obliterate more rapidly and completely every productive enterprise the Japanese have above ground in any city... If they do not now accept our terms they may expect a rain of ruin from the air, the like of which has never been seen on this earth."

Violence without Limits

Even before the atom bomb had been finished and used, there were suggestions from some American scientists, led by Edward Teller, for an even more terrible weapon - a hydrogen bomb.

In August 1949, after the Soviet Union detonated its first atomic bomb, there was a secret debate within the U.S. government whether to pursue the hydrogen-bomb. The committee that was set up to consider the possibility of a hydrogen bomb included Robert Oppenheimer, Enrico Fermi, and I. I. Rabi, among others. They concluded that the H-bomb could probably be built within five years, but advised against it [5]. The committee argued that "it is clear that the use of this weapon would bring about the destruction of innumerable human lives ... Its use therefore carries much further than the atomic bomb itself the policy of exterminating civilian populations."

While it was clear that the atom bomb was

a tool for a policy of extermination, the committee was divided however on how to characterize the exterminist nature of an H-bomb. The majority of the committee members argued that, "its use would involve a decision to slaughter a vast number of civilians ... Therefore, a super bomb might become a weapon of genocide." The minority view on the committee was that this statement did not go far enough. They argued the U.S. should reject the hydrogen bomb completely:

"It is clear that the use of such a weapon cannot be justified on any ethical ground which gives a human being a certain individuality and dignity even if he happens to be a resident of an enemy country. The fact that no limits exist to the destructiveness of this weapon makes its very existence and the knowledge of its construction a danger to humanity as a whole. It is necessarily an evil thing considered in any light."

The advice of the committee was ignored. The political, military, and institutional pressures of the growing nuclear complex and the Cold War prevailed. On November 1, 1952, the United States tested the first H-bomb. The Mike test, at Enewetak Atoll in the Pacific, had an explosive yield of over ten megatons, many hundreds of times more powerful than the bombs that destroyed Hiroshima and Nagasaki and more explosive power than all the bombs dropped by U.S. and British armed forces during the Second World War.

Where the United States led, others followed. First Russia, then Britain, France and China made and tested hydrogen bombs. India too has tested its hydrogen bomb, in May 1998. Pakistani nuclear weapons scientists have claimed they too could develop it if they were given the resources.

The nuclear stockpiles that were manufactured by the United States and Soviet Union, and the smaller nuclear weapon states, quickly surpassed the dangers posed by earlier measures of genocide. By 1960, only 15 years after the end of the Second World War, the United States had a nuclear war plan that would have resulted in the deaths of an estimated 360-525 million people. Robert McNamara, as then defense secretary, argued in 1962 that a "reasonable" goal for nuclear war against the Soviet Union could be the destruction of 25 per cent of its population (i.e. the death of 55 million people) and more than two-thirds of its industrial capacity [6].

Recent calculations have shown that McNamara's criteria of killing 25 per cent of the Russian population would now require only 51 modern U.S. nuclear warheads. Estimates of current arsenals in 2005 suggest that the United States has about 5,300 operational nuclear warheads (and other 5,000 on reserve), while Russia has 7,200 warheads, China has about 400, France has 350, and Britain has 200 warheads. Israel is believed to have up to 200 nuclear weapons.

It is estimated India and Pakistan have so far less than 100 warheads each. There is little solace to be had in the relatively smaller arsenals of India and Pakistan, the newest nuclear weapon states. A nuclear war between Pakistan and India in which each used only five of their nuclear weapons (each of which typically has the same yield of the bombs that destroyed Hiroshima and Nagasaki) would likely kill about three million people and severely injure another one and a half million [7].

A Nuclear Economy

The United States spent heavily on its nuclear weapons. The most reliable effort at accounting so far found that the U.S. Government never tried to keep track of how much was being spent either annually or over time on nuclear weapons. In some cases, there were no records at all [8].

The best estimate is that between 1940, when the bomb program was started, up to 1996, the United States spent nearly $5.5

trillion on nuclear weapons and weapons-related programs (in constant 1996 dollars). Most of this money was spent not on actually building the bomb, almost 90% of it went on missiles and planes and ships and submarines to carry the bombs and ensuring that the bomb could only be fired when ordered to do so.

This amount of money, it was said, would amount to a stack of dollar bills that would reach the Moon and nearly back again. But that is no useful measure. A better way to see the scale of such spending is to compare it to other things the U.S. government spent its people's money on.

The money spent on nuclear weapons over this nearly sixty year period was more than the combined total spent in this time by the United States for education, training, employment, and social services, agriculture, natural resources and the environment, general science, space, and technology, community and regional development (including disaster relief), law enforcement; and energy production and regulation. For almost sixty years, the care and feeding of the bomb was more important that that of the people it was supposed to protect.

The Nuclear Future

It is clear now that for the United States and a handful of other like-minded states, nuclear weapons have a role to play in the 21st century. While some states pursue a nuclear weapons capability, U.S. nuclear weapons designers and military planners are pushing for new weapons designs and missions. There are arguments for new bunker-buster nuclear weapons, for more reliable nuclear weapons (that will last longer), and for nuclear weapons that will be customized in their effects. This is evident in the fact that for the past decade, the US has spent over $6 billion a year on nuclear weapons, research, development and testing. The 2005 nuclear weapons budget is $6.6 billion. This is substantially larger than what it spent on these activities on average, every year throughout the Cold War [9].

The nuclear weapons complex is clear in what it desires. Stephen Younger, director of the Defense Threat Reduction Agency and former associate laboratory director for nuclear weapons at Los Alamos National Laboratory, has argued that in the post-Cold War world, the United States needs new kinds of low yield nuclear weapons because the continued U.S. "reliance on high-yield strategic (nuclear) weapons could lead to self-deterrence, a limitation of strategic options." In other words, American leaders feel reluctant to order the use of the bomb because it will summon up public memories of Hiroshima. The bomb makers want to free their leaders form this constraint. They want to give them bombs they can use.

There is also no doubt about where the bomb is to be used. Paul Robinson, the former director of Sandia National Laboratory and chairman of the policy subcommittee of the strategic advisory group for the commanders-in-chief of the U.S. Strategic Command has proposed developing a special low-yield "To Whom It May Concern" nuclear arsenal, directed at third world countries.

But these are not signs of a new nuclear age. Such thoughts were always there and identical suggestions have come from U.S. weapons laboratories before. In 1970, Harold Agnew, director of Los Alamos National Laboratory, suggested that "if people would prepare the right spectrum of tactical weapons, we might be able to knock off this sort of foolishness we now have in Vietnam and West Asia or any place else".

The United States is renewing its embrace of a nuclear arsenal in the post-Cold War world, knowing that this more deeply embeds nuclear weapons in national and international structures of political and military thinking and action. It is proof of the self-destructive qualities that create and drive the nuclear complex. This is now evi-

dent even to those who once created the monster. Former U.S. Defense Secretary and nuclear Cold warrior, Robert McNamara now says "I would characterize current U.S. nuclear weapons policy as immoral, illegal, militarily unnecessary, and dreadfully dangerous" [10].

American public opinion sees things differently. A 2005 poll found that two-thirds (66%) of Americans believe no nation should have nuclear weapons. Only 13% supported the view that "Only the United States and its allies should be allowed to have nuclear weapons." An even smaller proportion agreed with the position that "Only countries that already have nuclear weapons should be allowed to have them" [11].

It seems obvious that a peaceful and just world will be one where no state has nuclear weapons. But the struggle for peace will require more than just demanding a ban on the bomb. It will require understanding, confronting and transforming the institutions of the state and the market, the social systems of creating and sharing knowledge, the cultures that shape ways of thinking, all of which that make the bomb possible. For it is here that lie the systems of competition, exploitation, hostility, and conflict that are the true monsters.

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4. Ferenc Morton Szasz, The Day the Sun Rose Twice, University of New Mexico Press, Albuquerque, 1984.

5. Herbert F. York, The Advisors: Oppenheimer, Teller and the Superbomb, Stanford University Press, Stanford, 1976.

6. The MacNamara criterion and its effects are described in The U.S. Nuclear Wear Plan: Time for a Change, NRDC, Washington DC, 2001. On the web at www.nrdc.org/nuclear/warplan/index.asp.

7. M. McKinzie, Zia Mian, A.H. Nayyar, M.V. Ramana, "Nuclear War in South Asia, in Out of the Nuclear Shadow, eds. Smitu Kothari and Zia Mian, Lokayan/Rainbow Press, New Delhi, 2001.

8. The estimated costs of the US nuclear program are from Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons since 1940, ed. Stephen I. Schwartz, Brookings, Washington DC, 1998.

9. For recent costs of U.S. nuclear programs and the demands for new kinds of nuclear weapons see Los Alamos Study Group (www.lasg.org) and Western States Legal Foundation (www.wslfweb.org).

10. Robert McNamara, "Apocalypse Soon," Foreign Policy, May/June 2005; www.foreignpolicy.com/story/cms.php?story_id=2829.

11. The March 2005 poll was by the Associated Press and Ipsos-Public Affairs. The results are www.ap-ipsosresults.com.

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For more on the Program on Science and Global Security, see www.princeton.edu/~globsec.

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The Russell-Einstein Manifesto

Bertrand Russell and Albert Einstein
Issued in London, 9 July 1955

In the tragic situation which confronts humanity, we feel that scientists should assemble in conference to appraise the perils that have arisen as a result of the development of weapons of mass destruction, and to discuss a resolution in the spirit of the appended draft.

We are speaking on this occasion, not as members of this or that nation, continent, or creed, but as human beings, members of the species Man, whose continued existence is in doubt. The world is full of conflicts; and, overshadowing all minor conflicts, the titanic struggle between Communism and anti-Communism.

Almost everybody who is politically conscious has strong feelings about one or more of these issues; but we want you, if you can, to set aside such feelings and consider yourselves only as members of a biological species which has had a remarkable history, and whose disappearance none of us can desire.

We shall try to say no single word which should appeal to one group rather than to another. All, equally, are in peril, and, if the peril is understood, there is hope that they may collectively avert it.

We have to learn to think in a new way. We have to learn to ask ourselves, not what steps can be taken to give military victory to whatever group we prefer, for there no longer are such steps; the question we have to ask ourselves is: what steps can be taken to prevent a military contest of which the issue must be disastrous to all parties?

The general public, and even many men in positions of authority, have not realized what would be involved in a war with nuclear bombs. The general public still thinks in terms of the obliteration of cities. It is understood that the new bombs are more powerful than the old, and that, while one A-bomb could obliterate Hiroshima, one H-bomb could obliterate the largest cities, such as London, New York, and Moscow.

No doubt in an H-bomb war great cities would be obliterated. But this is one of the minor disasters that would have to be faced. If everybody in London, New York, and Moscow were exterminated, the world might, in the course of a few centuries, recover from the blow. But we now know, especially since the Bikini test, that nuclear bombs can gradually spread destruction over a very much wider area than had been supposed.

It is stated on very good authority that a bomb can now be manufactured which will be 2,500 times as powerful as that which destroyed Hiroshima. Such a bomb, if exploded near the ground or under water, sends radio-active particles into the upper air. They sink gradually and reach the surface of the earth in the form of a deadly dust or rain. It was this dust which infected the Japanese fishermen and their catch of fish. No one knows how widely such lethal radio-active particles might be diffused, but the best authorities are unanimous in saying that a war with H-bombs might possibly put an end to the human race. It is feared that if many H-bombs are used there will be universal death, sudden only for a minority, but for the majority a slow torture of disease and disintegration.

Many warnings have been uttered by eminent men of science and by authorities in military strategy. None of them will say that the worst results are certain. What they do say is that these results are possible, and no one can be sure that they will not be realized. We have not yet found that the views of experts on this question depend in any degree upon their politics or

prejudices. They depend only, so far as our researches have revealed, upon the extent of the particular expert's knowledge. We have found that the men who know most are the most gloomy.

Here, then, is the problem which we present to you, stark and dreadful and inescapable: Shall we put an end to the human race; or shall mankind renounce war? People will not face this alternative because it is so difficult to abolish war.

The abolition of war will demand distasteful limitations of national sovereignty. But what perhaps impedes understanding of the situation more than anything else is that the term "mankind" feels vague and abstract. People scarcely realize in imagination that the danger is to themselves and their children and their grandchildren, and not only to a dimly apprehended humanity. They can scarcely bring themselves to grasp that they, individually, and those whom they love are in imminent danger of perishing agonizingly. And so they hope that perhaps war may be allowed to continue provided modern weapons are prohibited.

This hope is illusory. Whatever agreements not to use H-bombs had been reached in time of peace, they would no longer be considered binding in time of war, and both sides would set to work to manufacture H-bombs as soon as war broke out, for, if one side manufactured the bombs and the other did not, the side that manufactured them would inevitably be victorious.

Although an agreement to renounce nuclear weapons as part of a general reduction of armaments would not afford an ultimate solution, it would serve certain important purposes. First, any agreement between East and West is to the good in so far as it tends to diminish tension. Second, the abolition of thermo-nuclear weapons, if each side believed that the other had carried it out sincerely, would lessen the fear of a sudden attack in the style of Pearl Harbour, which at present keeps both sides in a state of nervous apprehension. We should, therefore, welcome such an agreement though only as a first step.

Most of us are not neutral in feeling, but, as human beings, we have to remember that, if the issues between East and West are to be decided in any manner that can give any possible satisfaction to anybody, whether Communist or anti-Communist, whether Asian or European or American, whether White or Black, then these issues must not be decided by war. We should wish this to be understood, both in the East and in the West.

There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? We appeal as human beings to human beings: Remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death.

Resolution:

We invite this Congress, and through it the scientists of the world and the general public, to subscribe to the following resolution:

"In view of the fact that in any future world war nuclear weapons will certainly be employed, and that such weapons threaten the continued existence of mankind, we urge the governments of the world to realize, and to acknowledge publicly, that their purpose cannot be furthered by a world war, and we urge them, consequently, to find peaceful means for the settlement of all matters of dispute between them."

Signatories:

Max Born
Percy W. Bridgman
Albert Einstein
Leopold Infeld
Frederic Joliot-Curie
Herman J. Muller
Linus Pauling
Cecil F. Powell
Joseph Rotblat
Bertrand Russell
Hideki Yukawa

Remember Your Humanity

Joseph Rotblat

Your Majesties, Members of the Nobel Committee, Your Excellencies, Officers and Participants in the Pugwash Conferences, Ladies and Gentlemen:

At this momentous event in my life - the acceptance of the Nobel Peace Prize - I want to speak as a scientist, but also as a human being. From my earliest days I had a passion for science. But science, the exercise of the supreme power of the human intellect, was always linked in my mind with benefit to people. I saw science as being in harmony with humanity. I did not imagine that the second half of my life would be spent on efforts to avert a mortal danger to humanity created by science.

The practical release of nuclear energy was the outcome of many years of experimental and theoretical research. It had great potential for the common good. But the first the general public learned about this discovery was the news of the destruction of Hiroshima by the atom bomb. A splendid achievement of science and technology had turned malign. Science became identified with death and destruction.

It is painful to me to admit that this depiction of science was deserved. The decision to use the atom bomb on Japanese cities, and the consequent build up of enormous nuclear arsenals was made by governments, on the basis of political and military perceptions. But scientists on both sides of the iron curtain played a very significant role in maintaining the momentum of the nuclear arms race throughout the four decades of the Cold War.

The role of scientists in the nuclear arms race was expressed bluntly by Lord Zuckerman, for many years Chief Scientific Adviser to the British Government:

> "When it comes to nuclear weapons... it is the man in the laboratory who at the start proposes that for this or that arcane reason it would be useful to improve an old or to devise a new nuclear warhead. It is he, the technician, not the commander in the field, who is at the heart of the arms race."

Long before the terrifying potential of the arms race was recognized, there was a widespread instinctive abhorrence of nuclear weapons, and a strong desire to get rid of them. Indeed, the very first resolution of the General Assembly of the United Nations - adopted unanimously - called for the elimination of nuclear weapons. But the world was then polarized by the bitter ideological struggle between East and West. There was no chance to meet this call. The chief task was to stop the arms race before it brought utter disaster. However, after the collapse of communism and the disintegration of the Soviet Union, any rationale for having nuclear weapons disappeared. The quest for their total elimination could be resumed. But the nuclear powers still cling tenaciously to their weapons.

Let me remind you that nuclear disarmament is not just an ardent desire of the

people, as expressed in many resolutions of the United Nations. It is a legal commitment by the five official nuclear states, entered into when they signed the Non-Proliferation Treaty. Only a few months ago, when the indefinite extension of the Treaty was agreed, the nuclear powers committed themselves again to complete nuclear disarmament. This is still their declared goal. But the declarations are not matched by their policies, and this divergence seems to be intrinsic.

Since the end of the Cold War the two main nuclear powers have begun to make big reductions in their nuclear arsenals. Each of them is dismantling about 2000 nuclear warheads a year. If this programme continued, all nuclear warheads could be dismantled in little over ten years from now. We have the technical means to create a nuclear-weapon-free world in about a decade. Alas, the present programme does not provide for this. When the START-2 treaty has been implemented - and remember it has not yet been ratified - we will be left with some 15,000 nuclear warheads, active and in reserve. Fifteen thousand weapons with an average yield of 20 Hiroshima bombs.

Unless there is a change in the basic philosophy, we will not see a reduction of nuclear arsenals to zero for a very long time, if ever. The present basic philosophy is nuclear deterrence. This was stated clearly in the US Nuclear Posture Review which concluded: "Post-Cold War environment requires nuclear deterrence," and this is echoed by other nuclear states. Nuclear weapons are kept as a hedge against some unspecified dangers.

This policy is simply an inertial continuation from the Cold War era. The Cold War is over but Cold War thinking survives. Then, we were told that a world war was prevented by the existence of nuclear weapons. Now, we are told that nuclear weapons prevent all kinds of war. These are arguments that purport to prove a negative. I am reminded of a story told in my boyhood, at the time when radio communication began:

Two wise men were arguing about the ancient civilization in their respective countries. One said: "y country has a long history of technological development: we have carried out deep excavations and found a wire, which shows that already in the old days we had the telegraph." The other man retorted: "we too made excavations; we dug much deeper than you and found ... nothing, which proves that already in those days we had wireless communication!"

There is no direct evidence that nuclear weapons prevented a world war. Conversely, it is known that they nearly caused one. The most terrifying moment in my life was October 1962, during the Cuban Missile Crisis. I did not know all the facts - we have learned only recently how close we were to war - but I knew enough to make me tremble. The lives of millions of people were about to end abruptly; millions of others were to suffer a lingering death; much of our civilization was to be destroyed. It all hung on the decision of one man, Nikita Khrushchev: would he or would he not yield to the US ultimatum? This is the reality of nuclear weapons: they may trigger a world war; a war which, unlike previous ones, destroys all of civilization.

As for the assertion that nuclear weapons prevent wars, how many more wars are needed to refute this argument? Tens of millions have died in the many wars that have taken place since 1945. In a number of them nuclear states were directly involved. In two they were actually defeated. Having nuclear weapons was of no use to them.

To sum up, there is no evidence that a world without nuclear weapons would be

a dangerous world. On the contrary, it would be a safer world, as I will show later.

We are told that the possession of nuclear weapons - in some cases even the testing of these weapons - is essential for national security. But this argument can be made by other countries as well. If the militarily most powerful - and [therefore] least threatened - states need nuclear weapons for their security, how can one deny such security to countries that are truly insecure? The present nuclear policy is a recipe for proliferation. It is a policy for disaster.

To prevent this disaster - for the sake of humanity - we must get rid of all nuclear weapons.

Achieving this goal will take time, but it will never happen unless we make a start. Some essential steps towards it can be taken now. Several studies, and a number of public statements by senior military and political personalities, testify that - except for disputes between the present nuclear states - all military conflicts, as well as threats to peace, can be dealt with using conventional weapons. This means that the only function of nuclear weapons, while they exist, is to deter a nuclear attack. All nuclear-weapon states should now recognize that this is so, and declare - in treaty form - that they will never be the first to use nuclear weapons. This would open the way to the gradual, mutual reduction of nuclear arsenals, down to zero. It would also open the way for a Nuclear Weapons Convention. This would be universal - it would prohibit all possession of nuclear weapons.

We will need to work out the necessary verification system to safeguard the Convention. A Pugwash study produced suggestions on these matters. The mechanism for negotiating such a convention already exists. Entering into negotiations does not commit the parties. There is no reason why they should not begin now. If not now, when?

So I ask the nuclear powers to abandon the out-of-date thinking of the Cold War period and take a fresh look. Above all, I appeal to them to bear in mind the long-term threat that nuclear weapons pose to humankind and to begin action towards their elimination. Remember your duty to humanity.

My second appeal is to my fellow scientists. I described earlier the disgraceful role played by a few scientists, caricatured as "Dr Strangeloves," in fuelling the arms race. They did great damage to the image of science.

On the other side there are the scientists, in Pugwash and other bodies, who devote much of their time and ingenuity to averting the dangers created by advances in science and technology. However, they embrace only a small part of the scientific community. I want to address the scientific community as a whole.

You are doing fundamental work, pushing forward the frontiers of knowledge, but often you do it without giving much thought to the impact of your work on society. Precepts such as 'science is neutral' or 'science has nothing to do with politics' still prevail. They are remnants of the ivory tower mentality, although the ivory tower was finally demolished by the Hiroshima bomb.

Here, for instance, is a question: Should any scientist work on the development of weapons of mass destruction? A clear "no" was the answer recently given by Hans Bethe. Professor Bethe, a Nobel Laureate, is the most senior of the surviving members of the Manhattan Project. On the occasion of the 50th Anniversary of Hiroshima, he issued a statement that I will quote in full:

"As the Director of the Theoretical Division of Los Alamos, I participated at the most senior level in the World War II Manhattan Project that produced the first atomic weapons.

"Now, at age 88, I am one of the few remaining such senior persons alive. Looking back at the half century since that time, I feel the most intense relief that these weapons have not been used since World War II, mixed with the horror that tens of thousands of such weapons have been built since that time - one hundred times more than any of us at Los Alamos could ever have imagined.

"Today we are rightly in an era of disarmament and dismantlement of nuclear weapons. But in some countries nuclear weapons development still continues. Whether and when the various Nations of the World can agree to stop this is uncertain. But individual scientists can still influence this process by withholding their skills.

"Accordingly, I call on all scientists in all countries to cease and desist from work creating, developing, improving and manufacturing further nuclear weapons - and, for that matter, other weapons of potential mass destruction such as chemical and biological weapons."

If all scientists heeded this call there would be no more new nuclear warheads; no French scientists at Mururoa; no new chemical and biological poisons. The arms race would be over.

But there are other areas of scientific research that may directly or indirectly lead to harm to society. This calls for constant vigilance. The purpose of some governmental or industrial research is sometimes concealed, and misleading information is presented to the public. It should be the duty of scientists to expose such malfeasance. 'Whistle-blowing' should become part of the scientist's ethos. This may bring reprisals; a price to be paid for one's convictions. The price may be very heavy, as illustrated by the disproportionately severe punishment of Mordechai Vanunu. I believe he has suffered enough.

The time has come to formulate guidelines for the ethical conduct of scientists, perhaps in the form of a voluntary Hippocratic Oath. This would be particularly valuable for young scientists when they embark on a scientific career. The US Student Pugwash Group has taken up this idea - and that is very heartening.

At a time when science plays such a powerful role in the life of society, when the destiny of the whole of mankind may hinge on the results of scientific research, it is incumbent on all scientists to be fully conscious of that role, and conduct themselves accordingly. I appeal to my fellow scientists to remember their responsibility to humanity.

My third appeal is to my fellow citizens in all countries: Help us to establish lasting peace in the world.

I have to bring to your notice a terrifying reality: with the development of nuclear weapons, Man has acquired, for the first time in history, the technical means to destroy the whole of civilization in a single act. Indeed, the whole human species is endangered, by nuclear weapons or by other means of wholesale destruction which further advances in science are likely to produce.

I have argued that we must eliminate nuclear weapons. While this would remove the immediate threat, it will not provide permanent security. Nuclear weapons cannot be disinvented. The knowledge of how to make them cannot be erased. Even in a nuclear-weapon-free world, should any of the great powers

become involved in a military confrontation, they would be tempted to rebuild their nuclear arsenals. That would still be a better situation than the one we have now, because the rebuilding would take a considerable time, and in that time the dispute might be settled. A nuclear-weapon-free world would be safer than the present one. But the danger of the ultimate catastrophe would still be there.

The only way to prevent it is to abolish war altogether. War must cease to be an admissible social institution. We must learn to resolve our disputes by means other than military confrontation.

This need was recognized forty years ago when we said in the Russell-Einstein Manifesto: "Here then is the problem which we present to you, stark and dreadful, and inescapable: shall we put an end to the human race: or shall mankind renounce war?"

The abolition of war is also the commitment of the nuclear weapon states: Article VI of the NPT calls for a treaty on general and complete disarmament under strict and effective international control.

Any international treaty entails some surrender of national sovereignty, and is generally unpopular. As we said in the Russell-Einstein Manifesto: "The abolition of war will demand distasteful limitations of national sovereignty."

Whatever system of governance is eventually adopted, it is important that it carries the people with it. We need to convey the message that safeguarding our common property, humankind, will require developing in each of us a new loyalty: a loyalty to mankind. It calls for the nurturing of a feeling of belonging to the human race. We have to become world citizens.

Notwithstanding the fragmentation that has occurred since the end of the Cold War, and the many wars for recognition of national or ethnic identities, I believe that the prospects for the acceptance of this new loyalty are now better than at the time of the Russell-Einstein Manifesto. This is so largely because of the enormous progress made by science and technology during these 40 years. The fantastic advances in communication and transportation have shrunk our globe. All nations of the world have become close neighbours. Modern information techniques enable us to learn instantly about every event in every part of the globe. We can talk to each other via the various networks. This facility will improve enormously with time, because the achievements so far have only scratched the surface. Technology is driving us together. In many ways we are becoming like one family.

In advocating the new loyalty to mankind I am not suggesting that we give up national loyalties. Each of us has loyalties to several groups - from the smallest, the family, to the largest, at present, the nation. Many of these groups provide protection for their members. With the global threats resulting from science and technology, the whole of humankind now needs protection. We have to extend our loyalty to the whole of the human race.

What we are advocating in Pugwash, a war-free world, will be seen by many as a Utopian dream. It is not Utopian. There already exist in the world large regions, for example, the European Union, within which war is inconceivable. What is needed is to extend these to cover the world's major powers.

In any case, we have no choice. The alternative is unacceptable. Let me quote the last sentence of the Russell-Einstein Manifesto: "We appeal, as human beings, to human beings: Remember your

humanity and forget the rest. If you can do so, the way lies open to a new paradise; if you cannot, there lies before you the risk of universal death."

The quest for a war-free world has a basic purpose: survival. But if in the process we learn how to achieve it by love rather than by fear, by kindness rather than by compulsion; if in the process we learn to combine the essential with the enjoyable, the expedient with the benevolent, the practical with the beautiful, this will be an extra incentive to embark on this great task.

Above all, remember your humanity.

Professor Joseph Rotblat is Founder and President of the Pugwash Council. This is his lecture on receipt of the Nobel Peace Prize, 10 December 1995.

For more on Pugwash, see www.pugwash.org/index.htm.

The Power of Protest

Lawrence S. Wittner

One of the most striking facts about the modern world is that, for the past 58 years, we have managed to avoid nuclear war. After all, a nation that has developed weapons tends to use them. For example, immediately after the United States built nuclear weapons, it employed them to destroy Japanese cities. Just as startling, a nation that has devoted vast resources to developing weapons usually does not get rid of them-at least not until it develops more powerful ones.

But since August 1945 no nation has attacked another with nuclear weapons, and only a relatively small number of nations have chosen to build them. Also, those nations that have developed nuclear weapons have for the most part accepted nuclear arms control and disarmament measures: the Partial Test Ban Treaty; the Strategic Arms Limitation treaties (I and II); the Intermediate-Range Nuclear Forces Treaty; the Strategic Arms Reduction treaties (I and II); and the Comprehensive Test Ban Treaty. Why have they adopted these policies of nuclear restraint?

The answer lies in a massive grassroots campaign that has mobilized millions of people around the globe: the world nuclear disarmament movement. Indeed, the history of nuclear restraint without the nuclear disarmament movement is like the history of civil rights legislation without the civil rights movement.

A message from the masses

Nuclear restraint did not come naturally to government officials, who initially viewed nuclear weapons as useful additions to their nations' military might.

This certainly included U.S. officials. Learning of the successful destruction of Hiroshima, President Harry Truman called the atomic bomb "the greatest thing in history" and moved forward with the nuclear annihilation of Nagasaki. He also ordered the creation of a vast nuclear arsenal for the United States, including hydrogen bombs.

Truman's successor, Dwight Eisenhower, came to office with no interest whatsoever in nuclear arms control or disarmament. Instead, Eisenhower favored what he called "massive retaliation" and the integration of nuclear weapons into conventional war. Nuclear weapons, Eisenhower declared, should "be used exactly as you would use a bullet or anything else." John F. Kennedy campaigned for the presidency by pledging a U.S. nuclear buildup to close the supposed "missile gap" between the United States and the Soviet Union.

Even Jimmy Carter-as much a man of peace as any who has reached the White House-championed the development of the neutron bomb and the MX missile. Ronald Reagan, of course, entered office as an opponent of every nuclear arms control treaty signed by his Democratic and Republican predecessors. Furthermore, he talked glibly about fighting and winning nuclear wars. His successor, George H. W. Bush, halted nuclear arms control and disarmament negotiations in one of his first acts in office.

But they all came around to rejecting nuclear war and championing nuclear arms control and disarmament measures.

This reversal occurred because of a massive, worldwide campaign of public protest against the nuclear arms race and nuclear war. Atomic scientists, pacifists, profession-

al groups, religious bodies, unions, intellectuals, and just plain folks were horrified at the nuclear recklessness of government officials-including their own-and demanded nuclear disarmament. Powerful anti-nuclear groups sprang up around the world. In the United States, they included the Federation of American Scientists, the Committee for a Sane Nuclear Policy (SANE), Women Strike for Peace, Physicians for Social Responsibility, and the Nuclear Weapons Freeze Campaign. These constituencies demanded that the nuclear arms race stop, that nuclear disarmament begin, and that nuclear war be banned. For the most part, the general public agreed. During the 1980s, polls found that 70 to 80 percent of Americans supported the Nuclear Freeze proposal for a Soviet- American treaty to halt the testing, development, and deployment of nuclear weapons. The waging of nuclear war inspired widespread popular revulsion.

This public resistance to nuclear weapons startled government officials and gradually pushed them back from implementing their nuclear ambitions. As U.S. Secretary of State John Foster Dulles put it, there had developed "a popular and diplomatic pressure for limitation of armament that cannot be resisted by the United States without our forfeiting the good will of our allies and the support of a large part of our own people." When the Soviet Union began a unilateral halt to nuclear testing in 1958, the U.S. government could no longer resist. Testing was "not evil," Eisenhower remarked in exasperation, but "people have been brought to believe that it is!" And so the U.S. and British governments joined the Russians in halting nuclear testing. When some Eisenhower administration officials called for greater flexibility in the use of nuclear weapons, the president brushed them off. "The use of nuclear weapons," he said, "would raise serious political problems in view of the current state of world opinion."

The Kennedy administration also felt besieged by protests against nuclear weapons. According to the minutes of a November 1961 National Security Council meeting, "the President voiced doubts that we could ever test in Nevada again for domestic political reasons," while the U.S. ambassador to the United Nations, Adlai Stevenson, "pointed up the difficulty of testing at Eniwetok." Ultimately, Kennedy turned to Norman Cousins, the founder and co-chair of SANE, and urged him to use his meeting with Nikita Khrushchev to smooth the path toward a nuclear test ban treaty. That's just what Cousins did, and the result was the Partial Test Ban Treaty of 1963. Jerome Wiesner, Kennedy's White House science adviser, gave the major credit for the treaty to SANE and Women Strike for Peace. According to McGeorge Bundy, Kennedy's national security adviser, the treaty "was achieved primarily by world opinion."

When it came to the Vietnam War, Bundy recalled, the U.S. government did not dare to use nuclear weapons. Why? There would have been a terrible public reaction abroad, Bundy said; even more significant was the prospect of public upheaval in the United States, for-as he recalled-"no president could hope for understanding and support from his own countrymen if he used the bomb." Explaining his own restraint in the war, Richard Nixon recalled bitterly that, had he used nuclear weapons or bombed North Vietnamese dikes, "The resulting domestic and international uproar would have damaged our foreign policy on all fronts."

Taking "yes" for an answer

Even the hawkish Ronald Reagan had the good sense to get out of the way of the political steamroller. In an effort to dampen popular protest against his nuclear buildup, he endorsed the "zero option"-a proposal to remove all the intermediate range nuclear missiles from Europe. Then

he dropped plans to deploy the neutron bomb. Then he agreed to abide by the provisions of SALT II-though it was never ratified and, during the 1980 campaign, he had condemned it as an act of "appeasement." Although Reagan proceeded with the deployment of U.S. missiles in Western Europe, he was so rattled by the massive protests against them that, in October 1983, he told his startled secretary of state: "If things get hotter and hotter and arms control remains an issue, maybe I should go see [Soviet Premier Yuri] Andropov and propose eliminating all nuclear weapons." And, despite protests from his advisers, he did propose that, in a remarkable speech in January 1984. Moreover, as early as April 1982 he began declaring publicly that "a nuclear war cannot be won and must never be fought." He added, "To those who protest against nuclear war, I can only say: 'I'm with you!'"

All this happened during Reagan's first term in office, during the reigns of Leonid Brezhnev, Andropov, and Konstantin Chernenko in the Soviet Union-before the advent of Mikhail Gorbachev. Gorbachev's rise to power in March 1985 removed the Soviet stumbling block in the path of arms control and disarmament agreements, for the new Soviet party leader was a movement convert. Gorbachev's "New Thinking"-by which he meant the necessity for peace and disarmament in the nuclear age-came from a well-known anti-nuclear statement by Albert Einstein in 1946, reiterated in the famous Russell-Einstein appeal of 1955. Gorbachev's advisers have frequently pointed to the powerful influence of the nuclear disarmament campaign upon the Soviet leader, and Gorbachev himself declared that the new thinking took into consideration the conclusions and demands of the antiwar organizations and anti-nuclear activists.

Gorbachev met frequently with leaders of the nuclear disarmament movement and often followed their suggestions. On the advice of nuclear disarmament activists, he initiated and later continued a unilateral Soviet nuclear testing moratorium, decided against building a Star Wars antimissile system, and split the issue of Star Wars from the Intermediate- Range Nuclear Forces Treaty, thus taking the crucial step toward the 1987 agreement that removed all intermediate-range nuclear missiles from Europe.

When Gorbachev suddenly called the U.S. bluff by agreeing to remove all Soviet missiles from Europe (the zero option), it horrified NATO's hawks-including Margaret Thatcher in Britain, the Christian Democrats in West Germany, and key Republican leaders in the United States, such as Robert Dole, Jesse Helms, and Henry Kissinger. But, as U.S. Secretary of State George Shultz recalled: "If the United States reversed its stand now such a reversal would be political dynamite!" Or, as Kenneth Adelman, Reagan's hawkish director of the Arms Control and Disarmament Agency put it: "We had to take yes for an answer."

In response to anti-nuclear agitation during these years, there were also important shifts in other lands. New Zealand banned nuclear warships in its ports; Australia refused to test MX missiles. India halted work on nuclear weapons, and its prime minister, Rajiv Gandhi, joined with Gorbachev in calling for nuclear abolition. The Philippines adopted a nuclear-free constitution and shut down U.S. military bases that housed nuclear weapons. South Africa scrapped its nuclear weapons program. No new nations joined the nuclear club.

Although the movement began to decline in the late 1980s, it retained some influence. President George H. W. Bush and his secretary of state, James Baker, felt that Reagan had moved too fast and too far toward nuclear disarmament and abruptly halted disarmament negotiations. But their reluctance soon collapsed.

The U.S. and British governments wanted to significantly upgrade short-range nuclear forces in Western Europe. However, a number of West European governments, frightened at the prospect of a revival of public protest, resisted. When Gorbachev unilaterally removed short-range missiles from Eastern Europe, thus encouraging popular protests against the missiles in Western Europe, Baker was horrified. "We were losing the battle for public opinion. We had to do something," he wrote in his memoirs. "NATO could not afford another crisis over deploying nuclear weapons. The alliance would not be able to survive." Thus, the Bush administration backed off and agreed to negotiate missile reductions. Eventually, in a sharp departure from past practice, it unilaterally withdrew its short-range missiles from Western Europe.

Stopping the tests

The impact of the anti-nuclear movement upon nuclear testing was even more direct. Since the mid-1980s, disarmament groups around the world had been working to stop underground nuclear weapons explosions. Thanks to their pleas, Gorbachev initiated and continued his unilateral nuclear testing moratorium. But, after 18 months of Reagan administration rebuffs to the moratorium and to a test ban treaty, in February 1987 the Soviets resumed testing. This setback, however, only heightened anti-nuclear agitation.

Protesters organized large demonstrations at the Nevada Test Site. Police arrested thousands of Americans each year for non-violent civil disobedience. Inspired by these actions, a massive Nevada-Semipalatinsk nuclear disarmament movement emerged in the Soviet Union, eventually forcing the closure of the Soviet nuclear test sites.

Meanwhile, sympathetic members of Congress introduced a variety of bills to halt U.S. nuclear testing. In 1991, pressed hard by disarmament groups, they pushed for action again. The final legislation, passed in the summer of 1992, halted underground nuclear testing for nine months, placed strict conditions on further U.S. testing, and required test ban negotiations and an end to U.S. testing by late 1996.

Having halted U.S. and Soviet nuclear testing, the movement pushed on in the following years to secure the Comprehensive Test Ban Treaty (CTBT). During his presidential campaign, ill Clinton-recognizing the popular appeal of ending nuclear testing-had pledged to support the test ban treaty. But after he entered the White House in January 1993, Clinton began to renege. Disarmament groups and anti-nuclear members of Congress stirred up a test-ban campaign later that year, and the administration extended the U.S. nuclear testing moratorium, pressed other nuclear powers to join it, and began worldwide efforts to secure a treaty. Finally, in September 1996, representatives of countries around the world celebrated the signing of the CTBT. Speaking at the U.N. ceremonies, U.S. Ambassador Madeleine Albright declared: "This was a treaty sought by ordinary people everywhere, and today the power of that universal wish could not be denied."

That is the good news.

What can be done?

The bad news is that since the end of the Cold War popular pressure against nuclear weapons has waned, and-as a result-hawkish government officials have felt freer to go about their traditional business of preparing for war, including nuclear war. India and Pakistan became nuclear weapons powers and threatened one another with nuclear annihilation. The U.S. Senate rejected ratification of the CTBT. And the administration of George W. Bush- playing upon fears generated by 9/11-has withdrawn from the Anti-

Ballistic Missile Treaty, opposed the CTBT, and laid plans for building new nuclear weapons.

Decades of struggle against the bomb offer some strategic lessons. One is that the threat nuclear weapons pose to human survival provides a very effective basis for sparking mass mobilization against them. Even so, playing on fear can backfire, for hawkish forces can use it to make the case for more nuclear weapons. Consequently, disarmament advocates must not only stress the dangers of a nuclear buildup, but also provide a practical, positive alternative. On a short-term basis, this means nuclear arms control and disarmament under international control; on a long-term basis, the strengthening of international authority in order to prevent war and aggression.

Furthermore, because the mass media usually avoid discussing nuclear weapons issues and because much of the public would prefer not to think about nuclear annihilation, many people are ignorant about their governments' nuclear ambitions. Therefore, to stir up mass mobilization against nuclear weapons, disarmament groups must work overtime at raising popular consciousness about what governments are doing to prepare for nuclear war.

Finally, in order to develop that consciousness-raising campaign, as well as sensible alternatives to preparing for nuclear war, disarmament groups (and other civil society organizations) need to adopt a common focus for their efforts. They did this (more or less) in connection with halting nuclear testing, coordinating the European Nuclear Disarmament campaign, and organizing the Nuclear Freeze campaign.

There are also more profound lessons. Left to themselves, governments will gravitate toward nuclear weapons and nuclear war as a means of defending national interests. Nor is this surprising, for the nation-state system has produced arms races and wars throughout its history. Fortunately, nations can be compelled to reverse themselves. When the nuclear disarmament movement has mobilized substantial popular pressure, it has succeeded in curbing the nuclear arms race and preventing nuclear war.

What the movement has done before, it can do again.

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On August 6

Greg Mello

On August 6, 1945, at 8:15 in the morning local time, a ball of white fire appeared in the air 1,970 feet above Hiroshima, near the Aioi Bridge. The brilliance of the rapidly expanding ball instantly filled the city like liquid fire, brighter than anything a naked living eye had ever seen or could see, annihilating everything. Neither could anyone see those other rays, intense and invisible, that also bathed the city, grievously harming the life they touched.

In one second, the white ball expanded to 1,500 feet in diameter. Over the next two seconds it hung there horribly a few hundred feet above the doomed city, like a mistaken sun. By the end of the third second, the huge ball was still very bright, but for those whose eyes could still see or whose skin still feel, the burning intensity of light was already fading.

It was, after all, an early experiment. A few years later, the laboratory that made this white ball would find a way to make the all-consuming light last much longer - up to a minute, an eternity at such intensity. In the late 1950s and early 1960s, when the huge new bombs were tested, the fire came in vast spheres that grew to miles in diameter, charring the flesh of caged experimental animals over hundreds of square miles and burning all feathered life from the sky 20 or more miles away. On August 6, 1945, however, those advances in technique were still to come.

On the day of the first nuclear attack, 13-year-old Shigeko Sasamori was standing in the street about 1 mile from the center of the ball of light. Now, as the whiteness faded, her clothes were burning. Her skin was boiling away and her face was smoking. Then the first blast wave came, and Shigeko was slapped to the ground as if by a giant's hand. She got up.

The main shock wave came then. To those eyes miles above in the three silver airplanes, it looked like a pale, shimmering bubble expanding in the air. For Shigeko on the ground, hidden from their eyes by the black smoke and dust already mixed by the giant's hand, it came as another hard blow, with winds of 150 miles per hour. Tiles and rocks and pieces of glass came in it, and lumber was hurtled like spears. Shigeko was knocked down again, and for a while she couldn't see anything.

In fact, no one could see. The bright morning was gone as if it too had been crushed by the sudden, unearthly light. All was now dark - completely dark. In the dark, 10,000 fires began to grow.

At this point, just 10 seconds had passed since the white ball had appeared. In that short time, humanity's prospects changed. Whole worlds of possibility were now passing away, not just for the people dying around Shigeko but for everyone. Those who watched from above the mushroom cloud couldn't see this. They were too far away. They are always too far away.

Now, sixty years later, the darkness that began at Hiroshima has not been dispelled. The peace brought by the giant bomb was so badly deformed it was called a new war - a "cold" war. In that war, dozens of "hot" wars were fought, and millions of people were

killed. Tens of trillions of dollars were diverted from human needs. Millions of people starved or died of preventable diseases, or else lived in wretched poverty, helpless and hopeless. It was indeed a cold war - very cold. And before it quite ended, the next big war began, the perpetual, omnipresent "War on Terror," also known as the "Petroleum War" or "The War for Our Vanishing Way of Life." The coldness has not let up, and the promise of peace burned away by the white ball sixty years ago has not returned. Not yet.

The miracle

Despite extensive burns, Shigeko Sasamori would live. As fate would have it, she had been so exhausted that morning that she put on a second pair of pants over the ones she was already wearing, which protected her lower body just long enough to keep her legs from burning. Her head, however, was so completely burned that her parents could not even tell the front of her head from the back. And in those first three seconds after the white ball appeared, her fingers, ears and nose partly boiled away.

Shigeko's parents eventually found her lying in a makeshift first-aid station. For weeks she hovered between life and death. Very gradually she healed, but remained badly disfigured and, like the other young survivors, socially stigmatized.

Ten years after these horrific events, in 1955, Norman Cousins, a well-known American journalist and leader in the small but influential nuclear-disarmament movement, brought Shigeko and 24 other badly burned young women to Mt. Sinai Hospital in New York. There they received extensive reconstructive surgery.

Later, she would struggle with thyroid and stomach cancer. Always, she would live with bomb-related ailments. But Shigeko had been given a new life. She stayed in the United States, became a nurse, married and had a son, who is an attorney in Los Angeles. Shigeko, now 73, works tirelessly for nuclear disarmament.

It was nothing less than a miracle that Shigeko, so badly burned, recovered - a miracle of life and attentive, selfless love. Surely it is just the same kind of miracle, ever creative and new, that has sustained and renewed life on this planet so far, a miracle in which each one of us participates today. Except for certain occasions, we usually don't see this creation any more than the men in the airplanes could see the destruction they caused. We, like they, are just too distant, too estranged.

Unlike Shigeko, the government that dropped an atomic bomb on Hiroshima, and another one three days later on Nagasaki, has never recovered. Far from backing away from apocalyptic violence after this experience, the U.S. quickly went on to build as many nuclear weapons as possible. By 1949, when Russia tested its first bomb, senior officers were openly advocating the preemptive annihilation of Russia - genocide, in other words. Prompt, intentional and complete destruction of the enemy - contingent, anticipatory genocide - became official policy.

It still is today.

Staying the course

Not everyone involved wanted to drop those bombs in 1945. We now know they were dropped over the strenuous objections of many senior U.S. military and civilian leaders and over the objections of many scientists as well. But the men who ran the war had by then firebombed over 60 Japanese cities, and they were not in a mood to listen. Even after Nagasaki, and after the Japanese emperor had announced surrender over the radio, the War Department conducted a massive 1,000-bomber raid, the biggest in the Pacific war.

By August 6, it wasn't about defeating

Japan - that country was already defeated. The few senior U.S. leaders "in" on the secret of the bomb were then focused on much more than just victory in war. They also believed the bomb, if adequately demonstrated, would give the U.S. a "master card" in postwar diplomacy. At the top levels in the Manhattan Project, the "speedup" for the Trinity test was not driven by anything happening in the Pacific but by the impending negotiations with Stalin at Potsdam. After Trinity, the leaders at Los Alamos were quietly told they absolutely had to use the bombs prior to August 15, for reasons not explained.

As Nobel Prize-winning physicist Patrick Blackett - whom future Los Alamos director Robert Oppenheimer apparently had tried to kill with a poisoned apple in the fall of 1925 - observed soon after the war, those nuclear attacks were less the conclusion of one war than the initial shots in a new cold war with Soviet Russia. General Groves, who ran the Manhattan Project, had privately said exactly that in 1944 [1].

To be valuable diplomatically, the new bomb had to be demonstrated spectacularly, meaning on real cities with real people. Those in charge were not about to forgo that demonstration, no matter how defeated Japan might be. They also believed it was important to end the war very quickly, not so much to save American lives as to limit the ability of the Soviet Union, which would enter the Pacific war on August 9, to gain territory and influence in East Asia.

Thus it was that the machine created to bomb Japan, a machine in which the bomber crew high above Hiroshima and the scientists in New Mexico were cogs, had attained its own kind of critical mass. The goal was now a maximum of violence itself - maximum shock and awe, in more modern terms. Few in positions of responsibility at the time recognized the full extent of what was happening because, like the white ball that appeared over Hiroshima, the inherent violence of the enterprise, once it was set up, was wholly unprecedented in its scale, efficiency, scope.

The war ended, but the institutions, financial relationships and inverted ideals of the Manhattan Project did not. It was huge by then - a system of secrecy and compartmentalization, of paranoia and deception, staffed by the best and brightest and funded extravagantly outside all congressional oversight. The entire apparatus had been brought into being to create an instrument of absolute violence, what Secretary of War Henry Stimson hoped would be the old Roman ultima ratio, the "ultimate arbiter of force." After the war, and despite the efforts of many scientists, that mission remained. The Manhattan Project soon morphed into the Atomic Energy Commission, but the quest for bigger, better, and more numerous weapons remained its central organizing principle.

The white ball had made the world deeply uncertain and fearful. Now, the bureaucracy that produced it offered itself as the prime guarantor of security. No expense could be spared. That same secret, inaccessible bureaucracy, with violence at its core, was also a new model of governance, in diametrical opposition to more democratic conceptions. The absolute weapon required absolutism in government. And so the "national security state" was born, its key enabling legislation passed and its ideals largely accepted by the political class. The social contract Americans had had with their government and with each other changed, in the light of the white ball.

Now the unthinkable was not only thinkable but real. It had happened. Our own government, or parts of it, had engaged in what turned out to be, in retrospect, horrendous crimes, with the willing participation of everyone involved. This was the strangest and greatest secret, because everybody knew it. There could never be

any apology because that would diminish the power of the new weapons - the "credibility of our deterrent," as we learned to say. Those who had bombed cities told us we had to "stay the course." For far too long, we did.

People of the bomb

Novelist E. L. Doctorow once remarked that the bomb "... was first our weaponry and then our diplomacy, and now it's our economy. How can we suppose that something so monstrously powerful would not, after years, compose our identity?"

The question for Americans, especially we in New Mexico, is, does it? Are we now "the people of the bomb"? Because if we are, if we allow that identity to remain thrust upon us by those who profit thereby, there is no hope for us - no hope at all. If we remain passive and allow the great fiction of nuclearized "national security" to be the master story of our communal life, we will continue to wander in a desert of our own making, and we will die there.

Believe it or not, we can choose. But to choose at all, we must really choose. It won't be enough to merely express an opinion, or to vote - not nearly enough. Some people seem to think that if they do these small things, or go to a demonstration, the world should change, just like that. It doesn't work that way and never has. We have to insist on humane, sustainable priorities and make sacrifices for them or they won't happen.

Citizenship begins on the far side of convenience, and political power begins where being merely polite leaves off. "Power concedes nothing without a demand," 19th-century abolitionist leader Frederick Douglass reminds us. "It never has and it never will. Find out just what a people will submit to, and you have found out the exact amount of injustice and wrong which will be imposed upon them."

Think about it. We live in a state where making instruments of genocide is the second-largest industry, after oil and gas extraction. We take our children to museums in Los Alamos and Albuquerque that glorify weapons of mass destruction and the people who invented them (many of these scientists were later very sorry, but this is never mentioned). The corporations who run these labs are the very largest in the state along with the Public Service Company of New Mexico, and their executives are deeply insinuated into policy-making circles. How could anyone think that a just economy and clean environment could ever be the product of an industry devoted to death?

In this country, we've spent $7.3 trillion over the past 63 years on nuclear weapons. More than $100 billion of that has been spent in New Mexico. On a net per capita basis, federal funds have been coming to New Mexico far more than to any other state, for decades. And what have we gotten from the bomb factories? Continued poverty. A decline in average relative income over the past 3 1/2 decades. Bottom-drawer rankings in every important social indicator.

And nuclear waste - lots of it. Los Alamos is home to the largest nuclear dump in four states (Arizona, Colorado, New Mexico and Texas). More is buried every week. Millions of additional drums are expected to be generated and buried in Los Alamos over the next few decades. In the land where the first nuclear explosion was conducted in a place called the "Journey of Death," enchantment is giving way to entombment.

The good news

So what's the good news? The good news is that only a very few people really want all this to continue. Outside the corrupted halls of power and a few corporate conference rooms, nuclear weapons have no significant political constituency. Polls show

that more than 80 percent of Americans prefer complete nuclear disarmament pursuant to the Nuclear Nonproliferation Treaty, which legally requires it. Americans, despite decades of propaganda, have never accepted the legitimacy of nuclear weapons.

It's not too late. While imperial overstretch, fiscal irresponsibility, an addiction to cheap oil and many other trends make America's decline quite certain in conventional terms, the depth, the trauma and, above all, the meaning of that decline are partly up to us. Our story can be a noble one, but it can't be that if we "stay the course." We are going to have to come down from the bomber high above the burning city, abandon our strange loves and awaken to the miracle of life on Earth. The world is suffering; when we see this, who can refrain from helping, since we can? The alternative offered by the national security state, whose aegis of violence rises above the din of the consumer society, is despair.

On August 6, the Los Alamos Study Group and more than 130 allied organizations working for a just and sustainable world are holding an all-day commemoration and teach-in, called "August 6th: Hiroshima 60 Years," at Ashley Pond Park and nearby buildings in Los Alamos. The day's events begin at 10 a.m. and continue until 9 p.m. There will be inspiring speakers, workshops (on nuclear history and on building a postnuclear economy in New Mexico), music, thousands of sunflowers and floating lanterns, and much more. Bring your family, bring your friends - bring everyone you can. On this August 6, we will say a firm "No!" to continued investment in absolute violence and "Yes!" to the constructive action we now must take, and take without delay, to build the world our children need.

Notes:

1. Kai Bird and Martin J. Sherwin, American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer Knopf Publishing Group, New York, 2005. Blackett was Oppenheimer's tutor at Cambridge.

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For more on the Study Group, see www.lasg.org

Bombs and Lies

Ken Coates

It was fifty years ago that Bertrand Russell called a press conference to announce the initiative he had launched with Albert Einstein, which led directly to the movement for Nuclear Disarmament and the Pugwash Conferences. We mark this anniversary in no spirit of piety, but with a continuing sense of urgency. Russell and Einstein well knew that the detonation of thermo-nuclear weapons marked a new stage in our civilisation, and meant that a recurrence of global war would put all human life in jeopardy.

> "The general public still thinks in terms of the obliteration of cities. It is understood that the new bombs are more powerful than the old, and that, while one A-bomb could obliterate Hiroshima, one H-bomb could obliterate the largest cities, such as London, New York and Moscow.
>
> No doubt in an H-bomb war great cities would be obliterated. But this is one of the minor disasters that would have to be faced. If everybody in London, New York and Moscow were exterminated, the world might, in the course of a few centuries, recover from the blow. But we now know, especially since the Bikini Test, that nuclear bombs can gradually spread destruction over a very much wider area than had been supposed ... Here, then, is the problem which we present to you, stark and dreadful and inescapable: Shall we put an end to the human race; or shall mankind renounce war?"

Some of our most distinguished scientists, and legions of our people, responded to this appeal, and the history of the human conscience during these past fifty years has in large part been the story of continuous opposition to nuclear warfare.

For forty of these years, the nuclear arms race was a major component of the Cold War between America and its associates on the one side, and Russia on the other. This Cold War had a complex evolution, and in fact developed through several important mutations and fissions which made nuclear proliferation more common and, at the same time, potentially even more dangerous. But the overarching fact of the Cold War context accounted for a great preponderance of the nuclear weapons which were actually manufactured and deployed.

After Russell's death, we saw the growth of a non-aligned movement which sought to establish recognised nuclear-free zones in ever wider regions of the world. This movement was encouraged by the Treaty of Tlatelolco which governed Latin America, establishing just such a zone. As if to answer this example, there arose a powerful movement for a nuclear-free zone in the Middle East. For a long time this was encouraged by Israel, in the annual declarations it made, whilst it prepared its own deathly nuclear arsenal jointly with the apartheid regime in South Africa.

Here we learned, if we did not already know, that war is the mother of a thousand lies, and that the ultimate weapon will spawn the ultimate lie. But nonetheless, in Western Europe, living in hope, the call for a European nuclear-free zone was a major part in the movement which gave rise to

European Nuclear Disarmament, and sustained the demand that all nuclear weapons in the continent of Europe between the United States and Russia should be dismantled and/or withdrawn. Not unnaturally, this demand went alongside a call for the dismantling of the two great nuclear Cold War alliances, Nato and the Warsaw Treaty Organisation.

The Cold War came to an end, and at first it seemed that many of the demands of END were going to be met, very largely as a result of the responses of Mr. Gorbachev. But, whilst the Warsaw Treaty quickly dissolved itself, Nato grew and grew. Once again, the Lie was King.

We now know that Nato's nuclear arsenal was also sustained, and, according to The New York Times, that still there are in 2005 up to 480 American emplacements, harbouring nuclear weapons. This estimate is significantly higher than the figure of 150-180 deployed weapons previously estimated in earlier times.

The conventional argument for squandering social resources on such weaponry is that it is necessary to "deter" all enemies. Which precise enemies are being deterred by this mighty juggernaut? Not Osama bin Laden, for sure. A ban on Stanley knives would be more likely to box him in.

Today's nuclear weapons do not fit into a bipolar power struggle, but are one of the badges worn by the world's only megapower, whose official military doctrine is that of "Full Spectrum Dominance". Nuclear full spectrum dominance is surely aimed more at subordinate allies than it is at potential enemies. This is not to say that enemies will fail to respect overwhelming explosive power: but the first people to be intimidated are the very people who have given loyal hospitality to these dreadful machines.

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The article is excerpted from the editorial from Spokesman (the journal of the Bertrand Russell Peace Foundation) #85, 2005, marking the 50th anniversary of the Russell-Einstein Manifesto.

For more on the Bertrand Russell Foundation, see www.russfound.org

Beyond the NPT: Proliferation or Disarmament?

Rebecca Johnson

Few observers were surprised when the seventh Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) closed in New York on May 27, 2005 without any substantive agreement. Because of the political positions of a handful of states who want to keep their options open, it was predictable that there would be no consensus on major commitments such as the Comprehensive Test Ban Treaty (CTBT), fissile materials treaty, and nuclear fuel cycle controls[1]. But many had hoped that the NPT parties would grasp the opportunity to make progress on other important issues, such as tactical nuclear weapons, treaty withdrawal and strengthening the NPT's verification, enforcement and decision-making powers.

It was frustrating, however, to see the conference fail so meekly. Representatives of 153 of the NPT's 188 states parties wrangled for weeks over procedural questions, but quickly gave up on trying to agree language on anything substantive. Rather than make a serious attempt to build on past consensus commitments, the conference allowed the U.S. to sideline all mention of the outcomes of the previous review conferences in 1995 and 2000 as if they had never existed. After devoting only one week to debating the major issues, the meeting finished early with adoption of a final document that merely listed the conference participants, procedures, documents and meetings.

What are the implications of this outcome for the future of nonproliferation? First, it is important to distinguish between the failure of a conference and the regime it temporarily represents. Weak chairing and the obstructionist strategies of several states, notably the United States, Iran and, for different reasons, Egypt, were important contributory factors. Nor was there effective leadership from any states or groups of states, such as had been provided by the New Agenda Coalition of seven non-nuclear countries in 2000[2]. Such factors may be related to context and timing, but they are also symptoms of a much deeper malaise.

Two of the NPT's core elements lie at the heart of its current problems: the nonproliferation 'bargain' that prohibited the acquisition of nuclear weapons by all except the five nuclear weapon states that existed in 1967 (Britain, France, China, Russia and the United States), who were given an ill-defined obligation to pursue nuclear disarmament; and the apparent enshrining of an 'inalienable right' to develop nuclear energy. Brought into force in 1970, the NPT reflected the strategic interests of the major Cold War powers and the technological hopes of the 1960s, with its expectations that nuclear energy could provide cheap, safe, clean energy that would reduce pollution and promote development around the world. By contrast, the world in the 21st century has to wrestle with the attractiveness of nuclear materials and weapons to terrorists, the unsolved problems of radioactive waste and the long-term dangers of radiation.

Notwithstanding recent efforts to revive nuclear energy as the answer to fossil fuels and climate change, it has not lived up to its early promise except as the first step towards a nuclear weapons option. For many non-nuclear weapon states, the disarmament commitment in Article VI was even more important[3]. Although the end of the cold war brought welcome reductions, it did not displace nuclear weapons from their role in security doctrines, indicating that the five nuclear weapon states were more interested in rationalisation of nuclear forces than disarmament.

When the treaty came up for review and extension in 1995, serious questions were asked about the nuclear weapon states' real commitment to disarmament. In the end, it was decided to extend the NPT indefinitely, but on condition that progress would be made on three other agreements that were adopted at the same time: a decision on "Principles and Objectives for Nuclear Disarmament and Nonproliferation"; a decision to strengthen the review process; and a resolution on the Middle East, which called for a zone free of weapons of mass destruction in the Middle East. During the next five years, there was some progress on these issues, including conclusion of the CTBT, further deep cuts in the arsenals of Britain, France, Russia and the United States, and the accession of the remaining states in the Middle East - with the exception of Israel - to the NPT.

As progress began to slow, and gravely concerned by the nuclear tests conducted by India and Pakistan in May 1998, the foreign ministers of the New Agenda Coalition concluded that the most sensible way to reduce nuclear dangers was through clarifying and strengthening the treaty obligation on disarmament. Building on the 1995 NPT "Principles and Objectives", the 1996 International Court of Justice advisory opinion and some of the 1996 Canberra Commission's recommendations, New Agenda diplomats worked with civil society to develop the ideas, teamwork and strategies that enabled the NPT Review Conference in May 2000 to adopt a substantive set of agreements [4].

Known now as the 'Thirteen Steps', though the 13 numbered paragraphs actually comprise more than 13 principles, objectives and specific measures, the NPT 2000 plan of action on nuclear disarmament included a ground-breaking "unequivocal undertaking by the nuclear weapon states to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament to which all States parties are committed under Article VI".

A number of unilateral, bilateral, plurilateral and multilateral steps were specified in a multi-stranded approach that recognised the need for different measures to be promoted singly or together, depending on political, regional and international conditions. These include: entry into force of the CTBT, a moratorium on nuclear testing pending the treaty's entry into force; negotiations on banning fissile materials for weapons; implementation of deeper reductions in deployed strategic nuclear forces; further unilateral reductions in nuclear arsenals; further reductions in non-strategic nuclear weapons; the principle of irreversibility; increased transparency and confidence-building measures; reduction in the operational status of nuclear weapon systems (such as de-alerting); a diminished role for nuclear weapons in security policies, thereby minimising the risk of them ever being used (which could encompass no first use or strengthened security assurances); negotiations involving all the nuclear weapon states; and verification to build confidence in the implementation of agreements. Five

years later, hardly any of them had been honoured.

These were the agreements from 1995 and 2000 that the administration of George W. Bush wanted to marginalise in 2005. So if blame is to be apportioned, the major share should go to the United States, which slipped its lethal banana skin under the conference last year when it refused to let the outcome of the 2000 review conference be mentioned in the agenda for the 2005 conference. Having essentially rejected the mutual obligations of nonproliferation in favour of counterproliferation - or his new buzzword 'anti-proliferation' - President Bush is ideologically happier working outside multilateralism, and harbours the dangerous illusion that he can contain nuclear threats by means of more controllable groupings such as the Proliferation Security Initiative and London Club of nuclear suppliers[5].

But the US was not alone. France and Russia, which had expressed unhappiness about some of the 2000 commitments almost as soon as they had been adopted, were content to see them sidelined. France concentrated on trying to reinterpret the commitments in a P-5 statement instead[6]. It nearly succeeded, but US intransigence over the CTBT killed even that initiative. Though it tabled several working papers, China, which is still modernising its nuclear forces, kept its head down and let the US banana skin do its work. Britain's role was more complex. Publicly, particularly to its domestic audience, the Labour government took credit for having played an important part in brokering the 2000 agreements; in the NPT context, British diplomats used their coordination role of the Western Group of around 50 countries to promote 'compromises' that furthered US objectives.

Egypt tried hard to get the outcomes of these ground-breaking conferences acknowledged as unmet yardsticks that still needed to be taken seriously and implemented, but it made some tactical errors and became isolated. Neither the other New Agenda nor Non-Aligned states seemed to think it was worth risking US wrath in the present coercive political climate. Some feared reprisals and some decided to keep their powder dry in the hope that there would be more promising political conditions next time round.

As Sweden, Indonesia and Hungary had been co-opted into management roles, ambassadors from New Zealand did a valiant job of negotiating some modest but worthwhile disarmament objectives, Chile worked hard to get agreement on making withdrawal from the NPT more difficult, and Spain got blocked at every turn when it tried to make some sense of regional issues. Though reproduced on NGO websites, all these texts fell by the wayside. Given Brazil's positions on three major issues - the additional protocol, nuclear fuel cycle controls and the CTBT - it is perhaps not surprising that the Conference President, Brazilian diplomat Ambassador Sergio Duarte, did not emulate the presidents of 1985, 1995 and 2000, who had creatively explored available options to get innovative outcomes[7].

While states played convoluted games of chess and poker, international security comes out as the main loser. In treaty terms, the failure in 2005 to adopt further substantive recommendations means that agreements obtained in the review conferences of 1995 and 2000 still stand as the benchmarks for measuring progress and promoting compliance. It can even be argued that the lack of consensus in 2005 underscores the fact that the principles, measures and steps adopted by consensus in past review conferences have not yet been implemented,

and more work must be done to ensure that they are. But this just puts a brave face on a political fiasco.

Believing that the apocalyptic visions of the cold war are now impossible, policy-makers in several countries are pushing hard in their different ways to conventionalise nuclear weapons. Once again they are being touted as peace-keepers and stabilisers (at least for some). Tactical uses have also been steadily increasing in salience, advertising nuclear use with manageable effects, as if nuclear weapons can be treated as little more than a particularly effective conventional weapon. Both the strategies of North Korea and Iran and Tony Blair's desire for a new nuclear follow-on to the UK's submarine-based Trident nuclear missile system highlight the perception that nuclear weapons are valuable political currency. The contrasting US policies with regard to Iraq, North Korea and Iran, and its courtship of India, Pakistan and Israel, give rise to the view that the United States is more likely to take a country seriously if it has (or can convincingly appear to have) acquired nuclear weapons.

These developments, combined with the failure of the majority of states to stand up to the few nay-sayers at the review conference, send a dangerous message to would-be proliferators and existing nuclear weapon possessors. While the failure of a treaty meeting should not be equated with regime failure, and it is unlikely that NPT parties will queue up to leave the treaty in the next couple of years, more states may begin to hedge their bets. The alternative to nonproliferation is not counter-proliferation, as President Bush seems to think, but a proliferation cascade, where up to thirty countries could be nuclear-weapon capable within the next ten years.

Would this provide mutual deterrence and stability? Unlikely: former US nuclear commander General Lee Butler described cold war deterrence as "a dialogue between the blind and the deaf, born of an irreconcilable contradiction". And that was with the relatively simple conditions of bilateralism operating under a powerful taboo against using nuclear weapons. More proliferation would also greatly increase the acquisition chances of terrorists. If the spread of nuclear weapons is not checked, then somewhere in the next ten years, thousands, perhaps millions of people will die in a nuclear holocaust somewhere in the world, by accident or malign intention.

If nonproliferation has been fatally weakened, as many believe, there is an alternative approach that would make the world a lot safer: effective and verifiable disarmament, as put forward by civil society, including the Mayors for Peace, led by Mayor Akiba of Hiroshima and Mayor Itoh of Nagasaki, Yoko Ono and thousands of people from all over the world who demonstrated in New York and participated at the United Nations during the NPT Conference in May. Proliferation or disarmament: the choice may be painful for some, but it is unavoidable now.

Notes:

1. The 1996 CTBT bans the explosive testing of nuclear weapons. Fissile materials are those that can sustain the explosive chain reaction that is the source of energy of nuclear weapons -- the most common such materials are plutonium, which is recovered from the spent fuel of nuclear reactors, and uranium that has been enriched in its rare isotope uranium-235. The nuclear fuel cycle spans a set of processes, starting with the mining of uranium and ending in the separation of plutonium from spent nuclear fuel, which can be used both for making nuclear weapons and for producing nuclear energy.

2. The New Agenda Coalition of countries is made up of Brazil, Egypt, Ireland, Mexico, New Zealand, South Africa and Sweden. It originated in a declaration by eight foreign ministers on June 9, 1998, entitled "A Nuclear Weapons Free World: The Need for a New Agenda". Pressure from the United States and France

forced the eighth member, Slovenia, to withdraw some months later.

3. Article VI of the NPT states "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control."

4. The International Court of Justice, the highest legal body in the United Nations system, delivered an advisory opinion on July 8, 1996, that, among other things, "the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law", and that "there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control"; for the judgement see - www.icj-cij.org/icjwww/idecisions/isummaries/iunanaummary960708.htm).

The Australian government asked a panel of eminent figures (the Canberra Commission) to "develop ideas and proposals for a concrete and realistic program to achieve a world totally free of nuclear weapons". The final report was issued in August 1996 and can be found at www.dfat.gov.au/cc/cchome.html.

5. The Proliferation Security Initiative, proposed by President Bush in 2003, invites states to join with the United States to interdict and search planes and ships carrying suspect cargo and seize illegal weapons or missile technologies.

The London Club, also known as the Nuclear Suppliers Group, is a group of states that have joined together to regulate international trade in nuclear technologies, equipment and materials. It was created as part of US efforts to control proliferation after India's 1974 nuclear test.

6. The P-5 are the permanent members of the United Nations Security Council: Britain, China, France, Russia and the United States. These countries are also the five nuclear weapon states recognised under the NPT.

7. See www.acronym.org.uk/npt for reports on these meetings. The additional protocol is an expansion of the NPT's system of verification. It builds on earlier safeguards agreements to extend the powers of the International Atomic Energy Agency to allow it to investigate a state's nuclear activities more effectively, including providing the agency with authority to visit any facility, and if necessary to take samples, to investigate questions about or inconsistencies in a state's nuclear declarations.

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For more on the Acronym Institute, see www.acronym.org.uk.

America, the Bomb, and Bin Laden

Pervez Hoodbhoy and Zia Mian

Power over life and death - don't be proud of it.
Whatever they fear from you, you'll be threatened with.
Seneca (Roman philosopher and statesman, 4 BC - AD 65)

The decision to incinerate Hiroshima and Nagasaki was not taken in anger. White men in grey business suits and military uniforms, decided after much deliberation that the U.S. "could not give the Japanese any warning; that we could not concentrate on a civilian area; but that we should seek to make a profound psychological impression on as many of the inhabitants as possible... [and] the most desirable target would be a vital war plant employing a large number of workers and closely surrounded by workers' houses" [1]. It was justified by the belief that it would be cheaper in American lives to release the nuclear genie. Besides, it was such a marvelous thing to show Soviet leader Josef Stalin.

The victorious are rarely encumbered by remorse. Headlines like "Jap City No More" brought the news to a joyous America. Crowds gathered in Times Square to celebrate; there was less of the enemy left. The President Truman said "When you have to deal with a beast you have to treat him as a beast. It is most regrettable but nevertheless true" [2]. Not surprisingly, six decades later, even American liberals remain ambivalent about the morality of nuking the two Japanese cities.

At the end of World War II, the United States was the dominant military and economic power, and alone had nuclear weapons. As the United States dusted off its hands and moved on to try to create a new world order, elsewhere the radioactive rubble of the dead cities spawned not only a sense of dread, but also an obsessive desire for nuclear weapons. Not wanting to be left behind, the Soviet Union, which had been an American ally in the war, built its own bomb. It succeeded much faster than the U.S had anticipated, and the Cold War was born. The other great European powers looked for their place in a nuclear-armed world. The British quickly got back to work on their bomb, and in time the French.

In its efforts to impose its authority, the U.S. brandished its nuclear weapons. During the Korean War, in which more than three million North Koreans, a million South Koreans, and a million Chinese died, the United States repeatedly threatened the use of nuclear weapons. These threats led China to seek its own nuclear weapons. The end of the fighting did not end the war - the U.S. technically is still at war with North Korea. North Korea, facing a nuclear-armed U.S. army based in South Korea, eventually made its own nuclear plans.

It was not just the great powers and those that were directly threatened over whom Hiroshima cast a long shadow. Avner Cohen, the historian of Israel's nuclear bomb, writes that in newly independent Israel, Prime Minister David Ben Gurion "had no qualms about Israel's need for

weapons of mass destruction". Ben Gurion ordered his agents to seek out East European Jewish scientists who could "either increase the capacity to kill masses or to cure masses" [3].

The wind blew the poisonous clouds of fear and envy over other third world countries as well: In 1948, while arguing to create India's Department of Atomic Energy, Prime Minister Jawaharlal Nehru told parliament, "I think we must develop [nuclear science] for peaceful purposes." But, he added, "Of course, if we are compelled as a nation to use it for other purposes, possibly no pious sentiments of any of us will stop the nation from using it that way" [4]. Just three years after Hiroshima and Nagasaki, those "other purposes" were all too clear.

Days after Pakistan's nuclear tests in May 1998, Japan invited the country's foreign minister to visit Hiroshima's peace museum. The minister was visibly moved after seeing the gruesome evidence of mass devastation. His reaction: We made our nukes precisely so that this could never happen to Pakistan.

Many other states had nuclear ambitions. North Korea and Iran, both of whom have suffered grievously at American hands, seem determined to persist. They see that with the Cold War over, the American empire is less restrained than at any time in the past sixty years. They know they were put on notice by George Bush when he declared them, along with Iraq, part of the 'axis of evil'. Iraq is now under American occupation. There are other states who may now reconsider earlier decisions to abandon the bomb. They may seek a nuclear option.

But times have changed. It is no longer just states that seem to have Hiroshima on their minds. The New York Times reported that before September 11 the U.S. had intercepted an Al-Qaeda message that Osama Bin Laden was planning a "Hiroshima" against America[5]. In a later taped message, released just before the U.S. attack on Afghanistan, Bin Laden called up the image of the bombing of Japan, claiming:" When people at the ends of the earth, Japan, were killed by their hundreds of thousands, young and old, it was not considered a war crime; it is something that has justification. Millions of children in Iraq is something that has justification" [6].

Anger in Muslim countries at the United States has never been higher than today. The invasion and occupation of Afghanistan and then Iraq, the torture and abuse in Abu-Ghraib and Guantanamo by American interrogators, and instances of Quran desecration have added to already existing resentments. The oldest and bitterest of these is, of course, the unequivocal U.S. military, economic and political support for Israeli occupation of Arab lands. The desire for an atomic weapon to seek vengeance - utterly immoral, foolish and suicidal though it is - is not limited to extremists. The Islamic bomb is an increasingly popular concept.

The double challenge we face now is to understand and confront both a militant American imperialism and a violent Islamic radicalism.

Nuclear Armed Imperialism

In George W. Bush's America, nuclear weapons are here to stay and are viewed as weapons for fighting wars. The U.S. "Nuclear Posture Review 2002" recommended continued reliance for the indefinite future on nuclear weapons "to achieve strategic and political objectives" [7]. It mandated new facilities for the manufacture of nuclear bombs, research into new kinds of nuclear weapons, new delivery systems, and much more. It laid out a new strategy, in which nuclear weapons were to be used to "dissuade adversaries from undertaking military programs or operations that could threaten U.S. interests or those of allies". It named as possible targets, Russia, China, North Korea, Iraq, Iran, Syria and Libya, and opened the door to the use of nuclear

weapons to respond to "sudden and unpredicted security challenges."

It may seem difficult to understand why the U.S. should hunger for nuclear weapons in addition to all else that it has. Why does it want to goad other nations towards also craving nukes? And what does it seek to achieve by announcing that it may, if need be, target even non-nuclear adversaries? The answer is obvious: imperial hubris, runaway militarism, and the arrogance of power.

The continued insistence on a nuclear-armed American future has come despite growing public opposition from senior U.S. officials with long experience with these weapons. None is more prominent than General Lee Butler, Commander in Chief of the U.S. Strategic Air Command (1991-1992) and then of the U.S. Strategic Command (1992-1994) with responsibility for all U.S. Air Force and Navy nuclear weapons.

Butler now believes that "nuclear war [has] no politically, militarily or morally acceptable justification" [8]. So, why then does the United States keep nuclear weapons and insist on its right and willingness to use them. Butler's explanation is a rare first hand account of the terrifying madness that lies at the heart of the nuclear weapons complex. He writes:

> "I have no other way of understanding the willingness to condone nuclear weapons except to believe that they are the natural accomplices of visceral enmity. They thrive in the emotional climate born of utter alienation and isolation. The unbounded wantonness of their effects is a perfect companion to the urge to destroy completely. They play on our deepest fears and pander to our darkest instincts. They corrode our sense of humanity, numb our capacity for moral outrage and make thinkable the unimaginable."

For Butler, the continued reliance on nuclear weapons by the United States is due to the nuclear complex. The institutions that make and plan to use nuclear weapons are, he says, "mammoth bureaucracies with gargantuan appetites and global agendas... beset with tidal forces, towering egos, maddening contradictions, alien constructs and insane risks."

This complex was built during the Cold War. But the end of the Cold War has brought no relief. Butler explains that:

> "The Cold War lives on in the minds of those who cannot let go the fears, the beliefs and the enmities born of the nuclear age. They cling to deterrence, clutch its tattered promise to their breast, shake it wistfully at bygone adversaries and balefully at new or imagined ones. They are gripped still by its awful willingness not simply to tempt the apocalypse but to prepare its way."

The United States is now without doubt the dominant military power in the world. With 12 battle carrier groups and hundreds of military bases spread around the world, the U.S. will spend $455 billion on its armed forces in 2005, with another $82 billion marked for the wars in Iraq and Afghanistan. This is more than the total sum spent by the next 32 countries down the list, and is close to 50% of total world military spending.

The United States shows every sign of determination to use its military power and to expand it. U.S. military doctrines have shifted away from deterrence to pre-emption, unilateral military intervention, and simultaneously fighting several local wars overseas. The U.S. military has put in place a 2004 "Interim Global Strike Alert Order" from Donald Rumsfeld that requires it to be ready to attack hostile countries that are developing weapons of mass destruction, specifically Iran and North Korea. The military claims to be able to carry out such attacks within "half a day or less" and to use nuclear weapons in such an attack [9].

There are demands from the U.S. air force for authority to put weapons in space. A former Secretary of the Air force explained "We haven't reached the point of strafing and bombing from space...nonetheless, we are thinking about those possibilities" [10]. Full spectrum dominance - in land, sea, air, and space - is necessary to achieve the goal of total planetary control.

U.S. foreign policy in the Post Cold-War world owes much to "The Project for the New American Century" (PNAC), a Washington-based neo-conservative think-tank founded in 1997. PNAC was clear that the U.S. must rule the world: " [the new world order] must have a secure foundation on unquestioned U.S. military preeminence ...The process of transformation is likely to be a long one, absent some catastrophic and catalyzing event - like a new Pearl Harbor" [11]. That Pearl Harbor-like event came on 11 September, 2001.

After 911 there was no lack of spokesmen for the American Empire. In unabashedly imperial language, Zbigniew Brzezinski, who initiated the anti-Soviet jihad in Afghanistan, writes that the U.S. should seek to "prevent collusion and maintain dependence among the vassals, keep tributaries pliant and protected, and to keep the barbarians from coming together" [12].

To keep the "barbarians" at bay, Pentagon planners have been charged with the task of assuring American control over every part of the planet. Ralph Peters, an officer responsible for conceptualizing future warfare in the Office of the Deputy Chief of Staff for Intelligence, and author of New Glory: Expanding America's Global Supremacy, is clear about why his country needs to fight [13]:

> "We have entered an age of constant conflict.
>
> "We are entering a new American century, in which we will become still wealthier, culturally more lethal, and increasingly powerful.
>
> We will excite hatreds without precedent.
>
> "There will be no peace. At any given moment for the rest of our lifetimes, there will be multiple conflicts in mutating forms around the globe. The de facto role of the U.S. armed forces will be to keep the world safe for our economy and open to our cultural assault. To those ends, we will do a fair amount of killing."

But there is a downside to this. And the long-term consequences will not be to the advantage of the U.S. because the nuclear monopoly has broken down. There are others who would be nuclear warriors.

Can The Islam-U.S. Clash Go Nuclear?

The notion of an Islamic bomb is now almost thirty years old. Addressing posterity from his death cell in a Rawalpindi jail, Zulfikar Ali Bhutto, the architect of Pakistan's nuclear programme, wrote in 1977: "We know that Israel and South Africa have full nuclear capability. The Christian, Jewish, and Hindu civilizations have this capability. The communist powers also possess it. Only the Islamic civilization was without it, but that position was about to change."

Another Muslim leader stressed the need for a bomb belonging collectively to Islam. Addressing an Islamic conference in Teheran in 1992, the Iranian vice-president, Sayed Ayatollah Mohajerani said, "Since Israel continues to possess nuclear weapons, we, the Muslims, must cooperate to produce an atomic bomb, regardless of U.N. efforts to prevent proliferation."

In the celebrations following the 1998 nuclear tests, the Jamaat-e-Islami paraded bomb and missile replicas through the streets of Pakistani cities. It saw in the bomb a sure sign of a reversal of fortunes and a panacea for the ills that have plagued Muslims since the end of the Golden Age of

Islam. In 2000, we captured on video the statements of several leaders of jihadist, right-wing political parties in Pakistan - Maulana Khalil-ur-Rahman and Maulana Sami-ul-Haq - who also demanded a bomb for Islam[14].

One important bin Laden supporter, Pakistan's General Hameed Gul - an influential Islamist leader and former head of ISI, the country's powerful intelligence agency - has made clear how he feels. In a recent and widely watched nationally televised debate with one of the authors [PH], General Hameed Gul snarled: "Your masters (that is, the Americans) will nuke us Muslims just as they nuked Hiroshima; people like you want to denuclearize and disarm us in the face of a savage beast set to devour the world".

Nonetheless, it is impossible to conceive of any Muslim state declaring that it has an Islamic bomb that would be used for defense of the "ummah" against the United States or Israel (but it is worth recalling that this kind of "extended deterrence", as it was called, was practicised aggressively by both superpowers in the Cold War, including during the Cuban Missile Crisis). From time to time, the media reports the speculation that Pakistan would provide a "nuclear umbrella" for Arab countries in a crisis. But nothing in the history of Pakistan has shown a substantial commitment to a pan-Islamic cause.

Pakistan, so far the only Muslim nuclear state, is unlikely to risk devastating retaliation from Israel or the United States if it did attempt to provide nuclear weapons for use in the Middle East. Its earlier clandestine nuclear cooperation with Iran officially attributed to Dr. Abdul Qadeer Khan and his network - came to an end a decade ago. This was followed by similar sales to Libya that continued till 2003 and the exposure of the network, leading to a public confession by A.Q. Khan in early 2004.

The danger of a nuclear conflict with the United States, and the West more broadly, comes not from Muslim states, but from radicalized individuals within these states. Post September 11, Pakistan's military government insisted that there was no danger of any of its nuclear weapons being taken for a ride by some radical Islamic group, but it didn't take any chances. Several weapons were reportedly airlifted to various safer, isolated, locations within the country, including the northern mountainous area of Gilgit. This nervousness was not unjustified - two strongly Islamist generals of the Pakistan Army, close associates of General Musharraf, had just been removed. Dissatisfaction within the army on Pakistan's betrayal of the Taliban was (and is) deep; almost overnight, under intense American pressure, the Pakistan government had disowned its progeny and agreed to wage a war of annihilation against it.

Fears about Pakistan's nukes were subsequently compounded by revelations that two highly placed nuclear engineers, Syed Bashiruddin Mahmood and Chaudhry Majid, well known to espouse radical Islamic views, had journeyed several times into Afghanistan in 2000 and met with Osama bin Laden and discussed the possibilities of making nuclear weapons[15].

Preventing Doomsday

Today, the United States rightly lives in fear of the bomb it first brought into the world and tried to use to establish its dominance. The decision to use it - if and when it becomes available - may already have been made. Shadowy groups, propelled by fanatical hatreds, are believed to scour the globe for fissile materials. They are not in a hurry; time is on their side. They are doubtless confident they will one day breach fortress America.

The possibilities for nuclear attack are not limited to the so-called suitcase bomb stolen from the arsenal of a nuclear state. The mak-

ing of atomic weapons - especially crude ones - has become vastly simpler than it was at the time of the Manhattan Project. Basic information on nuclear weapons is now freely available in technical libraries throughout the world and simply surfing the internet can bring to anyone a staggering amount of detail. Advanced textbooks and monographs contain details that can enable reasonably competent scientists and engineers to come up with "quick and dirty" designs for nuclear explosives. The physics of nuclear explosions can be readily taught to graduate students.

The material for making nuclear weapons is also more easily available than ever before. To build a simple bomb or two, it is no longer necessary to go through the complex processes for uranium enrichment or plutonium reprocessing. These fissile materials are already present in the thousands of ex-Soviet bombs marked for disassembly, and in research reactors and storage sites the world over.

It is easy to imagine an improvised nuclear device fabricated from highly enriched uranium, constructed in the very place where it will eventually be detonated. Even simpler may be an attack on a lightly guarded nuclear reactor or spent fuel storage site, releasing large amounts of radioactivity.

Some nuclear weapon experts privately believe that it is not a question of if but when. This may be too pessimistic, but obviously tight policing and reduction of nuclear weapons and fissile material stockpiles are urgent, important steps. It is likely not to be sufficient if nuclear weapon states insist on keeping their bombs and missiles as legitimate instruments of either deterrence or war. Continuing to rely on nuclear energy will only add to the risk.

Global nuclear proliferation - whether by other states or non-state actors - can only be slowed down at best. Non-proliferation by cooperation and consent cannot succeed as long as the U.S. is insistent on retaining and improving its nuclear arsenal -- by what argument can others be persuaded to give up, or not acquire, nuclear weapons? The use of force, coercive non-proliferation, will only serve to drive up demand.

If we accept that religious fanatics are planning nuclear attacks and that they may eventually succeed, then what? Who will the U.S. retaliate against? Will the U.S. nuke Mecca? This has been suggested already by some, as they seek to identify those things of value to Muslims that the United States can threaten. Or, will the U.S. attack the capitals of Muslim states? How will it decide where to strike? What will the U.S. and its allies do as their people fear more attacks? Will they expel Muslims from the U.S. and Europe or like the Japanese Americans in World War II, herd them into internment camps? Any of these would further inflame the jihad. The world might plunge headlong into a bottomless abyss of reaction and counter reaction.

Hiroshima signaled a failure of humankind, not just that of America. The growth of technology has far outstripped the capacities of the social institutions we have to govern our societies. Humanity's best chance of survival lies in creating taboos against nuclear weapons, much as already exist for chemical and biological weapons, and to work rapidly toward their global elimination. We must dare to imagine and work urgently towards a future that is based on universal, compassionate, human, secular values. For this to happen, the civilized world, those who believe in an international community oriented towards peace, justice and freedom will have to subdue the twin ogres of American imperialism and Islamic radicalism.

Notes:

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