A Call of Conscience: Nuclear Disarmament

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As Nobel Peace Laureates and Laureate Organizations, we have gathered here in Rome, Italy, to express our alarm at the lack of political and public attention paid to the need to eliminate dangers posed to humanity by nuclear weapons. As a representative of the International Peace Bureau and as the President of the Global Security Institute, I urge in the strongest possible terms that we use every fiber of our energies to generate a new level of public concern and advance actions to achieve nuclear disarmament. We are living in a critical moment.

We must make a clear and forceful call this year to help forge a consensus of conscience and reason. Nuclear weapons are unworthy of civilization. No other threat to human survival is as immediate and hazardous.

Trillions of dollars have been spent to develop the existing arsenals, and well over 110 million dollars are squandered each day to keep them primed and ready. Compare this to the fact that the International Atomic Energy Agency has never spent more than 110 million dollars in a year to perform all of its critical inspections worldwide.

The destructive force of a nuclear weapon is beyond human imagination. Many yield more than 70 times the horrific atomic bomb dropped upon Hiroshima. A relatively common size of a 150 kiloton yield bomb in today's arsenals is ten times the destructive force of Hiroshima, which, if dropped on Mumbai, would kill 8 million people rapidly, and many more over time. A few dozen exploding in Russia or the US would end these nations and cause immeasurable suffering, even poisoning the genetic pool. There are many in the megaton or million ton range. The triggering devices on today's weapons are the size of the Hiroshima bomb.

Nuclear weapons cannot distinguish between combatants and civilians. How can we, in good conscience, tolerate threats in our names, through our own governments, to level these horrors upon millions of normal, peaceful, law abiding, innocent people?

Today, well over a decade since the end of the cold war, over 27,000 of these radiation fire ovens with wings remain with us; Russia and the US possess over 95% of the arsenals and persist in keeping thousands on high alert launch-on-warning status.

By accident or design, over time, these weapons will be used. No use can be controlled in space or time. Nothing stimulates the desire for, and acquisition of, nuclear weapons as much as the refusal of a handful of states- United States, Russia, United Kingdom, France, China, India, Pakistan and Israel- to make progress on elimination.

Challenges such as North Korea or Iran are symptoms of the underlying contradiction of attempting to stem proliferation while relying on the threat to use nuclear weapons as a core security policy. This hypocrisy sometimes reaches absurd proportions. For example, only two countries voted against a ban on nuclear weapons testing this year in the UN General Assembly- the US and North Korea.

The justification for Russia and the US's arsenals has shifted; previously, their existence was reasoned as a way to prevent them from being used. If each had sufficient retaliatory capacity to render a return volley unacceptably destructive, no one would use the weapons. Thus, we became accustomed to the claim that we need to have arsenals to prevent them from being

used. This bizarre logic had a tenuous but moral foundation, preventing use. Now, new doctrines are advanced, integrating nuclear weapons into conventional war fighting strategies, thus lowering the moral taboo of use and making the unthinkable not only possible, but probable.

Nuclear weapons serve no purpose against terrorists or criminals. They represent a thoroughly modern paradox: the more they are perfected, the less security is obtained. Nuclear weapons themselves are more dangerous than any problem they seek to solve. This unacceptably risky situation should not be tolerated.

To use a nuclear weapon against another nuclear weapon state is suicidal. To use a nuclear weapon against a non-nuclear weapon state is patently immoral.

If the people of the world knew fully the destructive sword that hangs over the civilian populations of our cities and threatens the very viability of human life, they would summarily reject nuclear weapons, neither wanting to be subject to this threat nor wanting to threaten others- millions of innocent people like themselves.

Nuclear weapons represent one aspect of a course that pursues security by seeking absolute dominance through terror. This quest reaches burlesque proportions in its logical extension - the weaponization of space. This is a consequence of failing to see and pursue our common security interests on earth.

Is there a way out of this predicament? Yes, we know there is.

First, we must clearly determine that universally verifiable, legally enforceable nuclear weapons abolition is our collective, unambiguous obligation. Heads of State, governments and individual citizens' efforts must be galvanized to fulfill this duty.

Having set this compass point, we must follow a map, each step of which must strengthen our collective security, diminish the security of no state, enhance the rule of law and fulfill existing legal obligations. Some of these steps might take time to be implemented, but we, all states, must begin immediately to advance:

(1) The entry into force of the Comprehensive nuclear Test-Ban Treaty;
(2) Negotiating a verifiable Fissile Material Cut-Off Treaty;
(3) Irreversible and verifiable cuts in existing arsenals;
(4) Codification of legally binding negative security assurances;
(5) Pledges of no first use;
(6) De-alerting nuclear weapons from launch-on-warning status;
(7) Dramatically strengthened International Atomic Energy monitored safeguards
(8) The convening of a Summit of states to eliminate threats posed by nuclear weapons and the beginning of negotiations on a Nuclear Weapons Convention

There are no technical impediments to advancing these proposals. It is a failure of courage and political will alone that is blocking our route to a safer, secure future.

To eliminate this self-inflicted threat and address the real threats to international security, greater levels of cooperation are required. In order to address the entire spectrum of global

threats, such as terrorism, poverty or failing to protect and live in harmony with the natural world, greater cooperation is imperative.

A nuclear apartheid with 'haves' and 'have nots' shreds cooperative security. The tools of cooperation - diplomacy, law, norm setting, dialogue, negotiations - which are needed to collectively address poverty and protect the environment are exactly the same tools needed to address nuclear threats. Yet, we can sadly observe that as cooperation corrodes, the law of power overtakes the power of law.

In a world with different levels of security where some claim the right to threaten to use weapons of mass destruction, is it realistic to expect states to refrain from taking short-term economic opportunities in deference to long-term environmental needs? Of course not. There must be a common recognition of our shared interests in a secure environment, in a healthy environment. That shared interest is the basis for pursuing a cooperative security environment. Nuclear apartheid is not compatible with a cooperative security regime.

Let us declare that our capacity for a safe, sane, cooperative future based on principles of sustainability is within our each. We know that we must fulfill the mandate for negotiating nuclear disarmament embodied in the cooperative security paradigm of the Nuclear Nonproliferation Treaty. 9/11 cannot be claimed as an excuse for not living up to this practical, moral and legal duty.

9/11 cannot be used to diminish our confidence in the guidance of reason, in sacred web of life, and in the responsibilities of conscience.

We understand that eliminating the axis of threats to our collective well-being- poverty, environmental degradation and nuclear weapons- demands a new course.
At the most recent Summit at the UN, a statement on nuclear nonproliferation- no less disarmament- could not be obtained. The Secretary- General recently described this situation as a kind of "sleepwalking." We cannot sit back and be ineffectual because heads of state fail to exercise their leadership responsibilities. We have a responsibility also.

States have the power of armies. People have the power of love and conscience. Moral power and authority should not be ignored. As Nobel Peace Laureates we have a heightened duty to act. We must not ignore this duty, and if by acting collectively, strengthen our abilities, then we must act accordingly.

I urge that we use our moral authority to help convene a summit of world leaders- from the worlds of business, art, entertainment, politics, religion, law, culture and science- to collectively identify and promote programs and policies that work towards a sustainable future. We could call this The Summit for A Safe, Sustainable Future. In that regard, we could be giving support, convening events, raising awareness and articulating the needs for such an event to world. By mobilizing our commitment to work together, to gather all Nobel Peace Laureates and Laureate Organizations to utilize their powers of persuasion and advocacy identify and promote proposals and policies for a safe, sustainable suture. Our efforts here to create and offer the Charter for a World Without Violence and a call for the abolition of nuclear weapons will help set a course.

Please join us in the journey.

Appendices setting forth background on nuclear issues

1) Fact Sheet: The Current Crisis of Nuclear Weapons

2) Fact Sheet: What Previous Nobel Laureate Summits Said about Nuclear Weapons

3) Fact Sheet: How a Nuclear Weapon Works

4) Fact Sheet: Risks of nuclear weapons

5) Fact Sheet: The International Legal Regime Governing Nuclear Nonproliferation and Disarmament

6) Fact Sheet: Nuclear Energy

FACT SHEET:
The Nobel Laureates and the Crisis of Nuclear Weapons

Recognizing that the use of nuclear weapons or an accident resulting from the stockpiling of such weapons could cause massive human casualties and severe environmental damage, **Nobel Peace Laureates have chosen to address the issue of nuclear proliferation at this year's Summit**.

Though the Cold War has been over for a decade, **nuclear weapons remain the greatest threat to world security and human survival**.

- 27,000 nuclear weapons are stockpiled today;
- Nuclear materials are inadequately tracked and monitored, leaving every major city in the world vulnerable to the threat of a terrorist nuclear attack;
- No longer just for deterrence, nuclear weapons are being modernized for offensive purposes;
- Thousands of nuclear weapons remain on high-alert and launch-on-warning status. The risk of accident multiplies daily;

Attention today is focused on stopping Iran and North Korea from furthering their nuclear programs, but **virtually no attention is paid to the responsibility of the existing Nuclear Weapons States to fulfill their legal obligation to eliminate their nuclear weapons**.

- Under Article VI of the nuclear *Non-Proliferation Treaty (NPT),* the Nuclear Weapon States have 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".
- In 1996, the *International Court of Justice* unanimously ruled that the threat or use of nuclear weapons "would generally be contrary" to humanitarian and other international law regulating the conduct of warfare;
- In 2000, the Nuclear Weapon States agreed to "an unequivocal undertaking" to accomplish the total elimination of their nuclear arsenals;
- Dr. Hans Blix, Chairman of the Weapons of Mass Destruction Commission, points out that the greatest obstacle to an effective non-proliferation regime lies with the original Nuclear Weapons States, who demonstrate a lack of compliance with legal obligations.

This is a fundamental dilemma: the Nuclear Weapons States desire to keep their weapons indefinitely while condemning others who attempt to acquire them. **If the Nuclear Weapons States do not proceed with their legal obligations to disarm, the non-proliferation regime will crumble.**

- The UN Secretary-General's High-level panel on Threats, Challenges and Change asserted that, "We are approaching a point at which the erosion of the non-proliferation regime could become irreversible and results in a cascade of proliferation."
- Israel, India and Pakistan have all acquired nuclear weapons and remain outside the NPT regime;
- the US and India have agreed to an exchange of nuclear technology that could lead to greater proliferation;
- North Korea recently declared that it conducted its first nuclear weapon test, raising the very real possibility of multiple arms races in Asia;
- Iran's resolve to further develop nuclear technology would give it the capability to develop nuclear weapons at a later date;
- 44 states have the nuclear resources and sufficient technical know-how and resources to develop nuclear weapons if the decision to do so were made.

FACT SHEET:
The Nobel Laureates and the Crisis of Nuclear Weapons

What have Previous Nobel Laureate Summits said about Nuclear Weapons?

The Nobel Peace Laureates expressed in the 2005 Declaration released following the 6th Nobel Laureates Summit in Gwangju, South Korea:

> *If we are to have stability we must have justice. This means the same rules apply to all. Where this principle is violated disaster is risked. In this regard we point to the failure of the nuclear weapons states to fulfill their bargain contained in the Nuclear Nonproliferation Treaty to negotiate the universal elimination of nuclear weapons. To pursue a nuclear-weapons-free Korean Peninsula or Middle East or South Asia, without credible commitment to universal nuclear disarmament is akin to a parent trying to persuade his teenagers not to smoke while puffing on a cigar. There are steps available to make progress in this area and they include: a. Completing a treaty with full verification mechanisms cutting off further production of highly enriched uranium or plutonium for weapons purposes; b. Universal ratification of the Comprehensive Test Ban Treaty, now ratified by 176 nations; c. Taking the arsenals of Russia and the US off of hair trigger, launch on warning high alert; d. Legally confirmed pledges by all states with nuclear weapons never to use them first; e. Making cuts in the US and Russia's arsenal irreversible and verifiable*

From the 2004 Rome Final Statement:

> *….We reject double standards and emphasize the legal responsibility of nuclear weapons states to work to eliminate nuclear weapons. We call for continuation of the moratorium on nuclear testing pending entry into force of the Comprehensive Test Ban Treaty, and for accelerating the process of verifiable and irreversible nuclear arms reduction. We are gravely alarmed by the creation of new, usable nuclear weapons and call for rejection of doctrines that view nuclear weapons as legitimate means of war-fighting and threat pre-emption.*

From the 2003 Rome Final Statement:

> *The threat of weapons of mass destruction remains with us. We call for an immediate end to the newly resurgent arms race, which is being fueled by a failure to universally ratify a treaty banning nuclear testing, and by doctrines that lower the threshold of use and promote the creation of new nuclear weapons. This is particularly dangerous when coupled with the doctrine of pre-emption.*
>
> *For some to say that nuclear weapons are good for them but not for others is simply not sustainable. The failure of the nuclear weapons states to abide by their legal pledge to negotiate the elimination of nuclear weapon, contained in the Nuclear Non-Proliferation Treaty, is the greatest stimulus to their proliferation.*
>
> *Nuclear weapons are immoral and we call for their universal legal prohibition. They must be eliminated before they eliminate humanity.*

FACT SHEET:
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What Is a Nuclear Weapon?

A nuclear weapon is a weapon whose explosive power is generated by the process of nuclear fission (an **atomic bomb**) or nuclear fusion (a **hydrogen** or **thermonuclear bomb**).

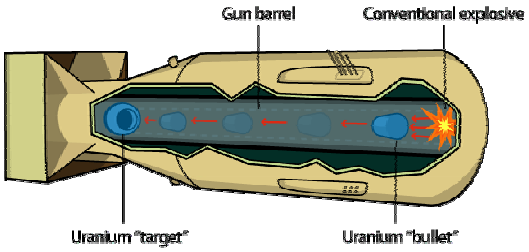
In order to create a fission or fusion reaction, a nuclear weapon must use what are commonly called **fissile materials**, either plutonium or highly enriched uranium (HEU), to fuel its explosion.

A nuclear explosion is the result of a rapid release of energy from a nuclear reaction, either fission or fusion. The result is an enormous blast of energy and thermal radiation.

What are the Types of Nuclear Weapons?

Uranium bomb

The Hiroshima bomb "Little Boy" is an example of a uranium fission bomb. Fueled by enriched uranium, this type of bomb is also called a "gun-triggered" bomb, because the splitting of uranium is achieved when a small mass of uranium is "shot" down a tube where it collides with a larger mass. The most powerful basic uranium fission bomb will detonate with a 50kt explosion force.[1]



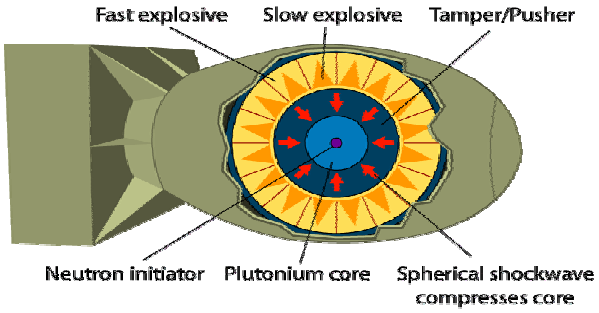
Bunker Busters and Mini-nukes

"Mini-nukes" (5-kt yield) and "bunker busters" (unspecified yield) are the newest in the development of low-yield nuclear weapons. Both mini-nukes and bunker busters would have the ability to attack deeply buried targets, thereby decreasing the amount of collateral damage.

However, because low yield nuclear weapons blur the distinction between conventional and nuclear weapons it is thought that their deployment may lower the threshold for the use of nuclear weapons.[2]

Plutonium bomb

The Nagasaki bomb "Fat Man" utilized the fission of plutonium, created by detonating an explosive around a ring of pie-shaped masses of plutonium, driving them to collide simultaneously in the center creating a fission reaction. Plutonium offers several advantages over uranium as a component in a nuclear weapon. Only about 4kg of plutonium is needed to make a bomb and only a small reprocessing plant would be needed. Such a device would explode with the power of 20 kilotons.[3]



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[1] *The Nuclear Fuel Cycle.* BBC News. Available at: http://news.bbc.co.uk/2/shared/spl/hi/sci_nat/05/nuclear_fuel/html/plutoniumbomb.stm

[2] Dr. Frank Barnaby and Dr. Jack Mendelsohn. *Low-Yield and Earth-Penetrating Nuclear Weapons aka "Mini-Nukes" and "Bunker-Busters."* Oxford Research Group and the Global Security Institute. December 2003. http://www.gsinstitute.org/docs/12-2003_Bunkerbuster.pdf

[3] Ibid.

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What Are the Risks of Nuclear Weapons?

Accidental launch:

- Thousands of warheads remain on high-alert; once launched, they cannot be recalled;
- There have been over 20 recorded instances of false alarms, including computer glitches, that were narrowly avoided;
- In addition to the risk posed by and for the US and Russia, those with the biggest arsenals, an even greater risk applies in India and Pakistan, whose long history of conflict combined with their close proximity makes it even more likely that a false alarm lead to an accidental launch;
- Space-based missile defense interceptors, such as those proposed by the US, can increase the risk of accidental detonation by eliminating pace-based early warning satellites, used by both the US and Russia;

Radiological Dirty Bomb:

- A "dirty bomb" is a device containing radioactive material and conventional explosives, such as dynamite;
- When the device explodes, neither fusion nor fission occur, though it will spread the radioactive material, contaminating the surrounding area;
- Radiological terrorism has occurred twice, in 1995 and 1998, both in Russia;

Environmental Consequences of Nuclear Weapons:

- Radioactive materials released from the testing or detonation of nuclear weapons remain in the ecosystem for thousands of years;
- Drinking radioactive contaminated water over a long period of time is closely linked to high cancer rates;
- Nuclear radiation, which results from the neutrons and gamma rays associated with fission, is lethal in high doses, and has many lingering effects, including increased cancer rates and organ damage. In addition to the 200,000 estimated deaths from the Hiroshima and Nagasaki bombs, thousands of other civilians developed cancer and other diseases form the high levels of radiation.

Nuclear Weapons Proliferation:

- In late 2003 a clandestine network, headed by the father of the Pakistani nuclear program - Dr. A.Q. Khan, was found to have been secretly and illegally supplying nuclear weapons technology to Libya, Iran and North Korea;
- The risk of other nuclear proliferation increases if the commitments of the nuclear Non-Proliferation Treaty are not honored and the verification regime is not maintained.
- Some countries have referenced the non-proliferation regime as "nuclear apartheid" – a system structured by the nuclear weapons states to deny non-nuclear weapons states status and respect and to keep technology from them in order to maintain their inferior and dependent status;
- In an interview after receiving the Nobel Peace Prize, IAEA Director General Mohamed ElBaradei commented that "we need a security system that's equitable…you cannot ask everybody not to smoke while you're dangling a cigarette from your mouth. It is not credible; it is not sustainable."

FACT SHEET:
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What is the international legal regime governing nuclear nonproliferation and disarmament?

- **The NPT**: The nuclear Non-Proliferation Treaty (1968) is an agreement by which non-nuclear states promise to forgo acquisition of nuclear weapons in return for access to peaceful civilian nuclear technology and, under Article VI, a commitment by the nuclear states to eliminate their nuclear arsenals. In 1995, the NPT was extended indefinitely.

  Five states (the US, the UK, Russia, China and France) are classified as Nuclear Weapon States. India, Pakistan, Israel and possibly North Korea are known to have nuclear weapons yet remain outside the NPT regime.

  In 2000, the Nuclear Weapon States agreed to "an unequivocal undertaking" to accomplish the total elimination of their nuclear arsenals.

- **The CTBT**: The Comprehensive nuclear Test-Ban Treaty (1997) prohibits all nuclear test explosions. To enter into force, the CTBT requires the ratification of 44 states identified as having a significant nuclear capability. Out of these, ten states, including the US and China, have not.

- **The ICJ**: In 1996, the International Court of Justice unanimously ruled that the threat or use of nuclear weapons "would generally be contrary" to humanitarian and other international law regulating the conduct of warfare. In addition, the court ruled that states are obligated to bring to conclusion negotiations on nuclear disarmament in all its aspects.

- **The IAEA**: The International Atomic Energy Agency conducts inspections to verify compliance and prevent the diversion of fissile materials for weapons use. In 1997, the IAEA established a voluntary Additional Protocol, designed to strengthen and expand existing IAEA safeguards under the NPT. As of January 1, 2005, 90 NPT states-parties have signed the Additional Protocol, and 62 of those states have put the Additional Protocol into force.

- **The FMCT**: Not yet negotiated, a Fissile Materials Cut-Off Treaty would prohibit the production of fissile materials for weapons purposes. Most states are generally in favor of such a treaty, though some issues remain in debate, such as the verifiability of such a treaty, as well as its scope; some states, for instance, want an FMCT to put a cap on existing stocks of fissile materials.

- **The General Assembly**: The First Committee of the United Nations General Assembly addresses all matters relating to international peace and security. The Committee passes resolutions each year reiterating the world's desire for the elimination of nuclear weapons. In 2006, 16 resolutions addressed the need for nuclear disarmament. GA resolutions are not legally binding in and of themselves, but rather work towards strengthening international norms.

FACT SHEET:
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Nuclear Energy

In 1934, an Italian scientist named Fermi and his colleagues bombarded uranium with slow moving neutrons and he realized that it produced much higher radioactivity than any other element treated the same way. Five years later Fermi discovered that the nucleus of uranium 235, if hit by a neutron, would split down the middle in two very similar fragments. This process was to be known as nuclear fission and it resulted in strong energy emission at the expense of the nucleus' initial mass.

The use of nuclear fission for civilian uses bases itself on the ability of controlling the chain reaction of such a process. In nuclear plants, the process of fission is tightly controlled through the use of special materials such as cadmium that are able to absorb neutrons and regulate the heat produced.

Nuclear Power Plants in Use Today

Slow Nuclear Reactors

These are the most common kind and are based on the nuclear fission principle; they are used in thermo-nuclear power plants and on air carrier ships. These reactors are built around a large cylinder where thousands of combustible pastilles (uranium 235) are inserted; controlled nuclear fission is then created and energy is produced in the form of heat that makes the water contained in the reactor evaporate and makes a turbine rotate thus producing electric energy through an alternator or making the propeller blades of a ship move.

Fast Nuclear Reactors

Fast nuclear reactors are called self-fertilizing because they are able to use the 99% of uranium that is not fissionable and which used to be disposed of in previous nuclear plants. These reactors are able to produce waste in the form of an artificial fissionable element named plutonium 238 or uranium 238. The first prototypes of these reactors entered service in 1974 in England and France. By using fast reactors uranium reserves could last for almost one thousand years.

From Fission to Fusion: Is Clean Nuclear Energy a Possibility?

Hydrogen is the lightest element in nature and is found in great quantity in water. Nuclear fusion theory rests on fusing two lighter atoms of hydrogen to obtain heavier ones (helium).

Specifically, nuclear fusion is achieved from two isotopes of hydrogen, deuterium and tritium, to obtain a nucleus of helium and a neutron. The construction of nuclear fusion reactors is very difficult: hydrogen atoms only fuse at temperatures above 100 million centigrade, and no known material can withstand such temperatures.

By fusing small quantities of hydrogen within a metal container (reactor) one could produce a regular and controlled energy flux; heat would be transferred to water by an independent circuit and the vapor would activate numerous turbines, thus producing energy.

There are currently two possible techniques that are being experimented with in laboratory settings:

Magnetic confinement based on a deuterium/tritium reaction.

The nucleus at the plasma state is enclosed in a reactor and separated from its sides by an incredibly powerful magnetic field. This reaction causes no radioactive waste, but radioactivity is produced in the reactor and causes noticeable neutron emissions.

Inertial confinement based on a deuterium/deuterium reaction.

This reaction is cleaner. By shooting lasers at small masses of deuterium and causing small fusion explosions in rapid succession, one could achieve a continuous energy flux.
If nuclear fusion is ever achieved, humanity's energy problems will be solved as hydrogen is readily found in waters across the world's surface.