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Developing effective actions towards the
total elimination of nuclear weapons



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Introduction

Nuclear war is one of the greatest, if not the greatest threat that humanity has ever faced. Since the first detonation, the world has never been the same and nations have around the world scrambled to obtain the technology in efforts to protect their sovereignty. Now nations are constantly trying to find solutions and agreements that will free the world of the fear of nuclear war. Despite consistent efforts to stop the spread of nuclear weapons and the dismantling of existing ones. Some nations have refused to participate in this global effort and have unilaterally continued the development of their programs despite nearly universal condemnation.

Since its conception, the United Nations has been at the forefront of the effort of the elimination of nuclear weapons. The first resolution created and debated by the United Nations General Assembly was on the issues of nuclear weapons and has been a key goal of most member states to control and decrease the size of existing stockpiles. The largest nuclear threats are the two powers which fought for global influence in the Cold War, the United States and the former USSR. Both nations had tens of thousands of warheads primed for use against their adversaries. Despite the fact that none of them were ever put into action, the burden of their existence has sat on the shoulders of previous generations. In order to focus efforts of nations with nuclear capabilities away from weaponization and towards peaceful application a treat was created. The Treaty on the Non-Proliferation of



Nuclear Weapons (NPT) was created and opened for signature in 1968 and in 1970 it came into action. The treaty has now been signed by 191 nations, 5 of which have declared nuclear weapons (“Treaty on the Non-Proliferation of Nuclear Weapons (NPT) – UNODA.”). There are still 3 nations which have declared nuclear weapons but have refused to sign the treaty. These are India, Pakistan, and the Democratic People’s Republic of Korea. The world continues to charge forward in the fight against nuclear weapons and negotiations because as old problems are solved new ones will arise.

Definition of Key Terms

Nuclear Weapons

An explosive device which uses energy from the chain reaction that follows the splitting of an atom. These are often considered to be the deadliest weapon that a military can have.

Nuclear Arsenal

Refers to the stockpile or collection of nuclear warheads and weapons within a nation’s possession. These range in size from only a dozen nuclear weapons to thousands and the size of a nation’s arsenal is a strong indicator of the military power of a nation.

Nuclear Weapons States (NWS)

This refers to the 5 designated “Nuclear Weapon States” which were outlined in the non-proliferation treaty (the Russian federation, the United States, the United Kingdom, France and China.) There are 4 other nations which have nuclear weapons that are not designated Nuclear Weapon States (Israel, Pakistan, North Korea, and India)

Uranium Enrichment

This is the process through which nations gain more valuable easily weaponized nuclear isotopes. These are typically Uranium - 235 or Uranium - 238 which are found in nature on rare occasions so they must be synthetically produced.

Nuclear Disarmament

This refers to the efforts made by nations and organizations to either dismantle existing nuclear weapon stockpiles. Nuclear disarmament efforts include the non-proliferation treaty (NPT) and has the final goal of complete nuclear disarmament (this does not mean that countries cannot enhance their nuclear energy programs or other non-military development efforts.)

Nuclear Non-proliferation

Proliferation by definition is the rapid growth in the number of something. Hence, “nuclear non-proliferation” refers to preventative measures that ensure more nuclear weapons are not created and spread around earth.

General Overview

The discovery of the atomic bomb, in the scale of human history, happened extremely recently. The time from conception of the idea to the first bomb dropped on Hiroshima was only about 4 years. This is why comprehensive actions have been taken to ensure that these technologies are kept out of the hands of those who wish to harm humanity. The urgency of the situation is best displayed by the nearly unanimous advocacy of nearly every nation on earth to prevent these weapons from ever being used again. But before one can understand

how to dismantle and rid of these weapons of mass destruction we must first know how they were created.

Discovery of Nuclear Fission

Following the discovery of the neutron and proton which developed our understanding of modern chemistry and physics, a group of three scientists began the pursue the idea put forth by Niels Bohr that atoms split in a similar fashion to a droplet of water. The group was carrying out their work in pre World War II Europe and because of this one member of the scientific trio, Lise Meitner had to flee the area due to her Jewish lineage. The two remaining members of the team carried out the experiment on their own and they sent their data to Meitner and her nephew who interpreted the confusing data and articulated that the large elements which splitting into smaller ones whilst also release large amounts of energy. The trio initially supported all of the positive possible applications creations of the discovery and the two primary scientists who continued their work on nuclear fission, Hahn, and Meitner, fiercely opposed the possible military use (“Pioneering Nuclear Science: The Discovery of Nuclear Fission.”)

The Manhattan Project

The United States government following the development of Nuclear Fission was extremely interested in the prospect of military applications. Starting in 1942, the U.S. began developing a nuclear bomb both as a means to protect their own sovereignty and their allies abroad. After the highly secretive development of the weapon in facilities across the country, with the work of about 130,000 people (Wellerstein), on July 16th, 1945, at a site in Alamogordo, New Mexico, the world’s first nuclear bomb was detonated. After further testing and development, four bombs were created, two of which were used in war efforts against the Japanese.

Hiroshima and Nagasaki

On August 6th, 1945, the first nuclear bomb was dropped on Hiroshima, Japan. Instantly, 80,000 citizens were killed following the explosion essentially destroying the entire city. Then on August 9th, a second bomb was dropped on the the the city of Nagasaki killing 74,000 more people. Before the bombing occurred, Japanese officials refused to surrender unconditionally prompting the president of the time, Harry S. Truman, to continue pursuing the destruction of the country until they surrender. On the 14th of August 1945, Japan surrendered and thus ended World War II. Following the end of the war and dropping of the two bombs on Japan, the cold war was set into motion and the race for better and larger nuclear arsenals began.

Nuclear Escalation and the Cold War

As the world war ended a new battle for power and influence began in what is now known as the cold war. The U.S. was at the time the sole nuclear power and the government's primary objective was to prevent the spread of Soviet-era communism. The government continued developing their nuclear capabilities and at the same time provided military and financial support to countries around the world to prevent them from becoming communist. The Soviets did not detonate their first nuclear weapon until August of 1949. With both superpowers having nuclear capabilities the only way for them to ensure supremacy is to build larger stockpiles than their adversaries. This lead to the rapid exponential growth of stockpiles in the following years and the development of new technologies like the hydrogen bomb that the United States had which was 2500 more powerful than that of the one created in Hiroshima. At the time bombs were primarily delivered through airplanes due to their large size and limited missile capabilities of the time. This meant that both nations began developing Intercontinental Ballistic Missiles (ICBMs) which were meant to carry warheads across the globe at the press of a button from large distances. The United States was constantly ahead of the curve for many years due to the fact that they had a headstart on all the technology as well as more resources and wealth.



This peaking in 1986 with nearly 70,000 warheads existing collectively around the earth (Bailey).

NATO and Warsaw Pact

As the two warring super-powers saw the threat that their weapons presented to the world they began entered alliances and formal pacts with other nations. The United States alongside Canada and an array of western European nations created the North Atlantic Treaty Organization (NATO). In the NATO charter, there is a mutual defence pact which remains intact today, claiming that an attack on one nation is essentially an attack on all member states. It also requires that all nations maintain a strong military prowess spending 2% of the GDP on military efforts. The Warsaw pact operated under a similar system to that of NATO and included Germany, the USSR, and Czechoslovakia. The Warsaw pact fell alongside the USSR but NATO remains today adding new countries every few years increasing their sphere of influence.

The Non-Proliferation Treaty (NPT)

The NPT was and is the most comprehensive effort towards total elimination of nuclear weapons but like all agreements, it has its limitations. Signed in 1968 the agreement designated that the 5 nations which had nuclear capabilities at the time were to be the NWSs or Nuclear Weapons States. It stipulated that all signatory states were not to develop nuclear weapons programs. The limitations enter into the fact that some nations refuse to sign the agreement or did not comply with the guidelines of the treaty. These include India, Pakistan, and North Korea all of which have not signed and have known nuclear weapons stockpiles. The agreement has seen sharp drops in the number of nuclear weapons in existence with the nearly 70,000 warheads seen in the 1960s dropped to a number around 15,000 in the current day. The problem lies in the fact that existing NWSs have vowed to and have improved and developed their existing stockpiles rather than continuing to dismantle their current stockpiles negating the progress made in recent decades.

Major Parties Involved

United States

The United States was the first country to obtain nuclear weapons and did so in the midst of World War II in their effort to defeat Japan. They are also the only country to detonate a nuclear bomb in battle and since its use, in Nagasaki, the world has been attempting to obstruct or delay the threat the weapons pose to society. The U.S. currently boasts a stockpile of 6,800 nuclear warheads (Abramson, Alana) but this projected to be 4,000 in the coming years as 2,800 of them are primed for dismantling. This promise for the further shrinking of the arsenal has been questioned recently considering President Trump's quotes regarding the possible strengthening of the American nuclear program. Statements from the U.S. Department of defense and the congressional budget office did reiterate that all improvements will stay within the confines of international treaties (Stewart). Additionally, whilst on the campaign trail, Trump refused to rule out the potential use of nuclear weapons against ISIS, saying that all options should be "left on the table" ("Trump Declines to Rule Out Using Nuclear Weapons Against ISIS.")

United Kingdom

The United Kingdom has one of the more unique nuclear arsenals in the world which operates under a cloak of secrecy. The system is called Trident and it is a CASD (Continuous at Sea Defence) program meaning and it is made up of 4 nuclear-powered submarines which are continuously patrolling the British coastline (Farmer). Each of the submarines contains a handwritten letter from the Prime Minister instructing the highest ranking officer on their action if the Prime Minister and her cabinet have been killed as a result of a large-scale attack on the nation. The location of the submarines is never known but since the 1990s there has always been one which is actively patrolling.

Russia

The Russian Federation is the counterpart to the United States as the second “nuclear super-power.” The nation was the second to obtain nuclear weapons and for almost all of the atomic-era, they have held the largest stockpile of any nation on earth. In 1986 the nation peaked at nearly 45,000 nuclear weapons but this had since been reduced to the nations current stockpile which currently stands at 7,000 (“Russia.”) The nation continuously updates its “nuclear doctrine” with the most recent edition coming in December 2014. The nation states that “The Russian Federation reserves the right to use nuclear weapons in response to the use of nuclear and other types of weapons of mass destruction against it and (or) its allies, as well as in response to aggression against the Russian Federation that utilizes conventional weapons that threatens the very existence of the state” (“Fact Sheets & Briefs.”). The United States and Russia have coordinated efforts to reduce their stockpiles for decades but in recent years these efforts have become more superficial and lackluster as the relationship between the two become more strained due to their highly contradictory foreign policies in the middle east and elsewhere.

China

At the peak of their relationship, the USSR and China were sharing military and scientific discoveries and this included Soviet-era nuclear technologies. The nation, which at the time of their entrance into the nuclear-era, was extremely impoverished went through the expensive and strenuous process of developing a nuclear program. After decades of research and preparation, the nation detonated their first nuclear weapon in 1964 and has since vastly expanded its arsenal to accommodate upwards of 270 warheads (“Nuclear Weapons.”)



France

The French nuclear program is highly similar to that of the United Kingdom. It consists of 4 submarines which are perpetually surveying the nation coastlines and awaiting orders to strike at a moment's notice. The country has 300 warheads making it the third largest nuclear arsenal on earth. The country maintains a somewhat vague nuclear doctrine claiming only that "aiming to protect France from any form of state actor aggression against France's vital interests, regardless of its origin or its form." ("France.")

Non-NPT

India

India is one of three non-NPT nuclear countries in the world. The government has never officially declared the size of their stockpile. They operate under a "no-first-use policy", this is unique and is not a commonly professed strategy among nuclear nations. Since NPT only allows for nuclear states to exist which had weapons before January 1st, 1967, India cannot join the NPT whilst in possession of nuclear weapons. The nation continues to defend its right to being an atomic power and most prime ministers of the nation have claimed that they never plan to join the NPT as it would leave them defenseless to their neighboring nuclear states (Pti).

Pakistan

Pakistan began development of nuclear weapons in the 1970s and has since accumulated an estimated 130-140 nuclear weapons ("Nuclear Arsenals.") The nation has proclaimed that they refuse to sign the NPT as a non-nuclear so long as India also has weapons. This stance in conjunction with Indian foreign policy has left the region in a

standstill in terms of disarmament as both nations see the other's arsenal as a threat to their own sovereignty. In recent years, there have been continued efforts for the two nations to build a stronger more peaceful relationship. This could lead to potential denuclearization of the region but it is difficult to predict the outcome of this new relationship considering that both nations feel threatened by the substantial nuclear arsenal of their neighbour, China.

North Korea

The Democratic People's Republic of Korea (DPRK) has been dominated by the news-cycle around the globe in recent years following their continuous nuclear weapon testing. The nation had signed the NPT in 1985 but faced a series of problems with inspectors from The International Atomic Energy Agency (IAEA) when they refused to give them access to their nuclear waste storage sites. In his 2002 State of the Union address President George W. Bush referred to Iraq, Iran, and North Korea as "axis of evil". This was based off American intelligence which claimed that the North Koreans had continued development of their program in violation of the NPT. Despite constant negotiations, treaties, aid packages, and agreements with the country nearly every agreement they have ever made have been violated and they continue to develop their program. Attempts from both President Bush and Obama have thus far resulted in further aggravation of the so-called "rogue state." Supreme Leader Kim Jong Un has guided his country towards the developments of Intercontinental ballistic missiles (ICBMs) which are capable of reaching the majority of Asia as well as the western coast of the United States ("Nuclear Arsenals.")

Non-Declared

Israel

The Israeli government has never acknowledged ownership or nuclear weapons nor made a formal statement regarding development but despite this foreign policy experts generally, agree that they do possess approximately 100-200 nuclear warheads ("Israel.") The refined

Uranium was supplied by the French who had already developed their program when Israel supposedly began there in the late 1960s.

Timeline of Key Events

Timeline of events in reverse chronological order leading up to present day (“Nuclear Weapons Timeline.”)

| Date | Description of Event |
|---------------------------|---|
| August 1942 | Manhattan Project Establish |
| 16 July 1945 | US conducts first ever nuclear test |
| 6 August 1945 | US drops atomic bomb on Hiroshima |
| 24 January 1946 | UN calls for elimination of nuclear weapons |
| 16-29 October 1962 | Cuban Missile Crisis occurs |
| 1 July 1968 | NPT is Signed |
| 11-12 October 1986 | US and Soviet leaders discuss disarmament |
| 9 October 2006 | North Korea conducts first nuclear test |
| 7 July 2017 | UN adopts nuclear weapon ban treaty |

Previous Attempts to Resolve the Issue

The first meeting of the UN General Assembly dealt with the elimination of nuclear weapons and efforts will not stop until this goal is met. Multiple meetings, treaties, and resolutions have been passed and discussed in attempts to rid of nuclear weapons these include:

- Declaration on the Prohibition of the Use of Nuclear and Thermonuclear Weapons
- Treaty on the Non-Proliferation of Nuclear Weapons (NPT)
- Partial Test Ban Treaty (PTBT)
- Comprehensive Nuclear-Test-Ban Treaty (CTBT)
- Treaty on the Prohibition of Nuclear Weapons (TPNW)



All of these have different focuses and ideas behind them but stick to one general theme which is preventing the human race from ever feeling the wrath of nuclear weapons again. Many of these resolutions were successful considering the staggeringly low amount of nuclear tests in recent decades addressed by the CTBT. Whilst Treaties and Resolutions are important most of the work is done by the diplomacy of individual nations and the realization that perpetuating the risk of human extinction is not worth the cost to humanity. This has been seen in efforts from governments around the world constantly working and pressuring one another to create a safer world.

Possible Solutions

The needs for nuclear weapons is born out of the need for nations to protect themselves in the most extreme circumstances possible. The sheer power of a nuclear weapon overshadows that of any other in existence meaning that when it comes to the wars no nation wants to arrive unequipped when their enemies hold weapons of mass extinction. This means that if there is ever to be a point of total elimination of nuclear weapons that all NWS and Non-NWS must make a simultaneous and binding agreement for elimination so that no one nation holds all the power.

Many scholars argue that in order for this to happen that nations must first develop stronger diplomatic bonds and trust to be able to take this type of action. This is why some have lost hope in disarmament in the near future because of deteriorating bonds between the United States and Russia. There is some reason for hope considering the recent meeting between Kim Jong Un and Donald Trump in Singapore where they discussed the possible denuclearization of the Korean Peninsula. Additionally strengthening bonds between India and Pakistan could mean potential de-escalation in the region.

Reasons for hope exist everywhere but until every nation on earth can see the importance of a world free from the tyranny of nuclear weapons. It is the duty of every current and future politician to make strides towards a nuclear-free world and follow the words of Chung Mong-Joon “The lesson of the Cold War is that against nuclear weapons, only nuclear weapons can hold the peace” Despite difficulties in the international community, solutions exist and are yet to be discovered and implemented. It is up to the next generation to take this problem upon themselves and create a more secure and prosperous world free of the burden of nuclear weapons.

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