

**Committee: General Assembly 1st Committee**

**Issue: Role of science and technology in the context of international security and disarmament**

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**Position: Co-Chair**

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Hello delegates,

My name is Jason Singer and I will be serving as co-chair of the Disarmament and International Security Committee in this year's Campion MUN conference. I am 17 years old, in my final year of high-school education at St. Catherine's British School and have participated as a delegate in said committee twice before. I find that the topics discussed in this forum of particular importance and deserving of diligence in order for effective solutions to be found. I therefore suggest that besides reading this study guide and the sources I will reference at the end delegates of all countries do their own research on this very broad topic in order to ensure that debate is well informed and of high intellectual caliber. If there remain any questions after said research do not hesitate to contact me ([jason.singer@stcatherines.gr](mailto:jason.singer@stcatherines.gr)) and I'll do my best to help. I look forward to seeing the ideas you come up with by and in October.

## TOPIC INTRODUCTION

War has long constituted a motivating factor for technological advancement. Unfortunately, it follows that with increase in effectiveness comes increase in lethality; posing an ever-greater danger to global security. In a world where a nuclear apocalypse – annihilating the entire human race – is a button away and precariously reliant on volatile international relations, disarmament seems a necessary course of action. Besides the physical threats modern warfare poses, increased reliance on computer systems and networks has given rise to international cyberwarfare the most notable culmination of which was the Stuxnet attack detected in 2011.

In 1988 – when this topic was first included in the United Nations Disarmament and International Security Committee's agenda – and still today, technological advancement radically transformed the way security is perceived. Notable examples of such changes include, inter alia, nuclear explosive power, fuel and laser technology. Whilst disarmament must be striven for, this topic is not directly concerned with reducing the arsenals of individual countries or even the retardation of scientific and technological advancement affecting warfare given that science per se is merely a tool used for aggression and not the root of the problem. Instead, this issue concerns the identification of new threats to international security, their recognition and assessment by the international community as well as setting guidelines for export controls on technologies (both peaceful and non). This latter has been ubiquitous in debates on this topic because certain developing countries have been excluded from technological trade thus severely impeding their socioeconomic growth. It is also of vital importance as there is little regulation at the moment ensuring that trade is aligned with the universally accepted non-proliferation aims. If any realistic steps are to be taken towards disarmament, multilateral negotiations setting rules for the trade of so-called "dual-use" technologies are of utmost importance.

## DEFINITION OF KEY TERMS

### Dual-use Goods and Technologies

This term refers to applications of science that could potentially serve as peaceful tools/inventions for economic growth as well as weapons during wartime. They are of particular relevance in this topic as their trade is not satisfactorily regulated or necessarily aligned with non-proliferation conventions.

### Export Controls

Export Controls are the set of regulations overseen by a body concerning the trade of particular goods.

### Chemical Weapons Convention

An agreement between almost all member states of the United Nations which aims to eliminate chemical warfare altogether. Signatories have agreed to not develop any weapons which fall under this category entirely and take legal action where necessary stopping any third parties within their jurisdiction from producing such weaponry. The Chemical Weapons Convention has been largely successful in eliminating an entire type of weapon of mass destruction from modern warfare and hence constitutes a great step towards international disarmament (for more specifics see “historical information”).

### Treaty on the Non-Proliferation of Nuclear Weapons

Less effective than the aforementioned convention – possibly due to the more widespread usage of nuclear weapons – this treaty has been signed by all UN member states except for India, Israel, Pakistan (which are thought to possess nuclear weapons) DPRK and South Sudan and aims to limit the development and spread of nuclear weaponry. The extent of its success is debatable; however, its widespread support does mean that countries are officially united in their nuclear intentions.

### Biological Weapons Convention

This was the first ever convention barring an entire category of weapons, namely bacteriological and toxin weapons. The convention allows for the possession of biological weapons for prophylactic reasons (dual use technologies) and appeals to the United Nations Security Council to enforce its ruling in signatories who have ratified the treaty. Although it is generally adhered to not much success can be attributed to this treaty due to a lack of compliance and reporting from certain signatories.

### Arms Race

This term refers to countries competing by rapidly advancing the effectiveness of their arsenals either by increasing the amount of weaponry, or by inventing new, more effective weaponry. Prompted by each other’s success such a process can spiral out of control very quickly and the longer it progresses the more volatile relations between those two countries become.

## BACKGROUND INFORMATION

The “Role of Science and Technology in the Context of International Security and Disarmament” is a topic on the agenda of the General Assembly 1<sup>st</sup> Committee proposed by India in 1989 towards the end of the Cold War. This time saw two superpowers: the United States of America and the Soviet Union (USSR) in an arms race of unmatched magnitude. New satellite espionage techniques were developed by

both sides and nuclear weapon technology flourished (without being used). Even before that, the USA developed the atomic bomb and dropped two of them (with devastating consequences but successfully ending WWII on the Japanese front) on two Japanese cities. During the Cold War period, both USSR and USA increased their nuclear arsenal and developed new such technologies including the Hydrogen Bomb. Such a weapon has never before been used against a country but if ever used would obliterate entire cities in similar (yet much more extreme) fashion as Hiroshima and Nagasaki (10,000 kilotons of TNT vs. 15 kilotons of TNT). The Hydrogen bomb now decorates the arsenals of India, the United Kingdom, Israel, France, China, Pakistan and possibly even North Korea. The number of nuclear warheads has decreased largely over the past years – although nuclear Armageddon is still possible – partially due to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) which entered into force in 1970. North Korea withdrew from the treaty in 2003 and has since tested multiple nuclear weapons the most recent of which was on the 9<sup>th</sup> of September 2016. While the NPT does condemn the use of nuclear weapons, peaceful uses of such technology is not limited by it and, as such, countries such as France, Japan and the United States of America use nuclear power to generate electricity.

### Number of nuclear warheads in the inventory of the nuclear powers, 1945-2014

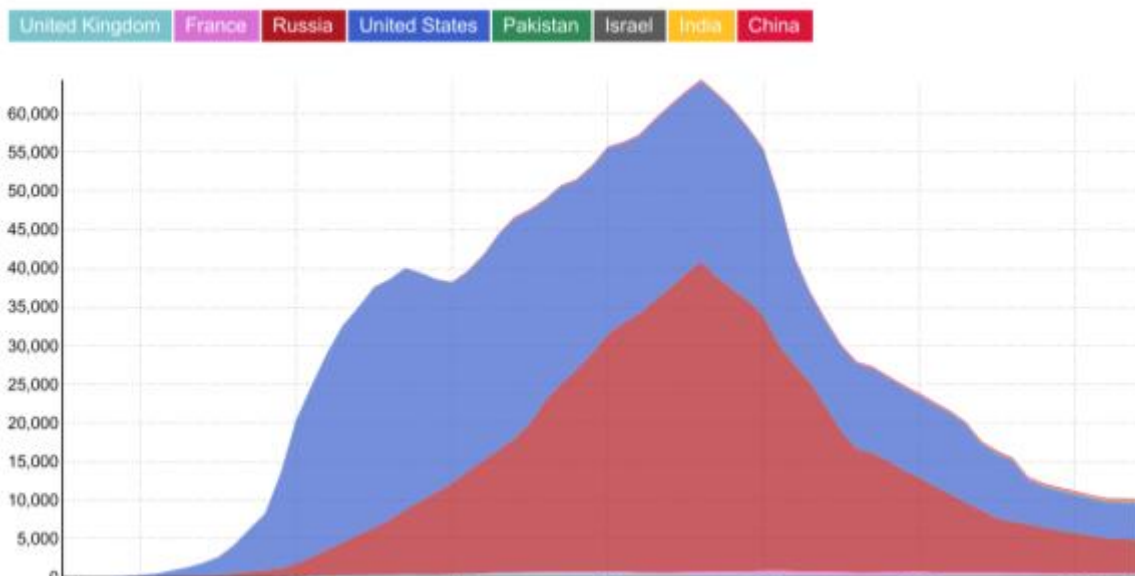


Figure 1 <https://ourworldindata.org/nuclear-weapons/>

As described by Mr. Rakesh Sood in his statement to the Conference on Disarmament, developing countries are put at a big economic disadvantage when deprived of the scientific knowledge nuclear countries possess as has been the case for many years now. Such countries only trade amongst themselves this information (even though it is Scientific and thus neutral) with discriminatory export control regimes. To understand just how disadvantaged these less economically developed countries are it is useful to look at the statistics of nuclear power usage in more economically developed countries (see figure about France). It should also be noted that some LEDCs do not have access to fossil fuels (due to their economic state and geography) or the alternative of hydroelectric power and would therefore benefit to an enormous extent if they had nuclear power plants (not to mention how much less pollutant this form of

energy production is when juxtaposed to the combustion of hydrocarbons). The reasons countries cite for their discriminatory trading tendencies is that with such knowledge countries would be one step closer to nuclear armament and thus pose a threat to international security. Importantly though, there exists the International Atomic Energy Agency (IAEA) whose long-term aim is for the usage of nuclear energy in safe ways in such countries. Its work is largely mitigated by such exclusive export controls and thus sustainable economic growth is largely unachievable.

Moving to another area of technology which can be used in warfare, chemical technology. This case constitutes an ideal success in disarmament through the Chemical Weapons Convention (as aforementioned). Signatories of this convention have already destroyed a large portion of their chemical weapons and facilities tasked with their production in the countries. This limitation of scientific development of a certain weaponry dates as far back as 1675 in an agreement between France and Germany to ban poison bullets due to their causing unnecessary suffering during wartime. This principle was then applied, through the CWC, onto any toxic chemicals (as outlined in Article II of the CWC). In spite of this progress, there have been occurrences of chemical warfare as in the case of the Iran-Iraq war. It is thought that there are approximately 30,000 soldiers still suffering the effects of such weaponry such as mustard gas 29 years after the end of the conflict. Moreover, there have been regular revisions to the convention in order for it to keep up with advancements in science and technology within the context of chemistry. The most recent of these revisions was in 2008 whilst the convention does require signatories to review their implementation of its measures every 5 years.

In contrast, the disarmament of biological weaponry has not constituted as much of a success. Whilst the Biological Weapons Convention (BWC) entered into force on 26 March 1975 and attempted to establish Confidence Building Measures (CBMs) among

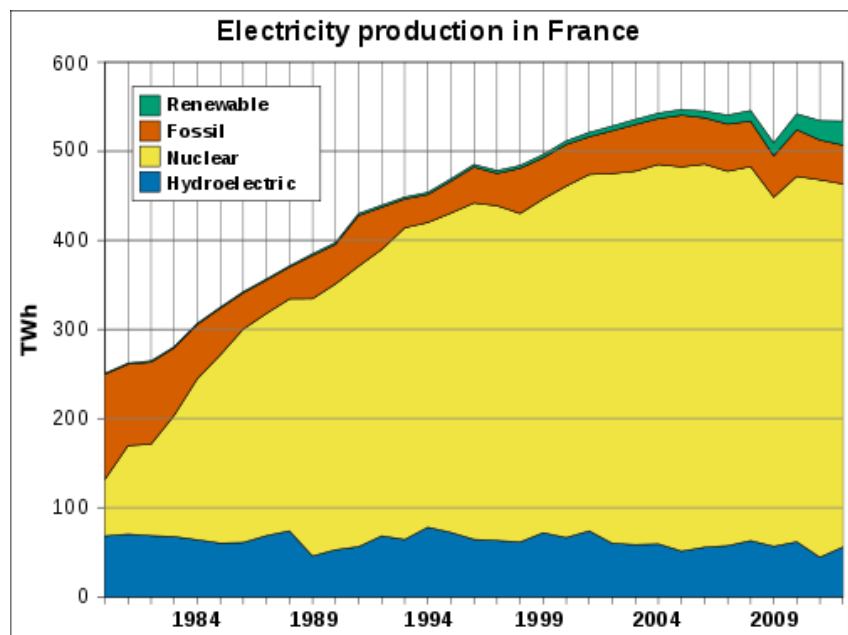


Figure 2 [https://en.wikipedia.org/wiki/Nuclear\\_power\\_in\\_France](https://en.wikipedia.org/wiki/Nuclear_power_in_France)

signatories so that their reports on their biological research, information on outbreaks are not subject to ambiguity, success is limited. The UN Special Commission on Iraq which found that the country was in violation of some of the most fundamental principles of the convention which it was it had signed and ratified. Moreover, the convention is subject to a lack of participation as Syria, one of the most war-torn states at the moment is not a signatory of the convention. The United States has publicly denounced many states of their misconduct including Iran, Cuba, Syria, Libya and North Korea. In a nutshell, there is a lack of compliance with the regulations outlined by it due to an inadequate verification process and this has led to international tensions.

Finally, cyberwarfare is notable in the context of the role of science in disarmament as it constitutes the newest and most elusive front on which countries fight. Whistleblowers such as Edward Snowden (first leaked in June 2013) have revealed the huge extent to which governments pervade the lives of individuals not only within their own borders. Several countries have characterized the surveillance of others' citizens as an act of violence. Even more tangible acts of aggression were the Stuxnet attacks which were discovered in 2010. Stuxnet was a cyberweapon, now commonly believed to have been developed by Israel and USA to damage Iran's nuclear program by making centrifuges malfunction to the point of self-destruction. This is comparable with the act of bombing Iran's nuclear facilities which is an undoubtable act of war, with the notable exception of the weapon being very hard to trace back to any specific country.

## COUNTRIES INVOLVED IN THE ISSUE

### United States of America

USA has the most funded military program of any other country. As such, its arsenal is of extravagant magnitude and it funds multiple programs for the invention and development of new weaponry through the advancement of science. As aforementioned, USA is also credited with the Stuxnet attack and is one of the most outspoken countries concerning lack of compliance to international treaties such as the BCW.

### People's Republic of China

China has the second greatest military spending in the world (\$145.8bn), is a nuclear state and has the most employed active personnel in its military. Its military has been recently modernized and development of new weaponry by military programs is regular.

### Countries currently in Large-Scale Conflicts

War itself creates an urgency for new weaponry and might even prompt countries to cross international regulations in order for its cessation. Whilst this does not directly concern the security of the entire international community, it can have ripple effects and should be considered for it directly relates to science and technology in this context. The list of the main countries involved in large, ongoing conflicts (10000+ casualties in the current or past year) are:

- Afghanistan – ISIS-KP and Taliban activity fought by USA, NATO and Afghan National Security Forces (see [MOAB dropped in April 2017](#))
- Iraq – Civil War Republic of Iraq ISIL airstrikes and military support from multiple other countries including Russia USA and Iran
- Syria – Assad Government vs. Free Syrian Army and ISIS (use of [thermobaric weapons](#))
- Mexico – Mexican Government vs. drug trafficking syndicates such as the Sinaloa Cartel)

## TIMELINE OF EVENTS

Date	Event
July 1917	Mustard Gas first used
June 1925	Geneva Protocol
August 1945	Atomic bombings of Japan
1957	IAEA founded
1970	Treaty on the non-Proliferation of Nuclear weapons enters into force
March 1975	Biological Weapons Convention enters into force
August 1988	End of Iran- Iraq War
November 1989	Fall of the Berlin Wall (ending the Cold War)
April 1997	Chemical Weapons Conventions enters into force
January 2003	North Korea withdraws from NPT
2010	Stuxnet first Identified

## RELEVANT UN RESOLUTIONS

- A/RES/61/55
- A/RES/51/39
- A/RES/48/67

These resolutions are ordered from newest to oldest and are very similar. In fact, delegates will find that some of the operative clauses are common across resolutions. I recommend that the perambulatory clauses are read as well because they underscore important contextual information concerning the issue at hand. In short, these resolutions call for increased multilateral discourse on the issue as well as increased efforts to guide scientific progress towards peaceful technologies.

## POSSIBLE SOLUTIONS

Delegates should consider methods of strengthening current conventions tasked with the limitation of the development of new weaponry such as the CWC and the BWC. These might have to include an alternative to sheer trust for the enforcement of their decrees. An independent committee auditing countries as opposed to self-reporting could work but at the cost of less confidence and possible aggravation of countries. In a similar vein, there are little to no regulations concerning the development of cyberweapons and given the world's increased reliance on cybertechnologies they pose an increased risk. Delegates should try and come up with pragmatic measures towards the restriction of government developed cyber tools to peace.

Nuclear warfare also cannot be ignored in this context given its scientific basis and apocalyptic capabilities. Attempts to limit scientific progress in this field to peaceful purposes is in the best interest of the international community. In conjunction with the IAEA and with reference to the NPT delegates should think of ways to remove the urgency for nuclear armament perceived by countries such as North Korea.

Finally, multilateral negotiations concerning the export controls enforced by more economically developed nuclear countries are of utmost importance. Discrimination in global trade disadvantages and aggravates many countries, depriving them of the basis required for economic mobility. Delegates should consider the reasons behind this phenomenon at the moment (namely confidence) and come up with the

regulations required for countries to be willing to trade these “dual-use” technologies. Again, the IAEA could both mediate these discussions and audit/enforce the results.

## FURTHER READING

Statements by Rakesh Sood on the matter:

- [Statement 1](#)
- [Statement 2](#)

[United Nations Page on this Issue](#)

[Page about the CWC](#)

Delegates might also be interested in weaponry which uses new technology:

- [Thermobaric Bombs](#)
- [Largest, non-nuclear bomb \(recently used\)](#)
- [Predator Drones](#)

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