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Committee: Disarmament and International Security Committee

Issue: The Question of the Use of Artificial Intelligence in Warfare

Student Officer: Marianna Generali / Nefeli Papou

Position: Chair / Co-Chair

PERSONAL INTRODUCTION

Esteemed Delegates,

My name is Marianna Generali and I am a student in the 12th grade of HAEF Psychico College in Athens. In this year's DSTMUN, I have the utmost honor to address you as the main chair of the Disarmament and International Security Committee (GA1), in my 12th conference. I would like to welcome you to the 2nd DSTMUN and assure you that it will be an unforgettable and unique experience.

I attended my first conference little less than two years ago and since then MUN has played a great role in my everyday life. The Disarmament and International Security Committee tackles intricate issues, offers fruitful debate and has grown to be my favorite. MUN in general has furnished me with an abundance of new skills such as those pertaining to research, public speaking and has equipped me with knowledge upon current affairs, world history, UN history and many more.

The topic of artificial intelligence in warfare is really interesting and an issue that arises in today's developing information age. Advantages and disadvantages can be seen while studying the issue and it is up to your discretion to find ways to tackle the difficulties and consequences that occur, as well as find a way to monitor AI usage in warfare.

This study guide will provide you with the necessary information in order to draft your resolutions, however be advised that it is vital you conduct your own research in order to familiarize yourself with your country's policy on the matter and further understand the topic!

Should you have any inquiries upon your research on the matter do not hesitate to contact me or my co-chair Nefeli via e-mail. You can reach me at marrgen3@gmail.com where I will be more than happy to answer your questions and will be available any time you should need me.

Dear Delegates,

My name is Nefeli Papou and I have the privilege to serve as a co-chair in the Disarmament and International Security Committee in this year's DSTMUN Conference. As such, I would like to welcome you all to this year's conference.

Ever since my first MUN experience, the excitement of the day to arrive for my next conference has only increased. MUN conferences are an opportunity for me to acquire new skills and overcome fears, for example talking to an audience. I only hope that we can all have a good time learning, cooperating and, of course, passing resolutions!

This year's topic is very interesting and refers to the question of the use of artificial intelligence in warfare. Please take into consideration that this study guide is written to help you in general with the topic and should not be your only source of information about it. It is important that you conduct your own research, always having in mind the position of the country you represent.

For any delegate who has questions concerning the study guide, the topic or the conference in general, please do not hesitate to contact me at nefelizaxa@icloud.com.

Best,

Marianna and Nefeli

TOPIC INTRODUCTION

Nowadays, Artificial Intelligence (AI) in general is a very controversial topic. In our everyday life, AI can replace manual labor and assist people with various compromising tasks. But what does the use of Artificial Intelligence in warfare mean? Opinions vary, as some Member States believe artificial intelligence could be immensely beneficial. However, some others support that the consequences could be detrimental.

Figure 1 Picture of one of the most common examples of AI machinery, a drone, ready for military use

Implementing Artificial Intelligence in machinery -contrary to Lethal Autonomous Weapons (LAWs)- means that they are able to act like humans, without receiving orders from them. Of course, this is a big step for humanity; however, it simultaneously poses a great threat, due to the autonomy and unpredictability of artificially intelligent weapons. In many cases that they cannot be controlled by humans, they have been proven self-sufficient and consequently, dangerous.

It is of major importance to locate the necessary means in order to combat the complicated issue of artificial intelligence and create an international standard upon its use in warfare. Seeing as the topic has seen a lot of controversy and difference in opinions, negotiations and solutions should be proposed in order to prevent the dangerous effects of artificial intelligence in warfare.

DEFINITION OF KEY TERMS

Artificial Intelligence (AI)

Artificial Intelligence is the intelligence that a machine can develop contrary to human intelligence. Generally, the term is used when a machine copies human action to solve a problem.

Autonomous Weapons or Lethal Autonomous Weapons (LAWs)

A weapon can be characterized autonomous when it is able to function on its own, without a human controlling it. They have the ability to understand who or what the target is and destroy it, if they have been programmed to do so.

Autonomous offensive systems

Autonomous offensive systems are weapon systems that are programmed to carry out all offensive actions, including searching and identifying the target. A known example is drones.

Artificial Intelligence Arm Race

It can be characterized as a competition between two or more countries, to show which one has developed the best artificial intelligence army. It is believed that the leading party in this race is China, paving the way with their technological advancements in artificial intelligence.

BACKGROUND INFORMATION

History of AI

The development of the electronic computer in 1941 is followed by the first idea of Artificial Intelligence in the late 1950s. The main influencer of this idea was

Norbert Wiener, an American mathematician, who was concerned with the common factors of control and communication in living organisms, automatic machines, and organizations. Furthermore, one other influence was the development of The Logic Theorist, the first program that could analyze Artificial Intelligence. When it was given a problem, it would most likely choose the correct conclusion.

Regardless to these influences, the main actor in this development was John McCarthy who is considered to be the father of AI. In 1956, he held a conference at Dartmouth University, in which he was presenting a research upon AI. After this conference, other Universities, such as MIT, got interested in the Artificial Intelligence research and started facing new challenges such as the creation or development of systems that would solve problems in limited time as well as the construction of programs with the ability to learn on its own.

Application of AI in warfare

The concept of AI in warfare is not theoretical anymore since numerous countries have considered using it for military reasons. The most propounding countries would include USA, Russia, China, France, UK, Israel and South Korea. These countries think that since Artificial Intelligence is working so fine in other aspects, such as healthcare and finance, it should be used in warfare as well. Based on Forbes magazine, nations like the aforementioned aim to incorporate AI in their weaponry arsenal as part of their efforts to showcase their technological and scientific advancements so as to obtain or remain in a dominant position in the global power game.

Figure 2 Picture of a plane, firing a rocket, which controls its direction using AI rather than human instructions

The application of AI in warfare, although evolving, most commonly occurs in the form of robot-soldiers and drones or rockets, at least up to now.

Robots may be useful due to their ability to receive orders via various kinds of networks such as the internet, as well as the capacity to act on their own even without human control. On a more practical note, the use of robots instead of human military personnel significantly reduces the casualties of people during an armed conflict, were we to ignore the increased danger of a strategical mistake of machines to, essentially, confuse the adversary with innocent civilians.

Drones are being designed to recognize the enemy's military personnel and weaponry on their own. AI has the capacity to act as the brain of such machinery, giving it the ability to take actions with no human intervention. The tasks for which

the drones are being used may be very dangerous or even impossible for warriors, thus, drones can become very helpful in times of conflict especially for spying purposes. Similarly, AI rockets work self-sufficiently as they are able to recognize their target on their own.

Disadvantages and Consequences

Artificial Intelligence in warfare has caused a huge debate among experts, concerning the development and use of semi and fully autonomous weapons with functions pertaining to targeting and application of force, without human oversight. Some military experts believe various advantages can be found in autonomous weapons systems such as strategic and tactical, but also preferable morally over human combatants. However, it is widely believed that such weapons should be dismissed or banned, for a variety of moral, legal and other reasons.

When talking about machinery based on artificial intelligence, we have to mention the cost and maintenance. Artificial intelligence is very expensive to develop and manufacture, thus a major amount of money is required for the construction of these machines. Furthermore, autonomous machines are very complex, when it comes to their software, thus its repairs and maintenance will be highly expensive.

The biggest problem that comes with these machines is their autonomy as it might have serious fatal consequences, due to their lack of logic and ethics. AI-equipped machines have the ability to make decisions on their own discretion, so it will be difficult to determine the cause of a flawed decision. For example, it could be caused due to flaws in its program or the autonomous deliberations of the machines. In situations where humans use force against a target, there is a chain of accountability, stretching from the actor to the commander who gave the order. In the case of autonomous weapons systems, no such clarity exists, thus it has remained unclear who or what is to be blamed or held liable.

Robots do not have the ability to feel the same emotions as humans do, thus not seeking retaliation for harm done previously. The debate so far has been made unclear due to the confusion of machine autonomy with moral autonomy. The main apprehension of engineers and designers developing autonomous weapons systems should not be ethics but safety and reliability. However, safety is of course a moral value as well.

Benefits

Even though ethical disadvantages can be found in the use of artificial intelligence in warfare, they undoubtedly can have military advantages. Firstly, autonomous weapons can multiply the force of a combatant army, as fewer warfighters will be needed and the efficiency of each warfighter will be greater.

Another benefit can be considered the expansion of the battlefield, allowing combat to reach areas, previously inaccessible. In some cases casualties can be reduced by removing human warfighters from dangerous missions and battlefields.

Knowing that agents and experts have a good understanding of the robotic capabilities, thus they monitor progress and ensure cooperation. Hence tasks will be able to be planned though various interactions. AI machines are considered to be "Digital Assistants", as they are highly developed and very intelligent. Furthermore, they can develop or even create new programs, which will adapt to each situation best, making them especially helpful, especially in warfare.

Undoubtedly, a benefit that artificial intelligence can provide to warfare is ensuring more efficient and faster work.

MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

China

China is working with artificial intelligence in order to enhance its military defense actors and it is expected to lead in AI by 2030. Since 2017 the Chinese government has been aiming to create a $150 billion AI industry by 2030. However, it has been speculated that integrating artificial intelligence into weapons rapidly, could lead to devastating consequences, such as warfare. China strongly encourages the introduction of more autonomy closer to lethal use of force. It was the first permanent member of the UNSC to approach the topic, questioning the competence of international law to address the consequences, fully autonomous weapons might bring. Furthermore, in 2018 it was estimated that the annual private Chinese investment in AI was under $7 billion per year. They call for regulations necessary for the military application of new and autonomous technologies by new international laws. Finally, when approaching LAWS, China believes international standards must be developed in retrospect of the application of AI for military purposes.

European Union (EU)

The EU reaffirms that international law should apply to autonomous weapons systems and that weapon systems ought to remain under manual control. They emphasize on States' responsibility in order to ensure that emerging weapons systems comply with IHL. The EU stresses the importance of humans making decisions with regard to use of lethal force, control over lethal weapons and urgent decisions. The EU supports GGE work in 2019 under the CCW.

Germany

Germany has previously supported initiatives to ban fully autonomous weapons, as it stresses the need for human accountability and responsibility over them. German officials stated that the government is pursuing a political declaration

reminding Member States of the importance of human control over future lethal weapons systems, as well as to ensure that the weapons are in accordance to international law.

Israel

Along with other Member States, Israel has blocked United Nations efforts to ban autonomous weapons, which could carry out war without human intervention. Israel has developed its own drone, namely the Harpy anti-radar drone is designed in order for it to be launched by ground troops. The drone autonomously flies over an area to find and destroy radars that fit criteria, determined during its manufacturing. In Israel's view, the fact that the CCW strives to strike the necessary balance between military necessity and humanitarian considerations in the application of International Humanitarian Law, makes it an important instrument in the conventional field.

Republic of Korea

The Republic of Korea welcomes the recent adoption of the report of GGE's in the area of lethal autonomous weapons systems (LAWS). The Super aEgis II machine gun has been used widely in the Middle East and the Republic of Korea, since 2010. It is able to identify and destroy moving targets from a range of 4 km. It is able to operate without human intervention; however. manual input is required.

Russian Federation

The Russian Federation has been making a significant amount of investments in AI for military purposes. However, some applications create questions on human rights and international norms. AI-guided missiles that are able to switch targets while in flight are being developed. The Russian Federation has developed autonomous artificial intelligence operation systems and unmanned aerial vehicle (UAV) clusters that complete missions autonomously, communicate and interact by sharing information. The Russian government has been testing autonomous and semi-autonomous systems for combat which are able to develop targets without human intervention and guidance. They have strongly opposed and condemned any bans on LAWS. It has also stated that it considers the CCW "an important and unique instrument providing reasonable balance between humanitarian concerns and security interests of states". Finally, the Russian Federation considers the issue of lethal autonomous weapon systems "premature and speculative."

United Kingdom (UK)

The United Kingdom in 2015 created a ban on LAWS, as international humanitarian law (IHL) provides sufficient regulation. The government has affirmed that weapons employed by armed forces would be under human oversight and control. It stands committed to the Convention on Certain Conventional Weapons (CCW) and has welcomed signs of progress by the CCW Group of Governmental

Experts (GGE) on Lethal Autonomous Weapons Systems. The UK continues to oppose legal instruments or bans that would show animosity to technological advances.

United States of America (USA)

The USA is one of the most technologically advanced Member States, especially in the field of artificial intelligence. Specifically, technological advancements, such as autonomous helicopters which can be directed remotely by soldiers are in development in the US. In 2017, U.S. and allied strikes in Iraq and Syria killed up to 6,000 locals. The US Department of Defense's Defense Advanced Research Projects Agency (DARPA) is developing and financing a robotic submarine system, expected to be applied in the detection of underwater mines and/or engagement in anti-submarine operations. In 2017 alone, the United States' Department of Defense spent USD 7.4 billion on artificial intelligence, Big Data, and cloud. Meanwhile the USA has a significant lead in the development of chip technology, which consists of a crucial element in processing datasets that usually power AI advancements.

TIMELINE OF EVENTS

Date	Description of event
1940s	Invention of the programmable digital computer
1939-1945	Development of the first autonomous weapons
1952-1956	The birth of Artificial Intelligence
June 18, 2004	First registered drone attack
2013	Launch of the "Campaign to Stop Killer Robots"
2014	First meeting regarding the Convention on Certain Conventional Weapons (CCW)
2016	Meeting in Geneva that concluded without any agreement

RELEVANT RESOLUTIONS, TREATIES AND EVENTS

Convention on Certain Conventional Weapons (CCW)

The Convention on Certain Conventional Weapons could be characterized as the limits that are put upon the use of artificially intelligent weapons. It was created to prohibit or restrict the use of LAWs or AI weaponry in times of conflict. The negotiators regarding the CCW concluded on October 10, 1980 at Geneva; however, it was actually activated three years later in December 1983. Until now, 125 countries have signed the Convention. The country that most recently signed the CWW was Afghanistan, that did so on August 9, 2017.
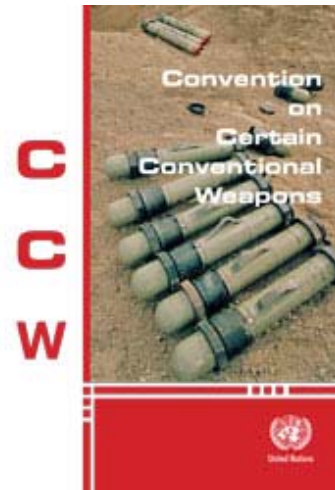

Figure 3 Informative post about the CCW, showing their logo

United Nations Meeting

On April 18, 2016, a meeting under the auspices of the UN took place on the topic: "Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects". Unfortunately, no agreement was reached by the end of the particular conference. Following the unfruitful outcomes of the meeting, the UN then decided to rearrange a four-day session commencing on March 25, 2019 in Geneva, Switzerland, as part of continuing the efforts to eventually come to a conclusion relating to the matter.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Campaign to stop killer robots

This campaign was launched by the Human Rights Watch, aiming to stop the use of the robots in place of warriors. Its main goal is to raise people's awareness regarding the problems of this kind of weapons as well as provide them with possible solutions in order to encourage them to join the campaign. This initiative is supported by several NGOs, Artificial Intelligence Experts, the UN Secretary General, the European Parliament, the Human Rights Council rapporteurs and many others.

Figure 4 The logo of the Campaign to Stop Killer Robots

Open Letter

At an international joint conference on Artificial Intelligence that took place in July 2015, an open letter calling for a ban on AI weaponry was released. The letter stated that, "Artificial Intelligence technology has reached a point where the deployment of such systems is feasible within years and the stakes are high." "Autonomous weapons have been described as the third revolution in warfare", it stated. The letter has an impressive list of signatories, including Elon Musk, Steve Wozniak, Stephen Hawking, among others. It also calls for a ban on offensive autonomous weapons beyond meaningful human control.

Human Rights Council Report

In 2013, the UN special rapporteur on extrajudicial, summary, or arbitrary executions presented to the UN Human Rights Council a report that recommended that Member States should implement monitoring on the testing, production, transfer, and deployment of lethal autonomous robotics (LARs) until an international framework for them is established.

POSSIBLE SOLUTIONS

For the past years, a lot of organizations have tried to give possible solutions upon this matter, because it is considered to be really important. It is important that, depending on your country's policy, you collaborate with Member States in order to provide the right solutions and preventative measures in order to solve this momentous issue.

Convention on Certain Conventional Weapons

One possible solution could be for Member States to ensure their adherence to the Convention on Certain Conventional Weapons (CCW), as it already offers many viable regulations that should be enforced. This could be achieved by the involvement of the UN Security Council (UNSC), where its purpose would be to impose sanctions on Member States that fail to abide by the Convention's regulations, or another relevant UN body.

Regulating AI programming

Artificial Intelligence machines should be programmed in order to be controlled by humans, when targeting and attacking. Human control over the robot must be guaranteed when manufacturing the machine, limiting its autonomous decisions, so that casualties and mishaps are avoided. In this way the development, production and use of fully autonomous weapons will be minimized and hence many individuals will be protected from the non-ethical decisions artificial intelligence takes.

Preventing the development of AI technologies

In order to ensure that a proper solution is found to the issue of artificial intelligence and its use in warfare, the development of new technologies and advancements in the specific sector could be delayed.

Banning manufacturing of AI weapons

Member States that have adopted and/or are considering, stricter laws concerning the general use of AI and specifically its use in warfare should consider banning of the manufacturing of such weapons and development of artificial intelligence technologies. In order to ensure the safety of their government as well as their citizens, laws and regulations upon the creation and use of autonomous weapons, such as LAWS, should be adopted if a Member State is opposed to the use of these technologies.

Initiating an International Agreement to Limit Autonomous Weapons

Member States willing to surrender the benefit of fully autonomous weapons in order to assure that casualties have come to a halt, could avoid initiating warfare and thus ban such weapons. If such a ban were to be agreed upon and was verified, then limitations on weapons with any measure of autonomy would be achieved.

All countries should calculate the negative aspects that fully autonomous weapons have and consider signing all together a treaty which will prohibit the use of those fully autonomous weapons, so that human beings will have a meaningful control over the use of fort.

All technology companies, organizations, as well as individual developed scientists, who work upon the creation of Artificial Intelligence, must consider the abatement or even the ban of the production of such weapons.

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