



CalsMUN 2019
Future Technology

Research Report

Forum: GA1

Issue: The use of autonomous weapons in combat

Chairs: Marije van de Wall and Annelieve Ruyters



Personal Introduction

Marije van de Wall

Dear Delegates,

As you can see above my name is Marije van de Wall and I will be your chair, and also the PGA, at CalsMUN 2019. I am 17 years old and go to Cals College myself, which makes this conference extra special for me. When it comes to my MUN experience, I have participated in 8 MUN's and was a chair at CalsMUN last year as well. When I have free time, which, as I am in my final year, is not very often sadly, I like to do rock climbing. Additionally, I also spend a lot of time watching movies and series or hanging out with friends. I am really excited for the conference and I am sure that it will be a lot of fun.

Sincerely,
Marije

Annelieve Ruyters

Dear Delegates,

My name is Annelieve Ruyters, 16 years old, and I will be your co-chair at this amazing conference. I have always enjoyed being a delegate (which I have done 7 times before), and now I will finally be able to lead this debate as a chair. I enjoyed being a delegate in GA1 in specific, as it is truly the best committee there is. And with me as your chair, and you as delegates, it will be *lit*.

However, there is more to me than my MUN experience (which I am forced to include in this letter). I love music; I play violin and bass guitar. I am also a metalhead: I like anything from melodic death metal to power metal. Also, I have a strange passion for drawing comics. I hope we will all get along and I hope we will make this CalsMUN the best one yet.

Sincerely yours,

Your Co-Chair Annelieve



Introduction

Autonomous weapons, commonly called lethal autonomous weapons or LAWs, are a type of robot used by the military that are programmed to independently search and kill targets. Lethal autonomous weapons, from now on referred to as 'LAWs', can be anything from landmines to small drones that can shoot a target from a distance. The type of LAWs that we will be discussing in this debate will be weapons of higher autonomy, i.e. the type that is a digitally programmed robot that can individually recognise targets.

The introduction and use of LAWs have caused a lot of controversy amongst countries, and there is an on-going ethical debate: can a robot decide over life and death? Several countries have thus attempted to come to an arrangement regarding LAWs, and there is still a division. There are several activist groups and campaigns that attempt to ban LAWs, and they are still working to this day, endeavouring to ban LAWs entirely.

As technology is ever evolving, and weapons are becoming more advanced, LAWs are therefore becoming more dangerous. Simple LAWs, such as the landmine, have been around since the 1600s, but after WWII and with the commencement of the digital age, LAWs are becoming more complex and get more functions. The evolution of LAWs causes a shift in opinions on them within several countries.

LAWs have recently taken the form of drones and small robots that can use basic ammunition. However, there are concerns that these LAWs can become more perilous, as they could use biological, chemical or even nuclear weapons to kill off their combatants. An example of a biological weapon could be the use of the *Bacillus anthracis*, the bacterium that causes Anthrax, a potentially deadly disease.

One aspect that is crucial in the LAW debate is the ethical one. Stuart Russell, a professor of computer science from University of California, Berkeley has stated that the use of autonomous weapons is unethical and simply inhumane. One of the main issues with the system of LAWs, he states, is that it is very hard to distinguish combatants from non-combatants. Therefore, the chance that an innocent civilian is killed is by one, which is in violation of International Humanitarian Law, is relatively present.

LAWs allegedly blur boundaries between who is responsible for a killing, therefore making the legal aspect a lot harder, although there have been people who contradict this argument by stating that, through advanced software, it is easier to track the person who gave the command to kill a certain person.

All in all, LAWs cause for difficult ethical and legal debates, as there is the question whether a machine is able to decide over life and death. Also, a machine cannot distinguish between combatants and non-combatants. Moreover, evolving technology and innovations cause LAWs to become more dangerous and lethal.

Definition of Key Terms

Lethal Autonomous Weapon (LAW)

Lethal autonomous weapons are unmanned weapons that do not need human intervention before firing, there is thus no human operator knowing when to attack. A LAW can be programmed by humans to make certain decisions.



Unmanned Combat Aerial Vehicle (UCAV)

Combat drones or small aeroplanes that are controlled externally by humans. The final decision prior to firing is made by the controller of the drone.

International Humanitarian Law (IHL)

“International humanitarian law is a set of rules, which seek, for humanitarian reasons, to limit the effects of armed conflict”

Artificial Intelligence (AI)

Machines that have some of the qualities the human mind has, such as the ability to use language, recognise pictures, or in this case, kill people.

Biological Weapons (BW)

(Also known as germ weapons) are weapons used to kill humans by the use of biological toxins, bacteria, or viruses.

General Overview

Due to the development of modern warfare techniques and robotics, a window of opportunity for robotic warfare arises. This brings along a great deal of debating on human morals and ethics. The ongoing research and development have reached a critical stage where the following questions come forward:

1. Can and should the decision over life and death be handed to an autonomous machine?
2. Can fully autonomous machines be left with the responsibility to make an ethical decision?
3. Are machines capable of acting in accordance to international humanitarian law (IHL) or international human rights law (IHRL)?
4. Can such fully autonomous weapons draw a distinction between combatants on their side and/or uninvolved civilians?
5. Can such systems give an accurate estimation and evaluation of the proportionality of such an attack?
6. Who can be held accountable for unintended deaths when such a weapon is fully autonomous?

The debates can be summed up into one main question: Can human abilities such as ethical decision making, evaluation of proportionality and guilt taking be handed over to a machine functioning on artificial intelligence? All opposing parties agree that by allowing lethal autonomy to develop we would be creating the perfect gateway for an eventual Third World War or a new age of warfare. The new senseless killing defies our human morals and values of human life.

It is known that the Chinese military has showcased a few of its fully autonomous biomorphic war robots in 2016. The robotics are meant for important tasks such as bomb disposal and urban reconnaissance. This is only one example of lethal autonomy. Furthermore, Russia has developed a new mobile robot guard designed to gun down trespassers at ballistic missile bases. These robotics are obviously meant to be used in defensive manner. But the development of autonomous weapons doesn't stop there for



the Russian military. The Russian weapon manufacturer group Kalashnikov has announced they are currently developing fully automated weapons that function on artificial intelligence. Designed to autonomously identify and attack targets the Kalashnikov group's new robotics have reached the attention of Russian President Vladimir Putin has visited the showcasing of the weapons a few days after their announcement. It is noteworthy that the Kalashnikov group is the mastermind behind the infamous AK-47, declared to be the most effective killing machine in human history. On the other side of the world, ex- United States president Barack Obama has publicly condemned the use and development of lethal autonomy. In 2012, the Obama administration created Department of Defense Directive which is a policy stating how the Pentagon is to deal with such technology and development thereof. However, 5 years later the policy elapses and the decision on banning or supporting lethal autonomy now lies with president Donald Trump. So far, the new president of the United States of America has not made a public statement regarding the question of lethal autonomy. Nevertheless, the U.S. army is no longer debating on whether to build such weapons or not. The debates are centered around how much independence such machinery should be given and whether or not it should be used in the U.S. Military's offense. In contrast to the president's silence, a thousand of the world's famous researchers and scientists have constructed an open letter urging the United Nations to place an immediate ban on the development and use of lethal autonomy. Such researchers include Stephen Hawking, a man who needs no introduction in the field of physics; Google Director of Research Peter Norvig and Microsoft Managing Director Eric Horvitz — were among the over 1,000 scientists who signed the letter calling for a killer robot ban.

Major Parties Involved

Organisations

The United States Military

The U.S. Military, like almost every country on this list, already owns Lethal Autonomous Systems. The question remains whether or not further development is allowed and if they are to be used in combat.

Major opponents

Nineteen nations even called for a global ban on killer robots, including Argentina, Peru Pakistan, Cuba and Egypt. A full list of scientists and researchers who have signed the letter calling for a ban on LAWS is included in the useful documents appendix. It is noteworthy that as there is still no international law on lethal autonomy – which is the basis of the issue at hand – so there also won't be any official treaties or policies signed by governments. Two full lists of signatories with influential and high ranked scientists are in the appendix.

Countries

The United States of America

One of the leading economies and science market in the world. The president of the United States Donald Trump is yet to declare whether or not the U.S. Military will



embrace such weaponry.

China

The Chinese military is currently working lethal autonomy as well. They have showcased a new collection of biomorphic robots. Robotics with the silly appearance of harmless animals but actually highly sophisticated computers functioning with AI-systems. The Chinese government funds the research and development of lethal autonomy.

Russia

The Russian Weapon manufacturer group Kalashnikov possesses several lethal autonomous weapons. President Vladimir Putin has shown his support for the showcasing of these weapons and has not publicly condemned them or any possible use of lethal autonomy.

Timeline of Key Events

Date	Description of Event
<i>2013</i>	Formation of the group 'Campaign to Stop Killer Robots'
<i>May 30, 2013</i>	Human Rights Council debate on UB report challenging full autonomy.
<i>November 14-15, 2013</i>	Convention on Conventional Weapons in Geneva discussing the future of LAWS.
<i>April 16, 2015</i>	A ban on lethal autonomous weapons systems is debated at the Convention on Certain Weapons (CCW) in Geneva.
<i>July 2015</i>	A group of 1000 experts in Artificial Intelligence signed a letter of warning of the threat of an arms race with LAWS, also endorsing a ban on LAWS

Previous Attempts to Resolve the Issue

Governments are beginning to consider their policy on fully autonomous robot weapons, but as yet there is no international process on the topic. Nations debated a UN report on the challenges of fully autonomous robot weapons at the Human Rights Council on 30 May 2013, and France is expected to propose that the topic be discussed at the annual meeting of the Convention on Conventional Weapons in Geneva on 14-15 November 2013.

Requests for open letters and petitions to bring the subject to discussion to the UN in order to construct new laws and resolutions about the new threat of LAWS.



Solutions

The foundation for any solution regarding an issue like this is communication and transparency. There is no former law to rely on and there are no steadfast policies regarding this issue. As the danger of lethal autonomy is only now beginning to show its true scale there haven't been any thorough discussions on the matter treating it as an imminent threat.

Possible solutions include:

1. Sessions at the UN in order to determine the pros and cons of lethal autonomy
2. Treaties banning all unaccounted use of lethal autonomy
3. Placing sanctions on member states that participate in such modern warfare
4. Placing sanctions on member states actively developing offensive LAWS

Bibliography

https://en.wikipedia.org/wiki/Lethal_autonomous_weapon#Ethical_and_legal_issues

<https://www.medbroadcast.com/channel/infection/overview/anthrax-as-a-biological-weapon>

<https://dictionary.cambridge.org/>

https://en.wikipedia.org/wiki/Biological_warfare