

Forum: Disarmament and International Security Committee (DISEC)

Issue: Measures to address the use of lethal autonomous weapons.

Student Officer: Francisca Lemos, Mateo Giralda

Position: Chair of DISEC

Introduction

Technological advances in recent years have led to the first autonomous weapons, weapons fully controlled by artificial intelligence (A.I.). A.I.-controlled weapons would have minimal to no human input, meaning these weapons would choose their targets based on the criteria coded into them and the A.I. would have the decision on whether to strike or not. Autonomous weaponry is still fully unregulated due to its only recent introduction into warfare. The increasing demand and research poured into these machines raise ethical questions. Who is to blame for the death of an innocent civilian who was misidentified by A.I.? Should we trust A.I. to handle our warfare. What safeguards A.I. are supposed to have in case of a system failure?. These issues need to be addressed urgently and regulations have to be set if autonomous weaponry continues to become a major part of modern warfare.

Definition of Key Terms

Manned Weapons: Weapons that require direct human input to operate.

Armed conflict: Armed conflict refers to ongoing fighting between states, government authorities and armed groups.

Autonomous: Having the freedom and full capability to operate independently and under self-government.

Target: A selected person, object, or location as the aim of an attack.

Trigger: Something that causes an event or situation to occur.

Sensor: A device that measures or detects a physical attribute and reacts or responds to it in some other way.

Artificial Intelligence (AI)

Artificial Intelligence is the development of simulated human intelligence processes for use in machines, especially computer systems. Such processes can include learning, planning, problem-solving, and speech recognition. The aim of artificial intelligence is to emphasize the growth of the machine's intelligence into working and thinking like human beings. Artificial intelligence is a set of algorithms that can respond to unforeseen circumstances.

Algorithm

A procedure or set of guidelines that must be followed while performing calculations or other problem-solving functions, particularly by a computer.

Semi-autonomous weapon

Semi-autonomous weapons are systems that require direct human input to achieve functionality when carrying out operations. The structure of these systems is referred to as a “human-in-the-loop” approach.

Supervised autonomous weapon

Supervised autonomous weapons are systems that are overseen by humans, who have the power to override their functions at any time during operations. Nonetheless, these systems perform tasks primarily without much intervention by humans. The structure of these systems is referred to as a “human-on-the-loop” approach.

Fully autonomous weapon systems (FAWS)

Fully autonomous weapons, also known as Lethal Autonomous Weapon Systems (LAWS) and Lethal Autonomous Robotics (LARs), are arms that operate not subject to the control of a human being. Solely with the use of AI, these weapons identify, select, and target individuals, and can autonomously make the decision to fire a fatal shot. The structure of these systems is referred to as a “human-out-of-the-loop” approach. Previously, these weapons have been called ‘Slaughterbots’ and ‘Killer robots’.

General Overview

Throughout history, conflicts have been entirely fought with humans and manned weapons. Yet, since the 20th century, the evolution of Artificial Intelligence (AI) has rapidly proliferated, and various nations have shown interest in its development. Due to the growth in this field of study, weapons for armed conflict controlled and ran by AI have increasingly been equipped with more autonomous functions and decreased human input. As previously mentioned above, such weapons are called Lethal Autonomous Weapon Systems.

The issue that has arisen with LAWS is that these autonomous weapon systems determine and strike targets, with absolutely no human interference. To operate, the machine's system self-initiates in response to information from environmental triggers obtained through sensors. Additionally, with the use of "target profiles", LAWS identifies specific human beings that its algorithms determine should be fired with a fatal shot.

Extreme and dangerous risks are associated with the employment of autonomous weapon systems, given that it is difficult to foresee and control their consequences. This lack of human control contradicts international humanitarian law (the law of armed conflict), and jeopardizes international peace and security. Moreover, extensive legal and ethical concerns arise with their use, which has made the permission of LAWS in armed conflicts a vastly controversial question.

The legal and ethical disputes regarding this issue are mainly due to the lack of existing regulatory frameworks and strong accountability systems to address the

issues that LAWS will generate. One of the main questions discussed around this issue is who would be at fault if an autonomous robot were to fire an accidental or incorrect shot, especially when the consequence is the death of an innocent human. While some argue it would be the machine's creator, others argue the blame should be appointed to the nation's military, who would endure the consequences. Because there have not yet been established any rules, guidelines, nor legal procedures that the LARs need to follow, few actions have been taken to stop their use in battle.

Until recently, no nation has created a fully autonomous weapon for use in battle. Yet in 2021, there were numerous reports of autonomous weapon systems being used in battle. The rise of these weapons is mainly due to many countries' increasing demand for them, especially since global superpowers, including China, South Korea, Russia, the US, and the UK, have been developing technologies that, if implemented in these machines, could have drastic and fatal consequences.

Autonomous Drone Strikes in Libya

Regardless, "killer robots" are no longer a question of a fictional future. Following a United Nations report in March 2020, LAWS, in the form of a drone, was used in combat in Libya. The conflict was between the U.N.-recognized Government of National Accord and forces aligned with General Khalifa Haftar. A fully autonomous drone was reported to be hunting down retreating Haftar-associated forces, and convoys. The aerial vehicle used was the STM Kargu-2, an attack drone manufactured by the STM (Savunma Teknolojileri

Mühendislik) Defense company of Turkey. This drone was being operated autonomously, by using artificial intelligence to identify, select, and kill targets. There were no reported casualties in the operation; nonetheless, this case remains as a tangible example of a future that awaits humans, if no measures are taken to address LAWS.

Major Parties Involved and Their Views

United States

The United States was one of the first countries to set regulations on LAWS but strongly believes that autonomous weaponry should not be banned but instead regulated. The US argues this on the basis that autonomous weapons have previously helped the US prevent civilian deaths in military operations. The US regulations were extremely thorough and while they did not ban autonomous weapons, DODD 3000.09, requires any DOD organization proposing to develop an autonomous weapon to go through an incredibly rigorous senior review process or meet a qualifying exemption. The US recognizes that a straight ban on autonomous weapons would cause a lot of trouble as missile defense systems and cyber weapons are already widespread and used by militaries worldwide while fitting into the “autonomous weapons” criteria.

Russia

Russia's current war on Ukraine has raised a lot of fears that they might start their use of their KUB-BLA kamikaze drone aircraft and their autonomous modes. Russia has also previously opposed a ban on autonomous weapons in UN

meetings and on May 31st, 2021 they announced the creation of a special AI department in the government. However, the Russian delegation at the United Nations Group of Governmental Experts on LAWS has previously stated that human control over the operation of LAWS is important; however, specific methods of human control over the LAWS should be unregulated between all countries

The United Kingdom

The United Kingdom strongly disagrees with the idea of autonomous weapons, believing they are unacceptable and believe that such systems should never exist. However, the U.K. has previously shown concern that a ban would be premature as it is not fully clear what autonomous weapons are defined as.

China

China has previously shown concern over the development of autonomous weapons and believes that there should be regulations set in place for their use. However, it is highly suspected that they are still developing their own machinery and purposefully being ambiguous when it comes to discussing this matter as seen on their position papers detailing the nation's views on military AI regulation.

Timeline of Events

Date	Description of event
Battle of Yorktown 1862	The creation of the landmine is controversially discussed as one of the first autonomous weapons ever created. Landmines kill at its own discretion and with no human input they can be considered autonomous. Its first recorded use was in the Battle of Yorktown in the American Civil War
1983	The first ship with the Aegis Weapon System, USS Ticonderoga, is commissioned. The Aegis Weapon system was a semi-autonomous air defense system that could automatically detect and shoot hostile targets intended for warfare.
July 3, 1988	The Semi-automatic Aegis Air Defense system installed on the USS Vincennes detects a civilian commercial aircraft and identifies it as a hostile aircraft, shooting it down and killing 290 people on board.
November 3, 2002	The first recorded targeted drone strike by the CIA killed 6 suspected al-Qaeda members. This was the first recorded fully unmanned drone strike.
November 21, 2012	DODD 3000.09 introduced, the first ever national policy on autonomous weapons systems is introduced in the world. This policy was made by the US Department of Defense and regulates the creation of autonomous weapons systems

- November 15, 2013 The 117 governments party to the U.N. Convention on Certain Conventional Weapons agree to take up the issue of lethal autonomy in 2014
- 2013 The Campaign to Stop Killer Robots was created
- 2015 Over 1000 experts in artificial intelligence signed a letter warning to the threat of artificial intelligence arms race and calling for a ban on LAWS. This letter was presented in Buenos Aires at the International Joint Conference on Artificial Intelligence and was cosigned by many notable figures such as Stephen Hawking, Elon Musk, and more.
- 2020 A UN report states that a rogue killer drone hunted down a human target autonomously, marking the first time a drone has hunted a human without permission.

UN involvement, Relevant Resolutions, Treaties, and Events

To date, the United Nations has taken several steps to combat the issue imposed by LAWS. Nonetheless, the effect that the measures taken have, are limited and insufficient to fully solve the problem. However, the 1945 United Nations Charter gives DISEC the authority to pass resolutions about weapons that jeopardize global security, including LAWS. Additionally, António Guterres, UN Secretary-General, stated that “machines with the power and discretion to take

lives without human involvement are politically unacceptable, morally repugnant and should be prohibited by international law.”

Convention on Certain Conventional Weapons (CCW)

On December 2, 1983, the CCW, whose full title is the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects, took effect. As it stands, there are 125 parties that gather every year to attend the convention, review, and discuss it. Even though this convention was initiated, no significant progress has been made, given that it has no real legislative power.

Group of Governmental Experts (GGE) on LAWS

Nonetheless, with its origin, in 2016, an open-ended Group of Governmental Experts (GGE) on developing technologies in the area of LAWS was established by the Fifth Review Conference of the High Contracting Parties to the CCW. The GGE's inaugural meeting took place in Geneva from November 13–17, 2017. In 2019, the Group of Governmental Experts reconvened in Geneva. During this meeting, 11 guiding principles on LAWS were adopted by the High Contracting Parties of the CCW.

11 Guiding Principles on LAWS

These guiding principles denote the fundamental base for any potential solutions that may be created in the future to help solve the issue imposed by LAWS. Significant factors to be considered by parties, such as how nations can have lethal autonomous weapons while following international and

humanitarian law, are noted in the principles. Additionally, the principles mention ways to direct responsibility of the weapon to a human, given that a machine must not be left accountable for itself.

The Geneva Conventions and their Additional Protocols

The topic of LAWS has only been tacitly addressed by the Fourth Geneva Convention and the Additional Protocols I and II, which list the laws of war that autonomous weapons may break. Adopted resolutions must adhere to the rules outlined in these Conventions, which diminishes the physical and nonphysical dangers imposed by the existence of these weapons.

UN Institute for Disarmament Research (UNIDIR)

In 2013, UNIDIR started investigating LAWS in relation to global security and disarmament. Since then, it has released a number of publications describing the controversy regarding LAWS in an effort to inform member states on the issue. These have included general remarks, audio recordings of expert talks, and documentation, demonstrating the ethical and technical problems caused by LAWS.

Past Action

There has been very little action regarding the approach organizations should take to creating LAWS. However, there have been many campaigns and a lot of public outcries from AI specialists in favor of a ban on autonomous weaponry. Autonomous weaponry should be regulated by a new set of rules,

and while it could be argued that we could use previous weaponry guidelines and rules of warfare as the base of the new regulations that should be set in place, it is important to acknowledge that this problem is unique and new, meaning we cannot simply apply the previous solutions to a new problem

Campaign to Stop Killer Robots

The Campaign to Stop Killer Robots is a peace campaign led by non-governmental organizations fighting for the blanket ban of autonomous weaponry. This campaign fights under multiple ethical premises, stating that a machine cannot comprehend the value of human life and the complex ethical choices needed during warfare. This campaign was nominated for the Nobel Peace Prize in 2020. This campaign organized the 1000 signatures presented during the International Joint Conference on Artificial Intelligence in Buenos Aires calling for the ban of autonomous weapons. This letter was cosigned by many notable figures such as Stephen Hawking, Elon Musk, and more.

DODD 3000.09

The first policy made for the regulation of autonomous weapons system made by the United States Department of Defense. The U.S. wants the DODD 3000.09 to be the base of a UN code of conduct on autonomous weapons. This directive defines autonomous weapons systems and requires their creation to go through a rigorous selection process requiring the signature of the military's highest ranking officer.

Possible Solutions

Lethal autonomous weapon systems do not have to be part of an inexorable future that awaits us. Just like in the past when the international community effectively outlawed arms such as biological weapons, the military usage of LAWS can also be regulated. Creating regulations for lethal autonomous weapons for states to adopt is one of the possible solutions to prevent LAWS from uncontrollably attaining power. These regulations could include the prohibition of autonomous weapons with human targets, which would restrict the machines' unpredictability. Moreover, limiting the military applications of AI to specific types of autonomous weapons, such as those that fully operate not subject to the control of a human being, would lessen these weapons' dangerous competence. Ultimately, maintaining the regular meetings of the Convention on Certain Conventional Weapons, as well as of the Group of Governmental Experts, will make sure that the issues that surge regarding LAWS are reviewed, discussed, and acted upon.

Sustainable Development Goal (SDG)

The use of autonomous weapons and the need for their regulations is connected to the UN's Sustainable Development goal number sixteen, "Peace, Justice, and Strong Institutions". The primary aims of this SDG are to "significantly reduce all forms of violence" and maintain ethics and regulations on weapons and warfare. The need for strong institutions directly connects to the issue presented as strong regulations and agreement need to be put in place and enforced among all countries for world peace and improved international

discourse. For this, countries need to be open and ethical about their decision-making when it comes to matters as sensitive as these as autonomous weapons have proven dangerous and possibly world changing if they were to be introduced to modern warfare.

Bibliography

Allen, G., 2022. *DOD Is Updating Its Decade-Old Autonomous Weapons Policy, but Confusion Remains Widespread*. [online] Csis.org. Available at: <<https://www.csis.org/analysis/dod-updating-its-decade-old-autonomous-weapons-policy-confusion-remains-widespread>> [Accessed 31 July 2022].

Allen, G., 2022. *Russia Probably Has Not Used AI-Enabled Weapons in Ukraine, but That Could Change*. [online] CSIS. Available at: <<https://www.csis.org/analysis/russia-probably-has-not-used-ai-enabled-weapons-ukraine-could-change>> [Accessed 31 July 2022].

“AUTONOMOUS WEAPON SYSTEMS TECHNICAL, MILITARY, LEGAL AND HUMANITARIAN ASPECTS.” *International Committee of the Red Cross*, Nov. 2014,

www.reliefweb.int/sites/reliefweb.int/files/resources/4221-002-autonomous-weapons-systems-full-report%20%281%29.pdf.

<<https://www.theguardian.com/science/2019/mar/29/uk-us-russia-opposing-killer-robot-ban-un-ai>> [Accessed 31 July 2022].

Greene, T., 2021. *China's new AI policy doesn't prevent it from building autonomous weapons.* [online] TNW | Neural. Available at: <<https://thenextweb.com/news/chinas-new-ai-policy-doesnt-prevent-building-autonomous-weapons>> [Accessed 31 July 2022].

Hambling, D., 2022. *Autonomous weapons: Efforts to regulate 'killer robots' are threatened by war in Ukraine* | *New Scientist*. [online] NewScientist. Available at: <<https://www.newscientist.com/article/2327965-efforts-to-regulate-killer-robots-are-threatened-by-war-in-ukraine/>> [Accessed 31 July 2022].

Hernandez, Joe. "A Military Drone With A Mind Of Its Own Was Used In Combat, U.N. Says." *NPR.Org*, 1 June 2021, www.npr.org/2021/06/01/1002196245/a-u-n-report-suggests-libya-saw-the-first-battlefield-killing-by-an-autonomous-d.

"ICRC Position on Autonomous Weapon Systems." *INTERNATIONAL COMMITTEE OF THE RED CROSS*, 12 May 2021,

<https://www.icrc.org/en/document/icrc-position-autonomous-weapon-systems>.

Kania, E., 2018. *China's Strategic Ambiguity and Shifting Approach to Lethal Autonomous Weapons Systems*. [online] Lawfare. Available at: <<https://www.lawfareblog.com/chinas-strategic-ambiguity-and-shifting-approach-lethal-autonomous-weapons-systems>> [Accessed 31 July 2022].

Leuszler, L., n.d. *The History Behind and Future of Drone Warfare*. [online] Steppenwolf. Available at: <<https://www.steppenwolf.org/articles/the-history-behind-and-future-of-drone-warfare/#:~:text=On%20November%203%2C%202002%2C%20the,and%20Pakistan%20attributed%20to%20drones>> [Accessed 31 July 2022].

“Machines Capable of Taking Lives without Human Involvement Are Unacceptable, Secretary-General Tells Experts on Autonomous Weapons Systems | UN Press.” *United Nations*, 25 Mar. 2019, www.press.un.org/en/2019/sgsm19512.doc.htm.

McCormick, T., 2014. *Lethal Autonomy: A Short History*. [online] Foreign Policy. Available at: <<https://foreignpolicy.com/2014/01/24/lethal-autonomy-a-short-history/>> [Accessed 1 August 2022].

Military.com. n.d. *Aegis Weapon System*. [online] Available at: <<https://www.military.com/equipment/aegis-weapon-system>> [Accessed 31 July 2022].

Nadibaidze, A., 2021. *Russia's Perspective on Human Control and Autonomous Weapons: Is the Official Discourse Changing?* - AutoNorms. [online] AutoNorms - Weaponised Artificial Intelligence, Norms, and Order. Available at: <<https://www.autonorms.eu/russias-perspective-on-human-control-and-a-utonomous-weapons-is-the-official-discourse-changing-2/>> [Accessed 31 July 2022].

n.d. *Stop Killer Robots*. [online] Available at: <<https://www.stopkillerrobots.org/>> [Accessed 31 July 2022].

"OUR COMMON AGENDA Report of the Secretary-General." *United Nations*, 2021, www.un.org/en/content/common-agenda-report/assets/pdf/Common_Agenda_Report_English.pdf.

Piesing, M., 2017. *The deadly danger you can't see*. [online] BBC. Available at:

<<https://www.bbc.com/future/article/20170321-the-deadly-danger-you-cant-see>> [Accessed 31 July 2022].

SLAUGHTERBOTS ARE HERE. 30 Nov. 2021, www.autonomousweapons.org/.

The Bureau of Investigative Journalism (en-GB). n.d. *History of drone warfare*.

[online] Available at:
<<https://www.thebureauinvestigates.com/explainers/history-of-drone-warfare>> [Accessed 1 August 2022].

UNA_UK. 2022. *New UK position on autonomous weapons - recognises lines need*

to be drawn but lacks detail or leadership | UNA_UK. [online] Available at:
<<https://una.org.uk/news/new-uk-position-autonomous-weapons-recognises-lines-need-be-drawn-lacks-detail-or-leadership>> [Accessed 31 July 2022].

United Nations Sustainable Development. n.d. *Peace, justice and strong*

institutions - United Nations Sustainable Development. [online] Available
at: <<https://www.un.org/sustainabledevelopment/peace-justice/>>
[Accessed 31 July 2022].

Werkhäuser, N., 2018. *Should 'killer robots' be banned?* | DW | 27.08.2018.

[online] Deutsche Welle. Available at:

<<https://www.dw.com/en/should-killer-robots-be-banned/a-45237864>>

[Accessed 31 July 2022].

“What Is International Humanitarian Law?” *International Committee of the Red*

Cross, July 2004, www.icrc.org/en/doc/assets/files/other/what_is_ihl.pdf.

Zhen, L., 2021. *Time to set global rules for AI warfare, China tells UN weapons*

reviews. [online] South China Morning Post. Available at:

<[https://www.scmp.com/news/china/military/article/3159704/time-set-glo](https://www.scmp.com/news/china/military/article/3159704/time-set-global-rules-ai-warfare-china-tells-un-weapons-review)

[bal-rules-ai-warfare-china-tells-un-weapons-review](https://www.scmp.com/news/china/military/article/3159704/time-set-global-rules-ai-warfare-china-tells-un-weapons-review)> [Accessed 31 July

2022].

Appendix

- I. An in-depth explanation of the difference between an algorithm and artificial intelligence, as well as the pros and cons of each.

<https://www.cmswire.com/information-management/ai-vs-algorithms-whats-the-difference/>

- II. The 11 Guiding Principles on LAWS adopted in 2019 to the Convention on Certain Conventional Weapons (CCW).

<https://www.un.org/disarmament/the-convention-on-certain-conventional-weapons/background-on-laws-in-the-ccw/>

- III. The Fourth Geneva Convention and the Additional Protocols I and II.

<https://www.icrc.org/en/doc/resources/documents/misc/additional-protocols-1977.htm>

- IV. Stop Killer Robots Organization.

<https://www.stopkillerrobots.org/>

- V. Autonomous weapons Organization.

<https://autonomousweapons.org/>

- VI. A 2021 survey shows that the public's opposition to Killer Robots' is strong.

<https://www.hrw.org/news/2021/02/02/killer-robots-survey-shows-opposition-remains-strong>