

(GA1): Disarmament

*Discussing the possible impacts of
autonomous weapon systems*

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Issue: Discussing the possible impacts of autonomous weapon systems

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Introduction

Autonomous weapon systems (AWS), a rapidly developing technology, have the potential to completely alter the dynamics of warfare in the future. These systems can choose and engage targets on their own since they are built to operate without human control. While it's likely that the development of AWS will reduce battlefield risk and boost military efficiency, worries about their possible effects on national security, ethical quandaries, and human rights issues are developing. The issue of the potential effects of autonomous weapon systems is a complicated and nuanced topic, and different nations and groups have different perspectives on it. The international community, particularly the United Nations (UN), has given the development of autonomous weapons a lot of attention and has debated the issue numerous times.

Academics, policymakers, and nongovernmental organizations (NGOs) have voiced great concern regarding the possible effects of autonomous weapon systems. Critics worry that the adoption of such instruments might significantly alter warfare dynamics jeopardizing human rights, and threatening global security. Risks related to autonomous weapons have drawn attention, including the possibility of unintended harm to people, unintended escalation, and the loss of human control over conflict. The efficacy and efficiency of the military could be improved, according to supporters of autonomous weaponry. Establishing the required ethical, legal, and technical foundations for these weapons' development and usage is essential, as is carefully assessing the potential liabilities of these weapons (Spazian et al.).

Definition of Key Terms

Autonomous weapon systems (AWS): Any weapons that choose their targets automatically and fire at them. Autonomous weapon systems are activated by people. However, because autonomous weapon systems are triggered by sensors and software that compare what the sensors detect in the environment against a "target profile," it is unknown specifically who or what will be struck, nor precisely where and/or when that strike will occur ("What").

Artificial intelligence (AI): The capacity of a digital computer or computer-driven robot to carry out functions often performed by intelligent beings. The term is widely used in reference to the

effort to create systems that possess human-like cognitive abilities like the capacity for reasoning, meaning-finding, generalization, and experience-based learning (Copeland).

Meaningful Human Control: In the context of arms, the term refers to authority over a weapon's "critical functions," which are the choice and engagement of targets. This refers to when, where and how weapons are used; what or whoever they are used against; and the implications of their use ("Killer").

Unintended Engagements: Unintended engagements are instances in which autonomous weapon systems could injure or destroy something that neither their operators nor creators intended or anticipated. Unintended engagements can result in unintended harm, unintentional escalation in the intensity of conflict or violence, and collateral damage if an autonomous weapon system misinterprets its target or makes a mistake in selecting a target (Scharre, 18).

Weapon Proliferation: Weapon proliferation is the term used to describe the widespread acquisition and distribution of autonomous weapon systems, which could result in increased use and unintended consequences ("Proliferation").

General Overview

Technical Capabilities of Autonomous Weapon Systems

Autonomous weapon systems use machine learning and clever algorithms to choose targets and apply force. They must be able to effectively analyze their environment and tell targets from non-targets. Advanced sensors like radar and lidar are needed for this, as well as computer vision and other technologies for observing the outside world. Advanced networking technologies like mesh networks and satellite communications are needed to interact with one another and with human operators. Autonomous weapon systems are susceptible to hacking and other online attacks, so strong cybersecurity measures are required. To ensure their responsible use, they must be rigorously tested and reviewed. To prevent errors and malfunctions, it is necessary to identify the probable origins of these problems and to create efficient fail-safes (Leys, 52-55).

Strategic and Legal Implications

The question of autonomous weapon systems also has major legal and strategic ramifications. The 1949 Geneva Conventions and the Convention on Certain Conventional Weapons (CCW) are just two of the agreements and procedures that control the use of weapons in conflict. The CCW strives to limit or forbid the use of weapons that can result in needless suffering or have unintended consequences. Yet, because autonomous weapon systems weren't invented at the time these treaties and protocols were written, questions have been raised concerning their applicability in regulating the use of such weapons. The use of AWS raises concerns regarding

the laws of war, namely the principles of distinction and proportionality, which call for fighters to make a distinction between military objectives and civilians, and the harm a strike does must be commensurate to the military advantage it results in. The use of autonomous weapon systems could have strategic ramifications as well since it could spark an arms race between countries vying for supremacy in the military (Anderson et al., 406-411).

Ethical Challenges of Autonomous Weapon Systems

The most important component of the problem is probably the moral dilemma and the ethical issues that autonomous weapon systems present. These weapons are criticized on the grounds that they diminish the worth of human life and cast doubt on morality and responsibility. Particularly in instances where there is no human intervention, the employment of AWS raises concerns about who is accountable for their behavior. The possibility of unintended engagement, such as the loss of human control over the weapons, harming civilians and non-combatants (unintended harm) is another worry. The creation and use of AWS can present ethical concerns, including issues with bias and discrimination and the possibility for these weapons to be used in ways that are incompatible with international humanitarian law (Horowitz).

Major Parties Involved and Their Views

The United States of America: The United States of America has taken a somewhat cautious stance in debates surrounding the topic of autonomous weaponry. US officials have emphasized the significance of ensuring that these technologies are used in a responsible and ethical manner, even though the US military has extensively invested in the development of autonomous technology, including weapons systems. According to a 2012 US Department of Defense regulation, the creation and use of autonomous weapons systems must adhere to international law and must be designed to allow for human control and supervision. However, some critics contend that this instruction is overly general and that there is a danger that autonomous weapon systems may be created and used without the necessary monitoring (Leys, 48).

Russian Federation: Russia has been more receptive to the development and use of these weapons than some other nations, despite having some reservations about the potential risks involved. Russia has been making investments in the creation of autonomous technology, such as ground-based robots and unmanned aerial aircraft, and has been utilizing these technologies in a variety of military missions. The Russian Ministry of Defense unveiled their most recent unmanned aerial vehicles and other autonomous technologies in a film that was broadcast in 2020.

Russia has also participated in debates on autonomous weapons at the United Nations and other international fora. Russia was one of several nations that resisted formal negotiations to outlaw

these weapons in 2018. They claimed that such a ban would be premature and could lead to unintended consequences. In general, Russia's approach to autonomous weapons is defined by a combination of cautious support for their development and use, as well as a determination to preserve its status as a significant military force in the face of technical advancements (Nadibaidze).

People's Republic of China: While having some reservations about the possible dangers posed by autonomous weapon systems, China has been more receptive to their development and use than other nations. Drones and other autonomous systems have been used in numerous military actions by China, which has made significant investments in the development of this technology. The development of autonomous platforms would be prioritized, according to a white paper on national defense published by China's defense ministry in 2020.

China has also participated in debates on autonomous weapons at the United Nations and other international fora. In 2019, China was one of several nations that argued that starting a formal negotiation process to outlaw these weapons would be premature and could hinder scientific advancement. Generally, China's stance on the subject of autonomous weapons is defined by a combination of cautious support for their development and use, as well as a desire to not fall behind in the competition for technological dominance (Kania, 14).

International Committee of the Red Cross (ICRC): ICRC is an influential group that promotes the safety of war victims and participates in discussions and debates on the subject of autonomous weapons. ICRC has expressed concerns about the humanitarian impact of autonomous weapons, including the possibility that these weapons could inadvertently harm civilians, the difficulty in ensuring accountability for their use, and the possibility that these weapons could exacerbate already-existing inequalities and power imbalances.

The ICRC has actively participated in talks about autonomous weapons at the United Nations and other international forums, arguing for more accountability and transparency in the creation and use of these weapons and stressing how crucial it is to keep humans safe. ICRC released a paper in 2019 clarifying its stance on autonomous weapons, urging a "human control approach" to the creation and use of these weapons and stressing the significance of international humanitarian law in governing their use. Overall, the protection of civilians and the requirement to ensure that the development and use of these weapons is compliant with international humanitarian law are at the core of the ICRC's approach to the problem of autonomous weapons ("ICRC").

Timeline of Events

1956	<i>The term "AI" was originated, and the field of artificial intelligence was thus formally formed.</i>
2 December 1983	<i>The United Nations (UN) Convention on Certain Conventional Weapons (CCW) entered into force.</i>
October 2012	<i>A coalition with more than 180 member organizations called Stop Killer Robots was established to demand new international law on autonomy in weapon systems and to ensure human control over the use of force.</i>
November 2012	<i>A decision from the US Department of Defense permits the employment of autonomous weapon systems under human oversight.</i>
14-15 November 2013	<i>The 2013 CCW Meeting of the High Contracting Parties was held in Geneva, Switzerland, where a new regulation on lethal autonomous weapons systems (LAWS) was approved.</i>
13-16 May 2014	<i>The CCW Meeting of Experts on Lethal Autonomous Weapons Systems (LAWS) was held at the UN in Geneva.</i>
20 January 2021	<i>The European Parliament passed a resolution on artificial intelligence: questions of interpretation and application of international law (2021/C 456/04).</i>
2022	<i>The two sessions of the 2022 Group of Governmental Experts on Lethal Autonomous Weapons Systems (GGE on LAWS) was held through 7-11 March and 25-29 July.</i>

Treaties and Events

The United Nations (UN) Convention on Certain Conventional Weapons (CCW): The Convention on Certain Conventional Weapons (CCW) tries to limit or outright prohibit the use of specific categories of weapons that are thought to excessively hurt or injure people or combatants. The convention forbids or restricts the employment of many weapons, including landmines, explosive weapons, and blinding laser weapons. The CCW also contains clauses that regulate the employment of autonomous weapon systems, particularly those that can choose and engage targets on their own without human assistance. The pact was initially ratified in 1980 and has since undergone numerous revisions.

Final report: Meeting of the High Contracting Parties to 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 (CCW/MSP/2019/9): This report

discusses and makes recommendations regarding the development of autonomous weapon systems, including the need for accountability and transparency throughout the development process, the significance of human control over autonomous systems, and the necessity of ensuring that such systems adhere to international humanitarian law. The paper also makes suggestions for additional research and conversations on the subject of autonomous weapon systems within the context of the CCW.

The United Nations General Assembly resolution to 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 (A/RES/76/64): The UN General Assembly's resolution from December 2021 called for ongoing debates and efforts to implement the CCW's ban on the development and use of autonomous weapons systems. The resolution places a strong emphasis on the requirement of making sure that such systems abide by the rules of distinction, proportionality, and military necessity of international humanitarian law. It also highlights the significance of preserving human control over such systems and the necessity of openness and responsibility in their creation and application. When the next Meeting of the High Contracting Parties to the Convention on Certain Conventional Weapons takes place in 2022, the resolution asks states to present their opinions and suggestions on the subject of autonomous weapon systems.

European Parliament resolution on artificial intelligence: questions of interpretation and application of international law (2021/C 456/04): This resolution covers how international law should be interpreted and applied in light of artificial intelligence, particularly autonomous weapon systems. The resolution, among other things, highlights the significance of international law in governing the development and application of AI, calls for increased accountability and transparency in these processes, and calls for the creation of an international body to monitor the development and utilization of AI.

Report of the 2022 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems: This paper summarizes the views and conclusions of a panel of experts who gathered to explore the topic of lethal autonomous weapons systems (LAWS). In order to address the problems caused by LAWS, including the threats to international security, the violations of human rights, and the potential loss of human control over the use of force, the paper emphasizes the necessity for ongoing international dialogue and cooperation. The paper also highlights how crucial it is to guarantee that any use of autonomous technologies complies with applicable human rights and international humanitarian law. The paper also recommends for enhanced accountability and openness in the design and use of autonomous armed systems.

Evaluation of Previous Attempts to Resolve the Issue

Over the years, there has been significant discussion and debate about the topic of autonomous weapons, and there have been numerous attempts to resolve it through various international forums and organizations. To successfully regulate these weapons, however, there is still much work to be done and progress has been slow. A step in the right direction toward tackling the issue of autonomous weapons was the creation of a GGE. Unfortunately, the GGE was unable to agree on how to govern these weapons, and its sessions were frequently marked by contentions between various nations over important matters. The GGE was unable to offer any significant suggestions or agreements as a result. For a while now, the CCW has been debating the topic of autonomous weapons. These conversations have assisted in increasing public awareness of the potential dangers posed by these weapons, but no legally binding rules or agreements have emerged as a result.

The Campaign to Stop Killer Robots has been an outspoken supporter of a prohibition on autonomous weapons and has been successful in increasing public awareness of the subject. But it hasn't yet been able to persuade enough nations to back such a ban. It was a start in the right direction to address this issue when the European Parliament passed a resolution asking for the outlawing of autonomous weapons. Nevertheless, since this resolution is not legally binding and certain European nations are against a ban, it is unclear how much of an impact it will actually have. Ultimately, although some significant measures have been made to address the problem of autonomous weapons, there is still considerable work to be done.

Possible Solutions

While critics have argued that a worldwide prohibition on the usage of autonomous weapon systems could be an effective solution to tackle the issue, delegates should look into more constructive solutions and ways of development to address the current concerns regarding autonomous weapon systems. The development and use of autonomous weapon systems could be governed by international treaties and accords, guaranteeing that they are only used for defined objectives and in compliance with international law. Additionally, passing legislation that supports such international treaties and accords would be an effective addition on a nation-to-nation basis. The creation of ethical, legal, and technical standards for their usage, as well as increased transparency, monitoring, and accountability, should all be applied to the research and development of autonomous weapon systems. As a way to follow the aforementioned standards, governments, and armed forces might give priority to the creation of alternative technologies that offer fewer hazards to human rights and international security on top of the development of autonomous weapon systems.

On top of governmental supervision, the development and employment of autonomous weapon systems could be monitored and evaluated by the relevant NGOs, including through campaigning and public awareness-raising efforts. To help people comprehend the risks and ethical issues related to autonomous weapon systems, increased public education and awareness-raising activities could be should be organized nationally and internationally. So far, the concerns and discussions raised by the international community has been the most important aspect of the issue. Therefore, the international community should continue to raise concerns and use more forceful diplomatic pressure, if needed, to address issues with autonomous weapon systems and to encourage international cooperation and discussion on this matter.

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