**Forum:** Disarmament Commission

**Issue:** Addressing the challenges of regulating and reducing the proliferation of Artificial Intelligence (AI) weapons, including small arms and light weapons

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Introduction

Historically, in the aftermath of the First Industrial Revolution (1760), war was conventionally characterized as a form of direct armed conflict with mostly physical violence. However, with the introduction of new types of more technologically developed military weaponry, primarily artificial intelligence (AI) technology, the traditional definitions of war have been reshaped into one that is more passive and unpredictable. Thus, the rapid advancement of AI has raised urgent concerns about the proliferation of its weapons incorporated through the application of inter-alias, small arms, lethal autonomous systems, and AI-enhanced offensive cyber security that may pose potential risks to international peace and security.

The fear associated with the changing nature of more complex technology has taken its toll on the emergence of AI in military weaponry, hence representing a paradigm shift in warfare and conflicts. Possessing the ability to autonomously identify, target, and engage adversaries, thereby altering the dynamics of armed confrontations, it is no surprise that the integration of AI amplifies their lethality and hence facilitates conversations regarding the ethical dimensions of their role in war. For instance, the increased use of lethal autonomous weapon systems (LAWS) and small arms and light weapons (SALWs) has led to an ‘AI arms race’ with the potential of non-state parties joining in with the proliferation of weaponry. Moreover, the automation of weapons manufacturing for both AI and conventional products has been made much easier with the help of AI in automation and 3D printing. Thus, SALWs are much easier to obtain, an estimation point to approximately one billion firearms in global circulation as of 2017 compiled by the United Nations Office on Drugs and Crime, compared to the 650 million in 2006, the circulation of firearms globally has increased dramatically; with more firearms, this may give reason to the rise in homicide rates in recent years (Noted as of 2017, 85% of firearms are in civilian hands).

Another example of the militarization of AI is in the Libyan War 2021, “triggered by the attack on Tripoli by armed groups affiliated with Khalifa Haftar on 4 April 2019” (Rešlová). As the conflict came to its last efforts, Libyan Prime Minister Faiez Serraj commenced operation PEACE STORM, 46 “which moved 46 GNA-AF to the offensive along the coastal littoral… Firtina T155 155mm self-propelled guns …and T-122 Sakarya multi-launch rocket systems firing extended range precision munitions against the mid-twentieth century main battle tanks and heavy artillery used by HAF (Rešlová). In the end, HAF was forced to retreat; subsequently, he was hunted down by remotely engaged combat devices (LAWS) such as STM Kargu-2s, which was deployed, targeting fleeing fighters. This attack raised concerns about the lawfulness of the deployment of LAWS in armed conflicts.

Definition of Key Terms

International Humanitarian Law (IHL)

**As the European Commission under the European Civil Protection and Humanitarian Aid Operations defines, “International humanitarian law (IHL) is a set of rules that seek to limit the effects of armed conflict. It lays out the responsibilities of states and non-state armed groups during an armed conflict”. Signed in 1864 in Geneva, this treaty was the first of its kind designed to protect humanitarian workers and civilians. Active in almost all states, though some still violate this treaty, the set of rules represents a milestone towards international standards in conflicts and serves as ethical guidelines for states that have ratified it. A generalization of the IHL can be said to deem all states participating to have the responsibility to protect their population from war crimes, ethnic cleansing, and genocides, and the IHL is there to provide the framework for the prevention.**

Lethal Autonomous Weapon Systems (LAWS)

A type of autonomously operated military system presented in various forms, capable of independently searching and engaging target adversaries without manual control. More colloquially addressed as killer robots, LAWS may operate in the air, on land, deep underwater, or even in space. As stated by the United Nations Office for Disarmament Affairs previously, “states are increasingly developing and deploying weapons with autonomous functions,” with more sophisticated systems including missile defense, loitering munition, and vehicles with autonomous capabilities. These raise ethical concerns about their reliability and the lessened risk of terrorist attacks, as AI would do everything unmanned. This concern was noticeably called out ever since 2018 by United Nations Secretary-General Antonio Guterres, who has maintained that LAWS are “politically accepted and morally repugnant.”

Unmanned Aerial Vehicles (UAV) or Unmanned Combat Aerial Vehicles (UCAV)

A UAV, as described by its name, is an aircraft vehicle without any human piloting. Used chiefly for military missions that were excessively dangerous for humans, this AI-powered technology has become a staple for reconnaissance, environmental monitoring, and policing. Over time, they transitioned to UCAVs designed for military combat, with surveillance and target acquisition uses, and some even carry aircraft ordinances such as missiles. An example of the uses of this can be found in the most recent major conflict, Russia and Ukraine, where they have taken drone warfare to another level. Since the start of the Russian invasion, both parties have used many uncrewed aerial vehicles every day and are said to lose some 10,000 drones a month. This highlights the importance of these vehicles, as they do not risk human lives.

**Group of Governmental Experts (GGE)**

As stated previously by the United Nations Office for Disarmament Affairs, requested in GA resolution 73/266, the GGE was established “to advance responsible State behavior in cyberspace in the context of international security.” The GGE will hold meetings within its committee (first held in 2019) and informal discussions with all UN Member States and other organizations such as the European Union, the Organization for Security and Cooperation in Europe, and the Regional Forum of the Association of Southeast Asian Nations.

**AI Advisory Body**

The High-Level Advisory Boyd on Artificial Intelligence aims to coordinate AI governance to “harness AI for humanity.” As stated under the United Nations Office of the Secretary-General’s Envoy on Technology, The Body will comprise experts from various fields, from governments to civil society, engaging in consultation with stakeholder groups and networks. Moreover, they will also research this topic, addressing issues of ethics and security. One significant aspect of this body is launching the Interim Report: Governing AI for Humanity document, which, as stated in the United Nations under AI Advisory Body, “calls for a closer alignment between international norms and how AI is developed and rolled out.” The document provides ideas and feasible solutions to the governance of AI and using its power to reach the Sustainable Development Goals (SDGs).

**Artificial Intelligence Arms Race**

A military AI arms race is similar to a conventional arms race (most recent is the nuclear arms race) seen often between two or more major powers, to develop and deploy in this case LAWS systems. The emergence of this arms race has been apparent between superpowers with a much-sophisticated military and in this context, between presently between US and China.

Background

Before computing ever-more became the mainstream of the foundation of technology and a large part of state military systems and day-to-day necessities, the definition of war differed drastically from what we know today. Technological combat, beginning with the invention of gunpowder in medieval China and finally adopted by Europe in the 13th century, had changed the world. With the milestone, gunpowder was eventually integrated into siege warfare before the invention of muskets firearms, which opened the door to long-range combat. Moreover, evolving into various gun derivatives used in specific scenarios and finally went into World War 1, where technological advancement of military vehicles was presented, introducing the first implementation of armored vehicles, which led to submarines, airplanes, and mechanized warfare time. Combat has noticeably changed throughout history, as we still use guns at present; it is as effective at killing as it is at obtaining it, leading to significant issues of ethical concern and fear as malicious non-state organizations receive such weapons. However, humanity did not stop, and during World War II, warfare innovations created a breakthrough in technological advancement with the introduction of the atomic bomb. Nuclear weapons ended the Second World War, thus realizing its power to the world, triggering a worldwide arms race and leading to the Cold War. There, we find the first forms of computers, but they are unlike today, only for specific single instruction tasks for military use. With its creation, states rushed to obtain computer supremacy, as they knew this would be the dominant force that could change their place internationally.

           With the vast funding of computer research and implementation of automation in the Cold War, computers became how we know them today. Throughout history, advantageous technological development has been the purpose of gaining the upper hand in a conflict. AI has become a prevalent topic among all states, first with cold weapons, then trench warfare, and finally shifting combat to now digital with cyber security on the rise. The previous discoveries paved the way for the rise of automation in military operations. Subsequently, they created various previously never-thought-of possibilities, such as data analysis and wide-range communication. In the future, AI may even replace humans in warfare, as the development of LAWS, automation, and much improved cyber security systems continue to advance.

           Although the use of AI is undeniable, only a few decades after its discovery, many have raised ethical concerns about using this technology within military combat. From a humanitarian standpoint, concerns about the reliability and security of AI systems come into question. However, even so, there have yet to be many sophisticated internationally ratified ethical frameworks that address this issue thoroughly. With LAWS still running rampant with the ongoing AI arms race, it has brought fear into many and protests about the possibility that AI will escalate an increased number of wars, and if this technology were to be proliferated to malicious organizations, the security of the world thus comes into question. With more and more AI integrated into and thought of as conventional military strategies, the risk of malfunctioning if LAWS were completely autonomous could be deadly. The military has control over the lives of all its people; it is essential to address and prepare fully before replacing a job with AI, especially military operations, as those may breach the sensitive nature of the state-to-state relationships and the high-rise of tension at present between the major powers. We can only hope that the fully unrefined AI automated technologies were to be mass proliferated to various parties or even stolen by terrorists, the consequences of that.

           In conclusion, it is with urgency that this issue must be addressed entirely within the coming few years as if this technology were to be received in the wrong hands, it would threaten international security. LAWS have already been developed to a much deadly degree, with uncrewed aerial vehicles, missile systems, and automation in the creation of weapons being autonomous; we must create a not feasible but successful framework for regulating and addressing the proliferation of AI weapons with strict laws and the up-most caution. The ratification of this framework must consider concerns and help regulate the ethical, humanitarian, and danger levels of these AI-powered weaponry and, most importantly, prevent them from getting into the wrong hands.

Major Parties Involved

People’s Republic of China (China)

China has become a significant power globally with its rapidly developing economy and military strength. Hence, it is no surprise that they and the United States of America are in an arms race, specifically LAWS, producing and deploying as many as possible. China, including leader Xi Jinping, personally expressed the belief that possessing cutting-edge AI technology is critical for the future and a state’s international military and economic power competition. The country has used drones and AI technology to improve day-to-day life and military-related automation. The country has expressed concerns that in the future, with the eventuality of fully autonomous weapons, it may cause accidental war. Thus, greater transparency and international cooperation in AI research should be realized. As the first permanent state to address this issue in the UN Security Council, they have clearly expressed their worries and dislike of how dangerous AI weapons can be. Thus, China has said its intention to ban LAWS entirely within the offensive weaponry system as they believe it to be quite dangerous when not fully prepared.

United States of America (USA)

Although there has been severe opposition and protest against LAWS within the USA, it still does not exist, and it seems that it will be a long way until the full ratification of a government-wide policy on Autonomous AI-powered weapon systems or restrictions of their use in any societal circumstances. The lack of action is justified as the USA is one of the most advanced, if not the most advanced, states using military and civilian AI. The country has numerous military AI combat programs; thus, it seems pretty apparent, as expressed by many, including the former Secretary of Defense Chuck Hagel, that artificial intelligence will define the next generation of warfare, and they will recognize the importance of it, thus continuing to participate in the AI arms race. That being said, minor restrictions, such as the requirement for human monitorization on autonomous warships and obeying all international treaties of humanitarian and technological development laws, still apply to the USA.

The Russian Federation (Russia)

The Russian government is vehemently opposed to any ban on lethal autonomous weapon systems and stated that it would be ignored if implemented. Since the first implications of AI systems in military weaponry, Russia has continued to present cutting-edge AI technology, from AI-guided missiles to establishing numerous organizations devoted to AI military use. As stated by Vladimir Putin, it seems that Russia is dead set on improving AI in the military as much as possible as the country believes that Artificial Intelligence is the future. Moreover, as stated by the Military Industrial Commission of Russia, the committee has initiated a change of 30 percent of Russia's combat power to remote AI-powered weaponry by 2030. Thus, Russia's stance is relatively unambiguous and stubbornly opposes a general international ban on LAWS.

The United Kingdoms of Great Britain and Northern Ireland (UK)

The UK is opposed to a ban on lethal autonomous weapons, as they believe that humanitarian treaties already provide sufficient regulation and monitoring. Although they have AI-powered weapons, it is mostly all under human control, thus this justifies their opposition to an international treaty on LAWS.

Timeline of Events

**It should be noted that the proliferation and regulation of AI-military weaponry have only been of significance for several years. Although cases of violence against LAWS have occurred, the minor incidents have not enabled many formal discussions regarding its ethics and uses. Moreover, in previous years, AI technology was not advanced beyond the requirement for a restriction; however, in the present and coming years, LAWS and other AI-powered systems must be addressed as they improve dramatically; thus, the consequences of their misuse and malfunction will be much more significant.**

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| Date | Description of event |
| **December 2002** | The first-ever dogfight of UAVs involved Iraqi MiG-25 and the American RQ-1 Predators both firing missiles at each other. The MiG-25 was victorious destroying the RQ-1 |
| **September 2011** | UAVs in Yemen were deployed by the USA to search and kill Anwar Al-Awlaki. He was killed by a UAV-launched missile attack in Yemen swiftly after. |
| **Since 2014** | The United Nations Convention on Certain Conventional Weapons (CCW) has held meetings discussing the proliferation of LAWS and their ethical implications. The meetings aim to establish international norms and regulations surrounding the development and deployment of autonomous weapons. |
| **June 2018** | The Joint Artificial Intelligence Center (JAIC) is established by the U.S. Department of Defense to accelerate the adoption of AI technologies, including for military applications. |
| **February 2022** | Russia declares war on Ukraine and begins its invasion. During the invasion, as stated by U.S. officials, Ukraine’s armed forces have been losing more than 10, 000 drones a month; same with Russia both parties have been mainly using and dramatically losing numerous unmanned aircraft often powered by AI. |

Previous Attempts to Resolve the Issue

**Arms control refers to an agreement between states to regulate and limit the development and deployment of a particular weapon or application of a weapon. However, this issue becomes highly complex in the context of Artificial Intelligence. Not only do some central states not wish for an internationally recognized law for banning LAW, but AI is very quickly obtained, so it will be hard to limit it. Nevertheless, through the influence of protests, various countries have reduced the proliferation of LAWSs in the military to counter the spreading of this technology to malicious parties, making it such that devices require human supervision, such as the case in the UK. However, this is only in some countries, and others ignore such concerns, believing that Artificial Intelligence is the future and only focusing on the rapid technological development of those weapons. Because sophisticated AI-powered weapons only came into view several years ago, a solid framework has not been ratified, and people still do not recognize the extent of AI’s power. Countries are much divided on this issue, with some implementing their restrictions and others striving on with their research, now creating completely unmanned nuclear missiles controlled by AI. This certainly does not solve the issue of rampant LAWS and AI weapons being used in the wrong hands as the proliferation of them becomes more and more common. The UN has recognized the importance of regulating this technology; thus, humanity needs an internationally recognized framework to restrict the ethical misuse and proliferation of AI-powered light weapons.**

Resolutions and Research

* The General Assembly its resolutions of 72/242 and 73/17 address the pace of rapid technological change
* HRC Resolution 53/27 rev. 1 elaborates on the development of new emerging technologies explicitly AI and the protection of human rights.
* Interim Report: Governing AI for Humanity calls for international norms and a guide to the development of AI. It proposes international governance of AI.
* CCW/GGE.1/2023/CRP.1 – Convention on restrictions of use of certain conventional weapons which may be deemed to be excessively injurious.
* The General Assembly its resolutions of L.56 outline the challenges and opportunities of new technologies such as autonomous weapon systems and AI.

Possible Solutions

* Strengthening international norms and legal frameworks shall be of utmost importance, encouraging member states to uphold existing international norms and legal frameworks such as the UN Charter, Geneva Convention, and other general treaties that govern the use of force and development of weapons. Furthermore, going off previous non-proliferation and disarmament treaties, such as the Non-Proliferation of Nuclear Weapons, The Chemical Weapons Convention, and the Biological Weapons Convention, can serve as crucial examples for the development of a new international framework for the regulation and limit the proliferation of AI weapons taking into account of its characteristics, potential risks and the opinions of all member-states.
* Creating ethical guidelines that illustrate proper military usage and disposal of those weapon systems may appease many concerns about its human rights violations, or excessive cruelty/killing of innocents if a malfunction occurs. Facilitating discussions and collaboration among governments, academia, industry, and civil society to develop ethical guidelines for the use of AI technologies in military contexts would be very beneficial. Moreover, maintaining and establishing connections to more expert groups or advisory bodies to provide guidance on the ethical implications of AI weapons and ensure compliance with international laws concerning each country.
* Raising public awareness and understanding of the risks and implications associated with AI weapons through public campaigns, educational programs, and media engagement. In addition, encourage interdisciplinary and peer-reviewed research by qualified personnel on AI weapons's ethical, legal, and societal implications, with further encouragement in collaboration between those experts.
* Strengthening International Cooperation is one of the most important solutions in this section, as it will bring countries together in the spirit of cooperation, not competition. If this is realized, cooperation between experts from various member states may work together to establish an acceptable framework. With transparency, the tension globally will drop, thus allowing for slower, more methodical development of this technology. However, with the Russo-Ukraine War ongoing, this solution will not be feasible at present but should be a goal to strive for in the grand scheme of AI weaponry and development.

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