

AI WARS AND INTERNATIONAL HUMANITARIAN LAW- GAZA AND UKRAINE AS EXAMPLES.

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Submission date: 05/01/2026 Acceptance date: 30/04/2026 Publication date: 31/05/2026

Abstract:

The rapid advancement of artificial intelligence (AI) in armed conflict has outpaced the capacity of international humanitarian law (IHL) to adapt, particularly with the emergence of numerous AI-enhanced weapons, as demonstrated by the 2023-2025 Gaza War and the conflict in Ukraine since 2022. These weapons, characterized by their effectiveness and low cost, pose serious risks to respect for the fundamental principles of IHL, especially distinction, proportionality, and humanity.

The weakness of existing legal frameworks, due to the outdated nature of relevant conventions, is also noteworthy, especially as new applications are accompanied by a growing decrease in human oversight, including in autonomous weapon systems. This makes proving criminal responsibility difficult due to the complexity of identifying the direct controller of AI applications.

Keywords: *Artificial intelligence, international humanitarian law, armed conflicts, autonomous weapons, cyber warfare.*

Introduction:

International humanitarian law is defined as a branch of public international law whose customary and written rules aim to protect persons affected by armed conflict, as well as civilian objects¹. It is based on the existence of armed conflict, but the nature of this conflict has continuously evolved from man-to-man combat to naval warfare and air warfare. Today, warfare is technological, employing artificial intelligence technologies, which the US Department of Defense has described as a "force multiplier."

Although military artificial intelligence has a long history and has been developing conceptually for some time, its use by the Ukrainian and Israeli militaries over the past two years demonstrates how this technology is

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radically changing the theaters of operation. While the Israeli Defense Forces have been investing for years in developing military artificial intelligence and are now using it to enhance their technological superiority over Hamas fighters in Gaza, artificial intelligence is being used in Ukraine to counterbalance the power dynamics against Russia².

This increasing reliance on artificial intelligence (AI) in modern warfare poses significant challenges to current standards of international humanitarian law (IHL). New applications are accompanied by a growing decrease in human oversight, including in autonomous weapons systems, raising concerns about accountability and compliance with the laws of armed conflict. This necessitates a re-evaluation of IHL's capacity to govern AI applications in warfare³.

Based on the above, the following problematic arises: What challenges does the international community face in addressing AI-enhanced weapons?

This article aims to explain how artificial intelligence (AI) technologies are used in military operations, focusing solely on the intersection of AI and international humanitarian law (IHL), without delving into the technical aspects of AI weapons.

It is also important to note that Algeria does not recognize Israel as a state, a position that Algerian researchers should adopt. Therefore, the term "Zionist entity" will be used in this article, emphasizing the non-recognition of this entity, its state, government, army, or the two-state solution under any name.

This study employs a descriptive approach to examine existing realities, scrutinizing traditional rules of international law and attempting to apply them to newly developed AI-enhanced weapons. This is achieved through two topics: the first addresses introductory concepts of AI and the types of AI-enhanced weapons used in Gaza and Ukraine, before exploring the challenges of reconciling IHL with the development of these weapons during armed conflicts.

The first Section

Preliminary Concepts of Artificial Intelligence and the Types of Weapons Enhanced by it in Gaza and Ukraine.

The rapid advancement of artificial intelligence (AI) has positively impacted various aspects of life, facilitating them in areas such as medicine, transportation, and scientific research. However, its military applications are highly controversial, as its use as a weapon could compromise human safety and freedoms.

Therefore, this section will examine the definition of artificial

intelligence before outlining the most important types of AI-enhanced weapons used in armed conflicts.

First Requirement: Understanding Artificial Intelligence

Despite its recent emergence, artificial intelligence is developing very rapidly. The advanced technology it employs, the latest of which remains classified for security reasons, makes it difficult for non-experts to understand.

Therefore, it is important to review the historical stages of AI's emergence and development before presenting its most important definitions, characteristics, and types.

I. The Emergence and Development of Artificial Intelligence Technologies.

Artificial intelligence began to develop in the 1950s, and interest in this science increased significantly around 2010 as a result of three main factors: the growth of big data, developments in machine learning, and increased computing power⁴.

Today, artificial intelligence systems can perform a variety of tasks, including recognizing faces and objects, navigating roads and driving autonomously, and generating images and texts. They also surpass human capabilities in certain areas such as long-term planning, imagination, and simulating complex ideas⁵.

It's worth noting that the earliest versions of AI applications we interact with today were built on traditional machine learning models, which rely on learning algorithms developed and refined by data scientists. In other words, traditional machine learning models require human intervention to process new information and perform any new tasks that fall outside their initial training.

For example, Apple added Siri to its iOS operating system in 2011, which was trained through human intervention to understand a set of highly specific phrases and requests. Meanwhile, deep learning models enable AI applications to learn how to perform new tasks that require human intelligence, engage in new behaviors, and make decisions without human intervention. The field of AI is still in a state of constant and rapid change, and our understanding of AI will continue to evolve as well⁶.

II. Defining Artificial Intelligence.

Artificial intelligence, or AI, is a rapidly developing science. It was defined by mathematician Richard Bellman in 1978 as: "The automation of activities that we associate with human thinking, such as decision-making, problem-solving, and learning..."⁷.

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of activities we associate with human thought, such as decision-making, problem-solving, and learning..."⁸

According to the proposed regulation of the European Parliament and Council to establish uniform rules on artificial intelligence, it is a program developed using one or more technologies, which, according to a certain set of objectives determined by humans, can generate results such as content, predictions, recommendations, or decisions that affect the environments with which it interacts⁹. " From this it appears that machines generated through artificial intelligence have improved efficiency compared to traditional human methods, which enables savings in time, effort, and money¹⁰

Artificial intelligence has many characteristics, the most important of which will be mentioned as follows:

1 - The ability to learn: based on inputs and data that have been previously stored, and then the ability to deal with deficiencies¹¹

2- many applications exhibit dual-use capabilities, meaning they can be applied simultaneously in both military and civilian contexts. For example, drones, and algorithms originally used for image recognition for civilian purposes, such as identifying individuals in YouTube videos, can be trained to assist militaries in monitoring terrorist activities using "fool's movement video." This type of video is obtained by remotely piloted aircraft deployed over target areas, as has been done in Ukraine, Gaza, and elsewhere. Thus, applications used in the civilian sphere can later be used in armed conflicts, and vice versa.

3- artificial intelligence demonstrates a high degree of transparency. Its presence may not be immediately noticeable when integrated into a product. Therefore, it is expected that artificial intelligence will become an integral part of diverse applications, including civilian ones, for military purposes¹²

1- narrow AI: This type of AI can be trained to perform a single, specific task, often much faster and better than the human mind. Examples include Siri, Alexa, and even ChatGPT from OpenAI.

2- general AI: This is a theoretical concept that can use existing knowledge and skills to accomplish new tasks and learn in different contexts without requiring human training on the underlying models.

3- superintelligence: If realized in the future, this type of AI will think, reason, learn, and possess cognitive abilities that surpass those of humans.

4- interactive machine AI: These are memoryless systems that operate on currently available data. They are derived from statistical mathematics and can analyze massive amounts of data¹³.

Requirement Second: Some types of AI-enhanced weapons used in armed conflicts.

The emergence of artificial intelligence and automated warfare systems is expected to reshape warfare in the same way that mechanization did in the 20th century. Its use will revolutionize military logistics and intelligence, aiming to reduce human casualties and enhance effectiveness in war. However, the move by some countries towards complete autonomy in this area may lead to controversial outcomes¹⁴.

I. Autonomous Weapon Systems.

These are defined as weapons that operate autonomously in the air, on land, or at sea. Once activated, they can select and attack targets without human intervention¹⁵.

Sensors, computers, and actuators provide it with situational awareness, enabling it to process information and execute decisions. According to the Intergovernmental Expert Group on Emerging Technologies in Lethal Offensive Weapon Systems, offensive weapons systems are not one or two types of weapons but a class of capabilities that enhance weapons by integrating autonomy into their core functions, specifically in target selection and engagement.¹⁶

It is certain that these weapons, as a form of artificial intelligence used in armed conflicts, cause unwanted human casualties and violate the principles of the laws of war. An example of the use of autonomous weapon systems is the Israeli “Harpy” weapon, which can detect, attack and destroy enemy radar transmitters, and conceal torpedo mines that launch a torpedo to identify the target when activated by a ship.

Current discussions among military strategists regarding artificial intelligence focus on the level of autonomy that should be granted to weapons that utilize it¹⁷. Autonomous weapon systems pose significant ethical, legal, and operational challenges, particularly concerning their compliance with the principles of international humanitarian law. An automated weapon system is largely independent of human will and therefore lacks an ethical dimension.

II. Unmanned Aerial Vehicles (UAVs): The Revolution of Modern Military Weapons.

Unmanned Aerial Vehicles (UAVs), commonly known as drones, are electromechanical flying technologies¹⁸. Historically, the first unmanned aerial vehicle was the unmanned hot air balloon used in France in 1783. Since then, drones have continued to be used in intelligence, aerial surveillance, search and rescue, reconnaissance, and offensive missions.

Today, drones are widely used in numerous fields, such as traffic control,

freight transport, first aid, agriculture, recreation, hobbies, security, and surveillance, offering a variety of customizable solutions that combine practicality and speed.

It's important to distinguish between remotely operated drones, which present no problems since the operator makes the decisions and is therefore responsible for any harmful consequences, regardless of the circumstances¹⁹, and autonomous drones. Autonomous drones receive initial instructions and then fly to target areas, conduct reconnaissance, and make targeting decisions independently. The annexation of Crimea in 2014 demonstrated the vulnerability of conventional drones to jamming techniques. Artificial intelligence was used to compensate for the loss of communication with the operator and to continue the mission even in an active electromagnetic environment²⁰. This type of drone poses significant challenges regarding the application of the fundamental principles of international humanitarian law.

Amid the international race to develop this type of aircraft, its use is expanding and becoming more entrenched, a trend strongly observed since the outbreak of the Al-Aqsa War on October 7, 2023, and the participation of Israeli, American, British, and other drones in surveillance and targeting operations within the Gaza Strip. This is in addition to the Iranian strikes within the framework of Operation True Promise 3, in which the Zionist entity was attacked with more than 100 drones and 200 ballistic missiles on June 13-14, 2025. In Ukraine, the number of drone incidents exceeded 8,500 in 2024, and cyberattacks reached more than 2,300 incidents²¹.

The reasons for this are their low cost and stealthy nature due to their small size, and, most importantly, the fact that they do not pose a risk to human personnel if detected, unlike the dangers pilots faced in the past²².

Because of these advantages, global spending on military robots reached \$13.4 billion in 2022²³. It is estimated that in 2020, at least 102 countries possessed active stockpiles of military drones. This prompted the UN Special Rapporteur on extrajudicial killings to issue several reports, following the use of this technology for extrajudicial killings, such as the assassination of Qassem Soleimani, commander of the Quds Force of the Iranian Revolutionary Guard, in Iraq by a US drone in early 2020. This raises growing international concerns about the dangers this weapon poses to the right to a fair trial and, more importantly, the right to life²⁴.

Similarly, during Operation "Guardian of the Walls" in Gaza in 2021, the Israeli army used swarms of small, multi-rotor drones to locate, identify, and target Hamas members. The experiment proved so effective

that the army immediately announced its intention to use them in other units, before they became the dominant feature in the current Gaza war²⁵.

III. AI-Enhanced Weapons for Defensive Purposes

The international community's response to artificial intelligence (AI) warfare technologies has varied. While some countries are developing related technologies to enhance their offensive military systems, others are using them to bolster their defensive capabilities²⁶.

Among these countries is China, which relies on AI to modernize its defenses. The People's Liberation Army (PLA) uses AI for planning, predictive analysis, and data integration, particularly in naval warfare, where advanced defensive measures are prioritized. This represents a strategic shift from "attack first" to "effective defense first."

AI is also used in cyber warfare defense. It enables highly responsive defenses, as automated cyber defenses, widely deployed in personal, commercial, and military sectors, address the scope and speed of cyber threats through continuous and adaptive processes, similar to firewalls and virus detection systems. AI systems can analyze attackers' actions independently and in real time, generating dynamic responses that surpass traditional defenses. This adaptability relies on massive datasets of global cyber activity, which feed into AI learning processes related to cyber defense²⁷.

IV. AI Applications for Military Purposes.

1- Artificial intelligence applications for military purposes in Ukraine.

Currently, the Russian-Ukrainian war is considered an ideal testing ground for future warfare, which relies more heavily on the use of artificial intelligence in military operations than any other armed conflict. This is occurring within the context of the geopolitical rivalry between China and the United States, where China and Beijing stand with Moscow, while the United States supports Ukraine. This has transformed into a digital arms race, reminiscent of the previous nuclear arms race, and could lead to dire consequences.

An analysis of the Ukrainian situation reveals that Kyiv, with its significantly smaller military capabilities compared to Moscow, has managed to hold out since February 2022 with American support. The US has helped track the movements of Russian nuclear missiles, which in the past often evaded detection. Furthermore, Ukraine was able to predict the Russian invasion of Ukraine months in advance, thus depriving Moscow of the element of surprise²⁸.

Artificial intelligence was used extensively in Ukrainian operations to repel the Russian attack and protect vital Ukrainian infrastructure. The

Ukrainian army uses the Sky kit system, which was developed using Meta Constellation software from the American company Palantir, which offered its services in 2022 to Ukrainian President Volodymyr Zelensky for free, along with several other companies such as Microsoft, Amazon, Google and Starlink²⁹.

Among the most important of these is the Revis notification application, which identifies Russian forces from satellite imagery. The Russian invasion of Ukraine led to the first documented use of facial recognition technology in combat. However, it was external support that proved decisive, prompting Western commentators to point to Ukraine's superiority in geospatial intelligence and the analysis of open-source data, such as social media content, to identify Russian soldiers, weapons, systems, units, and movements.

On the Russian side, there is less evidence and less information about the use of artificial intelligence in actual warfare. For example, at the beginning of the Russian invasion of Ukraine, the Kremlin released a fake video of President Zelensky calling on the Ukrainian people to surrender. This video, which garnered over 120,000 views on Twitter, was produced using artificial intelligence and deepfake technology, which makes news or videos appear remarkably real. How can one determine the level of trust in media manipulated by governments, advertisers, algorithms, or other third parties attempting to persuade users and information recipients during armed conflicts for the purpose of mobilization or winning psychological warfare against the enemy³⁰.

In addition to using convolutional neural networks to collect, classify, and analyze images and videos captured by the Lancet reconnaissance aircraft, which then carries out an attack, the Russian Marker project is an unmanned ground combat vehicle with autonomous mobility and collective vehicle control. Testing and evaluation under real combat conditions have begun³¹.

2- Artificial intelligence applications for military purposes in Gaza:

Since 2021, Israel has also been using several applications aimed at achieving a military advantage in its "Operation Guardian of the Walls" to this day. The most prominent of these applications is:

- The "Depth of Wisdom" program maps the Gaza Strip to detect Hamas tunnels.*
- The "Habsurah" (meaning "Gospel") program identifies buildings that could be used for military purposes, such as launching rockets, training, or storing weapons.*

- The “Lavender” app assesses the likelihood of a Gaza resident belonging to an armed group by comparing their communication patterns, such as regularly changing their phone number and contacting numbers associated with known members of Hamas or Palestinian Islamic Jihad³².
- The “Where’s Daddy?” program locates targeted individuals as they return home.
- The Gospel platform, an AI-powered targeting platform that won the 2020 Army Innovation Award, aims to locate resistance fighters and estimate civilian casualties in the event of clashes³³.

It is worth noting that before the war, the Israeli army identified 50 targets for bombing annually in Gaza. After using the platform and its algorithms, it now identifies 100 targets daily, striking 50 of them each day. According to Israeli figures, 15,000 targets were bombed in the first 35 days of the current Gaza war, compared to the 51-day war in 2014, during which between 5,000 and 6,000 targets were bombed³⁴. This leads us to a very frightening conclusion: a significant portion of the horrific casualty figures since October 7th is due to the use of artificial intelligence.

Therefore, in 2024, the UN Secretary-General expressed grave concern over reports that the Israeli military's bombing campaign was using artificial intelligence (AI) as a targeting tool, particularly in densely populated residential areas, leading to a rise in civilian casualties. He stated, "No part of life-and-death decisions affecting entire families should be delegated to the cold calculations of algorithms," emphasizing that he had warned for many years about the dangers of weaponizing AI and diminishing the essential role of human beings. He added that AI should be used as a force for good to benefit the world, not to contribute to waging war on an industrial scale, thereby obscuring accountability³⁵.

The second Section

Challenges of International Humanitarian Law's Compatibility with AI-Enhanced Weapons in Armed Conflicts.

Regardless of the causes of war or the parties involved, International Humanitarian Law aims to alleviate human suffering resulting from armed conflicts. It is a law of tragedies that evolves with the development of weapons technologies in wars and the crimes that result from them, with the goal of keeping pace and ensuring accountability.

Here, the question arises forcefully: what prevents International Humanitarian Law from applying to AI-enhanced weapons? It is also worth examining international efforts to address this legal vacuum and, consequently, to establish legal rules concerning artificial intelligence during armed conflicts.

First Requirement: Manifestations of AI Weapons' Incompatibility with the Rules of International Humanitarian Law.

The modern use of artificial intelligence (AI) in armed conflicts has revealed numerous violations and major challenges, particularly from the perspective of international humanitarian law (IHL), especially concerning weapons that operate without human intervention, and the extent of their compliance, or rather their ability, to implement humanitarian rules.

Therefore, this section will address the most important issues where AI intersects with the principles and objectives of IHL, focusing on the most significant due to the difficulty of addressing them all.

I. AI-enhanced weapons violate the principle of discrimination.

The fundamental principle upon which international humanitarian law is built is the obligation of warring parties to distinguish between civilians and civilian objects that may not be targeted and combatants and military objects that are legitimate targets. Common Article 3 of the four Geneva Conventions of 1949 stipulates the need to treat persons not participating in the conflict humanely³⁶. This was reinforced by Additional Protocol I of 1977 relating to the protection of victims of international armed conflicts under Articles 48 and 52³⁷. This is something that a machine may not be able to achieve in the event of severe overcrowding, as is the case in markets. Some children's toys and tools, especially agricultural ones, may look very similar to weapons to a machine.

Furthermore, some targets have dual civilian and military uses, such as power plants, communication networks, satellites, airports, and ports, etc. Article 52/3 of Protocol 1977 states that if there is any doubt as to whether an object is used for civilian or military purposes, it should be presumed to be civilian. Artificial intelligence, by its very nature, will search for potential targets because it is programmed to do so and does not tend to assume innocence.

This is precisely what the Russian attacks on critical Ukrainian infrastructure demonstrate, targeting not only military installations but also civilian facilities that ensure the continuity of essential public services³⁸.

This demonstrates a strong correlation between the increase in cyberattacks and the increase in documented cases of violations of humanitarian standards related to the principle of distinction. Stripping the decision to kill of its human aspect and transferring it to mathematical algorithms transforms the "principle of discrimination" from a value-based and legal standard into a mere calculation of probabilities, thus increasing

the likelihood of a catastrophic error against innocent people³⁹.

II. AI-enhanced weapons violate the principle of proportionality.

The principle of proportionality means that any incidental or collateral harm to civilians not directly participating in hostilities must not be excessive in relation to the military advantage gained⁴⁰. This principle is enshrined in Article 51/5/b of Protocol I 1977, which describes disproportionate attacks as a prohibited type of indiscriminate attack.

If a machine's programming does not prioritize the protection of civilians, it will pursue and engage targets even in the presence of large numbers of civilians. It's important to note that "excessive" is a relative term requiring human judgment. Therefore, algorithms will be incapable of accurately assessing "excessive" harm. For example, artificial intelligence might consider the loss of 10% of a residential area's population an "acceptable" number for eliminating a high-value target, while a human commander would reject it morally and legally.

On the other hand, it is difficult for artificial intelligence to determine the "tangible and direct military advantage," as the expected military advantage from the attack must be clear and short-term. According to Article 57, Paragraph 2/A/3 of Protocol 1977, the person planning the attack is required to refrain from it if he expects collateral damage that is not proportionate to the military advantage. Artificial intelligence may analyze data in isolation from the major strategic objectives set by humans, which may make it attack targets of little military value in exchange for actual civilian losses, which disrupts the balance of proportionality.

Proportionality isn't just about those who die at the moment of an explosion; it also considers those who will die later due to, for example, the collapse of infrastructure. Current artificial intelligence programs excel at calculating immediate physical damage, but they lack the ability to predict the long-term social and health impacts on the population, which is an integral part of proportionality calculations.

However, the greatest threat to the principle of proportionality is the unpredictable and rapid escalation of combat operations. AI-enhanced weapons systems use algorithms and pre-programmed data to identify, track, and engage targets with unprecedented accuracy and speed. As military operations escalate, it becomes impossible for humans to intervene and reassess "proportionality" as the situation on the ground changes⁴¹. This contradicts Article 36 of Additional Protocol I of 1977, which requires states to assess new weapons to ensure they do not violate international law under any circumstances.

While Russian reports during its war against Ukraine indicated a

detection-to-engagement time of no more than 3-4 minutes⁴², reducing this time to 20 seconds in the current Gaza war inevitably entails the risk of miscalculation, especially in high-risk or volatile environments like Gaza, which could lead to errors resulting in catastrophic human losses.

This is clearly evident from examining the disastrous consequences of Operation Iron Swords in Gaza in 2013, which revealed at least three sets of errors: First, the Israeli entity miscalculated its algorithms, using inaccurate data such as the contact information used to identify Hamas members. Their frequent phone changes led to fatal errors for people who collected phones from anywhere they could find to contact their families during displacement. Second, there was an overconfidence in the algorithms' rationality, which reduced the percentage of human verification. Officers spent only twenty seconds verifying the validity of a human target suggested by the Lavender program, even though the system's error rate was estimated at 10%. Finally, affiliation with Hamas was determined based on mere suspicion, such as a name similar to that of a known activist, membership in the same WhatsApp group, or even liking a post supporting Hamas⁴³.

III. AI-enhanced weapons violate the precautionary principle.

In armed conflicts, when a choice exists between several military objectives to gain a comparable military advantage, the objective that should be chosen should be the one expected to cause the least possible harm to civilian lives and civilian objects. This is what Article 57 of Protocol I 1977, entitled "Precautions during an attack," stipulates, requiring the development of plans to avoid civilian casualties or attacks on persons under special protection, such as journalists, medical personnel, and relief organizations, as well as attacks on civilian objects, etc. Taking all possible precautions to protect civilians has become more important than ever with the development of automatic weapons systems, in an effort to achieve a just balance between humanitarian requirements and the necessities of war.

Current reports also show that artificial intelligence tools are being actively used to identify targets in Gaza and Ukraine, contributing to indiscriminate attacks and heavy civilian casualties. It is believed that autonomous weapons may be compatible with international humanitarian law in remote and rugged areas, but are undesirable in densely populated urban areas⁴⁴.

Protocol 1977 also adds the obligation of the attacking state to provide advance warning, under Article 57(2)(c), by effective means in the event of attacks that may affect civilians. However, the speed of artificial

intelligence may eliminate the necessary warning window, and it will not be able to cancel an attack if it becomes clear that the target is not military. This is emphasized in the aforementioned article, which stipulates that the attack planner or decision-maker must cancel or suspend any attack if it becomes apparent that the target is not military or that the attack may result in civilian casualties⁴⁵.

From this, it can be concluded that AI-enhanced weapons lack ethical considerations, and their decisions are made purely materialistically and without conscience, which constitutes a clear violation of the principles of international humanitarian law.

The second requirement: An examination of the laws aimed at regulating the use of artificial intelligence during armed conflicts.

It is clear that international law, particularly humanitarian law, is unable to address the rapid and strategic developments in the use of artificial intelligence during armed conflicts. This is due to the military advantages it grants states in both defense and offense, necessitating the search for applicable legal frameworks to ensure international criminal accountability. This is achieved through frameworks that reconcile technological advancements with humanitarian principles. This necessitates revitalizing international cooperation to evaluate existing laws and develop new ones based on informed principles, ensuring the continued effectiveness of international humanitarian law in light of these technological developments, with the ultimate goal of developing responsible artificial intelligence⁴⁶.

I. International Humanitarian Law's Approach to Weapons During Armed Conflicts.

International humanitarian law is divided into: the Geneva Conventions, which address the protection of persons during armed conflicts, and the Hague Conventions, which comprise a set of agreements aimed at prohibiting certain types of weapons that contravene the principles of international humanitarian law.

The parties to a conflict do not have unlimited options regarding the methods and means of warfare. International humanitarian law prohibits the use of weapons that cause unnecessary casualties or excessive suffering⁴⁷, as stipulated in specific agreements such as the Convention on the Prohibition of the Use, Stockpiling, Transfer and Transfer of Anti-Personnel Mines and on their Destruction (Oslo 1997) and the Protocol on Explosive Remnants of War (2003).

Perhaps the first document to address the limitation of weapons use in warfare was the St. Petersburg Declaration of 1868, which prohibited the

use of certain projectiles in wartime. Specifically, it prohibited the use of projectiles weighing more than 400 grams against persons. This type of weapon was considered internationally prohibited because it violates humanitarian principles. The objective of using weapons is to weaken the enemy's capabilities, not to annihilate armies⁴⁸.

Because not every weapon can be covered by a single agreement, the First Additional Protocol to the four Geneva Conventions, relating to the protection of victims of international armed conflicts, adopted on June 8, 1977, established three criteria that inherently prohibit a weapon if its use results in any of the following:

- It has an indiscriminate effect, such that it cannot be precisely directed at a specific target (Article 51/4/b).
- It causes serious injury and unnecessary suffering (Article 35/2 B.1).
- It causes widespread and long-lasting damage to the natural environment (Article 35/3 B.1).

From this, it can be understood that other weapons for which no agreements have been concluded may be used during armed conflicts. These fall under the category of weapons whose use is restricted, not prohibited, provided they are not used against civilians and are directed against military personnel and military installations. Despite this, the International Court of Justice, in the 1996 case concerning the legality of the use of nuclear weapons, concluded that there is no prohibition the state whose existence is threatened by its use, despite the long-term, indiscriminate, and destructive effects of nuclear weapons⁴⁹.

Furthermore, new weapons of mass destruction, easy to transport and use, and with devastating consequences, continue to emerge. In fact, Protocol IV of the 1980 Convention on Conventional Weapons, which prohibits the use of blinding laser weapons, is the only one that has been banned before its actual use, thanks to the efforts of the International Committee of the Red Cross, the guardian of international humanitarian law⁵⁰.

From an examination of this international legal and judicial approach, it appears that there is no genuine will to ban weapons that do not comply with the principles of international humanitarian law, especially since they cost major industrialized nations billions of dollars. Consequently, the international community will not succeed in banning weapons that utilize artificial intelligence, particularly after the widespread adoption of this technology by almost all countries worldwide, except those that have not yet acquired it. If the use of nuclear weapons, which meet the aforementioned criteria, cannot be prohibited, how can weapons enhanced

with artificial intelligence be banned?

In the absence of any relevant international legal instrument, some initiatives have emerged that offer valuable insights. The US-drafted Political Declaration on the "Responsible and Autonomous Use of Artificial Intelligence" was adopted in The Hague in 2023. While this document has the status of a non-binding soft law, it represents a significant step forward in regulating the use of artificial intelligence.

To date, 49 states have expressed their support for this initiative. The declaration emphasizes the importance of respecting the rules of international humanitarian law in conflicts involving AI-guided weapons, this includes the need for states to enhance the protection of civilians in such conflicts and to clearly define the purpose of these weapons to limit their arbitrary use.

It remains to be seen whether states will adopt these non-binding rules and transform them into treaty-based or at least customary international law, thereby making them legally binding and applicable⁵¹.

The most recent document is the "EU Artificial Intelligence Act," adopted by the European Parliament on June 13, 2024. This act aims to regulate the use of artificial intelligence systems in all EU member states, ensuring their development and use are consistent with EU values and the protection of human rights. It also seeks to mitigate their harmful effects by developing global standards for the safety and security of these systems. The Act is set to enter into force in 2026⁵². Unfortunately, it does not include rules related to warfare, focusing solely on the commercial use of artificial intelligence.

II. The Tallinn Guide to Cyber Warfare: Towards the Establishment of New International Humanitarian Rules.

Cyber warfare refers to military activity that primarily uses computer systems and networks to attack adversary systems. Artificial intelligence has been used as a cyber weapon in practice for some time, even before the widespread adoption of cloud computing.

It is important to emphasize that cyber warfare does not always involve the use of artificial intelligence. Long before the development of AI in the modern era, cyberattacks existed, but they were launched manually or by humans. Today, however, cyber warfare strategies increasingly rely on AI in an automated manner.

Among the most prominent of these attacks was the one targeting Estonia in April 2007, which Russia was accused of orchestrating. It was a prolonged series of distributed denial-of-service (DDoS) attacks that disrupted the banking system, many government services, and most media outlets. In 2010, the Stuxnet worm struck Iranian computer networks. This

American-Israeli virus targeted and damaged centrifuges at Iranian nuclear facilities, particularly the Natanz facility. This confirms that cyberspace has become a new arena for warfare, subject to both offensive and defensive military operations.

The reliance of modern, AI-enhanced cyberattacks on complex and opaque software has complicated the applicability of international humanitarian law (IHL). IHL is limited to battlefields and physical⁵³ weapons, and international efforts to address this issue are quite modest. The most serious initiative is the Tallinn Manual on Cyber Warfare, a document compiled by a group of legal scholars, researchers, and experts, published by Cambridge University Press (UK). The first edition was released in 2013, the second in 2017, and the Tallinn III project, launched in 2021 for a five-year period, includes a review of its existing chapters and the exploration of new problematic topics.

The Tallinn Manual on Cyber Warfare is a comprehensive guide to international humanitarian law applicable to cyber warfare. What is noteworthy about this guide is the title of the first chapter, "International Cybersecurity Law." Here, we find a growing awareness that a new branch of public international law is emerging, examining issues of state sovereignty in cyberspace, jurisdiction, and the use of force. Subsequent chapters raise important legal questions, ranging from individual criminal responsibility and the conduct of hostilities to misuse, treachery, and espionage during cyberattacks⁵⁴.

Despite the importance of this work, which exceeds 300 pages, it unfortunately remains an academic work and not legally binding.

III. The Dilemma of Responsibility for Crimes and Crimes Resulting from the Application of Artificial Intelligence.

Military commanders in conventional warfare bear responsibility for the use of offensive weapons and for setting the standards or limits of military operations. Therefore, they bear criminal responsibility for their own actions and the actions of their subordinates, as well as all the consequences of decisions made by subordinate commanders and service members. This is emphasized in Article 28 of the Rome Statute of the International Criminal, and according to the Article 38 of the Rome Statute the obeying superiors' orders does not justify committing any criminal act⁵⁵.

Here, it becomes clear that the international struggle that led to the adoption of the above rule faces enormous challenges in its application if the use of AI-enhanced weapons results in serious harm. While AI weapons possess destructive power useful in combating adversaries, their impact

can damage civilian infrastructure and claim civilian lives. The unregulated proliferation of weapons technology and the unchecked militarization of AI will erode the fundamental pillars of international humanitarian law and undermine legal accountability in warfare, ultimately destabilizing global security⁵⁶.

This raises fundamental questions about how to apply the rules of international criminal responsibility, given that AI operates autonomously and machines and applications cannot be punished⁵⁷.

On the other hand, current frameworks do not stipulate how to determine responsibility when autonomous systems operate outside of human intent or control. Therefore, international humanitarian law needs to establish new accountability mechanisms to address these gaps, such as frameworks for state responsibility or specialized AI war crimes tribunals. Determining who controls these systems is highly complex, as responsibility may be distributed among combatants, military commanders, and even developers and designers⁵⁸.

All these legal issues can be avoided by requiring states to appoint a responsible supervisor for each AI weapon⁵⁹, and to ensure that AI applications are instructed on the principles of international humanitarian law, state responsibility, and humanitarian rules of engagement during hostilities⁶⁰.

Until such a system is in place, and to prevent responsibility from being diluted among all these parties, the military commander must be held accountable for failing to anticipate or protect against harm when operating an autonomous weapon outside of its programming parameters. This includes cases of errant or misdirected fire, failure of smart weapons to perform as expected due to defects or malfunctions, and all errors that can occur throughout the entire killing chain when using autonomous systems⁶¹.

Third requirement: Artificial intelligence in the military field and the General Assembly: Towards a new international agreement.

On 24 December 2024, the General Assembly adopted resolution 79/239, entitled “Artificial Intelligence in the Military Field and its Implications for International Peace and Security,” its first relevant resolution. In it, the Assembly affirmed the applicability of international law to all forms of artificial intelligence, encouraged States to address the opportunities and challenges related to AI in the military field, and resolved to bridge the gaps between States regarding responsible AI in the military domain.

Subsequently, the Secretary-General submitted a substantive report, No. 78/80, on the opportunities and challenges posed by the application of AI

in the military field to international peace and security, with a particular focus on areas other than lethal autonomous weapons systems. Discussions were also held in the Disarmament Commission under the agenda item entitled "Recommendations on Common Understandings Relating to Emerging Technologies in the Context of International Security," and the work of the Group of Governmental Experts on Emerging Technologies in the Field of Lethal Autonomous Weapons Systems, established under 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. This convention is considered the most appropriate framework for this type of instrument in the form of an Additional Protocol. Despite comments from States encouraging the adoption of this project, it does not appear likely that it will be adopted soon⁶².

From the foregoing, it is clear that updating existing international agreements is insufficient. A new global international convention is needed that comprehensively and precisely regulates the legal status, responsibilities, and limits of the use of autonomous military technologies. This convention should also define technical concepts such as "artificial intelligence for military purposes," "autonomous weapons," and "human control," establish procedural safeguards to prevent misuse, and provide mechanisms for determining the responsibilities of States, manufacturers, and operators of the systems⁶³.

Conclusion:

The increasing use of artificial intelligence (AI) in armed conflicts represents a radical shift in the landscape of modern warfare. While it offers operational advantages, it also raises profound ethical and legal challenges to international humanitarian law. In the wars in Ukraine and Gaza, rather than contributing to cleaner and more compliant warfare, AI has led to the targeting of more people more quickly, at a lower cost, and with seemingly logical justification.

This underscores the urgent need for a new framework to restrict AI-enhanced weapons. The Hague Conventions, which regulate weapons in armed conflict, are broad and outdated, but action can still be taken to prevent or prohibit the production of dangerous AI weapons to ensure the effective protection of human life⁶⁴.

A more serious concern must also be emphasized: the proliferation of these technologies could lead to them falling into the hands of terrorist groups. In addition to their small size and low cost, AI weapons reduce risks to their operators and allow easy access to people and institutions

thousands of kilometers away⁶⁵.

Finally, it is worth questioning the true capabilities of artificial intelligence. While the Zionist entity reached all the top leaders of Hezbollah in late 2024, and those in Iran in mid-2025, it failed to reach a single hostage in the Gaza Strip, an area of only 365 square kilometers, despite having declared the ongoing war to be the first AI war known to humankind. Furthermore, an old blanket worn by Hamas fighters proved ineffective against the capabilities of AI, advanced algorithms, and thermal cameras in identifying individuals. Is it then accurate to say that artificial intelligence will one day surpass human intelligence?

This study leads to the following conclusions:

- Artificial intelligence is characterized by its effectiveness and low cost, and it provides a crucial advantage in network security during cyberattacks in armed conflicts.
- The body of conventions comprising international humanitarian law is outdated, which is inconsistent with the rapid development of artificial intelligence.
- The use of autonomous weapons raises serious doubts about their ability to comply with the principles of international humanitarian law, such as distinction, military necessity, and proportionality. The absence of an effective legal framework complicates accountability, particularly when artificial intelligence malfunctions due to product defects or misuse.

The following suggestions can also be raised:

- States and private companies must commit to establishing internal regulations that designate the supervisor responsible for each AI weapon.
- Relevant international agreements must be updated, and an international convention on emerging technologies in the field of lethal autonomous weapons systems must be concluded to ensure full compliance with international humanitarian law.
- Those responsible for the use of AI-enhanced weapons in the Gaza and Ukraine wars must be brought before the International Criminal Court.

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