

Autonomous Weapons & Humanitarian Law

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Abstract: Autonomous weapons AWS have developed significantly in recent years because of the benefits and military capabilities that are indispensable in modern wars due to their low costs and superior capabilities and reaching their goals without human losses, so countries have been racing to allocate funds and capabilities to outperform others without taking into account stable humanitarian principles and their lack of commitment to moral values and causing many violations the conclusion of binding international instruments prohibiting weapons that are completely independent of human control and restricting others which has partial independence. Despite these attempts, Countries are still moving forward in their manufacture, development, and use, putting obstacles in the way of concluding any international instrument that restricts them in this vital area and the danger to their future and the extent of their superiority.

KEYWORDS: autonomous weapons, AWS, humanitarian law, violations, responsibility, morality

INTRODUCTION

In 2015, a group of researchers in the field of AI sent an open letter to the international community warning of the race of countries to use AI in the weapons industry, and extent of the danger of technical development in terms of its diverse capabilities, high accuracy, low costs, speed of operations and the possibility of loss of control, and these weapons are similar to the stage of development after the discovery of electricity. (Scharre P. , 2021)

What used to be considered electronic games has now become a reality, weapons capable of decision-making automatic-AWS (*Weapons System*) have been developed to kill or destroy without reference to the source by verifying the availability of predefined specifications about the target, and the world will be on the cusp of a new stage of wars in which weapons of self-decision contribute on a large scale and enjoy complete independence these rules are generally treated in terms such as (*indiscriminate effect or excessive damage*), but they are insufficient to regulate these dangerous weapons that Their widespread use began in recent wars, causing large numbers of victims and large-scale destruction that does not comply with the rules of humanitarian law in force and constitutes a flagrant violation from both legal and moral points of view, which requires addressing these weapons in a comprehensive and qualitative manner that covers their descriptions and identifies breaches in order to reach agreement on their prohibition explicitly. These weapons have other advantages; they are used to protect land and sea borders, clear battlefields from mines and explosive devices, and reach dangerous places that may cause significant human damage.

The importance of research; the use of autonomous weapons AWS has become an imposed reality through int'l practices in recent wars, some of which are still ongoing until now, The accompanying killing of civilians and the destruction of civilian infrastructure unrelated to wars, and the decision authority is vested in a machine that doesn't appreciate the sense of human values and devoid of feelings that may stop the implementation of the decision at the last moment, which requires addressing and reducing its risks by all available means, including scientific research.

The method of research; in order to take note of the topic, it requires familiarization with the latest developments in AWS, as the topic is modern and something new is being developed every day, and there is a need to follow it up and find out the positions of countries on it and the extent of their ability to face it, in addition to reviewing the rules of humanitarian law and exploring the size of the need to develop them in proportion to the development of these weapons. Therefore, the method will be inductive, analytical, and exploratory.

Research questions: The research seeks to answer the following questions:

- What are autonomous weapons AWS and their destructive effects?
- What is the position of humanitarian law on these weapons?
- What are the efforts to counter these weapons?

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Research plan

1. The development of autonomous weapons:

- 1.1. What are autonomous weapons?
- 1.2. Growing interest in autonomous weapons;
- 1.3. The dangers of self-determined weapons;

2. Violation of humanitarian law by self-determined weapons:

- 2.1. Violation of the principles of humanitarian law ;
- 2.2. Responsibility for the manufacture or use of self-determined weapons;

3. Efforts to counter self-determined weapons:

- 3.1. Legal regulation of autonomous weapons ;
- 3.2. Ethical principles and Human Rights and their impact on autonomous weapons;
- 3.3. efforts to counter self-determined weapons ;

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- 5.1. References in the English language
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1. The development of autonomous weapons:

The description of self-made weapons distinguishes them from other weapons, which requires determining their identity. The growing interest in these weapons is increasing due to their relationship with the element of superiority, the speed and capabilities they have, and as a result of the development of these weapons, they have caused risks to human existence and violation of legally established rights.

1.1. What are autonomous weapons?

Autonomous military weapons AWS are defined as those autonomous weapons that make decisions on the battlefield without human intervention due to taking into account the speed of decision-making in light of the developments of the battle, away from the humanitarian aspects, causing death and destruction. Most of those killed by these weapons in Yemen under the pretext of fighting terrorism were civilians. (الدولية، 2013) and may be random or unable to distinguish as humans do, where the programming that works according to it is unable to keep up with human capabilities in distinguishing and detecting the intentions of combatants and neutralizing civilians from the damage they may cause, (Castel, 2016) because it adopts technology equipped with the capabilities of thinking, analysis, conclusion, prediction, situation assessment, and decision-making instead of the human mind, (Haenlein, 2019) and therefore it was objected to for violating international humanitarian law, and the percentage of opposition in the world is more than 60% (Deeney, 2019) since 2014, European countries have sought to establish ethical and legal limits for the use of these weapons, (EC, 2014) and is equipped with autonomous weapons systems that can select targets and engage them without the need for human intervention from those who ordered their operation. (2023، فرجاني) and they may be in the form of an airplane, a submarine, a missile, a mine, or a projectile. Et cetera is programmed to operate independently of its user in making its own decisions, while the Red Cross calls it an automatic weapons system. (2015، احمر) And there are those who call them (*killer autonomous robots*). (2022، العليان) The phrase autonomous weapons overlaps three concepts: the **first** is that they operate under human supervision, the **second** is that they are partially independent and may have the authority to decide in predetermined cases, and the third is that they are completely independent. (Scharre, 2014) These weapons have paired human and electronic capabilities so that they have become working at a super speed that the human mind is unable to keep up with them, in addition to saving expenses and reducing the human need and ability to work in spatial and temporal conditions that humans cannot tolerate, so countries are now trying to automate all their military operations to keep pace with the development with other countries whose financial allocations have increased for this purpose, Countries are seeking to provide space for the independence of these weapons and not affected by human aspects. (Allen, 2017) Including the drone squadrons currently used in the Gaza war, as well as in the Russian-Ukrainian war and in Syria, and that these squadrons need a high-precision organization to coordinate their movement and how to perform their goals in an independent way, even if Limited, which may cause errors and lead to violations of humanitarian law, (2017، حميد) therefore, some countries have opposed this independence, especially in the case of targeting humans. (Kallenborn, 2022) Due to the AI ability to collect data, analyze, predict, and reach solutions quickly that are vastly superior to human capabilities and at a lower financial cost, making it an indispensable tool in the manufacture and development of weapons, including AWS (GOLDFARB, 2020)

1.2. Growing interest in autonomous weapons;

The use of AWS in radar detection and destruction began automatically and without direct human intervention, and did not provoke an influential international reaction to it because it was not used for killing. In a fictional story about the US forces, it happened that a drone attacked its human control when it decided to intervene based on the predefined goals of the aircraft. Drones that integrate

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automated, autonomous technologies and artificial intelligence into targeting and mobility functions already exist, for example, in the form of deployed munitions, and are ready to attack targets mostly inhabited by civilians. They have been used in many recent conflicts, such as those used in Libya, Nagorno-Karabakh, Syria, and Ukraine, causing large-scale indiscriminate effects. (Mahdi, 2022) They are a distinct class of unmanned aircraft that can integrate sensor-based analysis to fly over, detect, destroy, or explode targets. It saves the router from following it by enabling it to identify the target and make a decision to attack it according to advance and open source data that does not require reference to the human router, which causes unexpected results that may complicate the war plan and make the conflict far from the principles of humanity and the possibility of being accessible to elements outside the law. (2025, حامد) Among the serious accidents that occurred as a result of Algorithmic Information provided by the air defense system were the injury of 56 commercial aircraft, the most obvious of which are the downing of a Ukrainian commercial aircraft by Iran (*flight No. 752*) in 2020, the downing of the Malaysian plane (*flight No. 17*) over Ukraine in 2014, and the downing of the Iranian plane (*flight No. 655*) in 1988 by the USA. (Report I. , 2016) and damages were compensated in these incidents, which confirms the recognition of the violation of international humanitarian law without identifying those responsible for these mistakes and without assuming criminal responsibilities. The Israeli Aerospace Industries Company Harbi is widely considered an example of an autonomous weapon system capable of automatically applying force by sensor-based targeting without human intervention (*autonomous decision*). (2018, العشاش) These munitions have been rapidly spreading over the past years. (2018, كريستيان) in Libya, the Cargo-2 weapon was used to kill without human intervention, although the manufacturer claims that it is under human control. (Report, 2021) By mid-2022, almost 24 countries produced such weapons, and the global market for such weapons is expected to grow significantly in the next years. These weapons have been equipped with AI tools that enable them to learn and make decisions from simulation and experimentation with or without human supervision, and they do not need the internet because their data inputs are constantly updated to enable them to make decisions independently. and in the latter case, the danger of these weapons lies. (2022, رضوان) The Iron Dome program in Israel is a model of autonomous weapons. During the past five years, the UN has been interested in these deadly weapons because it has noticed the increased spending on their development at an escalating pace that may cause a breach of international security, which called on countries seeking this technology to put the attention of the international community before their own interests threatened by unexpected and rapidly developing risks so that it is impossible to take note of and pursue them, and the cost of some of them has become cheap and dealing with terrorist groups, for example, the cost of the drone aircraft has become 25\$ (Haner, 2019)

1.3. The dangers of self-determined weapons;

These weapons may enable authoritarian regimes to continue their control and expand their influence by dominating their people by force, repression, and electronic surveillance, as China is doing with the Uighur people in more than 70 towns through facial recognition devices. (Watch, 2019) which called on the human rights organization to call for the development of a framework of standards for the operating systems of these weapons to restrict their use during the meeting of the convention on conventional weapons in 2021 in Geneva. (Wareham, 2021) The UN Secretary-General also called for the conclusion of an international convention prohibiting the use of killer robots in any form. (Hickleton, 2019) The use of AI in weapons faces great challenges represented by its failure to keep pace with military contexts in the sequence of orders, checking, verifying and reviewing them constantly according to the renewal of practical conditions and developments of battles, and surprises that require human intervention with flexibility and high experience to face them. (Amodei, 2016) Errors or breaches of Algorithmic Information may lead to problems in the use of AWS that cannot be foreseen or controlled, causing damage and violations not considered by the user, and leading to loss of liability. (Haner J. &, 2019) The five countries (*USA, China, Russia, South Korea, and the European Union*) are the leaders in the production of lethal autonomous weapons, and the USA spends more than the other group of countries combined. (Boulain, 2017) China is progressing and increasing its allocations to be the leader in AI Science in 2030, as are the EU Countries. (Altmann, 2017) The major powers are working to hinder any attempt at an international agreement banning the use of unmanned military aircraft because of the Advantage they achieve to ensure their superiority and reduce their human losses. (2015, جعفر) It is expected that future wars will be mostly a war of drones and robots, which represents a new global revolution; no one knows its extent, the extent of its damage, or the extent of its violation of humanitarian law. (Melcang, 2022)

2. Violation of humanitarian law by self-determined weapons:

There has been a lot of discussion about the position of humanitarian law on AWS, especially since it is the law that represents the legal framework for its use, and can it answer the following questions: Did you address it clearly, and did he give a sufficient answer on how to deal with it? And what is the responsibility for their use? These questions have raised concerns about the legality of these weapons and whether they respect stable moral and humanitarian values and principles. International humanitarian law hasn't kept pace with the accelerated developments of these weapons and their increasing use in recent wars, which prompted researchers to try to bridge the gap between the legal provisions and the need to regulate these weapons by exploring solutions from previous humanitarian principles and trying to adapt them to fit the actual reality and answer the extent of their legality and the responsibility arising from their use. (SZPAK, 2019) The discussion and investigation are taking place to explore the position of humanitarian law, mainly within the framework of the 1980 Arms Convention and the protocols thereof, in addition to the two protocols to the Geneva Conventions of 1977, as well as the principles approved by the Geneva Conventions of 1949.

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2.1. Violation of the principles of humanitarian law ‘

Under Article 36 of Additional Protocol I, States Parties are obliged to observe humanitarian principles when they manufacture or develop weapons, and the United States has adhered to this provision, although it is not a party to the protocol, as the ICRC considers this provision mandatory for all states. (ICRC, 2006) But this text is insufficient to address the risks of AWS and the extent to which countries are increasingly interested in it and racing to achieve the highest degrees of development in it, because it represents a means of rapid and low-cost superiority. (HICKLETON1, 2019)

2.1.1. Determining the nature of the target (civilian or military);

In Article 50 of the Additional Protocol I of 1977, if there is a doubt between the nature of the target *civilian or military*, it should be treated on the basis that it is a civilian target, and this distinction, comparison and reassessment by giving priority to the civilian target is impossible for AWS and the example of a woman with a child carrying a toy in the form of a gun, autonomous weapons consider it a military target through their analysis of the data provided to them in advance. (2015 جعفر) In practice, the Special ICTY has confirmed this principle, and those responsible for carrying out violations of non-discrimination between civilian and military objectives have been held accountable. (ICTY, 2003) These weapons can't distinguish between a military capable of fighting and a military incapable of fighting, whose killing should be bypassed because it does not achieve a military advantage, and presumably capture, and it is not expected that they absorb intentions and give a preponderance when distinguishing between two situations, as humans can. (Docherty, 2012) Article 57 of the Additional Protocol I of 1977 requires that efforts be made continuously during the conduct of military operations to ensure that harm to civilians and civilian objects is avoided and based on intelligence information on targets to ensure that damage is not exceeded so that it is minimal, while Protocol II as well as Common Article 3 of the Geneva Conventions did not contain provisions for the protection of civilian objects, which constitutes a significant deficiency in this protocol, as it was addressed in subsequent conventions, (2007 بك) Which was confirmed by the court criminal proceedings of the former Yugoslavia, (ICTY, 1999) This is in line with the general trend that humanitarian principles, including the Prohibition of attacking civilian targets, apply to international and internal conflicts (2018 شعيرة) While the AWS guidance is limited to the preparation stage, it is impossible to continue the guidance after its launch towards its goals to ensure a reassessment of the situation to protect civilian targets. Civilians may be subjected to a military attack because they are workers in a military factory or live near vital sites, as happened in many US attacks when civilians were injured in Iraq in 2003. (HRW, 2003)

2.1.2. Principle of proportionality ‘

As for the principle of proportionality contained in Article 51/5 of the protocol between the type of weapon used and the nature of the military target, and the balance between what is required by military necessity and adherence to humanitarian principles, which ensures the least loss of people and equipment. (2011 بشير) And trying to avoid unnecessary damage, taking this into account is complicated for the human element, as is the case when programming AWS, which will also make it impossible to take into account the principle of proportionality, of course.

In practice, the assessment of proportionality varies from one fighter to another according to his religious and educational background and the extent to which he adheres to human values and principles, and based on this assessment, the military action and reaction will also be different when dealing with military objectives and assessing the extent of their danger and the likelihood of affecting civilian objectives, that is, it is a personal assessment that differs in each case, (Szpak, 2020) And this isn't achieved with AWS, its assessment of proportionality is the same in all cases, (Galic, 2003) Because it requires situational awareness that is based on context, inference, and evaluation that can only be predicted at the moment of its occurrence, and it is impossible for pre-programming to anticipate unlimited scenarios. (Rosen, 2009)

2.1.3. Causing unnecessary or indiscriminate pain ‘

Regarding the principle of the prohibition of weapons that cause unjustified pain or indiscriminate effect, stipulated by the convention on conventional weapons of 1980, it requires taking into account the nature of unjustified pain and the type and scope of weapons that cause such pain, in the advisory opinion of the ICJ in 1996 on the legality of the use of nuclear weapons or the threat of it is accompanied by rapid technological development. (1999 هيريبي) That the reference in the convention on conventional AWS lethal weapons is insufficient to include AWS because it has not been agreed on a specific definition of them, despite many attempts, including the definition by the International Committee of the ICRC as (*weapons that can search, detect, identify targets or track, and can attack against targets, neutralize, damage or destroy*). (Crotoft, 2015) And some believe that these weapons can be more accurate than humans in identifying weapons that cause undue pain. (2018 ناصر) Indiscriminate impact weapons have not been identified, and in the fourth paragraph of Article 51 of Additional Protocol I of 1977, cases of indiscriminate impact weapons are mentioned that can be measured as follows: Those that aren't directed at a military target. Those that use a method or means of combat can't be directed at a military target. Those that use a method or means of combat, the effects of which can't be limited, and which would injure civilians or civilian targets without discrimination. The fifth paragraph of the said article adds other cases that are considered random attacks or their status, as follows:

- Bombing of distant military targets located within an area populated by civilians.
- An attack from which damage to civilians or civilian objects can be expected.

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The above cases were mentioned in the Additional Protocol I, which many countries have not yet ratified. (الاحمر، 2016) And these situations can be applied to AWS if they are used during them, (الانثر، 2015), and can be directed to be indiscriminate in effect, then what is applied to conventional weapons is applied to them. It is also subject to the provisions of the legal review by Article 36 of Additional Protocol (I) of 1977 to ensure compliance with applicable international law, and in accordance with the *Review Manual* prepared by ICRC in 2006. (الانثر، 2015) It is required that the audit be accompanied by the manufacturing process of these weapons to allow the opportunity to make an amendment before the completion of manufacturing, because after the completion of manufacturing, and bearing the production costs, it is impossible to agree on the illegality of these weapons. (McClelland, 2002)

2.1.4. Military necessity :

When applying the principle of military necessity and making a decision commensurate with each case, whether to limit oneself to capture or cause minor or serious injury, or to make a decision to attack a specific target because of the military advantage it can achieve, which is defined by the Harvard Manual of air and missile warfare that the advantage should be large, close and direct and does not depend on expectation and the damage caused is not excessive compared to the military advantage, (Manual, 2013) These weapons will be unable to make a trade-off commensurate with the situation of necessity, as a human fighter can. (CAMERON, 2013) And that the assessment of the situation based on recalculating the losses incurred for each case and estimating their proportionality to the size of the gains achieved, and the sense of human feelings and the fact of his desire to surrender, and understanding facial expressions, tone of voice, and movements that indicate fear or goodwill, all this is impossible for the AWS to achieve. (البرعي، 2022) While others believe that these weapons allow a wide and quiet field for the human it is programmed with great flexibility to overcome errors and violations of humanitarian law in the light of updates on the circumstances surrounding the target and what the attack can cause unnecessary damage If AWS is not able to observe variables and assess potential risks, its use is not consistent with humanitarian law. (Thurnher, 2012) International jurisprudence has approved conditions that should be met in case of military necessity, as follows:

- This situation is associated with the occurrence of armed conflict and during military operations.
- This condition is temporary and disappears with the end of its causes.
- The procedures for its implementation shall be in accordance with international humanitarian law.

In addition, there is no other option other than military action to be carried out. (بشير ع، 2013)

2.1.5. participation of civilians in hostilities :

There is a difficulty in defining the concept of direct participation of civilians in hostilities developed by the (*Red Cross Guidance Committee*). (RED CROSS, 2009) The complexity increases if we apply the rule of direct cause of damage, which is required by the rules of humanitarian law, and how these weapons can determine the direct cause from others, and then decide to attack the first without the second. (Schmitt, 2010) Whereas in the case of the use of AWS, the direct cause is the weapon capable of decision-making and not directed, which makes it impossible to apply humanitarian law.

2.1.6. Martins condition:

The implementation of the Martins condition and its requirement to take into account the humanitarian and moral principles not provided for in humanitarian law conventions faces another dilemma due to the lack of AWS human feelings capable of assessing the war situation and its suitability to this condition, so that military necessity corresponds to the humanitarian end. (ميلزر، 2010) Under this condition, any situation that isn't expressly provided for in humanitarian law and based on the dictates of the human conscience, states are obliged not to cause harm to civilians and civilian targets and even to protect combatants by avoiding indiscriminate weapons or that lead to unjustified pain or disproportionate to the necessity of war from any weapon described in international conventions or not described, (Brown, 2016) The lesson is the result, not the means, and thus this condition covers any violation of the principles of humanitarian law under the current rules, as well as violations that aren't covered by the current rules, but it is still too early to expand the principle to represent a ban on AWS. (HICKLETON, 2019) Although the above measures have been taken, there is still no international agreement to consider AWS legitimate, due to the complications that accompany its use on the ground, and the failure to ensure its compliance with the principles of humanitarian law, an attempt is being made to determine which AWS should be banned, determine which other weapons should be regulated, set red lines that shouldn't be crossed, and what human powers can be granted to these weapons, (رضوان ح، 2022) Therefore, the ICRC recommended in 2021 the need to follow new legally binding rules to regulate the use of these weapons to ensure adequate human control and control when using them in addition to banning certain types. These rules are as follows:

- Blocking AWS whose decisions cannot be predicted, which may cause random damage or severe impact.
- Prohibition of AWS targeting humans and civilian objects.
- Limit the use of AWS to military purposes and set restrictions on the duration, location, and scope of use so that it allows human control at the right moment. (الاحمر، 2023) and since the early twentieth century, these rules have been called (*Laws Asimov's*), which regulate the uses of the robot. (Asimov, 1950) It is also impossible for these weapons to answer important questions related to determining the nature of the armed conflict, whether it is international or internal, because each conflict has its own provisions and rules established in humanitarian law, which increases the complexity that accompanies their use without human intervention. (Sassóli, 2014)

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Questions are raised about the timing of the use of these weapons, whether it was at the time of the armed conflict covered by humanitarian law, and whether their use before the armed conflict can be subject to humanitarian law, as it can be considered a period of preparation for the armed conflict entering the preparatory phase, which is considered to be within the time of the armed conflict. The uses of these weapons are usually documented, which can be easily and accurately retrieved when examining evidence in criminal or negligent proceedings.

2. Responsibility for the manufacture or use of self-determined weapons:

However, discussions are being raised about the level of human control over AWS and whether it is enough to participate in programming without directly following what these weapons will do, or whether it should be feasible to control them. (Crootoof, 'A Meaningful Floor for "Meaningful Human Control, 2016) since these weapons are not eligible for liability and their operator remains responsible for the consequences of their use, it will be his duty to continue his control over them to ensure that he is not held accountable for what these weapons can do. (القانون الدولي الانساني وتحديات النزاعات المسلحة المعاصرة، (الاحمر، 2019)

2.2.1. Individual responsibility;

The individual responsibility of commanders or fighters as regulated by humanitarian law, which depends on the availability of the elements of the crime, especially the moral element and the required availability of criminal intent and determining the direction of the attacker's intention to commit a criminal act, which is one of the basics of criminal responsibility, it is difficult to prove in the acts of AWS. (Schrawat, 2020) but commanders remain responsible for allowing the use of these weapons, they know their capabilities and independence in decision-making and bear disciplinary and criminal responsibilities depending on the situation they caused, (كريستيان، 2018) And that anyone who supports, assists or directly participates of responsible and executed commanders in the commission of international crimes is criminally liable, (Meloni, 2010) There is disagreement on responsibility when the contribution or assistance is indirect, but from an early date it was agreed on the responsibility of commanders if they commit violations, (Fellmeth, 2022) As happened in the trial of the Japanese officer (*Tomoyuki Yamashita*) by holding his soldiers responsible for their crimes in the Philippines during World War II, (Commission, 1948) and in the tribunals of the former Yugoslavia and Rwanda, the responsibility of commanders for the actions of their subordinates was recognized on the basis of their dereliction of duty to prevent the commission of crimes that occurred in their areas of influence, provided that verification of the existence of actual and not assumed responsibility. (ICTY, Prosecutor v. Krnojelac, Case No. IT-97-25, Prosecutor v. Bemba, Case No. ICC-01/05-01/08, Prosecutor v. Halilović, Case No. IT-01-48-T, Prosecutor v. Delalić, Case No. IT-96-21-A, 2003, 2009, 2005, 2001), and they can also be indirectly responsible for the crimes of their subordinates if they were foreseeable and did not take appropriate measures to prevent them; (Williamson, 2008), This principle was confirmed in Article 86 of Additional Protocol I to the Geneva Conventions, and the Rome Statute of the ICC provided for the responsibility of commanders in Article 6 paragraph 3. The state is also responsible for the subordination of these commanders to it and the assumption that it has taken measures to prevent causing harm and conducting the required review of these weapons as regulated by Article 57-A of Additional Protocol I of 1977. (McFarland, 2021) It is also not possible to determine the responsibility of commanders when issuing orders, causing crimes, and whether they took measures to prevent the commission of the crime governed by Article 86 of the Additional Protocol I. (Dahl, 2021) Where the directives issued by the UN in 2019 impose specific obligations on states to take measures to prevent the violation of humanitarian law by not manufacturing, deploying, or using weapons of all kinds that cause this, including AWS weapons, in accordance with Article 91 of Additional Protocol I of 1977. (متحدة، 2019)

2.2.2. Responsibility of the state or manufacturer :

The AWS was included in the agenda of conventional weapons experts for the period 2014-2016 under the item (*potential challenges to IHL*), which confirms the responsibility of a state planning to purchase or produce an autonomous weapon for the damage caused by it, where it should take the following:

- Programming algorithms to ensure that the target complies with the pre-supplied instructions for the autonomous weapon.
- Weapon sensing mechanism, which distinguishes it from non-weapon.

Characterization of the environment and the time of use of the autonomous weapon. The state remains responsible for all electronic, human, and other uses that may cause harm to others, whether the Causer is carrying out its direct orders or working under its command and has not taken any action to prevent the occurrence of harm, even if it is probable. (Gunawan Y. &, 2022) As long as it has allowed the use of weapons with the ability to decide without reference to its user, knowing about its capabilities, and the damage it can cause. (UNGAOR, 2001)

There are those who raise the possibility of holding the manufacturer of AWS accountable if it is programmed to operate completely independently of the user, because it is obliged to comply with humanitarian law in any way. (ساسولي، 2017) There is no doubt that these determinants will be the focus of the conferences on the review of the production, storage, and use of weapons due to the danger they pose and the threat to human life and the places to which they seek refuge. However, if the manufacturer of these weapons assumes that they can make unexpected and uncontrolled decisions, they fall under the concept of a probable crime for which the manufacturer bears responsibility. (Goodman, 2013) Because he expected what happened but did not take the appropriate action to avoid it, one of the first steps is to include the user in responsibility because he is the closest link to making the decision

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to use them, and he knows well what damage they can cause, so it is assumed to prevent this type of weapon. (Sparrow, 2007) The countries differed in the extent to which these weapons enjoy moral personality and intellectual property rights. Australia and South Africa supported granting them moral personality, and the USA and Britain opposed it. This complex and new issue remains the subject of controversy and debate because of its relationship in determining the liability arising from their use and the great damage they can cause. (Schwartz, 2021) As long as AWS provide a large area for areas of use that are inaccessible to the human element, in addition to their speed, high accuracy, low costs, reducing the sufficient numbers of combat units, their failure to respond to the pressures of war and the accompanying emotional and psychological effects, will make them the center of attention of states to determine the responsibility for their use, regardless of their compliance with humanitarian law. (Gunawan, 2022)

3. Efforts to address self-determined weapons:

The efforts to combat these weapons are divided into three axes: **The first** includes agreement on binding international legal rules governing their manufacture and use, **the second** includes that these weapons operate by ethical principles and established human rights norms in international dealings, and **the third** includes the most important efforts exerted in practice in countering these weapons.

3.1. Legal regulation of AWS

This was confirmed in the 2023 peace plan as immoral and hateful. The UN secretary-general began his post by calling for a ban on AWS. And, he recommended that countries conclude a legally binding instrument banning these weapons, and that their continued manufacture, development, and use raise legal, political, and moral concerns and pose a direct threat to human rights and fundamental freedoms. (UN, 2023)

In 2019, the group of governmental experts from the states parties to the convention on conventional weapons came up with specific principles on deadly AWS. However, they weren't able to adopt a legal instrument on these principles because of their differences in the definition of these weapons and the recipe of independence by which they operate. (UN, Lethal Autonomous Weapons System, 2019) This indicates the increasing use of AI in New military systems, as it is impossible to return to the previous systems because of the many elements they provide, the most important of which is the element of superiority. However, this fact does not prevent regulating and restricting the manufacture and use of such weapons due to their increased risk to human society. (Pacholska, 2023) especially assault weapons. If used, human operators are supposed to monitor the operation of AWS via a two-way data link, and they must authorize* by releasing the force so that the decision is under the control of human operators on specific targeting decisions. And, to ensure that the final decision is human, most manufacturers prescribe that the final decision to launch the force and use the technology remains human by humanitarian law. In certain circumstances, the human operator may lack control, and guidance over the AWS (which decides independently, and based on advance data that may be open source from the manufacturer to attack a specific target, because it is impossible to predict all the circumstances surrounding the battle atmosphere and accompanying sudden events that are difficult to predict, (Kellenberger, 2012) And here lies the danger in these weapons, in the absence of specific rules on how the responsibility of the decision-maker and the executor is clearly defined by the sequence of issuing orders and who the executors are. Therefore, the global awareness has moved towards identifying these weapons with certain rules that do not allow them to make a decision independently only with direct human intervention, because it is he who is addressed by the legal rules, whether as a producer, promoter or user, and he is responsible for the results of the use of these weapons and the accompanying new events in which these weapons are authorized to decide to shoot as expected by the producer or the mentor. Some countries are trying to regulate the industry and use of AWS through the following:

- Prohibition of laws that allow the use of AWS without human intervention.

Regulating the design and use of AWS, among other weapons systems, to ensure human intervention in their management and guidance. (Sauer, 2021) And they proceed from the principles of humanitarian law (*discrimination, proportionality, military necessity, and unnecessary pain*), based on which chemical, biological, and nuclear weapons were prohibited (2023, العايب), which principles it affirms in its preamble and Article 11 of the CCW of 1980, in addition to basic principles of (HRs) that contradict the use of these weapons. Therefore, the 2015 international conference on AI recommended banning such weapons. (Gunawan, 2022) As confirmed by the countries participating in the CCW meeting in 2018. (فرجاني, تحديات دخول الروبوتات العسكرية في سياق التسليح التكنولوجي، (2023)

For example, China, Austria, Brazil, and Egypt support the conclusion of an international instrument prohibiting it, and the USA, France, Russia, South Korea, Britain, and Israel oppose it. (2023, ليتيم) for example, in 2022, the USA announced a fully autonomous submarine within the framework of this type of weapon.

3.1. Ethical principles and Human Rights and their impact on self-determined weapons:

Global efforts are being made towards the establishment of Protocol VII to the CCW@ of 1980 to regulate everything related to AWS. (Sasso'li, 2014) Especially since it faces opposition based on the fact that it does not act on the basis of moral principles. (Sharkey, 2012) Others believe that the use of these weapons should be subject to ethical principles, (2019, درار) that don't allow the decision to kill, injure, or destroy automatically from the weapons themselves in light of accurate information collected about the targets before attacking them, especially if the targets are human or in populated areas, people can be endangered, because making such a decision is related to determining the personality of, (Wilia, 2019) because the use of force must be exclusively

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human, preferably if the circle of decision-making is expanded, and in all cases the human operator remains responsible for all the consequences of the use of these weapons, including authorizing them to decide to use force, otherwise it is contrary to IHL (*such as the principles of distinction, proportionality and precautions before the attack*), and HRL. (دافيسون، 2018) Others, therefore, see the need to ban these dangerous weapons, as called for by the European Parliament. (الاوربي، 2018)

3.3. Efforts to combat self-determined weapons;

Since 2013, the Special Rapporteur on extrajudicial killings has stressed the need to ban indiscriminate and excessively injurious weapons, and the efforts of the HRC through the committee of non-governmental experts have continued on the basis that the best way to discuss weapons using AI is the protocols annexed to the CCW of 1980 through a special protocol banning these weapons, but this call hasn't received a response from the committee of governmental experts, especially from the most influential and developed countries in the world . (Haas, 2017) then the ICC movement contributed to raising the issue of AWS through the participation of civil society bodies and pressure on governments to hold a meeting of governmental experts to study this issue from a legal point of view and with the participation, and support of international parties interested in the subject until agreement to achieve it on Feb.17, 2017, and an attempt to link it with the issue of disarmament Sponsored by the United Nations .these efforts succeeded with the issuance of UN directives on AWS in 2018. (جيل، 2019)

Amnesty International has also contributed to the need to regulate killer robots and AI-powered weapons, limit their use to military targets, and determine the duration and place of their use, while providing an opportunity for human intervention at any stage. (دولية، 2018) The movement is constantly following up on everything related to weapons that use AI and the obligation to comply with humanitarian law conventions and protocols to ensure that the rights of civilians as well as combatants are not violated. The (ICC) Movement joined in calling on countries that AI in the manufacture, development, and use of weapons to avoid violating HL by adhering to specific restrictions. (ICRC, 2021) The HR organization called on the UN to ban killer robots, put severe controls on AWS, and work to ban them because of their danger they pose by violating HL unpredictability of their actions, and loss of control. (كريستيان، فجوة المحاسبة المتعلقة بالروبوتات القتالة، 2018) Just as the international community succeeded in banning biological and chemical weapons, as well as atomic weapons, even theoretically for the latter, it will also succeed in banning AWS because they also violate HL, and cause human and material damage without finding the direct responsible for them because of their pre-programmed capabilities from manufacturers who mayn't have anything to do with their use or may be used and lose control after their launch. HR has confirmed that the greatest threat to human society is AWS, so negotiations have been held between countries to limit or prevent the manufacture and use of these weapons, but in vain because of the advantage they provide over and reduce the material and human losses of military missions and their ability to carry out complex tasks that require a long time of concentration and access to places that are impossible for humans to carry out. (Wareham M. , 2022) Therefore, international efforts have now turned to focus on securing human control over them to avoid violating humanitarian law and determining the responsibility of the user because they work under their direct guidance, better than the trend to ban them. (Rosert, 2020) To successfully address these weapons, there is a need to mobilize the international community, as happened when five protocols to the 1980 CCW banning chemical, biological, indiscriminate, and anti-human mines were approved, as well as an international instrument prohibiting nuclear weapons in 2017. (Gibbons, 2018) International efforts can be focused on concluding an international instrument regulating the use of AWS on the basis that they are excessively harmful and indiscriminate weapons, making them specific to use, excluding them in the face of humans and allowing sufficient time for negotiations on this instrument to ensure that the circle of its approval widens so that it is serious and influential in the actions of states during wars. (Wilia, 2019) The development of these weapons has been linked to the interests of states in control, domination, conflict, and competition, which requires a balance between these interests and the principles of law and stable moral values to preserve the interests of the entire international community. It should be noted that HL needs to take into account the developments in modern weapons, including AWS, in dealing with and regulating them so that principles are taken into account on the one hand and the desire of states to stick to these weapons on the other hand, and not to be content with the previous formulations of this new stage of development, (كمال، 2020) as happened with the efforts of (Harv. Uni.) in preparing a manual for air and missile warfare in 2009, and replacing the concepts of mercy, compassion, chivalry and humanity associated with a human fighter and not an emotionless machine humanity in assessing unnecessary pain or avoiding damage that is not commensurate with the goals and objectives of the military attack.

4. CONCLUSION

4.1. Results'

Through the above research, the following results have been reached:

- a. There has been a significant development in the use of AI in weapons, and as a result of this development, AWS is capable of operating without human intervention and has appeared and has become a target for the countries of the world because of the results they achieve in terms of how to implement, speed and low costs.
- b. AWS has caused violations of some basic humanitarian rules in addition to violating some established moral principles.
- c. Efforts have been made to address these weapons at the level of States, international organizations, and international bodies specialized in the humanitarian aspect, but haven't yet reached binding legal norms for states.

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d. The manufacture and use of these weapons entails responsibility on the leaders and executors on the one hand, as well as on states if the manufacture or use was carried out with their knowledge or at their direction, or they didn't take appropriate measures to prevent their violations and damage.

e. The manufacture and use of these weapons will continue during the coming period, which requires the adaptation of international and humanitarian rules to this actual reality of weapons devoid of feelings, compassion, and humanity.

4.2. Recommendations⁴

In light of the above results, we make the following recommendations:

a. Raising the international community through international conferences on the importance of cooperation in the field of countering self-determined weapons, and prioritizing public interests over the private interests of states.

b. Focusing scientific research on the extent to which these weapons violate HL, and ethical principles to provide a research base on their danger and the need to address their development, manufacture, or use.

c. Continuing efforts to combat these weapons, in particular through the UN and its branches, the ICRC movement, H.R. Watch, as well as all regional IOs.

d. States should expect to be held responsible for the development or use of these weapons, and educate military leaders and subordinates about the possibility of holding them responsible for their use.

e. Adapting humanitarian rules and ethical principles to suit the actual reality of the continued development and manufacture of these weapons because of their close connection with the interests of states and their arms race.

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