DOI: https://doi.org/10.68193/jilj.2023.7cuykyhj

JOURNAL OF INTERNATIONAL LAW AND JURISPRUDENCE
A Publication of the
Department of International Law and Jurisprudence,
Faculty of Law, University of Jos,
Jos, Nigeria.
JILJ Vol. 8, No. 1, 2023.

AUTONOMOUS WEAPON SYSTEMS AND COMMAND RESPONSIBILITY UNDER INTERNATIONAL HUMANITARIAN LAW

Peter Ademu Anyebe*

ABSTRACT

The development of unmanned systems that are remotely controlled and those with increased autonomy in making the decision to target or kill humans has been a source of concern to the international community for over a period of time. The idea behind developing Autonomous Weapon Systems (AWS) is that once activated, they are able to make the decision to kill humans without further human intervention. Therefore, the use of autonomous weapons has become a very significant threat to humanity. A major issue confronting the use of autonomous weapons is that of command responsibility. The paper aims to examine the rules governing the operation of Autonomous Weapons System during war in particular with regard to the command responsibility under the International Humanitarian Law. It is the argument of the paper that in-as-much-as AWS promises to save lives, there are compelling reasons to believe that the deployment of

* Associate Professor Of Law, Ag. Deputy Director/Head, Post Graduate School, Nigerian Institute Of Advanced Legal Studies, Unilg Campus, Akoka, Lagos, Nigeria, Tel. Nos: 08098760120, 07062174115
Email Address: Petneville1@Gmail.Com

AWS will result in the violation of the right to life, dignity and other important rights. Also, it is the further argument that AWS without meaningful human control, are unpredictable on the battlefield where they are used. In the event of AWS violating the law, it is not clear who is legally responsible thereby creating an accountability gap. It is therefore important to examine who, in this case, the commander can be held responsible when AWS commits a crime. However, it is the finding of the paper that the use of AWS can potentially jeopardise several general principles of IHL, including proportionality, distinction and precautions. The paper concludes that human commander is liable for the actions of the human subordinate deploying the AWS if he/she knows or ought to have known that the human subordinate deploys an AWS in a way that violates IHL. The paper recommends among others that humans exercise meaningful human control over weapons in order to make AWS remain mere weapons in the hands of the warriors rather than being in the hands of robots.

Keywords: Autonomous Weapons Systems, Command Responsibility, International Humanitarian Law

1. INTRODUCTION

At the beginning of the last century, weapons such as tanks, air warfare, and the long-range missile have been used by the soldiers participating in the hostilities. Nowadays, technology of weapons is becoming more and more innovative, and humans are moving further away from the battlefield. Automated war and high-tech development have been linked together for centuries. Nevertheless, states and military leaders have been searching for weapon systems that will minimize the risk for soldiers. Weapon systems are becoming more and more advanced, and humans are moving further away from the battlefield. Especially due to the development of Artificial Intelligence, weapon systems with limited human participation have been developed.[1] Autonomous Weapon Systems (AWS) are, therefore, emerging as key technologies of future warfare.

International Humanitarian Law categorizes the use of Autonomous Weapon Systems to means and methods of warfare, the context means in

[1] Geneva Academy of International Humanitarian Law , *Autonomous Weapon Systems Under International Law*, Acad. Briefing no. 8, at 24 (Nov. 2014)

International Humanitarian Law is what kind of weapons used in hostilities. AWS specifically refers to the physical means that belligerents use to inflict damage on their enemies during combat. As such, the term includes all weapons and includes weapons systems.[2] Different from the method of warfare, the term generally describes how weapons are used by parties to an armed conflict in the conduct of hostilities.

The new use of AWS will cause difficulties in establishing the form of responsibility for the application of humanitarian law when numerous individuals are implicated, and the actor is a robot. Therefore, it is important to regulate AWS. And to regulate AWS, one of the many questions that needs to be answered is, 'Can the commander be held responsible when an AWS commits a crime?'[3] AWS, once activated, select targets and engages them with violent force without further intervention by human operators. However, such systems pose considerable challenges for international humanitarian law (IHL), in particular to the principles of distinction, proportionality and precaution. It is well accepted that new technologies of warfare must abide by existing international law, in particular IHL. The use of autonomous weapon systems will need to comply with the fundamental rules of IHL, i.e., the rules of distinction, proportionality and precautions in attack. Significant challenges lie in programming machines to distinguish objects, and even more so persons, in particular to distinguish civilians from combatants and persons *hors de combat* from active combatants.

Traditionally, where humans take the decision to use force, it will lead to prosecutions, disciplinary action or the need to pay compensation. The question arises, however, of 'What happens where humans do not exercise meaningful human control over the use of force during armed conflict or law enforcement, but delegate it to computers?'. In addition, there are many questions regarding how to ensure accountability for acts performed by autonomous weapons that amount to violations of IHL, be it through individual criminal responsibility or command responsibility. Just as

[2]International Committee of Red Cross, Autonomous Weapon Systems: Technical, Military, Legal and Humanitarian Aspects, Summary Reports from the Expert Meeting, (May 9, 2014), https://www.icrc.org/eng/assets/files/2014/expert-meeting-autonomus-weapons-icrc-report-2014-05-09.pdf> accessed on 20 April 2023

[3] M. Schulzke, *The Morality of Drone Warfare and the Politics of Regulation* (London: Palgrave Macmillan UK, 2017)

the principles of distinction, proportionality, and precautions in attack balance military necessity and humanity, command responsibility places this onus on the individual best equipped to bear the load; the commander, who has an opportunity to shape the strategy and tactics that subordinates execute.

In order to examine the topic, the paper is divided into seven parts with the first one dealing with the introduction. Part two concerns conceptual clarifications. Part three examines the application of International Humanitarian Law to Autonomous Weapon Systems. Part four discusses Autonomous Weapon Systems and accountability gap. Command responsibility covers part five, while parts six and seven are the conclusion and recommendations, respectively.

2. CONCEPTUAL CLARIFICATIONS

2.1 Autonomous Weapon Systems

As a general rule, AWSs are weapons that can select, detect, and engage the targets with little or no human intervention. However, there is no commonly accepted definition of AWSs; the term typically covers a broad range of potential weapon systems, ranging from fully autonomous weapons that can launch attacks without any human intervention to semi-autonomous weapons that require human affirmative action to execute a mission.[4] It can also be defined as 'a weapon system that employs autonomous functions'.[5]

The International Committee of Red Cross (ICRC) defines Autonomous Weapon Systems as:

> Any weapon system with autonomy in its critical functions. That is, a weapon system that can select (i.e. search for or detect, identify, track, select) and attack (i.e. use force against, neutralize, damage or destroy) targets without human intervention.[6]

[4] Y. Gunawan, M. H. Aulawi and A.R.Ramadhan, 'Command Responsibility of Autonomous Weapons Systems under Internation Humanitarian Law' (2019) 7 *IlJ* 354-356

[5] C. Rebecca, 'War, Responsibility, and Killer Robots' (2015) 40 NCJILCR

[6] H.Y.Liu, 'Categorization and Legality of Autonomous and Remote Weapons System' (2012) 94 IRRC

AWSs are mostly characterized as human-out-of-the-loop weapons systems. However, some categorize AWS as human beyond the wider circle weapon systems, because AWS are not truly making their own choices, they are performing certain actions based on human defined rules and they respond to signals picked up by its sensors.[7]

AWSs exist on a continuum, along which machines become more autonomous. Any system that can sense, decide, and act without human intervention has a degree of autonomy. The more autonomous the system is, the more responsible it will become for its actions. A precision-guided munitions fired from an unmanned aerial vehicle represents an ability to sense and act against a target, but it is still a human pilot that decides to execute the elimination chain.

Autonomous weapons is an umbrella term that would encompass any type of weapon with 'autonomy in its critical functions, meaning a weapon that can select (i.e. search for or detect, identify, track) and attack (i.e. intercept, use force against, neutralize, damage or destroy) targets without human intervention.[8] Switzerland's working definition describes 'autonomous weapon systems' as 'weapon systems that are capable of carrying out tasks governed by IHL, in partial or full replacement of human in the use of force, notably, in the targeting cycle', although it explicitly states that this should not necessarily be limited to the targeting cycle.[9]

On the whole, there is no internationally agreed definition of an autonomous weapon system. For the purpose of this paper, 'autonomous weapon systems' are defined as weapons that can independently select and attack targets. These are weapon systems with autonomy in the critical functions of acquiring, tracking, selecting and attacking targets. A weapon system that, once activated, can select and engage targets without further intervention by a human operator.[10] Examples include some 'loitering' munitions that, once launched, search for and attack their intended targets (e.g. radar installations) over a specified area and without any further

[7] Y. Gunawan, M. H. Aulawi and A. R. Ramadhan, 'Command Responsibility of Autonomous Weapons Systems under Inte**rnatio**n Humanitarian Law' (2019) 7 ILJ 354-355

[8] International Committee of the Red Cross (ICRC),

[9] Government of Switzerland, 'Towards a "compliance-based" approach to LAWS, Informal Working Paper, 30 March 2016, CCW Informal Meeting of Experts on Lethal Autonomous Weapons Systems, Geneva, 11-15 April 2016

[10] US Department of Defence (2012) Autonomy in Weapon Systems, Directive 3000.09.21 November 2012, Glossary, Part II Definitions

intervention, or weapon systems that autonomously use electronic 'jamming' to disrupt communications.[11]

The autonomous weapon systems in use today are constrained in several aspects: first, they are limited in the tasks they are used for (e.g. defensive roles against rocket attacks, or offensive roles against specific military installations such as radar); second, they are limited in the types of targets they attack (e.g. primarily vehicles or objects rather than personnel), and third, they are used in limited contexts (e.g. relatively simple and predictable environments such as at sea or on land outside populated areas).[12] The AWS currently in use are various fixed weapon systems in stationary roles, including ship and land-based defensive weapon systems and fixed gun systems, with different levels or degrees of human oversight.

For a better understanding, the ICRC has raised some general definitions in its 2011 report on IHL and challenges in contemporary armed conflicts as 'Autonomous weapon system is one that can learn or adapt its functioning in response to changing circumstances in the environment in which it is deployed. A truly autonomous system would have artificial intelligence that would have to be capable of implementing IHL'.[13] For the purpose of this paper, the term 'autonomous weapon systems' refers to weapon systems for which critical functions (i.e., acquiring, tracking, selecting and attacking targets) are autonomous.

2.2 ***Concept of Command Responsibility***

The concept of command responsibility was included in a binding international treaty in 1977-Additional Protocol I to the Geneva Conventions of 1949. In Article 86 (2), it provides that the fact that the unlawful act was committed by a subordinate does not absolve the superior of responsibility when the commander "knew or had information which should have enabled" him to know that subordinates were committing crimes and did not take feasible steps to stop or prevent them." The modern form of command responsibility is contained in Article 28 of the

---

[11] Expert Meeting, *Reports on Autonomous Weapon Systems: Technical, Military, Legal and Humanitarian Aspects*-,(Geneva, Switzerland 2014)

[12] Ibid

[13] 31st International Conference of the Red Cross and Red Crescent (28 November-1 December 2011) 39, <http://www.icrc.org/eng/assets/files/red-cross-crescent-movement/31st-international-conference/31-int-conference-ihl-challenges-report-11-5-1-2-en.pdf.> accessed 9 February 2023

Rome Statute-applicable to both military and civilian commanders. Article 28 of the Statute provides that in addition to other grounds of criminal responsibility under the Rome Statute for crimes within the jurisdiction of the ICC:

1. A military commander or person effectively acting as a military commander shall be criminally responsible for crimes within the jurisdiction of the Court committed by forces under his or her effective command and control, or effective authority and control as the case may be, as a result of his or her failure to exercise control properly over such forces, where:
   i. That military commander or person either knew or, owing to the circumstances at the time, should have known that the forces were committing or about to commit such crimes; and
   ii. That military commander or person failed to take all necessary and reasonable measures within his or her power to prevent or repress their commission or to submit the matter to the competent authorities for investigation and prosecution
2. With respect to superior and subordinate relationships not described in paragraph (a), a superior shall be criminally responsible for crimes within the jurisdiction of the Court committed by subordinates under his or her effective authority and control, as a result of his or her failure to exercise control properly over such subordinates, where:
   i. The superior either knew, or consciously disregarded information which clearly indicated, that the subordinates were committing or about to commit such crimes;
   ii. The crimes concerned activities that were within the effective responsibility and control of the superior; and
   iii. The superior failed to take all necessary and reasonable measures within his or her power to prevent or repress their commission or to submit the matter to the competent authorities for investigation and prosecution.

In order to determine the extent to which a commander can be responsible for the operation of AWS, the above elements will then be linked to the classification of Autonomous Weapon Systems compiled by Human Rights Watch (HRW). The classifications are as follows:

(a) The first category is human-in-the-Loop weapons. These are weapons described as “a weapon system that, once activated, it is intended to only engage individual targets or specific target groups that have been selected by a human operator”. So, these weapon systems can select individual target or specific groups of targets and deliver force only with a human order. These weapons can be categorized as Semi-Autonomous Weapon Systems.

(b) Second category, Human-on-the-Loop Weapons: Robots that can select targets and deliver force under the oversight of a human operator who can override the robots’ actions. So, these weapon systems can freely select and engage specific targets. There is no human who must decide if those specific targets are to be engaged, but there is a human who can intervene to halt the operation if necessary.

(c) Third category, Human-out-of-the-Loop Weapons: Robots that can select targets and delivering force without any human input or interaction. These weapon systems can select targets and sending force without any human input or interaction. These weapon systems are programmed to autonomously select individual targets and attack them in a pre-programmed selected area during a certain period.

In order to determine the extent to which a commander can be responsible for the operations of AWS, the elements of applying command responsibility need be linked to the Autonomous Weapon Systems as indicated above. Based on the above, it can be concluded that the limitation of command responsibility will only apply to weapons that are classified as “Human-in-the-loop-weapons”. However, with regard to weapons in the other two categories, a commander can still be held accountable if the use of these weapons results in war crimes. For example, with a drone that is still controlled by a remote, the remote is controlled by a military force that moves on the orders of its commander. Therefore, if a soldier who is subordinate to a commander commits a war crime by using drones, in that case, the principle of command responsibility can be applied. On the other hand, the principle of command responsibility is still debated as to whether it can be applied to AWS weapons that fall into “Human-out-of-the-loop

weapons" category. This is because this weapon system can select targets and send forces without human input or interaction. However, the application of the principle of command responsibility can possibly be applied if a command or subordinate of the command concerned performs the process of inputting algorithmic data regarding the target of the weapon.[14]

There are some conditions that need to exist before command responsibility can be established. These three key elements are as follows. First, there has to be a superior/subordinate relationship. As explained in the ICRC Commentary on Article 86 of Additional Protocol I, 'we are concerned only with the superior who has a personal responsibility with regard to the perpetrator of the acts concerned because the latter, being his subordinate, is under his control...The concept of the superior...should be seen in terms of a hierarchy encompassing the concept of control'.[15] This relationship can be *de jure* or *de facto*, with the exercise of effective command, control or authority being determinative.[16] Second, the superior knew or had reason to know that one or several subordinates committed or were about to commit criminal acts. Third, the superior failed to take the necessary and reasonable measures to prevent or punish the commission of said acts.[17] Therefore, before the commanders will be liable, there must be some information available to the superiors that put them on notice of the commission of the IHL violations by subordinates. This standard has been pronounced upon by both the ICTR and ICTY Appeals Chambers thus:

> Reason to know standard does not require that actual knowledge, either explicit or circumstantial, be established. Nor does it require that the Chamber be satisfied that the accused actually knew that crimes had been committed or were about to be committed. It merely

[14] Y. Gunawan, 'Command Responsibility of Autonomous Weapons under International Humanitarian Law', <https://www.tandfonline.com/dol/full/10.1080/23311886.2022.2139906> accessed 16 February 2023

[15] Commentary to Protocol Additional to the Geneva Convention of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977 (Commentary), ICRC/Martinus Nijhoff Publishers, Leiden, 1987, 1013.

[16] See ICTY Appeals Judgment in *Prosecutor v. Delalic et al* (Celebici), Case No. IT-96-21-A, 20 February 2001, 95

[17] J. A. Williamson, 'Some Considerations on Command Responsibility and Criminal Liability' (2008) 90 IRRC 307

> requires that the Chamber be satisfied that the accused had "some general information in his possession, which would put him on notice of position unlawful acts by his subordinates".[18]

Under Article 86 (2) of Additional Protocol I, superiors are required to take all feasible measures within their power to prevent or repress a breach of IHL by their subordinates. In international criminal law, the standard that has been introduced is one of a failing by the superior to take the necessary and reasonable measures within his power to prevent or repress the commission of the crimes by his subordinates. Most domestic legal systems provide succinct definitions of "reasonable" and also of "necessary". International criminal jurisprudence speaks of a "reasonableness in the circumstances" test, and tends to treat "reasonable" and "necessary" in unison.[19]

3. APPLICATION OF INTERNATIONAL HUMANITARIAN LAW TO AUTONOMOUS WEAPON SYSTEMS

International humanitarian law (IHL), also known as the law of armed conflict, is a body of rules that sets out restrictions and prohibitions that must be complied with in armed conflicts, international as well as non-international. Many of the provisions laid down in IHL, treaties are also reflected as general principles of international law and in rules of customary IHL, and are thereby binding for all parties to armed conflicts.[20] These fundamental and internationally recognized rules form the basis for the Certain Conventional Weapons (CCWs) discussions on regulating AWSs.

---

[18] *Prosecutor v. Bagillishema*, Judgment (Reasons), Case No. ICTR-95-1A-A, 3 July 2002 (*Bagillishema* Judgment), para. 28

[19] In some ICTY cases, the prosecution has sought to define both: "Necessary measures" are those required to discharge the obligation to prevent or punish, in the circumstances prevailing at the time. "Reasonable" measures are those which the commander was in a position to take in the circumstances prevailing at the time." See *Prosecutor v. Tihomir Blaskic*, Judgment, 3 March 2000, Case No. IT-95-14, at 33

[20] In 2005 the International Committee of the Red Cross (ICRC) compiled and published these rules in a widely accepted and referenced study on customary IHL; J. Henckaerts and L. Doswald-Beck, *Customary International Humanitarian Law, ICRC*, Vol. 1 (Cambridge University Press: Cambridge, 2005); the ICRC, Customary IHL, Database, <https://ihl-databases.icrc.org/customary.ihl/eng/docs/home> accessed 16 February 2023

The rules of IHL that limit the development and use of AWS can be classified into three categories:[21] (a) rules prohibiting or restricting specific weapons, means and methods of warfare; (b) general prohibitions and restrictions on weapons, means and methods of warfare; and (c) general prohibitions and restrictions on the conduct of hostilities. While the first and second categories can be said to relate to whether a weapon, means or methods of warfare is unlawful per se, the third category of IHL rules, in contrast, regulates how weapons, means and methods can be lawfully used. However, it would be incomplete to assess the legality of AWS without considering the Martens Clause, which stipulates that in cases not covered by IHL, conventions, neither combatants nor civilians find themselves completely deprived of protection.[22]

Under IHL, any new weapon, means or method of warfare, including AWS, would be deemed inherently unlawful if it has one or more of the following characteristics:

1. The weapon (or its injury mechanism) is already prohibited by a specific treaty, such as the prohibition on the use of biological weapons, chemical weapons, poison or blinding lasers.
2. The weapon is of a nature to cause superfluous injury or unnecessary suffering.[23]
3. The weapon is by nature indiscriminate, that is, the weapon cannot be directed at a specific military objective or its effects cannot be limited as required by IHL, hence it is of a nature to strike military objectives and civilians or civilian objects without distinction.[24]

---

[21] V. Boulanin, L.Bruun and N. Goussac, 'Autonomous Weapon Systems and International Humanitarian Law', (2021) Stockholm International Peace Research Institute 5

[22] V. Kourtroulis, 'Maetens Clause', (Oxford Bibliographies 2013)

[23] Protocol I Additional to the 1949 Geneva Conventions, and Relating **to the v Protection** of Victims of International Armed Conflicts, opened for signature (1977), entered into force 7 December 1978, Article 35 (2) and ICRC, Customary IHL, Database, Rule 70

[24] The use of indiscriminate weapons is prohibited in all circumstances under customary IHL, c.f. the IHL prohibition of indiscriminate attacks. See Additional Protocol I, Article 51 (4) (b) and (c); and ICRC, Customary IHL Database, Rule 71. Weapons that are by nature indiscriminate.

4. The weapon is intended, or may be expected, to cause widespread, long term and severe damage to the natural environment.[25]

In view of the foregoing, it is well accepted that new technologies of warfare must abide by existing international law, in particular IHL, also known as the law of armed conflict. Whether or not a new weapon (including an autonomous weapon system) is capable of use in accordance with IHL is determined by assessing the weapon's foreseeable effects based on its design, and its foreseeable use in normal or expected circumstances.[26] The minimum requirements for fully autonomous weapons to comply with IHL are that they can:

a. Distinguish between military and non-military persons and objects;
b. Determine the legitimacy of targets;
c. Make proportionality decisions;
d. Adapt to changing circumstances;
e. Handle unanticipated actions of an adaptive enemy; and
f. Deal with other autonomous systems controlled by unknown combat algorithms.[27]

The use of such a weapon system would need to comply with fundamental rules of IHL, i.e., the rules of distinction, proportionality and precautions in attack. Droege[28] refers to them as 'the core principles of IHL on the conduct of hostilities, while Kolb[29] argues that those principles are essential.

[25] Additional Protocol I, articles 35 (3) and 55; and Customary ICRC Database, Rule 45, causing serious damage to the natural environment.
[26] Expert Meeting, *Reports on Autonomous Weapon Systems: Technical, Military, Legal and Humanitarian Aspects-*, (Geneva, Switzerland 2014)
[27] Ibid, p. 29
[28] C. Droege, 'Get Off My Cloud: Cyber Warfare, International Humanitarian Law, and the Protection of Civilians' (2012) 94 IRRC 533, 553
[29] R. Kolb, *Advanced Introduction to International Humanitarian Law* (Edward Elgar 2914) 76

i. The principle of distinction

The principle was initially set forth in the St. Petersburg Declaration which prescribes that: 'the only legitimate object which States should attempt to accomplish during war is to weaken the military forces of the enemy'. The principle is now codified in Articles 48, 51 (2) and 52 (2) of Additional Protocol I and is a principle that lies at the heart of an armed conflict in a targeting process.[30] The principle recognizes civilian damages or civilian casualties during a lawful attack on a military target. Such attacks will be considered lawful if they are proportionate in relation to the direct and tangible military advantage expected from the attack.

Article 48 of AP I describe the fundamental rule of distinction as follows:

> In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.[31]

The rule is made operational through two other fundamental provisions prohibiting attacks on civilians and civilian objects.[32] In addition, Article 50 (1) states that, 'in case of doubt whether a person is a civilian, that person shall be considered to be civilian'. Article 52 (3) AP I states a similar rule for civilian objects. Article 52 (1) of AP protects civilian objects from attacks or reprisals, and defines them as all objects which are not military objectives as defined in paragraph 2, which reads:

> Attacks shall be limited strictly to military objectives. In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization. In the circumstances ruling at the time, offers a definite military advantage.

---

[30] Additional Protocol I

[31] ICRC, *Customary International Humanitarian Law, Vol. 1: Rules* (Cambridge: Cambridge University Press, 2005), Rule 1, p. 3

[32] Articles 51 (2) and 52 (1) AP I

The definition of a military objective is context-dependent. Certain objects will meet the definition in virtually any armed conflict, e.g., tanks, combat aircraft and military bases. Conversely, objects which are a *priori* civilian objects, e.g., hospitals, schools, apartment buildings may become military objectives if the criteria of the above quoted definition of a 'military objective' have been met. Under the rule of distinction, attacks must only be directed at combatants. Civilians are protected from deliberate attack, unless and for such time as they are directly participating in hostilities.[33] Applying this rule is not so straight forward and would pose particular challenges for the programmer of an Autonomous Weapon System. For example, in a classic armed conflict involving uniformed combatants, an autonomous weapon system would need to be capable of distinguishing an armed and uniformed soldier from an armed and uniformed civilian such as a police officer or a hunter.[34] Moreover, in contemporary armed conflicts, with the shift of military operations into civilian population centres, with civilians increasingly involved in the hostilities (both on the side of States and organized armed groups) and with such fighters often not wearing distinctive uniforms, there are increasing difficulties in distinguishing between lawful targets and persons protected from attack.[35]

However, the person may not be targeted if they have become *hors de combat* due to capture, surrender or incapacitation.[36] Article 41 of AP I thus prohibit attacks against persons who are *hors de combat* in the following terms:

A person is *hors de combat* if:

---

[33] Geneva Conventions of 12 August 1949, adopted on 12 August 1949, entered into force on 21 October 1950, Article 3 common to four Geneva Conventions: Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflict, adopted on 8 June 1977, entered into force on 7 December 1978 (Additional Protocol I or AP I), Articles 51 (2) and (3); Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflict, adopted on 8 June 1977, entered into force on 7 December 1978 (Additional Protocol II or AP II), Article 13

[34] See the ICRC's Interpretive Guidance on the Notion of Direct Participation in Hostilities under International Humanitarian Law (Geneva: ICRC, 2009), which presents the ICRC's recommendations on how the notion of 'direct participation in hostilities' should be interpreted in contemporary armed conflicts; <http://www.icrc.org/assets/files/other/irrc-872-reports-documents.pdf> accessed 18 March 2023

[35] Expert Meeting, *Reports on Autonomous Weapon Systems: Technical, Military, Legal and Humanitarian Aspects*- (n 28).

[36] Additional Protocol I, article 41 (2)

(a) He is in the power of an adverse Party;
(b) He clearly expresses an intention to surrender; or
(c) He has been rendered unconscious or is otherwise incapacitated by wounds or sickness, and therefore is incapable of defending himself; provided that in any of these cases he abstains from any hostile act and does not attempt to escape.

Illustrative of the programming challenge presented by this principle is the difficulty in detecting a person's willingness to surrender. There is no general agreement on the precise requirements to surrender, although many States and authors refer to the classical examples of raising hands, throwing away one's weapon or waving a white flag. The assessment of whether a person has surrendered requires detecting the individual's intention to surrender. This depends heavily on information reasonably available to commanders and others responsible for deciding upon attacks at the time they take their action.[37] In relation to the difficulties in interpreting intent to surrender, Boothby argues that 'there are legal implications flowing from the apparent fact that decision-making which is difficult for a pilot [of manned aircraft] or operator [of a remotely piloted aircraft] becomes unlikely bordering on impossible task for autonomous weapons'.[38] Another equally fundamental question in relation to persons surrendering is 'Whether it is effectively possible to surrender to a machine.?' The act of surrendering creates responsibilities under IHL for the party to which the combatant is surrendering (e.g., treating the wounded, protecting them from the dangers arising from the ongoing hostilities, etc.). Would it be practically possible to programme an autonomous weapon system to discharge such responsibilities? These would seem to require human involvement.[39]

Article 51 (1) AP I creates a presumption of civilian status of doubt as to whether a person is a legitimate target or as to whether a civilian object

[37] M. Bothe, K. Partsch and W. Solf, *New Rules for Victims of Armed Conflicts*: Commentary of the Two 1977 Protocols Additional to the Geneva Conventions of 1949 (The Hague: Martinus Nijhoff Publishers, 1982) 220

[38]W . Boothby, How Far Will the Law Allow Unmanned Targeting to Go? In D. Saxon (ed), *International Humanitarian Law and the Changing Technology of War* (The Netherlands: Martinus Nijhoff Publishers, 2013) 24

[39] Expert Reports on Autonomous Weapon Systems: Technical, Military, Legal and Humanitarian Aspects (n 37)

has become a military objective. In such situations, a careful assessment has to be made under the conditions and restraints governing a particular situation as to whether there are sufficient indications to warrant an attack. In cases of doubt as to the civilian status of a person, Schmitt argues, 'the degree of doubt that bars attack is that which would cause a reasonable attacker in the same or similar circumstances to hesitate before attacking'. He adds that developing an 'algorithm that can both precisely meter doubt and reliably factor in the unique situation in which the autonomous weapon system is being operated will prove hugely challenging'.[40] He nevertheless adds that algorithms that would enable an autonomous weapon system to compute doubt are possible in theory. What will remain difficult is determining the threshold of doubt at which an autonomous weapon system would need to refrain from attack.[41]

ii. The Principle of Proportionality

In addition to being able to distinguish civilian from combatant, an autonomous weapon system would need to be able to comply with the principle of proportionality in IHL. The rule recognizes that civilian persons and objects may be incidentally affected by an attack that is directed at a legitimate military objective. According to the rule of proportionality, incidental civilian casualties and damages can be lawful under treaty and customary law if they are not excessive in relation to the concrete and direct military advantage anticipated and provided other rules are respected.[42]

Article 51 (5) of AP I formulates the rule thus:

> (b) an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.

[40] Michael Schmitt, 'Autonomous Weapon Systems and International Humanitarian Law' : A Reply to the Critics, (2013) HNSJ 33 .

[41] ibid

[42] J. Queguiner, 'Precautions under the Law Governing the Conduct of Hostilities' (2006) 88 IRRC 794

According to the ICRC's commentary, even if the rule is based, 'to some extent, on a subjective evaluation, the interpretation must above all be a question of common sense and good faith for military commanders. In every attack, they must carefully weigh up the humanitarian and military interests at stake'.[43] The International Criminal Tribunal for the Former Yugoslavia (ICTY) has held that, 'in determining whether an attack was proportionate, it is necessary to examine whether a reasonable well-informed person in the circumstances of the actual perpetrator, making reasonable use of the information available to him or her, could have expected excessive civilian casualties to result from the attack'.[44]

The principle of proportionality implicitly recognizes that civilians and civilian objects may be affected incidentally by an attack that is directed against a lawful military objective. Under this rule, it is unlawful to conduct an attack that may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be expected to be excessive in relation to the concrete and direct military advantage anticipated.[45]

iii. The Principle of Precautions

The principle of precautions includes two interrelated components: one concerning military operations and the other concerning attacks. First, in the conduct of military operations, IHL obliges parties to take constant care to spare the civilian population, civilians and civilian objects.[46] Second, IHL obliges parties to take several sets of precautions regarding specific attacks. In particular, the obligation to take precautions in attacks entails a requirement to: (a) do everything feasible to verify that the objectives to be attacked are neither civilians nor civilian objects, and are not subject to special protection but are military objectives; (b) take all feasible precautions in the choice of means and methods of attacks to avoid, and in any event, minimize incidental loss of civilian lives, injury to civilians and damage to civilian objects; (c) refrain from deciding to launch an attack if it

[43]ICRC, *Commentary on the Additional Protocols* of 8 June 1977 to the Geneva Conventions of 12 August 1949 (The Netherlands: Martinus Nijhoff Publishers, 1987), para. 1469

[44] ICTY, *Prosecutor v. Stanislav Galic*, Case No. IT-98-29-T, Judgment, Trial Chamber (5 December 2003), para. 58

[45] Additional Protocol I, Article 51 (5) (b); and ICRC, Rule 14

[46] Ibid, article 57 (1)

may be expected to violate the principle of proportionality; and (d) cancel or suspend an attack if it becomes apparent that the objective is not a military one, that the objective is subject to special protection, or that the attack may be expected to violate the principle of proportionality.[47]

These precautions pose a number of challenges for AWS. However, the most common one is that AP I does not define "feasible precautions" In Amended Protocol II to the 1980 Convention on Certain Conventional Weapons (CCW), "feasible precautions" are defined as 'those precautions which are practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations'.[48]

4. AUTONOMOUS WEAPON SYSTEMS AND ACCOUNTABILITY GAP

There have been questions raised about whether the use of AWS may lead to a legal "accountability gap" in case of violations of IHL While there will always be a human involved in the decision to deploy and activate a weapon to whom accountability could be attributed, the nature of autonomy in weapon systems means that the lines of responsibility may not always be clear. Thus, if finding the commander, programmer or manufacturer responsible is not a practical possibility, then it is feared that there could well be a 'responsibility gap' that would enable impunity for the use of AWS.[49] Thus, under IHL and International Criminal Law, the limits of human control over an AWS can make it difficult to find individuals involved in the programming (development stage) and development (activation stage) of the weapon liable for serious violations of IHL in some circumstances. Humans that have programmed or activated the weapon systems may not have the knowledge or intent required to be found liable, owing to the fact that the machine, once activated, can select and attack targets independently. Programmers may not have knowledge of the

[47] Ibid, article 57 (2) (a) and (b); ICRC, Customary IHL Database, rules 15-19

[48] *Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices as amended on 3 May 1996* (Amended Protocol II to the Convention on Conventional Weapons), adopted on 3 May 1996, entered into force on 3 December 1998, Article 3 (10)

[49] C. Heyns, *Report of the Special Rapporteur on Extra-Judicial, Summary or Arbitrary Executions* ,Christol Heyns. UN General Assembly, A/HRC/23/47 (9 April 2013), para. 38, <http://www.chchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session23/A-HRC-23-47en.pdf> accessed 23 March 2023

concrete situations in which, at a later stage, the weapon system may be deployed and in which IHL violations can occur and, at the point of activation, commanders may not know the exact time and location where an attack will take place.[50] In view of this, Heyns proposes that if 'the nature of a weapon renders responsibility for its consequences impossible, its use should be considered unethical and unlawful as an abhorrent weapon'.[51] On the other hand, it has been proposed that accountability can be assigned in advance,[52] along with the requirement to install recording devises on the autonomous weapon systems to review footage of lethal uses.[53] Thus, commenting on the problem of legal responsibility, Kenneth Himma has observed that unless and until machines such as AWS have a free will and deliberative capacity, no moral agency or legal responsibility can be attributed to them.[54] In the absence of moral agency in AWS, it is impossible to hold them accountable for any wrongful acts.[55] Sparrow rightfully notes that the law demands that someone be held accountable for unlawful acts in war and the fact that AWS may never meet this condition makes their deployment unethical.[56]

Wendell Wallach notes that there is a challenge in computing legal responsibilities for AWS' actions where a number of individuals are involved from their production up to their deployment.[57] He, however, refers to five rules that have been developed by practical ethicists and social theorists who insist on the 'principle that humans cannot be excused from moral

---

[50] Neil Davison, UNODA Occasional Papers, No. 30, p. 17

[51] C. Heyns, *Report of the Special Rapporteur on Extra-Judicial, Summary or Arbitrary Executions* (n 51)

[52] R. Arkin, 'The Robot didn't do it,' Position Paper for the Workshop on Anticipatory Ethics, Responsibility and Artificial Agents, University of Virginia (24-25 January 2013) 1 <http://www.cc.gatech.edu/ai/robot-lab/online-publications/positionpaperv3.pdf>accessd 23 March 2023

[53] G. Marchant, et al, 'International Governance of Autonomous Military Robots (2011) XII CSTLR 272-315

[54] Kenneth Einar Himma, *Artificial Agency, Consciousness, And the Criteria for Moral Agency: What Properties Must An Artificial Agent Have to Be a Moral Agency*? (2009) 11 EIT 19-29

[55] Peter Asaro, 'On Banning Autonomous Weapon Systems: Human Rights, Animation, and the Dehumanization of Lethal Decision-making' (2012) 94 IRRC 886)

[56] R. Sparrow, 'Killer Robots' (2007) 24 JAP 62

[57] W. Wallach, 'From Robots to Techno Sapiens: Ethics, Law and Public Policy in the Development of Robotics and Technologies' (2011) 3 LIT 194-195

responsibility for the design, development or deployment of computing artefacts'.[58] The rules provide as follows:

> Rule 1: The people who design, develop or deploy a computing artefact are morally responsible for that artefact, and for the foreseeable effects of that artefact. This responsibility is shared with other people who design, develop, deploy or knowingly use the artefact as part of a sociotechnical system.
>
> Rule 2: The shared responsibility of computing artefacts is not a zero-sum game. The responsibility of an individual is not reduced simply because more people become involved in designing, developing, deploying or using the artefact. Instead, a person's responsibility includes being answerable for the behaviours of the artefact and for the artefact's effects after deployment, to the degree to which these effects are reasonably foreseeable by that person.
>
> Rule 3: People who knowingly used a particular computing artefact are morally responsible for that use.
>
> Rule 4: People who design, develop, deploy, promote or evaluate a computing artefact should not explicitly or implicitly deceive users about the artefact or its foreseeable effects, or about the sociotechnical systems in which the artefact is embedded.[59]

In view of the above, Thilo Marauhn argues that as far AWS are concerned, 'criminal responsibility of individuals can be established for commanders and operators on the basis of command responsibility'.[60]

---

[58] Ibid

[59] See Moral Responsibility for Computing Artefacts: The Rules, Univ. Of ILL. Springfield [hereinafter Rules] <http://edocs://uis.edu/kmiII2/www/TheRules_>accessed 25 March 2023

[60] T. Maraun, An Analysis of the Potential Impact of Lethal Autonomous Weapon Systems on Responsibility and Accountability for Violations of International Laws 5 (Geneva May 13-16 2014), <http://www.unog.ch/802256EDD006B8954/%28httpAssets%29/35FEAD015C2466A57C1257CE400BCA51/$file/Maraun_MX_Laws_SpeakingNotes_2014.pdf> accessed 25 March 2023

From the arguments that have been made by scholars so far in connection with accountability over actions of AWS, we now address command responsibility and to what extent it is applicable to AWS.

5. COMMAND RESPONSIBILITY AND AUTONOMOUS WEAPON SYSTEMS

Under international humanitarian law (IHL) commanders have a duty to ensure that their troops respect that body of law during armed conflict and hostilities. Failure to do so may give rise to liability. A mere breach of duty, whereby the commander has not fulfilled the responsibilities expected of his action, is usually dealt with through disciplinary action. However, where a commander fails to prevent or punish violations of IHL by subordinates, criminal proceedings are likely, and the punishment to be meted out will reflect the gravity and nature of the crime committed by the subordinate.[61] Indeed, because of their position of command over troops and subordinates and their influence and responsibilities as superiors, military commanders and other superiors have an affirmative duty to act in preventing violations of IHL by their subordinates.[62]

Command responsibility is an international criminal law mode of imputing responsibility that has been developed in the jurisprudence of various international criminal tribunals and courts.[63] Comman responsibility is part of customary international law[64] and has been considered an important tool as far as reinforcing deterrence and countering impunity is concerned.[65] Command responsibility is where a commander is held

[61] See International Criminal Tribunal for the former Yugoslavia (ICTY) Appeal Judgement in *Celebici* case, Case No. IT-96-21-A, 20 February 2001, at 226. Article 7 (3) of the [ICTY] Statute is concerned with superior liability arising from failure to act in spite of knowledge. Neglect of a duty to acquire such knowledge, however, does not feature in the provision as a separate offence, and a superior is not therefore liable under the provision for such failures but only for failing to take necessary and reasonable measure to prevent or to punish.

[62] J. A. Williamson, Some Considerations on Command Responsibility and Criminal Liability, International Review of the Red Cross, Volume 90 Number 870 June 2008, 304

[63] Bert Swart, *Modes of International Criminal Liability*, in The Oxford Companion to International Criminal Justice 89 (Antonio Cassese ed., 2009)

[64] See the case of *Prosecutor v. Dlalic*, Case No. IT-96-21-T, Trial Judgment, 330-343 (International Criminal Tribunal For the Former Yugoslavia Nov. 16, 1998),<http://icty.org/x/cases/mucic/tjug/en/981116_judg_en.pdf> accessed 27 March 2023

[65]T.Markus Funk, Victims Rights and Advocacy at the International Criminal Court (2010) 16

responsible for the actions of his or her subordinates by virtue of him or her failing to prevent or punish the commission of crimes by the subordinates.

According to Meron, the idea of command responsibility goes back to as early as the 15th century when in 1439, Charles VII of Orleans promulgated law stating that:

> The King orders that each captain or lieutenant be held responsible for the abuses, ills, and offences committed by members of his company, and that as soon as he receives any complaint concerning any such misdeed or abuse, he brings the offender to justice...if he fails to do so or covers up the misdeed or delays taking action, or if, because of his negligence or otherwise, the offender escapes and thus evades punishment, the captain shall be deemed responsible for the offence as if he had committed it himself and shall be punished in the same way as the offender would have been.[66]

The position of the commander or superior can be used to establish individual responsibility. For example, where the commander ordered, aided and abetted the commission of a crime.[67] According to Marauhun, Article 28 of the Rome Statute on command responsibility is best suited to deal with programmers and operators of AWS since they are "much closer to 'effective command and control'" as required under command responsibility.[68]

As interpreted by courts, command responsibility provides that a commander may only be held responsible where he or she "knew or should have known" that his or her subordinates were about to or are committing a crime and the commander fails to take action to prevent or stop them or

---

[66] T. Meron, Henry's War and Shakespeare's Laws: Perspectives on the Law of War in the Later Middle Ages 149 (1993)

[67] *Prosecutor v. Akayesu*, Case No. ICTR-96-4-T, Trial Judgment, 692-94 (September 2, 1998, <http://unictr.unmict.org/sites/unictr.org/files/case-documents/ictr-96-4/trial-judgments/en/980902.pdf>acessed 27 March 2023

[68] T. Marauhn, J. Liebig U, 'An Analysis of the Potential Impact of Lethal Autonomous Weapon Systems on Responsibility And Accountability for Violations of International Law' 2 (May 15, 2014) <http://unoda-web.s3.amazonaws.com/wp-content/uploads/assets/media/35FEA015SC2466A57C1257CE4004BCAS/file/Marauhn_MX_Laws_SpeakingNotes_2014.pdf>accessed 27 March 2023

that no punishment was meted against the perpetrators after commission.[69] Furthermore, in order to be held accountable for the actions of his or her subordinates, the commander must have "exercised effective control" over them.[70] The ICTY, ICTR and ICC have articulated some elements of what constitute effective control for the commander to be held responsible.[71] There must be a superior-subordinate relationship between the commander and the combatants or fighters[72] that allows the commander to control his or her subordinates[73] while the subordinates depend on his or her orders.[74]

Having analysed commander's responsibility above, the question therefore will be 'Whether the mode of responsibility therein is applicable to AWS? Responsibility can be attributed, discerned and scrutinized through multiple frameworks simultaneously and the same conduct may constitute multiple violations, a single violation or no violation.' Therefore, the legal frameworks for commanders help to structure compliance with IHL rules, to avoid impunity for IHL violations and to sustain confidence in the efficacy of the IHL regime. Thus, Asaro[75] wrote in respect to the concept of command responsibility and AWS that:

> The nature of command responsibility does not allow one to abdicate one's moral and legal obligations to determine that the use of force is appropriate in a given situation. One might transfer this obligation to another responsible

---

[69] Geneva Convention Protocol I; International Committee of the Red Cross, Commentary on the Additional Protocols of 8 June 1977 to the Geneva Conventions of 12 August 1949

[70] See the case of *Prosecutor v. Dlalic*, Case No. IT-96-21-T, Trial Judgment, 330-343 (International Criminal Tribunal For the Former Yugoslavia Nov. 16, 1998),<http://icty.org/x/cases/mucic/tjug/en/981116_judg_en.pdf> accessed 27 March 2023

[71] See Geneva Convention Protocol I, Articles 86 (2) and 87

[72]*Prosecutor v. Bemba*, Case No. ICC-01/05-01/08, Decision Pursuant to Article 61 (7) (a) and (b) of the Rome Statute on the Charges of the Prosecutor Against Jean-Pierre Bemba Gombo, 417 (June 15, 2009), <http://www.icc-cpi.int/CourtRecords/CR2009_04528.PDF>accessed 27 March 2023

[73] See Bemba, ICC-01/05-01/08, op cit; See the case of *Prosecutor v. Dlalic*, Case No. IT-96-21-T, Trial Judgment, 330-343 (International Criminal Tribunal For the Former Yugoslavia Nov. 16, 1998),<http://icty.org/x/cases/mucic/tjug/en/981116_judg_en.pdf> accessed 27 March 2023

[74] Ibid

[75] P. Asaro, 'On Banning Autonomous Weapon Systems: Human Rights, Animation, and the Dehumanization of Lethal Decision-making' (2012) 94 IRRC 886

> human agent, but one then has a duty to oversee the conduct of that subordinate agent. Insofar as autonomous weapon systems are not responsible human agents, one cannot delegate this authority to them.

Thus, the only instance where the use of command responsibility is relevant is when the commander or civilian who supervises the individual programming or deploying an AWS knew or should have known that his or her subordinate was programming or using an AWS in an unlawful manner and did nothing to prevent or stop his or her subordinate or punish him/her after the fact.[76] In support of this view, Chengeta maintains that 'AWS should be weapons and those who deploy them are the warriors. From a legal perspective, AWS cannot and should not commit crimes'.[77] As Schmit quoting Seneca, observed, 'a sword is never a killer, it is a tool in the killer's hands.[78] Therefore, if this is a case of a warrior and his weapon, to establish liability of the combatant or fighter over the use of an AWS, the correct mode of imputing criminal liability is individual criminal responsibility.[79] Command responsibility is restricted to...where a commander of the person who used an AWS is liable for having failed to prevent, stop or punish his subordinate in relation to the use of AWS.[80]

Furthermore, a common feature of modern warfare is that the decision making process leading to the use of force may be distributed across a large number of actors at the strategic, operational and tactical levels before and during an attack.[81] The case of AWS pushes this trend to

---

[76] Michael Schmitt, Autonomous Weapon Systems and International Humanitarian Law: A Reply to the Critics, Harv. National Sec. J. 33 (2013)

[77] Thompson Chengeta, "Accountability Gap: Autonomous Weapon Systems and Modes of Responsibility in International Law", *Denver Journal of International Law & Policy*, Vol. 45, No. 1, 2016, 33

[78] Michael Schmitt, Autonomous Weapon Systems and International Humanitarian Law: A Reply to the Critics (n 42)

[79]M.Sassoli, 'Autonomous Weapons And International Humanitarian Law: Advantages, Open Technical Questions And Legal Issues to be Clarified' (2014) 90 ILS 308, 324 ; <http://stockton.usnwc.edu/cgi/viewcontent.cgi?article=1017&context=ils>accessed 29 March 2023

[80] T. Chengeta, 'Accountability Gap: Autonomous Weapon Systems and Modes of Responsibility' (2016) 45 *DJILP* 33

[81] M. Bo, 'The Human-weapon Relationship in the Age of Autonomous Weapons and the Attribution of Criminal Responsibility for War Crimes' University of Miami Law School Conference Paper 4/2020 19

an extreme, as the pre-programmed nature of an AWS supposes that its effects will not only be determined by decisions made by multiple people along the military-command-and-control chain, but also by engineers and technicians during the development phase. In this context, therefore, the interpretative question that AWS raises is 'Whether IHL demands that a single person be responsible for the decision to employ an AWS and the resulting effects or whether that responsibility may reside with multiple people?' If the latter, how then does an individual contribution to the ultimate decision to employ an AWS and to administer its operation interact in a systemic multi-agent model be made?

As it currently exists, IHL does not necessarily provide a clear answer. Yet this question is critical, not only for the framing of the human-machine interaction debate, but also for the debate on individual responsibility.[82] One interpretation is that the responsibility for deciding to employ and for administering an AWS needs to reside with a single person, typically framed as the commander. From this perspective, the person who authorises the activation and launch of an AWS and who administers its operation is responsible for exercising and implementing legal agency relating to the AWS, including by making the value judgments demanded by the IHL rules governing the conduct of hostilities. The commander is the ultimate decision maker, even if the judgments may be partly implemented by other people such as weapon operators, and built on instructions provided by higher levels command or even the automated systems. Unlike the preceding agents, the commander is in a better position to make the context-dependent, legal assessments required to exercise IHL obligations.[83]

The other interpretation is that the responsibility for exercising and implementing legal agency, including by making the evaluations demanded by the principles of distinction, proportionality and precautions, may reside with multiple people and possibly systems of people-in the command-and-control chain.[84] From this perspective, all members of the command-and-

[82] V. Boulanin, L. Brunn and N. Goussac, 'Autonomous Weapon Systems and International Humanitarian Law-Identifying Limits and the Required Type and Degree of Human-Machine Interaction' , (2021) Stockholm International Peace Research Institute 16

[83] I. Henderson and P. Keane, 'Remote and Autonomous Warfare Systems: Precautions in Attack and Individual Accountability', (edn). J.D. Ohlin, *Research Handbook on Remote* Warfare (Edward Elgar Press: Cheltenham, UK, and Northampton, MA, USA, 2016) 23

[84] M. Schulzke, 'Autonomous Weapons and Distributed Responsibility', (2013) 26

control chain who contribute to the targeting process are seen as exercising and implementing legal agency. Thus, the responsibility for complying with the principles of distinction, proportionality and precautions may be shared across multiple human agents.

Contrary to the above, Schmitt ignores the problem of unpredicability of AWS with full autonomy or high levels of autonomy and functioning in unstructured environments.[85] If followed to its logical conclusion, Schmitt's argument is that once one has programmed an AWS and deploys it, all the eventual actions of the AWS are attributable to the programmer or the individual deploying it.[86] In this regards, Schmitt's argument suggests that programming of an AWS alone is sufficient control by the weapon user leading to responsibility for all ensuing acts. This idea has a chilling effect of throwing the important element of *mens rea* out of the window and putting in place some form of "strict criminal liability." It suggests that once programmed all actions are foreseeable. According to Schmitt,[87] this is arguably not true, since there can be situations where a combatant with no intentions to commit any crime programmes and deploys an AWS to kill legitimate targets but the system ends up killing innocent civilians. AWS with full autonomy, for example, will make other important decisions once they are deployed-decisions that may not be in line with the intentions of the person deploying them. The situation is even more horrendous where the system does not allow or need human intervention once it is activated. In those circumstances, establishing the important element of *mens rea* becomes difficult.

Thus, contrary to what Schmitt seems to suggest, the idea of control over the weapon one uses is central to their responsibility. For it to be meaningful control, programming alone is not sufficient. There is the need for some form of supervision after activation. Such supervision must be in real time. The actions of an Autonomous Weapon Systems must be well within the control of a human combatant who approves targets, prevent or abort missions whenever the situation requires.[88]

---

[85] M. Schmitt, 'Autonomous Weapon Systems and International Humanitarian Law' (n 42)
[86] Ibid
[87] Ibid , 16-17
[88] M. Sassoli, Autonomous Weapons And International Humanitarian Law: Advantages, Open Technical Questions And Legal Issues to be Clarified, (2014) 90 ILS 308, 324 <http://stockton.usnwc.edu/cgi/viewcontent.cgi?article=1017&context=ils>accessed 29 March 2023

The writer agrees in *toto* with Chengeta when he opines that 'as for command responsibility, I argue that it is inapplicable to the relationship between AWS and those deploying them. No analogy may be drawn between the relationship of human commander versus a human subordinate and that of the human fighter versus robot'.[89] The continued referral of a person deploying AWS as a commander gives a misleading impression that AWS are somewhat combatants or fighters.[90] AWS must be developed in a manner that they remain weapons in the hands of a fighter who is liable on the basis of individual responsibility in cases where crimes are committed.[91] It should not, and must not, be a case of a commander and subordinate where the notion of command responsibility is invoked. Command responsibility is only applicable to the extent of the responsibilities of a human commander over his or human subordinates involved in the deployment or use of AWS.[92]

6. CONCLUSION

International Humanitarian Law regulates activity during armed conflict and situations of occupation. It also contains the principle that must be applied in armed conflict, and the body of law that regulates the recourse to armed force. On the use of Autonomous Weapon Systems, there are three main principles that must be considered. Those are principle of Distinction, Proportionality and Precaution. These rules are addressed to those who plan, decide upon and carry out an attack in armed conflict. These rules create obligations for human combatants in the use of all weapons to ensure compliance with IHL. The lawful use of autonomous weapon systems, as broadly defined, will therefore require that combatants retain a level of human control over their functioning in carrying out an attack. Thus, the notion of command responsibility is inapplicable to the relationship

---

[88] T. Chengeta, 'Accountability Gap: Autonomous Weapon Systems and Modes of Responsibility in International Law' (2016) 45 DJILP 33

[89] T. Chengeta, Accountability Gap: Autonomous Weapon Systems and Modes of Responsibility in International Law, Denver Journal of International Law & Policy, Vol. 45, No. 1, 2016, 3

[90] Bonnie Doherty,' Lasing Humanity: The Case Against Killer Robots' (2012) 1HRW<https://www.hrw.org/report/2012/11/19/losing-humanity/case-against-killer-robots> accessed 29 March 2023.

[91] M. Sassoli (n 88)

[92] G. Mettraux, *The Law of Command Responsibility* 55, 2009

between a human and a robot. AWS are not human subordinates. Command responsibility is only applicable in the relationship between a human commander and his or her human subordinate. The relationship between AWS and the person deploying an AWS as the "commander" may thus be misleading. Therefore, command responsibility only remains applicable to the extent that the human commander is responsible for the actions of the human subordinate deploying the AWS if he/she knew or ought to have known that the human subordinate was programming or deploying AWS in a way that would violate international humanitarian law and failed to prevent, stop the human subordinate or punish him or her after the fact.[93]

7. RECOMMENDATIONS

In the absence of rules of IHL explicitly prohibiting or restricting autonomous weapon systems, the acceptability of AWS should be examined according to the principles of humanity and dictates of public conscience. This has already since been introduced in the main body of AP I to the Geneva Conventions and the preamble of Additional Protocol II of the Geneva Conventions. Furthermore, AWS must first identify the military target before determining whether striking the military target will result in a definite military advantage in order to comply with military necessity principle. It is also critical to have a human presence to control the usage of AWS in order to decrease the errors which it causes on the battlefield. Therefore, the challenges that are posed by AWS as far as accountability of violations is concerned must be taken seriously. This is so because accountability is the crux of International Humanitarian Law; without accountability, we must as well forget about it. Not only does accountability counter impunity, it is the basis on which victims of international crime, violations of International Human Rights and International Humanitarian Law realise their right to a remedy. Thus, AWS must be developed in a way that they remain mere weapons in the hands of warriors.

[93] T. Chengeta, 'Accountability Gap: Autonomous Weapon Systems and Modes of Responsibility' (2010) 45 DJILP 50