

CHAPTER FOUR

FINDING AND ANALYSIS

A. The Rise of Autonomous Weapons Systems

Autonomous military systems have been used by armed forces around the world for many decades. All of these can suggest their past to as early as the First World War, and the importance of that autonomous weapon to the battlefields of the future is only set to grow exponentially. For centuries, States and Military leaders have responded to the changes in the means and methods of warfare. These developments have ranged from hardware development, such as the crossbow and gunpowder, to developments in tactics.³⁷ This development is still ongoing, and weapons become increasingly autonomous.

The development of Autonomous Weapons Systems (AWS) in the next ten years is predicted to be more disruptive to international order than the development of nuclear weapons in the 1940s.³⁸ Autonomous Systems will allow the richest developed nations to fight at any intensity of warfare with fewer casualties and risk than ever before. However, this technology will be clustered around only those States and non-state actors that have the necessary resources and technological infrastructure, combined with a highly educated workforce.

³⁷ Darren M. Stewart, 2011, *New Technology and the Law of Armed Conflict*, Newport, U.S Naval War College, p. 271.

³⁸ P.S. Excell and R.A. Earnshaw, "The Future of Computing – the Implications for Society of Technology Forecasting and the Kurzweil Singularity" in *IEEE International Symposium on Technology and Society*, 11-12 November 2015.

1. Legal Category of Autonomous Weapons Systems

At the outset, it must be stated that there does not exist in International Humanitarian Law (IHL) in any category of weapon or weapon system called an Automatic or Autonomous Weapon System, nor is there a prohibited weapon or weapon system so-called. Associated with this absence, IHL also does not have a general prohibition on the development and use of “new” weapons or weapons systems such as “Autonomous Weapon Systems.”³⁹

Article 36 of Additional Protocol to The Geneva Conventions 1949, and relating protection of victim in International Armed Conflicts (Additional Protocol I)⁴⁰ deals with new weapons and reads: “In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rules of international application to the High Contracting Party”.

Besides the protection of Victim in International Armed Conflict, especially on new weapons, International Humanitarian Law also regulates what kind of weapons that prohibited, the following is an overview of weapons that are regulated by IHL treaties:

³⁹ Antonio Cassese, Guido Acquaviva, Mary D Fan and Alex Whitin, 2011, *International Criminal Law, Cases and Commentary*, Oxford, Oxford University Press, p. 134.

⁴⁰ Additional Protocol on the Geneva Conventions of 12 August 1949.

Table 4.1.Categorization of Prohibited-Weapons with Treaty.⁴¹

Weapon	Treaty
Explosive Projectiles weighing less than 400 grams	The Declaration of Saint Petersburg (1868)
Bullets that expand or flatten in the human body	The Hague Declaration (1899)
Poison and Poisoned Weapons	The Hague Declaration (1907)
Chemical Weapons	The Geneva Protocol (1925) The Convention on the Prohibition of Chemical Weapons (1993)
Biological Weapons	The Geneva Protocol (1925) The Convention on the Prohibition of Biological Weapons (1972)
Weapons that injure by fragments which, in the human body, escape detection by X-Rays	The Protocol I (1980) to the Convention on Certain Conventional Weapons
Incendiary Weapons	Additional Protocol III (1980) to the Convention on Certain Conventional Weapons
Blinding Laser Weapons	Additional Protocol IV (1995) to the Convention on Certain Conventional Weapons
Mines, booby traps, and “other devices.”	Additional Protocol II, as amended (1996) to the Convention on Certain Conventional Weapons
Anti-Personnel Mines	The Convention on the Prohibition of

⁴¹ International Committee of the Red Cross, “Weapons”, published in <https://www.icrc.org/en/document/weapons> accessed 31 January 2019 05:50 p.m.

	Anti-Personnel Mines (Ottawa Treaty) (1997)
Explosive Remnants of War	Additional Protocol V (2003) to the Convention on Certain Conventional Weapons
Cluster Munitions	Convention on Cluster Munitions (2008)

Also, Customary Rule of International Humanitarian Law regulated the kind of weapon that is prohibited in hostilities (Rule 70-86 of Customary Rule of International Humanitarian Law)⁴². In banning weapons, there are three reasons to ban certain weapons.⁴³

First, means and methods of war are prohibited if the weapon cannot distinguish between military targets on the one hand, and civilians and civilian objects on the other side. These weapons can strike their targets accurately, but the effects are uncontrollable. For example, bacteriological weapons which will inevitably spread and infect civilian or Autonomous Weapons Systems that conduct cyber-attacks and the malware used will spread into a civilian network.⁴⁴

⁴² Customary International Humanitarian Law, Rule 70-86.

⁴³ AIV, CAVV, *Op. Cit.*, p. 20.

⁴⁴ *Ibid*, p. 21.

Second, International Humanitarian Law prohibits weapons that are causing unnecessary suffering or superfluous injury.⁴⁵ An example of such a weapon is a laser weapon that causes permanent blindness.⁴⁶

The third reason to prohibit weapons is if their effects cannot be controlled in a manner prescribed by International Humanitarian Law, which results in indiscriminate harm to soldiers and civilians.⁴⁷ Besides of those reasons on banning some certain weapons, it is universally accepted for Autonomous Weapons Systems, but, AWS must be able to be used in compliance with the “basic principles of humanitarian law” including the principles of distinction and proportionality.⁴⁸

2. Autonomous Weapons Systems in Current Use

As a general matter, AWS are weapons that can select, detect, and engage the targets with little to no human intervention. However, there is no singularly accepted definition of AWS; the term typically covers a broad range of potential weapons systems, reaching from fully autonomous weapons that can launch attacks without any human intervention to semi-autonomous weapons that require human

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ *Ibid.*

⁴⁸ Marina Castellaneta “New weapons, old crimes?” Fausto Pocar, Marco Pedrazzi and Michaela Frulli (eds) *War crimes and the conduct of Hostilities* (Edward Elgar, Cheltenham, 2013) 194 at 200–201; *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons* [1986] ICJ Rep at 78–79; Schmitt, above n 5, at 14; and Jean-Marie Henckaerts and Louis Doswald Beck *Customary International Humanitarian Law, Volume 1: Rules* (Oxford University Press, 2005) at 237 [ICRC Rules].

affirmative action to execute a mission. Critics of AWS focus primarily on fully autonomous weapons, dubbing AWS “killer robots” and questioning their ability to respect human life and comply with International Humanitarian Law (IHL).⁴⁹

Autonomous Weapons Systems 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.⁵⁰ The more autonomous the system is, the more responsible it will become for its actions. A precision-guided munition 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 kill chain. An automatic anti-ballistic missile system under development by the United States is an example of a system able to sense, decide, and act to engage a target (an incoming ballistic missile) without human intervention. Once functional, this would be an example of a higher level of automation on the *continuum*.

The next step along the Autonomous Systems *continuum* is for the machine to seek appropriate targets on its own, using sensors and image processing. It will decide to engage using a variety of actions and then execute. This technology is useful for current situation and is being implemented in several countries. Humans are no longer

⁴⁹ Hayley Evans, Natalie Salmanowitz, Lethal Autonomous Weapons Systems: Recent Developments, <https://www.lawfareblog.com/lethal-autonomous-weapons-systems-recent-developments> accessed on 28 May 2019 at 9:12 p.m.

⁵⁰ Peter Asaro, 2008, “How Just Could a Robot War Be?”, in *Conference on Current Issues in Computing and Philosophy*, Amsterdam: IOS Press Amsterdam, p. 2.

required to be “in the loop.”⁵¹ The specific focus of this article is to discuss Autonomous Systems that can sense, decide, and act without human intervention.

The rising level of autonomy within weapons systems raises issues about international law. Therefore, it is important to make a clear distinction between the different levels of autonomy within a weapon system and to define an Autonomous Weapon System. An Autonomous Weapon System can be defined as: “a weapon system that employs autonomous functions.”⁵² Human Rights Watch has made a classification in order to categorize the various forms of autonomous weapons systems.⁵³ Human Rights Watch differentiate between human in the loop weapons which are semi-autonomous weapons, human on the loop weapons which are weapons systems that can autonomously select and engage specific targets and human out of the loop weapons which are weapons systems that are programmed to choose autonomously individual targets and attacks them in a pre-programmed selected area during a certain period of time.⁵⁴

⁵¹ *Ibid.*

⁵² Crotoft, Rebecca, “War, Responsibility, and Killer Robots” (February 24, 2015). *North Carolina Journal of International Law and Commercial Regulation*, Vol. 40, No. 4, 2015, Chapel Hill, UNC School of Law, Available at SSRN: <https://ssrn.com/abstract=2569298>

⁵³ Human Rights Watch, “Losing Humanity: The Case against Killer Robots”, <https://www.hrw.org/report/2012/11/19/losing-humanity/case-against-killer-robots#> accessed on 14 May 2019 at 6:32 p.m.

⁵⁴ AIV, CAVV, *Op. cit.*, p. 9.

Once the human out of the loop weapon system is activated, a human cannot intervene to stop the attack.⁵⁵ Autonomous Weapons Systems are mostly categorized as human out of the loop weapons systems. However, some classify Autonomous Weapons Systems as a human beyond the broader loop weapons systems.⁵⁶ These weapons systems can make decisions based on self-learned or self-made rules and selects and engages targets without any human involvement.⁵⁷

B. International Humanitarian Law on Autonomous Weapons Systems

Artificial intelligence (AI) and machine learning are rapidly entering the arena of modern warfare. This trend presents extraordinarily complex challenges for policymakers, lawyers, scientists, ethicists, and military planners, and also for society itself. Some militaries are already far advanced in automating everything from personnel systems and equipment maintenance to the deployment of surveillance drones and robots. Some States have even deployed defensive systems that can stop incoming missiles or torpedoes faster than a human could react. These weapons have come online after extensive review of their conformity with longstanding principles of the laws of armed conflict, including International Humanitarian Law. These include the ability to hold individuals and States

⁵⁵ Human Rights Watch, 2012, “Losing Humanity: The Case against Killer Robots”, <https://www.hrw.org/report/2012/11/19/losing-humanity/case-against-killer-robots#> accessed on 14 May 2019 at 6:52 p.m.

⁵⁶ AIV, CAVV, *Op. cit.*, p. 10.

⁵⁷ *Ibid*, p. 17.

accountable for actions that violate norms of civilian protection and human rights.⁵⁸

International Humanitarian Law provides no dedicated principles with respect to autonomous weapons. Because of this, some argue that autonomous weapons are to be considered illegal and should be banned for military applications. However, it is a general principle of law that prohibitions must be clearly stated or otherwise do not apply. During the armed conflict, the IHL's principles of distinction, proportionality and unnecessary suffering must be applied. This also implies the obligation for States to review their weapons to confirm they are in line with these principles. In general, this does not impose a prohibition on any specific weapon. In fact, it accepts any weapon, means or method of warfare unless it violates international law, and it puts the responsibility on the States to determine if its use is prohibited. Therefore, autonomous systems cannot be classified as unlawful as such. Like any other weapons, means or method of warfare, it must be reviewed with respect to the rules and principles codified in international law.⁵⁹

1. Principle of Distinction

The cornerstone of International Humanitarian Law is the principle of distinction. It is based on the recognition that “the only legitimate object which States should endeavor to accomplish during

⁵⁸ Ted Piccone, 2018, “How can International Law Regulate Autonomous Weapons?” <https://www.brookings.edu/blog/order-from-chaos/2018/04/10/how-can-international-law-regulate-autonomous-weapons/> accessed on 3 July 2019 at 8:32 p.m.

⁵⁹ André Haider, 2018, “Autonomous Weapon Systems in International Humanitarian Law”, *The Journal of the JAPCC* Vol.27, No.1, Römerstrasse, Joint Air Power Competence Centre, p. 46.

war is to weaken the armed forces of the enemy”⁶⁰ Therefore, the parties to an armed conflict must be distinguished between civilian objects and military objective and accordingly shall direct their operation only against military objectives.⁶¹

Today’s conflicts are no longer fought between two armies confronting each other on a dedicated battlefield. Participants in a contemporary armed conflict might not wear uniforms or any distinctive emblem at all, making them almost indistinguishable from the civilian population. So, the distinction between civilians and combatants can no longer be exercised only by visual means. The person’s behavior and actions on the battlefield have become an important distinctive factor as well. Therefore, an Autonomous Weapon must be capable of recognizing and analyzing a person’s behavior and determining if he or she takes part in the hostilities. However, whether a person is directly participating in hostilities or not is not always that clear. An Autonomous Weapon will have to undertake extensive testing and will have to prove that it can reliably distinguish combatants from civilians. However, even humans are not without error, and it must be further assessed how much, if any, probability of error would be acceptable.⁶²

⁶⁰ Preamble of St. Petersburg Declaration

⁶¹ Article 57 (1) of Additional Protocol I

⁶² André Haider, *Op. Cit.*, p.48.

2. Principle of Proportionality

Practice shows a general acceptance of the principle that incidental damage affecting the natural environment must not be excessive in relation to the military advantage anticipated from an attack on a military objective. This is set forth in the Guidelines on the Protection of the Environment in Times of Armed Conflict and in the San Remo Manual on Naval Warfare.⁶³

The applicability of the principle of proportionality to incidental damage to the environment is supported by a number of official statements. The principle of proportionality is applicable in both international and non-international armed conflicts also in relation to the environment. The ICRC made such a statement of principle in 1993 in a report submitted to the United Nations (UN) General Assembly on the protection of the environment in time of armed conflict.⁶⁴

Use of military force should always be proportionate to the anticipated military advantage. This principle has evolved alongside the technological capabilities of the time. For example, carpet bombing of cities inhabited by civilians was a common military practice in World War II but would be considered completely disproportionate today. Modern guided ammunition is capable of

⁶³ International Committee of Red Cross, 1996, “Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict”, <https://www.icrc.org/en/doc/resources/documents/article/other/57jn38.htm#a2> accessed on 6 July 2019 at 10:22 a.m.

⁶⁴ ICRC Report on the Protection of the Environment in Time of Armed Conflict.

hitting targets, and advanced software, used in the preparation of the attack, can calculate the weapon's blast and fragmentation radius and anticipated collateral damage.⁶⁵

Especially for this issue, it can be argued that autonomous weapons could potentially apply military force more proportionately than humans. This is because they can calculate highly complex weapon effects in an instant and therefore reducing the probability, type and severity of collateral damage. However, following the principle of proportionality is completely dependent on reliably identifying and distinguishing every person and object in the respective target area. And this, ultimately, refers to the application of the principle of distinction.⁶⁶

3. Principle of Unnecessary Suffering

IHL prohibits the employment of means of warfare that result in superfluous injury or unnecessary suffering. This rule reflects an attempt to strike a balance between the competing ends of humanity and military necessity, and the protection resulting from its application, strictly speaking, focusses on the effect of weapons on combatants. Weapons which would inevitably cause serious permanent disability, as well as those that render death inevitable are affected by the prohibition. Accordingly, the principle would restrict the permissibility of inflicting injury and suffering on combatants to that

⁶⁵ *André Haider, Op. Cit.*, p. 49.

⁶⁶ *Ibid.*

which is not necessary to achieve a lawful military purpose in the prevailing the circumstances.⁶⁷

In application of this principle, IHL must restrict and prohibits certain types of weapons, with the effect of which are considered to be extremely forbidding regardless of the conditions, including the use of Autonomous Weapons, there must be a strict regulation on high-technology weapon to prevent unnecessary suffering to the civilians, civilian objective and natural objective.

C. The Doctrine of Command Responsibility

Command responsibility has been recognized as a principle of customary international law for a long time.⁶⁸ However, the legal nature of command responsibility is still open to debate in international criminal law: is it a mode of liability for the crimes committed by subordinates or rather a separate offense of the superior for failure to discharge his duties of control pursuant to international law. In other words, is a superior to be held criminally responsible for the crimes committed by his subordinates “as an accomplice”,⁶⁹ or for a separate offense of omission, consisting of the dereliction of his duty to control, prevent or punish.

In the development of doctrine of command responsibility, there are several cases as an important role in the development of this doctrine.

⁶⁷ *Ibid.*

⁶⁸ K. Ambos, “Superior Responsibility”, in A. Cassese, P. Gaeta, J.R.W.D. Jones, 2002, *The Rome Statute of International Criminal Law, Vol. I*, Oxford, Oxford University Press, p. 825-848.

⁶⁹ E. van Sliedregt, 2003, *The Criminal Responsibility of Individuals for Violations of International Humanitarian Law*, The Hague, TMC Asser Press, p. 61.

1. Yamashita Case

The first modern case which dealt with the doctrine of command responsibility was the Yamashita case in 1945. The Yamashita judgment has played a key role in the development of the doctrine of command responsibility. Yamashita was the commanding general of the Imperial Japanese Army in the Philippines. He has been charged, convicted and sentenced to death by the U.S. War Crimes Commission. The U.S. War Crimes Commission charged him for: “unlawfully disregarded and failed to discharge his duty as commander to control the operations of the members of his command, permitting them to commit brutal atrocities.”⁷⁰ The defense of Yamashita argued that he could not make contact with his subordinates. Therefore, he had no control over the actions of his subordinates, and he did not know about the atrocities committed by his soldiers.⁷¹

However, the U.S. War Crimes Commission argued that: “the crimes were so extensive and widespread, both as to time and area, that they must have been willfully permitted by the accused or secretly ordered.”⁷² So, Yamashita did not stand trial for war crimes he committed or war crimes he directed his troops to commit, but he stood trial because he failed to punish violations of International Humanitarian Law and to prevent war crimes.

⁷⁰ In Yamashita case Report 317 U.S. 1; 66 S. 340, 4 February 1946.

⁷¹ *Ibid.*

⁷² *Ibid.*

2. Nuremberg Tribunal

Another important role in the development of the doctrine of command responsibility was Nuremberg Tribunal. The tribunal was charged prosecuting those Nazi leaders to be responsible for organizing and directing Germany's aggressive wars and atrocities. Nuremberg tribunal proclaimed that individual possesses international duties which exceed the obligation of national compliance. It is clear that the commander might be prosecuted for ordering, planning, participating in war crimes or in crimes against humanity.⁷³ The tribunal implicitly invoked the doctrine of command responsibility in convicting several civilian officials. The defendant in these cases were determined to have been well-aware of the misbehaviors of individuals under their command.

Wilhelm Frick was Minister of the Interior during the war, he possessed jurisdiction over nursing homes, hospitals and asylums in which euthanasia was practiced. Fritz Sauckel was Supreme General for Utilization of Labor. Fritz Sauckel's decisions extended the doctrine of command responsibility to civilian officials. At the same time, these cases harrowed the intend standard. Unlike Yamashita case, Fritz Sauckel clearly possessed knowledge of the crimes committed by their subordinates.

⁷³ United States v Herman Goering. 1948, XXII Trials of Major War Crimes, before the International Tribunal, p. 446.

The notions of command responsibility were more fully developed in trial of Japanese war criminals before the International Military Tribunal for Far East.

3. Tokyo Tribunal

The Allied Powers charged the Japanese cabinet and high-level military officers and administrative officials with varying degrees of responsibility for safe-guarding prisoners of war.⁷⁴ Military and civilian officials who exercised direct authority over prisoners who possessed actual or constructive knowledge of mistreatment, or would have acquired such knowledge absent of their own negligence. The Tokyo tribunal refined and replace the *Yamashita* standard with an actual knowledge requirement. For instance, Shimada Shigetaro, Navy Minister in the Tojo Cabinet between 1941 and 1944, was acquitted on the grounds that he had neither ordered, authorized, permitted or had been aware of the murders of prisoners in the Pacific.⁷⁵

As showed by the Koiso judgment, a government official with knowledge of war crimes was required to act in an affirmative style. Hideki Tojo was named Minister of War in 1940, and thereafter was appointed Prime Minister in October 1941, a position in which he continued until July 1944.⁷⁶ The tribunal also held that a high-ranking official who receives assurances that criminal conduct will be

⁷⁴ Leon Friedman, 1972, *The Law of War: A Documentary History Vol. 1*, Michigan, Random House, p. 1029.

⁷⁵ *Ibid.*

⁷⁶ *Ibid.* p. 1154.

curtailed might not ignore continued reports of criminal conducts. In summary, Tokyo Tribunal imposed a duty upon civilian and military officials to take such steps as were within their power and authority to investigate, prevent, stop and to punish war crimes.

The doctrine of command or superior responsibility stipulates that a superior can be held criminally responsible when his subordinates commit international crimes. The doctrine has become a part of customary international law and has been incorporated into the statutes of the international criminal tribunals and the Rome Statute of the International Criminal Court (ICC). The superior sustains criminal responsibility for failing to have prevented the criminal acts committed by his subordinates. Command responsibility may imply a crime of omission. As the superior, the superior may be held criminally responsible. The doctrine must observe the basic principles of criminal law, especially in the principle of individual guilt.⁷⁷

When looking at the command responsibility itself, the doctrine of command responsibility, as mentioned in the Statutes and jurisprudence of the Tribunals, imposes liability where:

- a. there is a superior-subordinate relationship;
- b. the superior knew or had reason to know that a subordinate was about to commit crimes or had done so; and

⁷⁷ Harmen van der Wilt, 2017, “*Command Responsibility*”, <https://www.oxfordbibliographies.com/view/document/obo-9780199796953/obo-9780199796953-0088.xml> accessed on 20 May 2019 at 2:22 p.m.

- c. the superior failed to take the necessary and reasonable measures to prevent such acts or to punish the perpetrators thereof.⁷⁸

The Rome Statute takes a very similar approach, with minor differences.⁷⁹ First, and most importantly for present purposes, the Rome Statute requires that the commander's dereliction contributed to crimes that the crimes were "a result of his or her failure to exercise control properly over such forces." Second, while it is not the focus of this article, it should be mentioned that the Rome Statute also handles the mental element differently, drawing a distinction between military commanders and civilian superiors. The mental element for military commanders is similar to, but arguably slightly different from the ICTY 'had reason to know' standard. Civilian superiors are given a more generous mental element, requiring that they 'consciously disregarded' information about crimes.⁸⁰

The International Criminal Tribunal for the former Yugoslavia (ICTY) has held in the *Čelibići* case that command responsibility does not involve strict liability. Criminal law is based on the idea of free human agency, implying that the suspect can act in conformity with the legally and morally desirable norm and that he knows that he will be held responsible whenever he disobeys that norm. The doctrine of command responsibility contains three constituent elements, reflecting, respectively, power and agency, *mens rea*, and the omission that triggers criminal responsibility. The doctrine has

⁷⁸ Prosecutor v Kordić (Judgement), ICTY, Appeals Chamber, Case No IT-95-14/2-A, 17 December 2004.

⁷⁹ Article 28 of the Rome Statute 1998.

⁸⁰ Article 28 (b) of the Rome Statute 1998.

been shaped and refined in the case law of the *ad hoc* tribunals for the ICTY and International Criminal Tribunal for former Rwanda (ICTR).⁸¹

The premise of command responsibility is two-fold, First, Commanders, by their role, have supervisory responsibilities. Commanders gain benefits from this role, as do states or other entities that rely on the chain of command. Commanders receive a pool of people and other instrumentalities that do the commander's bidding, backed up by a system of military discipline that attaches severe penalties to disobedience. States benefit from that efficiency in the projection of military force. Since commanders enjoy these benefits, they should also shoulder the burdens of command responsibility for taking reasonable steps to ensure that subordinates comply with IHL.

On this view, command responsibility, while a relatively recent doctrine, is a logical outgrowth of age-old concerns about warfare. Just as 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.⁸²

The theory in a codified form first appeared in the 1899 Hague Convention with respect to the Laws and Customs of War on Land, which

⁸¹ *Ibid.*

⁸² Markus Wagner, 2014, "The Dehumanization of International Humanitarian Law: Legal, Ethical, and Political Implications of Autonomous Weapons Systems", *Vanderbilt Journal of Transnational Law*, Vanderbilt, Vanderbilt University, p. 47.

declared that the laws, rights, and duties of war applied not only to armies but also to militia and volunteer corps, on the condition, among others, that that paramilitary personnel were 'to be commanded by a person responsible for his subordinates'.⁸³ This was reproduced in Article 1(1) of the Regulations attached to the 1907 Hague Convention (IV). Article 4 of the 1907 Convention provided that the 1899 Convention would remain applicable between the parties which did not elect to become a party to the 1907 Convention, that was intended to replace the 1899 Convention.⁸⁴

The idea that command responsibility is a basis for criminal liability has been codified in Article 86 and Article 87 of Additional Protocol I. Article 86 of Additional Protocol I provides that the commander is responsible for the actions of his subordinates if the commander: “knew, or had information which should have enabled the commander to conclude the circumstances at the time, that the subordinate was committing or was going to commit such a breach of the Geneva convention and Additional Protocol I and if they did not take all feasible measures within their power to prevent or repress the breach”. Article 87 of Additional Protocol I concerned with the duties of commanders. The provision obliged commanders to prevent

⁸³ Article 1 (1), Annex to the Convention, titled “Regulations respecting the Laws and Customs of War on Land”.

⁸⁴ A. Roberts and R. Guelff, 1989, *Documents on the Laws and War 2nd Edition*. Oxford, Oxford University Press, p. 44.

breaches from being committed, to suppress them when they have been committed and to report them to the competent authorities.⁸⁵

As the 1907 Convention was regarded by the UN Secretary-General as having by 1993 become customary law,⁸⁶ the corresponding part in the 1899 Convention has by analogy also assumed the status of customary law. Developments have been occurring in this area since the establishment of the ICTY and ICTR. Questions that only made a fleeting appearance in the first cases have manifested themselves more fully through the practice of the two Tribunals, which has, in turn, provided a case study for the drafting of the Rome Statute.

Article 7 of the ICTY Statute, Individual Criminal Responsibility provides that:

“person who planned, instigated, ordered, committed or otherwise aided and abetted in the planning, preparation or execution of a crime referred to in articles 2 to 5 of the present Statute, shall be individually responsible for the crime.”⁸⁷

Military commanders are responsible for controlling the behavior of their subordinates and are thus liable for their failure.⁸⁸ The principle of holding the commander responsible for his or her subordinates' conduct applies if the military commander had knowledge or should have known

⁸⁵ Sandoz, Swiniarski, and Zimmerman, 1987, *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Convention of 12 August 1949*, Geneva, International Committee of Red Cross p. 1017.

⁸⁶ Report of the UN Secretary-General refers to Paragraph 2 of Security Council Resolution 808 (1993) (S/25704), presented on 3 May 1993, p. 41-44.

⁸⁷ Article 7 of ICTY Statute.

⁸⁸ Article 86 of Additional Protocol I.

that the individual planned a wrongful act but did nothing to determine it.⁸⁹

The military commander will be held liable if the subordinates:

- a. Personally, sees or hears of unlawful acts being committed by subordinates;
- b. Obtains reports of the unlawful conduct of his or her troops through his or her subordinates, such as officers and staff, yet fails to prevent a violation; or
- c. The military commander neglects or is reckless about his or her troops and is unaware of their actions.⁹⁰

To prevent and suppress breaches, the commander has to make sure that their subordinates are familiar with their obligations under the Geneva Conventions and Additional Protocol I.⁹¹ Furthermore, the commander has to initiate disciplinary or penal actions against violators under their command or under their control.⁹² So, article 87 is not limited to the duties of a commander concerning the soldiers under his/her command. The provision also applies to other persons under the control of the commander.⁹³

With the adaptation of the Geneva Conventions and Additional Protocol I, the doctrine of command responsibility has been given an international basis. However, the doctrine of command responsibility has

⁸⁹ *Ibid*, Article 86-87.

⁹⁰ Sandoz, Swiniarski, and Zimmerman, *Loc. Cit.*

⁹¹ *Ibid*, p. 1019.

⁹² *Ibid*, p. 1020.

⁹³ *Ibid*, p. 1020.

changed to the establishment of the ad hoc regional tribunals. The formation of the International Criminal Tribunal for the Former Yugoslavia (ICTY) and the International Criminal Tribunal for Rwanda (ICTR) contributed to the harmonization of the doctrine of command responsibility and has developed the doctrine even further through case law. The doctrine of command responsibility is codified in the Statute of the ICTY in Article 7 and the Statute of the ICTR in Article 6. It should be noted that the ICTY and ICTR do not use the term command responsibility; they use the term superior responsibility. However, the two terms are meant to be the same principle.⁹⁴

D. Concept of Command Responsibility of Autonomous Weapons Systems

The issue of Command Responsibility for remote warfare involving a human operator is relatively straightforward. It is a matter of identifying the individual responsible for carrying out an attack and what he or she knew or should have known at the time of relevant actions or decisions. However, for AWS, accountability for when things go wrong is one of the more contentious issues. Many commentators are concerned with the morality and ethical issues associated with a machine deciding whether to kill a human being, and some argue that the issues with attributing accountability for war crimes committed by an AWS are insurmountable. This is raised as another

⁹⁴ ICTY 16 November 1998, IT-96-21-T, paragraph 331 (Prosecutor v. Delalić *et al.*).

reason for seeking a preventive ban on the development of AWS.⁹⁵ In the Nuremberg International Military Tribunal 1946, individual criminal responsibility for breaches of the law of war is affirmed. ‘Crimes against international law are committed by men, not by abstract entities, and only by punishing individuals who commit such crimes can the provisions of international law be enforced.’⁹⁶

Assuming that the AWS is capable of discrimination to the standard required by law, the position of the human operator relative to the AWS decision loop to use force will be an important factor in considering individual accountability. However, while the three system models outlined in the current U.S policy particulate where the human operator is situated with respect to the AWS decision loop, it does not provide the complete answer on where accountability could lie for war crimes. Obvious candidates for individual accountability with respect to AWS extend beyond the human operator to commanders, programmers, and manufacturers.⁹⁷

There is a strong technological development towards fully Autonomous Weapon Systems, and they will be used on future battlefields. While weapons review does not assess any possible uses of a weapon, certain uses may violate IHL. Persons responsible for those uses must be accountable. Autonomous weapons trigger questions in this regard since

⁹⁵ Human Rights Watch, 2012, “Losing Humanity: The Case against Killer Robots”, <https://www.hrw.org/report/2012/11/19/losing-humanity/case-against-killer-robots#> accessed on 20 May 2019 at 7:32 p.m.

⁹⁶ International Military Tribunal for the Trial of German Major War Criminals, Nuremberg, 30 September – 1 October 1946, p. 544.

⁹⁷ Jens David Ohlin, 2016, *The Combatant's Stance: Autonomous Weapons on the Battlefield*, New York, Cornell Legal Studies, p. 177.

they can make decisions without human authorization. That absence of human authorization need not create an “accountability gap.” In dealing with AWS, the proper mechanism for accountability is the familiar doctrine of command responsibility. Under command responsibility, a person in command is accountable for crimes committed by subordinates if the leader knew or should have known that subordinates were engaged in illegal activity and failed to take reasonable steps to prevent such acts.

The use of Autonomous Weapons Systems is governed by International Humanitarian Law and principles of International law. One of the requirements of International Humanitarian Law is the possibility to hold someone accountable for crimes that have been committed.⁹⁸ However, it is unclear who can be held responsible for deaths caused by Autonomous Weapon Systems. After all, Autonomous Weapon Systems can select targets and make decision autonomously without a human in/on the loop. Sparrow has argued that no one will be responsible because it is not possible to describe any responsibility for the behavior of Autonomous Weapons Systems to a human.⁹⁹

Others, such as Hellstorm and Asaro, are of the opinion that an Autonomous Weapon System will be, one day, responsible for their behavior.¹⁰⁰ Human Rights Watch has identified three human actors who

⁹⁸ Robert Sparrow, 2007, “Killer Robots”, *Journal of Applied Philosophy* Vol. 24 Issue 1 February 2007, United Kingdom, University of Aberdeen, p. 67.

⁹⁹ *Ibid.*

¹⁰⁰ Merel Noorman, Deborah G. Johnson, 2014, *Negotiating Autonomy and Responsibility in Military Robots, Ethics and Information Technology*, Dordrecht, Business Media Dordrecht, p. 52.

could be held responsible when the Autonomous Weapon System is used and commits a crime. These are the commander, the program, and the manufacturer. However, the opinions of author are divided on whether any of these three human actors can be held responsible for the conduct of an Autonomous Weapons Systems.

In order to hold a commander directly responsible, the *actus reus* (an illegal act) and *mens rea* (intent) need to be established. Sassóli stated that: “it is as fair to hold a commander of a robot accountable as it would be to hold accountable a commander who instructs a pilot to bomb a target he describes as a military headquarters, but which turns out to be a kindergarten.”¹⁰¹

However, to proof, whether a developer is accountable for an attack by AWS, is a bit problematic.¹⁰² Gubrud evaluates that any use of violent force, whether it is lethal or non-lethal, there must be a human who decides another word; this must always be under the control of a human.¹⁰³ “Developers,” it refers broadly to people who play some significant role in defining the behavior of an autonomous weapon system, as opposed to “operators,” which refer to those responsible for utilizing the system in some situation during armed conflict.¹⁰⁴ A weapons system is an inanimate

¹⁰¹ Sassoli M, 2014, *Autonomous Weapons and International Humanitarian Law: Advantages, Open Technical Questions and Legal Issues to be Clarified*. Newport, U.S Naval War College, p. 308–340.

¹⁰² Solis G.D, 2016, *The Law of Armed Conflict 2nd Edition*. Cambridge, Cambridge University Press, p. 544.

¹⁰³ M. Gubrud, 2014, “Stopping Killer Robots”, *Bulletin of the Atomic Scientist* Vol. 70, No.1, New York, SAGE Publications, p. 37.

¹⁰⁴ *Ibid*

object; any harm resulted from it, is a result of its developers.¹⁰⁵ In that case, a highly Autonomous Weapons is potentially partly or fully replaces combat personnel from their duty which occupied traditionally, so that accountability for specific acts committed through such systems is not likely easily ascribed to the personnel or the commander.¹⁰⁶

E. Legal Review on Autonomous Weapons Systems

While Autonomous Weapons Systems (AWS) may have tactical impacts on the battlefield that have strategic implications on militaries that utilize or face these weapons systems, weapons law review and targeting review must still be applied to an Autonomous Weapons Systems before it can be fielded in combat by Law of Armed Conflict (LOAC) and International Humanitarian Law (IHL). While AWS may perhaps branch an evolutionary leap in modern warfare, there is nothing inherent in these technologies that would result in them violating weapons law. Moreover, in a targeting law review, AWS is comparable to other weapons systems in that limitations should be adopted to constrain their use to ensure they are used in conformance with international laws and customs.¹⁰⁷

The use of AWS has brought into a question on who would be held responsible for a LOAC violation resulting from these systems; an accountability review seems appropriate. In conducting general research on what such an investigation into an AWS violation would entail, it appears

¹⁰⁵ *Ibid*

¹⁰⁶ *Ibid*, p. 366.

¹⁰⁷ Michael Press, "Robots and Rules: Autonomous Weapon Systems in the Law of Armed Conflict", *Georgetown Journal of International Law* Vol. 48, No. 2, Washington DC, Georgetown Law Journal, p. 1353.

likely that a human within the chain of command that allowed for its use in a combat situation or one responsible for the manufacture or upkeep of an AWS would be held accountable.¹⁰⁸

1. Legal Review on Weapons Law

In a review of weapons law and targeting, the law must be applied to AWS. About weapons law, there is currently no international treaty or ban that prohibits the fielding of AWS. While certain non-governmental organizations, such as Human Rights Watch and the International Committee for Robots Arms Control have banded together to encourage nations to adopt a preemptive prohibition on fully automated weapons systems without human control, known as the Campaign to Stop Killer Robots, the movement has not achieved its aim.¹⁰⁹

The legal principles that opponents of AWS believe would be violated have been mentioned previously in weapons and targeting law, but their opposition is also based on “non-legal,” or ethical, protections. These considerations include a supposed need to have human emotion present in an attacker to curtail killing and violating of LOAC. In March 2016, the UN Special Rapporteur on the rights to freedom of peaceful assembly and of association and the Special Rapporteur on extrajudicial, summary or arbitrary executions produced

¹⁰⁸ *Ibid.*

¹⁰⁹ Dom Galeon, 2017, “Following Elon Musk Letter, UK Government Plans to Ban Fully Autonomous Weapons”, <https://futurism.com/following-elon-musk-letter-uk-government-plans-to-ban-fully-autonomous-weapons> accessed 26 June 2019 at 1:43 p.m.

a joint report recommending an AWS prohibition for warfare and for law enforcement use because of the lack of human control.¹¹⁰ While some nations do support such a ban, they outwardly project other pragmatic reasons for desiring a prohibition, not simply for the same legal and ethical rights for the campaign.¹¹¹

2. Legal Review on Targeting Law

Under targeting law, there are no international treaties restricting certain legal uses of AWS, similar to regulations on the use of land mines, outside of those applied to all weapons and weapons systems under international law. A restriction on AWS could be a more viable alternative as opposed to a prohibition.¹¹² This use limitation would be preferable because of the benefits of AWS in a war that would sway nations away from a ban and the benefits of guiding the evolution of AWS technology to ensure nations are aware they need to be tightly bound to established LOAC and IHL principles. A use limitation would also prove to be beneficial to close legal loopholes nations might use to subvert any ban, due to the enforceability hurdles and dangers of any attempt to prohibit AWS.

¹¹⁰ The Special Rapporteur on the Rts. to Freedom of Peaceful Assembly and of Ass'n and the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions on the Proper Mgmt. of Assemblies, Hum. Rts. Council on Its Thirty-First Session, at 15, U.N. Doc. A/HRC/31/66 2016.

¹¹¹ Mary Wareham, 2017, "Banning Killer Robots in 2017", <https://www.thecipherbrief.com/article/tech/banning-killer-robots-2017-1092>. accessed on 28 June 2019 at 3:44 p.m.

¹¹² Kenneth Anderson, 2014, *Adapting the Law of Armed Conflict to Autonomous Weapon Systems*, International Law Study. p. 386.

However, simply because the technology necessary to stand by LOAC is far from completion does not mean that it will never exist. The sensors needed to comply by LOAC must not be perfect in terms of distinction to be lawful under targeting law. The standard is reasonability.¹¹³ Therefore, if it would be reasonable for a human, under certain circumstances, to fire on a target that turns out not to be valid, neither the human nor an AWS under similar circumstances, would be found to violate LOAC. Additionally, while the lack of emotion has been proposed as a reason why AWS should not be fielded because they could not identify such emotion, this could be an advantage. AWS's lack of fear means that AWS can put themselves more at risk of a surprise attack, even sacrifice themselves, in order to identify if a possible target is legitimate.

3. Legal Review on Accountability

Many opponents of AWS base their call for a prohibition on the fact that these systems would be unique, and their use could result in LOAC violations for which no one could be held accountable.¹¹⁴ A key step to holding personnel accountable is the creation of regulations and standards of care that can provide notice to personnel on the Standard Operating Procedures (SOPs) for AWS so that such

¹¹³ Jeffrey S Thurner, "Out of the Loop": Autonomous Weapon Systems and the Law of Armed Conflict', *4 Harvard National Security Journal Vol. 231*, Massachusetts, Caspersen Student Center, p. 77.

¹¹⁴ Tim McFarland, Tim McCormack, *Mind the Gap: Can Developers of Autonomous Weapons Systems be Liable for War Crimes?*, Newport, U.S Naval War College, p. 18-19.

personnel knows what actions committed by the AWS implicate Individual Responsibility.¹¹⁵

Accountability for the remote supervisor who is actively monitoring the AWS through a live feed would not be so different from the tactical commander who orders and specifies a mission for the AWS. In both situations, the supervisor and the commander would not actively be in the AWS' decision loop. Command responsibility seemingly applies in each case because both the supervisor and commander are expected to maintain operational control of the AWS as with any military equipment under their command.¹¹⁶

The accountability of Autonomous Weapons Systems characteristics above should not be mistaken for uncontrolled enthusiasm. While Autonomous Weapons Systems have extraordinary capabilities, experts have not yet analyzed those strengths together into a system that will pass a weapons review and be suitable for deployment against humans in an armed conflict. In dealing with AWS, a suitable mechanism for accountability is the familiar doctrine of command responsibility. However, on the issue of command responsibility, the commander can be held directly responsible when the commander gives an illegal command to subordinate on using Autonomous Weapons Systems.

¹¹⁵ Benjamin Kastan, 2013, "Autonomous Weapons Systems: A Coming Legal 'Singularity'?", *Journal of Law, Technology and Policy* Vol.45, No.1, Pennsylvania, College of Law, p. 66.

¹¹⁶ Christopher Toscano, 2015, "Friend of Humans": An Argument for Developing Autonomous Weapons Systems, *Journal of National Security Law & Policy* Vol.8, Washington DC, Georgetown Law, p. 236.

International Humanitarian Law regulates activity during armed conflict and situations of occupation. Also, regulate the principle that must be applied in a conflict situation and the body of law that regulates the recourse to armed force. On the use of Autonomous Weapons Systems, there are three main principles that must be considered. Those are the principle of Distinction, Proportionality, and Unnecessary Suffering.