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The Status of Autonomous Weapon in International Humanitarian Law: Implications, Issues and Recommendations

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Abstract

The use of Autonomous Weapons System (hereinafter AWS) in modern warfare poses serious threats to the survival of humankind. Autonomous Weapons System are types of weapons which do not need any human command or control and it can attack and kill anyone coming in its way regardless of that person's status. Autonomous Weapons System can also use disproportionate force against civilians and enemy combatants. This research focuses on the usage of Autonomous Weapons System in modern warfare. Qualitative and analytical methodology is deployed to critique the use of Autonomous Weapons System during armed conflict. This is argued that the use of Autonomous Weapons System during war is outside the purview of International Humanitarian Law (hereinafter IHL) hence there is an urgent need to work on the guide lines and rules to limit its use or place complete prohibition on its use if prior is not under the ambit of International Humanitarian Law. The study finds that Autonomous Weapons System fails the tests of proportionality and distinction enshrined in International Humanitarian Law.

Keywords: Autonomous Weapons System, Artificial Intelligence, International Humanitarian Law, Geneva Conventions, International Committee of Red Cross.

Introduction

At the beginning of the last century, air warfare and long-range missiles felt like science fiction, but they are reality now. The use of AWS challenges the rules of war which require warring parties to balance military necessity with the interest of humanity. These rules are enshrined in IHL. In fact, it was the International Committee of the Red Cross that pushed for the creation and universal adoption of these rules. Starting with the very first Geneva convention in 1864 these rules have remained flexible enough to encompass new developments in weaponry staying as relevant today as ever, but

these laws were created by humans for humans to protect other humans. Fully AWS can be defined as

“a weapon, which is once activated, can select any target to attack and get engage with it, without any intervention of human.”

On the other hand, semi-autonomous weapons can be defined as such weapons, which will require no guidance once it is fired but it will only hit the that target which was selected initially (USA Department of Defense, 2012). So here one of most important question arises i.e. can a machine follow the rules of war? a question which is not properly answered yet. This research aims to argue that the use of AWS falls outside the scope of IHL and particularly its two important principles i.e. the principle of proportionality and distinction, therefore, a specific set of rules shall be put forwarded in this regard which shall restrict the use of AWS. This study will also avail an opportunity to explore the possibility of bringing AWS under the principles of IHL, and if it is not possible to do so, then there is no other way but to place total prohibition on the system.

Concept of Autonomous Weapon

(Niki Clark, 2018) Humanity is confronted with a grave and tough challenges in future especially with the rise of AWS. Initially there was no concept of drone but with the passing time the use of drone has tremendously expanded, similarly the interest in the AWS has increased. The fact cannot be denied that both autonomous and semi-autonomous weapons will increase the cost with respect to IHL in battlefield and will reduce the accountability for war crime. AWS and its regulation under IHL is one of most compelling and complex topic not only with regard to legal experts, ethicist, military planners but also for whole of the world due to rapid increase in artificial intelligence, more particularly looking it in the terms of autonomy and use of force (Bruce Jones, 2018). The advancement in modern militaries is visible on the face of the world and via different means it is evident how they are automating everything from equipment maintenance and personal system to surveillance drones and to robots, even some of the countries are majorly focusing upon development of systems like Iron Dome.

Statement of the Research Problem

The fact cannot be denied that the advancement and the perks which Artificial Intelligence (hereinafter AI) have achieved so far, as it is helpful in every field of life, so has the impact and contribution in lethal AWS, as it can locate, identify and kill their targets without any input from a person. These weapons would react too fast for a human to maintain meaningful control; they could be created for the purpose of mass destruction because it can be programmed to kill innocent civilian of a specific ideology; also, they can be small enough to enable the assassination of any sole person. In an annual meeting of AAAS, 2019, Dr. Walsh said that:

“We must take the opportunity to ban lethal autonomous weapons now or bring it in compliance with principles like, principle of necessity, proportionality and distinction.”

Looking from perspective of IHL, these lethal autonomous weapons are visible threat to human security. Time and again it is seen in different parts of world where robotic soldiers, weapons controlled with AI, other automated bomb and deadly weapons have killed many of soldiers and civilians regardless of any conflict. All this indicates that for the preservation of human right, morality, security and justice, the AWS must be regulated by separate piece of law in addition to current laws (IHL, IHRL, IL) as the later set is silent for now (Peter Asaro, 2013). Every law in this world is protecting human rights or it could be said that the basic virtue of every law is to protect human life and his rights but in contemporary scenario, no one can guarantee what could happen

because of use of AWS. Considering the above, this study argues that the use of AWS falls outside the scope of IHL and its principles; therefore, there should be placed a complete on the system.

Aims and Objectives

There is no specific treaty of IHL which could specifically regulate AWS, but it is unanimously accepted that the use of these weapons system must comply with the principles of IHL. (Neil Davison, 2018) Those states involved in developing and using of autonomous weapons shall ensure this responsibility. A state's military shall be capable of conducting hostilities in accordance with its international obligation in respect of all above mentioned issues and the obligation of a state to conduct legal review of new weapons is laid down in Article 36 of Additional Protocol (1) to the Geneva Convention. All these mentioned issues lead us to think once before legalizing the use of such weapons or if these weapons are allowed to use then further questions would arise such as the accountability in case of violation, the extent of use of such weapons, the legal implications and its compliance with principles of IHL. Based on all the content aforesaid, this paper aims to:

- a) To highlight the issue of AWS in the light of IHL, IL, IHRL.
- b) To make evident understanding about the concept of lethal AWS and its governing from every perspective under IHL.
- c) To analyze the current regulatory principles/rules regarding lethal weapons and finding the lacunae in IL, IHL, and IHRL.
- d) To present such guidelines and recommendations which will be covering the grey area present in this regard and recommendation regarding the protection of human rights by banning the usage of AWS in modern warfare.

Research Questions

Following are the research questions as under:

- 1) What are the important conventions and laws regulating the conduct of war?
- 2) What are the various principles enshrined in the IHL?
- 3) How does the use of AWS violate the principle of distinction and principle of proportionality?
- 4) Why there is a need for total prohibition of AWS in modern warfare?

Organization of the Study

This research work is divided in five chapters and basic focus will be on IHL, Principles of IHL and the compliance of AWS with these principles. The first chapter is introductory chapter, which elaborates what is the main issue, main argument and what are the aims and objectives of this research work. Second chapter deals with literature review in which it is explained that what are the challenges confronted by IHL along with published work of scholars and explores the possibility of finding a research gap or niche in the already published work. Chapter three covers basic understanding of IHL, how it governs the conduct of work and why it is so important and different as compare to other laws. Chapter four specifically talks about in detail about the two and very important principles of IHL and that are principle of proportionality and principle of distinction. This chapter basically critiques the usage of AWS in armed conflict. Chapter five provides reasons and recommendations which are considered as necessary to put a total prohibition on the use of AWS.

Research Methodology

Research methodology is the 'how' part of any research. It is one of the most important questions in doing research. As a result, a mixed methodology i.e. qualitative research and analytical research

methods has been adopted which helped in collecting the primary. This method helped in investigating and gathering the data from concerned individuals. (Tashakkori & Teddlie 1998) also adopted this methodology in various research works. After collecting the primary data in this research work, secondary data collection sources are also considered, because the arena of the title is quite vast so to cover it in every possible dimension, reliance is made on both types of resources. Since AWS is developed by powerful states to defend themselves from external aggression comes under conservative paradigm, but the use of AWS at the same time poses threat to the lives of many including women, children, and other civilians. So, qualitative methodology is the right methodology to be deployed to collect data on contemporary scenarios and developments and the possible use of AWS in modern warfare. Throughout this study, critical analysis techniques will be used to critique the usage of AWS in armed conflicts or wars.

Literature Review

This section will critically review most of the published work about Autonomous Weapons System (hereinafter AWS). The main purpose of the chapter is to locate or identify a niche or a gap in the already published work on AWS. Secondary purposes include to position this work in a fashion to fill the niche with an original and suitable scholarly work; to comprehend AWS and its operation during modern warfare; to highlight challenges AWS might pose to International Humanitarian Law; and to present therein few research questions carrying forward this thesis. Due to development in technology leads, there is rapid increase in the advancement of military technology. Such development also brings a rapid change in the working of machines and computers as they minimize the work of human beings.

As technology advances the use of Artificial Intelligence (hereinafter AI) in the use of modern weapons including AWS also increases. There was a time when use of AWS was a future approach, but such weapons have been developed and used in certain cases. (Future Life Institution, 2015) After the development and use of gunpowder and nuclear weapons, AWS are considered as the third revolution of warfare. Currently in further development, such weapons are algorithmically controlled that can take the decision to target the enemy on their own, without any intervention from human being (I.C.J, Adawa v. Rasasa, 2019). There is a race of eager among various countries to be the first one to fully develop AWS and get the advantage of it, contrary to that, different scholars and human right activists around the world have opinion that AWS are evident threat to society and it shall be banned. Therefore, Liberal Critique research methodology is deployed to set ground for critiquing of AWS in modern warfare.

The Existing Framework of International Humanitarian Law

Discover the ICRC, (International Committee of the Red Cross, 2005) listed most articulately that, International Humanitarian Law (hereinafter IHL), also referred to as the Law of Armed Conflict or the Law of War, “*is the body of rules that, in wartime, protects persons who aren't or are not any longer participating within armed conflicts*” and limits the means of warfare to prevent suffering which could be caused to human during armed conflicts. The principal instruments of IHL are the four universally ratified Geneva Conventions of 1949 also the three Additional Protocols of 1977 and 2005, as they stipulate that civilians and wounded or captured combatants must be treated humanely. While the principles of IHL *jus ad bellum* refers to the set of lawful criteria considered before engaging in war, and *jus in bello* is that the law that governs how warfare is conducted, regardless of whether the reason for war is just. It works to humanize war, and protect civilians by creating distinctions (the principle of distinction, to be discussed in detail in chapter Three) between who and what could also be targeted in conflicts, how this targeting is executed, weapons allowed, and therefore the rights and obligations of combatant forces (Schmitt, Michael, 2007). Within the laws of

war, principles of distinction, proportionality (to be discussed in detail in chapter Three), and necessary precaution for minimal effects on civilians are essential to how soldiers may participate in combat. Accordingly, IHL focuses on governing “*how military operations may happen*”, rather than “*the legality for the rationale of why they happen*”.

Different Challenges Confronted with IHL

In a report of the United Nations Security Council, published in 2010, on the protection of civilians in armed conflict, the Secretary General places an emphasis on the need of such approach which will improve the compliance with law, he stated:

“Improved compliance with international humanitarian law and human rights law will always remain a distant prospect within the absence of, and absent acceptance of the necessity for, systematic and consistent engagement with non-state armed groups. In case of Afghanistan, Colombia, the Democratic Republic of the Congo, the occupied Palestinian territory, Pakistan, Somalia, Sudan, Uganda any other place, shows that lives can be saved by engaging armed group’s compliance with international humanitarian law in their combat operations and general conduct, gain safe access for humanitarian purposes and dissuade them from using certain sorts of weapons” (UN Security General, 2010).

The fact cannot be denied that civilians have always remained the primary victims of violations of the principles and Law of War by either party, state representatives or non-state groups. Civilians have remained the primary victims of violations of IHL committed by both State parties and non-State armed groups. Purposively attacks on civilian, illegal detention, force displacement, and destruction of property of civilian population are just few examples of prohibited acts which are conducted when proportionality and distinction principles of IHL are neglected. In different parts of world individual civilians have been victims of illegal acts such as, forced disappearance, physical torture, cruel treatment, murder, and rape and other sort of sexual violence. Most of the time it is seen that person detained in result of armed conflict had been deprived of his very basic rights like, not an adequate place is provided to live, no proper treatment is given, no right to fair trial. (ICRC, 2007) It is noticed that many humanitarian organizations have face different sort of barriers while conduction their due duty effectively. In short civilians still bears the brunt of armed conflicts.

There is quite long list of issues to specifically discuss and work on issue of challenges that are confronted with IHL but for general understanding a useful outline has been drafted by the Geneva Academy International Humanitarian Law and Human Rights. It has categorized the factor into five main groups:

- Strategic Military Concerns.
- Likelihood of prosecution under domestic law.
- Lack of trust over international norms.
- Ideology as a cause for deliberate violation.
- Lack of knowledge of international law.

Elaborating the strategic military concerns, it refers to use of unlawful combatants, cluster bombs, child soldiers, killer robots and AWS. Important challenges to IHL are being highlighted here. Later, the study will focus on the use of AWS because this thesis critiques the use of AWS in modern warfare.

Understanding Autonomous Weapons System (AWS)

The AWS which is also known as killer machines are such devices that are lethal and it can explore the area where it is deployed, not only it explores the surroundings but identify the potential threat or target and on its own independently attack the target without the human intervention. Such weapons system performs just like the robots, as robots using its sensor gather the data and after gathering that information the robots analyze it to perform the assigned task. So according to the Experts meeting held at Geneva, 2014, an autonomous machine has an ability to perform its functions like robot, but it operates without human intervention or some external control.

Distinguishing Weapons Based on its Autonomy

Not all the weapons are said to be autonomous based on its functioning and control. So, the autonomous weapons based on control are distinguished into three categories;

Remote Controlled Weapon System

Such system needs some sort of operator to perform its function and it cannot perform its functions directly without the operator. It includes weapons on the ground or sea-level with a fire control system equipped in it.

Semi-automated Weapon System

Such system works without any external force that is controlling it but it is programmed to do that specific task. So, such weapons system works as per the rules that are stored in its program. This include ground missiles or air guns that shoot the target as soon as it approaches in the range.

Autonomous Weapons System

This is the weapon system that enjoys full autonomy without any intervention from any sort of external factors. Such weapon system is not only free from external control, but it performs its actions on its own based on the programs installed in it. (Thompson Chengeta, 2016) This system performs some critical calculations and carry out the actions regarding who to kill or not based on such calculations.

Based on such distinction, the autonomous weapons can be distinguished from the other weapons systems. Therefore, such system is defined as by US Department of Defense,

“A weapon system that, once activated, can select and engage targets without further intervention by a human operator. This includes human-supervised autonomous weapon systems that are designed to allow human operators to override operation of the weapon system but can select and engage targets without further human input after activation.”

Background of Autonomous Weapons System (AWS)

The AWS was just a fiction in the past but now it is a reality and now it is developing on a very fast rate. The weapon system which was just a theory is now developing because the military forces are now using such technology of robotic system for different purposes on land, air and under water and such weapon system evolved rapidly in the last few years like first there was some Direct Operator Control (DOC) weapons which are controlled by the humans physically, secondly there are introduced the Tele-operator Control where are also controlled by the humans but from a far distance just like a drone whose operator control it from a far distance, then comes the Semi-automated weapons that are programmed to do a certain task as per the program equipped in it. Finally, the unmanned weapons are into the play to respond to a potential threat.

Until now a lot of countries have autonomy in their weapon system, but it is subject to the human control like to defend the ship from air-strike, or air-guns which engage on its own upon the target but still there is a human control behind it. Considering the drones, there are features of the auto-pilot or landing but these features are just to provide the human behind that drone to focus on decision making regarding the delivering of weapons upon the target. There is autonomy present in the current weapon system but with the interference of a human to intervene with some unwanted outcomes. So according to Experts meeting of 2014 in Geneva, currently a weapon system can select and engage but a human can override it anytime.

Effects of Autonomous Weapons System (AWS)

The AWS which was just a science fiction is now the present. If it is the machines not the humans that are making decisions of life and death, then it will surely have some grave consequences. The rapid rise of the AWS is a threat to the humanity future. It has an adverse effect on the humanity because a machine no matter how perfect it is, one thing that it always lacks is the emotions.

Distinction Between Machines and Humans

(Experts Meeting Geneva, 2014) The skill set based on which the computer and humans work are completely different. Such as;

- Machine works by calculating numbers while the human's work based on reasoning.
- Machine can search larger data at a time while the humans work on some patterns.
- Machine responds quickly regarding the task allocated to it while the humans respond by after thinking about every possible measure.
- Machine carry out different tasks at a time whether complex or simple while the humans apply their experience to perform different tasks.
- Machine works based on data provided to it while the humans rely on the meaningful judgments.

From the above distinction it is clear that the machine always works on the basis of the data (in form of numbers) collected and stored by it whereas the humans work differently that is on the basis of the rationality and the judgments they came up with their experience. Therefore, even if the makers put a lot of efforts in the machine, they will lack this quality that the human possess, due to which its use will have the chaotic effect in the warzone.

Adverse Effects

Based on research and theories available in the present regarding the use of AWS, certain adverse effects of AWS are as follows:

Untested Technology

One of the major negative effect of the AWS is the element of practicality that is missing in the new technology of AWS. No matter how perfect a system is made, it will be tested in very controlled environment therefore to predict how it will work in the field is completely unpredictable. Of course, posing problems for proportionality and distinction.

Example

In case of a self-driving car, the car when was tested in the controlled environment with the human inspection it is a different experience but when such car is brought to highway for the practical use it

will be a complete un-predictable scenario. If based on such example the autonomous weapon is compared, then to test such system in a controlled environment is different and to deploy it in the battlefield will be a completely different experience that involves a factor of risk.

(Michael T.Klare, 2019) Considering this example, an automated system no matter how much trained it can never reach that point where it detects every outcome or a potential danger that might occur on the battlefield because such system can easily malfunction on the basis of a slight change from the actual representation of a specified task or by the way of hacking.

Risk of Misuse

One of the major effects of having these weapons is that if such weapons falls in the bad hands or a terrorist group then the results will be chaotic because such groups do not comply with any sort of law and they will use such weapons to target those areas where the humans cannot reach. (Ariel conn, 2018) The terrorist groups can also make such weapons themselves once they get hold of the technology because the material that is needed to make the weapons is easily available.

Niche or Gap in Already Published Work

Development in the technology is increasing which leads to the advancement of military technology. Such development also brings a rapid change in the working of machines and computers as they minimize the work of human beings. As technology advances the use of artificial intelligence in the weapons also increases by the armed forces. The use of autonomous weapons is a future approach, but such weapons are present even now therefore a lot of work regarding the autonomous weapons has been done, that include articles, documentaries and published research of different researchers. In all those published works there are certain gaps or loops which are left untouched by the researchers, such as;

(Rebecca Crootof, 2015) in her article defined the autonomous weapons and while making a comparison stated that these weapons are not the future they still exist and use by the armed forces of the state. In this article the writer generally covered all the things regarding the autonomous weapons where she discussed different approaches of the one's in favor or against the use of such autonomous weapons and suggested certain international implications on the use of autonomous weapons. But she failed to discuss the legal implications regarding the use of AWS with respect to the principles of proportionality and distinction.

(Jeffrey Thurnher, 2013) in his article while discussing the AWS explores the working of such AWS where he while discussing the working of such weapon system describe that such weapon system can select and engage the selected targets on its own without the human's involvement. The author described all possible consequences and challenges that might occur due the use of AWS. The author in this article generally covered about whether the autonomous weapons are lawful, application of humanitarian law with respect to such weapon system and the lacunae in law while using such weapons. In this article, the author discussed in detail about the use of autonomous weapons but failed to propose the possible solutions to fill the lacunae in law while dealing with such AWS and lacked to critique the use of such weapons in the modern warfare.

The existence of AWS is without any doubt is no longer just a future approach, these weapons do exist and present therefore there are certain pros and cons regarding the use of such weapons system. (Amitai Etzioni and Oren Etzioni, 2017) in their article stated that no doubt such weapons system will aid in the armed conflicts, but it will do more harm than good because it lacks or use very less human control. The authors in this article discussed the debate from both sides, the one in favor and the later against it, regarding the use of the AWS and proposes that such weapons use should be banned for

using by way of international agreements. The author here fails to critique remain focus on the use of AWS with respect to proportionality and distinction principles of IHL.

(Thompson Chengeta, 2016) in his article discussed about AWS with respect to international law where he worked on the factor of accountability that is “who would be accountable if someone is a victim of the autonomous weapon?” because the autonomous weapon works on its own without the human interference. As accountability plays a vital role in the international law thus the author writes that such autonomic nature creates an accountability gap which would affect the application of international law because the legal right of the victim will also be affected. The victim will face a lot of unfavorable challenges because use of autonomous weapon creates a liability on the user as well as the manufacturer who made such weapons, it creates a dual responsibility and such concept is missing in the international weapon law. The author in his work suggested prohibiting the providence of full autonomy to the weapon system and giving some control to the humans because this will remove the accountability gap. The author rather proposing a possible solution to the issue of accountability altered the concept of AWS which remove the essence of autonomy. Therefore, the author failed to have used proportionality and distinction in choosing the targets by AWS. This work critiques the use of AWS by focusing the two important principles of IHL that is the principle of proportionality and distinction.

Conclusion

International Law along with different organizations, institutions and forums are working to bring conduct of war in compliance with law and majorly it is taking place through IHL. IHL is referred as a body that lays down rules which shall be follow in warfare and it protect those who are not taking part in it. But there are quite large number of challenges which IHL face in compliance and the very current could be AWS. It is evident from the above work that if AWS is developed than as it lacked human control, the results will be disastrous. Therefore, many scholars worked on this issue but lacked in their work to address different solutions regarding this issue. They also failed to work on the major principles that includes principle of distinction and principle of proportionality to bring it in accordance with IHL. this world needs to be protected from every lethal action in any form and the above data shows that AWS could be one of the deadliest things ever witnessed by the race of humanity. The world order in every dimension is changing and God Forbids, if such technology falls in the hand of irresponsible and dangerous people or groups then the shape of this world would be the same. So, for this very reason, the United Nations, its principles organs and other international organization shall consider this issue as a matter of life and dead for the humanity and act in accordance with the guidance of IHL and IHRL to avoid the use of AWS for the better future of humanity.

Recommendations

There is a way forward which can be advocated to bring an end to the use of AWS in accordance with IHL or through any other treaty. These are as follows;

- 1) There should be an additional protocol to IHL to the total prohibition of the deployment or use of AWS. Economic sanctions should be proposed for states using AWS in any armed conflict.
- 2) There should also be a universal treaty for the complete prohibition of AWS. The treaty should provide for a committee and tribunal to probe into and prosecute any state involved in the deployment or use of autonomous weapons.

- 3) The use of autonomous weapons should be included in the list of crimes against humanity and International Criminal Court should also be given universal jurisdiction to hear and prosecute the uses of autonomous weapons during war or in any armed conflict.

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