AUTONOMOUS WEAPON SYSTEMS: A LEGAL CHALLENGE FOR INTERNATIONAL HUMANITARIAN LAW[1]

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ABSTRACT

The increasing deployment of artificial intelligence (AI) technologies has highlighted the need for the adaptation of legal frameworks and the rectification of regulatory deficiencies. The implementation of these technologies in the military domain and the diminishment of human oversight over weaponry given rise to a multitude of debates, particularly in the realms of law and ethics. There has been considerable worldwide resistance to the dehumanization of individuals into objects, stereotypes, and data points by lethal robots aimed at humans. This study will examine the novel security dangers presented by artificial intelligence driven military technology and autonomous weapon systems (AWS) within the framework of Ulrich Beck's Risk Society theory and International Humanitarian Law. In conclusion, the increasing deployment of AI technologies in civilian and military contexts presents both opportunities and risks that demand attention, particularly given the ethical concerns and debates surrounding autonomous weapons systems (AWS) due to the current deficiencies in international legal regulations.

Keywords: Artificial intelligence (AI), autonomous weapon systems (AWS), International Humanitarian Law, Killer Robots, Risk Society

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[1] Compliance with ethical principles regarding the relevant study has been declared.

OTONOM SILAH SISTEMLERI: ULUSLARARASI İNSANCIL HUKUK IÇIN HUKUKI BIR ZORLUK

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ÖZ | Yapay zeka (AI) teknolojilerinin giderek yaygınlaşması, yasal çerçevelerin uyarlanması ve düzenleme eksikliklerinin giderilmesi ihtiyacını ortaya çıkardı. Bu teknolojilerin askeri alanda uygulanması ve silahlar üzerindeki insan denetiminin azalması, özellikle hukuk ve etik alanlarında çok sayıda tartışmaya yol açtı. İnsanların ölümcül robotlar tarafından nesnelere, stereotiplere ve veri noktalarına indirgenmesine karşı dünya çapında önemli bir direnç oluştu. Bu çalışma, yapay zeka destekli askeri teknoloji ve otonom silah sistemlerinin (AWS) yarattığı yeni güvenlik tehlikelerini Ulrich Beck'in Risk Toplumu teorisi ve Uluslararası İnsani Hukuk çerçevesinde inceleyecektir. Sonuç olarak, AI teknolojilerinin sivil ve askeri bağlamlarda giderek daha fazla kullanılması, özellikle uluslararası yasal düzenlemelerdeki mevcut eksiklikler nedeniyle otonom silah sistemleri (AWS) etrafındaki etik kaygılar ve tartışmalar göz önüne alındığında, dikkat gerektiren hem fırsatlar hem de riskler sunmaktadır.

Anahtar Kelimeler: *Yapay Zeka (AI), otonom silah sistemleri (AWS), Uluslararası İnsani Hukuk, Katil Robotlar, Risk Toplumu*
JEL Kodları: *F50, F55, F59*

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1. INTRODUCTION

Artificial intelligence (AI) technologies are increasingly adopted in a variety of fields, both horizontally (across different sectors) and vertically (with greater intensity of use). Studies on the application of artificial intelligence technologies in military defense and security fields have brought to the agenda both the transformation that this technology can create in the nature of war and the ethical problems that can arise from the use of this technology ((Scharre, P. (2018), (Bartneck et al., 2020), (Raska & Bitzinger, 2023)). In different studies conducted in the context of international law, the responsibility of states has been addressed ((Schraagen, 2023) (Boutin, 2022) (Sati, 2023)). The emergence of Autonomous Weapons Systems (AWS) in military technology is becoming more obvious, given its potential use in armed conflicts, which generate fierce competition among nations. This situation has also sparked various discussions in the fields of international humanitarian law, international human rights law, and accountability. As a result, it is critical to address the legal issues involved with the use of such devices in armed circumstances. However, studies carried out within the framework of international humanitarian law and the issue of accountability have not been emphasized sufficiently. Furthermore, investments in this area are increasing in both civilian and military sectors. The opportunities provided by this technological advancement have brought along various discussions about the risks it has created as well. The use of this technology, particularly in the military field, and the emergence of lethal autonomous weapons have raised serious concerns, especially regarding law and ethics. The absence of international regulations and legal frameworks regarding the use of artificial intelligence technologies in the military field, and the decrease or complete elimination of human control over weapon systems, make it debatable who will be responsible, especially when such technologies are used. The transfer of decisions about a person's life to a machine has also raised concerns about human rights. In this context, a social movement comprising numerous civic organisations has emerged, advocating for the cessation of lethal autonomous weapons systems under the slogan "Stop Killer Robots!". This movement aims to reduce the autonomy of lethal autonomous weapon systems (LAWS) developed with the support of AI and to address the lack of regulation in this area under international law, focusing on the ethical concerns raised by AI technologies. These technologies not only raise ethical concerns but also social risks. In this context, the new types of uncontrollable and unpredictable risks created by modern technologies and scientific developments will be evaluated within the framework of Ulrich Beck's concept of the Risk Society.

This study examines the extent to which current legal restrictions can

address the ethical challenges and issues presented by autonomous weapon systems. What factors require enhancement and should not be overlooked in formulating international legislation concerning the utilization of these military systems?

Beck's theory is useful in understanding the technological risks created by autonomous weapons systems. Because, thanks to this approach, it can be clearly demonstrated that lethal autonomous weapons systems, which are a risk created by technological development, are a risk factor on a global scale. In addition, this approach, which states that individuals should take more responsibility in decision-making processes in risk societies, contributes to the highlighting of the human factor. Thus, the emphasis on both the risks created by this technology and the need to take responsibility for limiting these risks supports the basic approach of this study.

In the first section of the study, a conceptual framework regarding AWS and the degrees of autonomy among these systems will be presented without delving too deeply into technical details. The second section will focus on the rise of AI technology and the various issues that have arisen alongside this rise, particularly ethical concerns. In the third section of the study, the issues arising from the lack of regulation regarding AWS will be evaluated in the context of international humanitarian law.

2. CONCEPTUAL FRAMEWORK

The Risk Society, proposed by German sociologist Ulrich Beck, suggests that modern societies face risks that are more complex and global in nature, unlike traditional risks. In traditional societies, risks were primarily focused on natural disasters or individual issues, whereas in modern societies, risks are related to global threats created by technological advancements and industrialization (such as nuclear disasters, environmental pollution, climate change, biotechnology, and genetic engineering). The risks faced by modern societies are of a nature that transcends borders and affects not just a specific region or group, but all of humanity. To illustrate, incidents such as nuclear leaks or global warming can have adverse effects on communities in disparate geographical locations. In this context, a social dynamic is also being activated that transcends borders and cannot be framed by class categories, alongside the globalization of risks (Beck, 1992, pp.39-40). Moreover, the risks brought about by modernization hit back at those who produce it or benefit from it, much like a boomerang (Beck, 1992, p.23).

The risk society is a period in which individuals need to take on more responsibility in their decision-making processes. This is a situation that arises

with the diminishing function of the social structure to safeguard the individual. Moreover, most modern risks are unpredictable and uncertain. According to Beck, once the state begins to lose its capacity to prevent or manage risks, modern institutions such as science and technology, society starts to evolve from an industrial society to a risk society. The issue of regulatory inadequacy in industrial society is a significant factor in the emergence of these concerns (Beck, 1992, pp.48-49).

Beck emphasizes the dual role of science and technology in both providing solutions to problems and creating new risks. It emphasizes that science and technology are indispensable for the advancement of modern society, while also noting that they bring along unforeseen new risks. (Beck, 1992, p.59). In this context, it can be observed that one of the latest advancements in technology today, AI-based technologies, also brings unpredictable risks. The movement to Stop Killer Robots has emerged as a global social movement to draw attention to the increasing risks in a situation where unpredictability and incalculability rise with the removal of the human factor from the equation of AWS (Monroy, 2023).

One of the key areas of technological advancement in the 21st century is AI-supported technologies. AI technologies, which are increasingly widespread and intensifying in their applications today, bring along potential risks in addition to the benefits they provide. In this context, it can be posited that AI technologies have the potential to be both an opportunity for the advancement of humanity and a serious threat. Consequently, it seems that the technological developments in question have led to the emergence of new discussions. While there are numerous discussion topics due to the extesive range of applications of AI technologies and their dual-use nature (being used for both civilian and military purposes), this study will focus more on the use of AI technologies specifically in the military field and the ethical debates it generates.

The use of AI-supported technologies in the military field is becoming increasingly widespread. It is observed that major powers, especially those looking to increase their activities on a global scale, are investing more in AI technologies and developing strategies to advance these technologies (Madiega & Ilnicki, 2024). AI investments are increasing rapidly within the spending of the US Department of Defense, and the contract amount, which was $190 million in 2022, approximately tripled ($557 million) by August 2023 (Henshall, 2024). The Russian Defense Ministry, which has established a special department for the development of artificial intelligence and allocated a special budget for it, has not yet given a figure for the amount of spending. However, there is a strong possibility that the level of 650 billion rupees (about $7.3 billion) that the artificial

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intelligence market in Russia will reach in 2023 and the share of AI-based military technologies in the market will increase in the future (Starchak, 2024).

Despite the increasing demand from states for AI-supported systems, it has been observed that they remain indifferent to regulations regarding the conceptualization of these AI-supported systems. This situation give rise to discussions regarding the purpose and nature of the normative framework to be established. For this reason, it becomes essential to distinguish the concept/system of autonomy from the concepts that are directly or indirectly related to it. In this regard, a conceptual framework will initially be identified, a conceptual description will be made, and ultimately, an analysis of the political and normative structure will be made possible. In this context, the first concept to be addressed is "automatic." According to the definition in the Oxford English Dictionary, "automatic" refers to a mechanism that is operated by mechanical means or a self-regulating mechanism, an action performed without consciousness, in other words, without will (Oxford English Dictionary, n.d.). The second concept is the term "automated." The concept of automation refers to a structure designed to consistently and logically follow a predefined and categorized set of rules in response to inputs from one or multiple sensors, with the aim of achieving a specific outcome. (Williams & Scharre, 2015b, p. 32). The third one is "autonomous/autonomy." Both concepts, which are interrelated with each other, express the freedom to make decisions and demonstrate the ability to execute without any external intervention. (Scharre, 2018, pp. 27-28). The physical manifestation of the concepts of autonomy/autonomous is autonomous systems. Generally, autonomous systems based on AI can act independently by focusing on stimuli from sensors in order to achieve predetermined goals and carry out the necessary actions and behaviors in that direction. (Cardon & Itmi, 2016: 5).

Despite the aforementioned conceptual differences, a definitive definition of autonomous systems remains elusive. The definitions in the literature have been shaped around four main aspects: these include definitions expressed around the nature of the human-machine command and control relationship; definitions based on capability parameters; definitions structured within a legal framework that emphasize the nature of the tasks performed by the system; and definitions that address complex parameters (Özer, 2022, pp. 89-93). On the other hand, the shortcomings in the definition of autonomous systems are similarly reflected in their classification. There are different classifications by both international organizations and states on this matter. Indeed, the table below confirms the situation in question.

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Table 1: Classification of Autonomous Systems (Özer, 2022: 95)

	Category I	Category II	Category III
United States Department of Defense	Semi-Autonomous Systems	Human-Controlled Systems	Autonomous Systems
Human Rights Watch	Human-In-Loop Systems	Human-On-Loop Systems	Human-Outside-Loop Systems
International Red Cross	Remote Controlled Systems	Automated Systems	Autonomous Systems

Although systems have varying degrees of autonomy, fundamental characteristic elements can facilitate the differentiation of systems. Accordingly, the semi-AWS in the first category are those that can select targets by a human operator and apply force only at the command of a human. In such systems, human operators have absolute control at any stage, including the selection of targets, the prioritization of selected targets, determining when to engage with the target, and the ability to deactivate the system. (Washington Headquarters Services, 2012). Automated systems that operate without the influence of a human operator after being deployed are systems capable of detecting, selecting, and striking targets under the supervision of a human operator who can override their actions. Additionally, the force to be applied in automated systems takes shape through the loading of specific software into the algorithmic system before deployment. Autonomous systems can adapt to changing conditions without human control. Humans are absolutely outside of the cycle. Once activated, such systems can operate autonomously in achieving targets, meaning they can determine, identify, select, and engage with objectives without human oversight and control. (Wagner, 2016).

3. THE RISE OF AWS EQUIPPED WITH AI AND THE EMERGENCE OF A POTENTIAL THREAT

3.1. The Application of AI in the Civil Sector

It is observed that technologies supported by AI are increasingly being applied in a variety of fields. Smart city applications are increasingly being used in the civil sector for various purposes, including the development of customized learning programs in education, enhancing efficiency, creating innovative

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solutions for businesses, and improving decision-making processes. The rise of AI-supported technologies, utilized in various sectors such as finance, education, medicine, commerce, transportation, and agriculture, has increased the interest of investors who see significant investment opportunities and profit potential in this field. By the year 2025, investments in AI, machine learning, and robotics technologies are expected to reach 232 billion dollars. (Mascellino, n.d.). The expected global investment amount in AI in 2025 is approximately 158 billion dollars. (Statista, 2023). In short, technological advancements in areas such as AI technologies, software, and robotics are expected to accelerate, creating profit opportunities for investors.

There is no significant societal reaction regarding the development of AI technologies and autonomous systems used in civil areas. However, there are concerns regarding digital dehumanization. One of the messages emphasized in the campaign to stop killer robots is that it is unacceptable to regard humans merely as data in terms of machines. Digital dehumanization refers to the process where individuals are reduced solely to data, leading to decisions and actions that negatively impact human life. This process undermines human dignity and diminishes the human qualities of individuals. (Automated Decision Research, 2023, p.2).

3.2. Military Use of Artificial Intelligence: Technologies and Ongoing Debates

The development of military technologies and/or the implementation of new technologies in the military domain also contributes to transformation in this area. The United States' endeavours to adapt and integrate the technological advancements of the late 1970s and 1980s into the military sphere, with the objective of transforming the manner and character of warfare, are designated the Military Technical Revolution (MTR). The technological developments based on information technologies that came to the forefront during this period and the opportunities they provided have enhanced the success of the U.S. military on the battlefield. The success brought about by the application of the opportunities provided by information technologies (or, in other words, the communication revolution) in the military field (especially the success of the United States in the Gulf War) has led to the frequent use of the concepts of MTR or Revolution in Military Affairs (RMA) in the 1990s. (Sloan, 2008, pp. 1-2, Hynek & Solovyeva, 2022, pp. 9-14).

The Military Revolution led by Western powers, particularly the United States, or alternatively referred to as the IT-driven Revolution in Military Affairs, continued to exist until the 2010s. During the period between 1970 and 2010,

which saw the United States and the West at the vanguard of military technology research and development, these technologies were disseminated to allies and strategic partners, particularly small and medium-sized states in Europe and East Asia. However, for the first time since the 2010s, a strategic competitor has emerged that challenges the military technological leadership of the United States, possessing its own developed military technologies and supported by new technologies: China. (Raska & Bitzinger, 2023, p.1). In short, the impact of the spread of AI technologies is fundamentally different from the spread of Information Technologies in the field of defense technologies during the period roughly between 1970 and 2010. The spread of AI technologies in the field of military defense could lead to the emergence of a new revolution in military technology.

There are various approaches to the application of AI technology in the military field. Attitudes towards the application of this technology in the military field can generally be divided into three groups: Enthusiasts (Like P.W. Singer), Pragmatists (Like Paul Scharre, James Manyika), and Deniers (Skeptics) (Like Stuart J. Russell, Noel Sharkey). Those who enthusiastically support the use of AI in the military often believe that AI will revolutionize the art of war by drastically altering the character and conduct of combat. They claim that AI technology will transform the nature of wars, as well as the reasons for their emergence. Those who approach the use of AI in the military from a pragmatic standpoint feel that, while not as revolutionary, it will result in substantial improvements in battle, notably in operational and tactical aspects, making war easier. Pragmatists claim that this technology will provide an advantage for countries that possess it by making military operations easier and more efficient, asserting that AI technologies will be increasingly utilized in military fields over time. Skeptics, while acknowledging the advancements in AI, raise criticisms regarding the various issues that could arise from the application of these technologies in the military field. The focus of his criticisms is that the military fields where AI is applied are not controlled and well-structured environments. Due to this characteristic, AI applications in military fields will not be able to realize their potential and will face various obstacles (technological, socio-political, organizational, ethical, and legal). Skeptics who believe that AI can influence the character of war acknowledge that this technology represents a technological advancement in warfare. (Raska & Bitzinger, 2023, p.13).

3.2.1. AWS as a potential threat

In a public opinion survey conducted by Human Rights Watch at the end of 2018, involving participants from 26 countries and carried out by Ipsos, respondents were asked about their views on fully autonomous weapons. According to the research findings, 6 out of every 10 people (61%) expressed their opposition to lethal autonomous weapons. This rate shows that the opposition to lethal autonomous weapons, which was recorded at 57% in a similar study conducted in 2017, continues and even has increased. (Deeney, 2019). According to the findings of the 2019 study, the countries with the highest support for lethal AWS were India (50%) and Israel (41%), while the countries with the highest opposition to these weapons were Turkey (78%), South Korea (74%), and Hungary (74%) (Deeney, 2019). Additionally, according to the findings in the same study, 66% of those opposing the mentioned weapons stated that these weapons cross a moral boundary and that machines should not be allowed to kill, while 54% cited the lack of accountability of machines as their primary reason for opposition. (Deeney, 2019). Ipsos, which conducted similar research at the beginning of 2021, has reached alike results in its recent public opinion survey conducted in 28 countries; the countries with the highest opposition are Sweden (76%), Turkiye (73%), and Hungary (70%), while the country with the highest support for autonomous weapons is again India (56%). This research shows that opposition to autonomous weapons is high among both men (60%) and women (63%), but on the other hand, it indicates that support for AWS is higher among men (26%) compared to women (17%). (Ipsos, 2021). The distribution of support for or opposition to autonomous weapons across specific age groups has also been included in the analysis of the same study. According to this, 54% of participants under the age of 35 are opposed to autonomous weapons, while among participants over the age of 50, this rate increases to 69%. (Ipsos, 2021). In sum up, opposition to lethal autonomous weapons continues to exist to a certain extent. The attitude that has found a certain degree of resonance among the public needs to be translated into democratic demands in the political arena, and social movements play a significant role in alleviating the concerns that this technology, which has not yet been clearly regulated, has generated among the people. The phrase "Killer Robots," which often sounds like a quote from a science fiction movie when mentioned in daily life, has also inspired a social movement. The Stop Killer Robots campaign, which serves as a type of umbrella organization where many national/international social movements collaborate, represents a global social movement. However, it would not be entirely accurate to evaluate this campaign as one of the classic social movements. In this context, the concept of "movement network" proposed by Alberto Melucci (Melucci, 1985, p. 799)

appears to be more functional in defining the relevant campaign. The fact that individuals within the movement network can engage in multiple activities simultaneously contributes to the formation of a network by facilitating the circulation of people and information among the groups that make up the network. (Melucci, 1985, p. 800). The structure of groups within the network that allows for multiple memberships is one of the fundamental characteristics of today's social movements, where emotional solidarity is a desired condition for participation.

The movement against AWS has also benefited from the wide opportunities offered by today's communication technologies. Thus, it has become possible for hundreds of groups that come together for very different purposes to act in cooperation on a specific common ground. In addition to groups generally opposed to armament, the campaign also includes movements against AWS like Article36, as well as efforts like Encode Justice that strive for AI technologies to be human-centered. Moreover, a number of groups promoting specific technological developments have also formed a unified front in order to address the ethical concerns associated with these developments. This movement, which is not fundamentally opposed to technological developments, focuses on the ethical concerns arising from the process of dehumanization caused by technology. The concept of dehumanization used here refers not to the notion of dehumanization that opens the door to racist approaches, but rather to the weakening and/or elimination of people's control over technological tools in a digital context. The elimination of human control creates ambiguity regarding who will be held responsible for potential harms. Moreover, the fact that essential life-and-death decisions in conflict/war zones are made by machines devoid of human emotions can lead to moral shortcomings. (Docherty, 2012, p. 38). The responsibility gap created by fully AWS will complicate the deterrence of national/international law violations and the provision of justice, as there are significant challenges in legally holding a commander, the manufacturing company, or the programmer accountable for the actions of a robot. One of the main mottos of the "Stop Killer Robots" campaign, "Less Autonomy, More Humanity," reflects the concerns at hand. (Stop Killer Robots, n.d.). Therefore, action must be taken before AWS, which pose a significant potential threat, turn into 'killer robots' in the near future (Ban 'Killer Robots' Before It's Too Late, 2022). In order to effectively address an imminent global threat, it is necessary to implement a global movement and a system of global governance.

3.2.2. AWS as an 'opportunity' for humanity

Just as those opposed to AWS have their own justifications, there are also various reasons put forth by supporters of such weapons. They believe that AI-supported technologies will revolutionize the way and nature of warfare, and as a result of this revolution, future conflicts will be waged between robotic entities and AWS. They also think that in the near future, there will be a divide between those who adapt AI to their military strategies and those who cannot adapt such technologies to their military strategies; therefore, AI-supported technologies should be regarded as an opportunity. (Raska & Bitzinger, 2023, p. 14). In addition, AWS can reduce the risks faced by human soldiers, lead to fewer human casualties, make quick decisions and take action due to very high information processing speeds. Thanks to its technological advantages, it can ensure that military operations are carried out with precision and help prevent human errors, reducing collateral damage (deaths and injuries of non-combatants, etc.) (Nasu & Korpela, 2022). In addition, it is expected that the materials used in military operations will be consumed more efficiently and effectively. Due to their capabilities in close-range combat, banning lethal autonomous weapons will hinder military technological advancements aimed at reducing civilian casualties, as they can lower secondary damage to a lesser extent. (Nasu & Korpela, 2022). It is also claimed that AWS could provide significant advantages to countries possessing this technology in terms of deterrence. This way, it can contribute to the reduction of potential conflicts and to international peace (in the sense of conflict-free). As can be seen, the priority of groups advocating for the use of lethal autonomous weapons is also "human." The argument that advocates of autonomous weapons emphasize the most is that human soldiers are at less risk and, due to operational precision, civilians suffer less harm from conflicts As the objective of this study is to examine the "Stop Killer Robots" campaign, rather than to evaluate the relative merits and drawbacks of the technologies under discussion, these sections have been presented in a concise manner. A plethora of sources exists regarding the impact of AI-supported technologies on military technologies and war doctrines, particularly since 2010.

3.3. AWS and International Law

The revolutionary advancements in AI are shaping not only states, individuals, and institutions today but also legal norms. Particularly in the context of military technology, the emergence of AWS is becoming increasingly evident due to their potential use in armed conflicts, paving the way for fierce competition among states. This situation also brings various discussions in the fields of international humanitarian law, international human rights law, and

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accountability. Therefore, it is necessary to address the legal issues arising from the use of such systems in armed conflicts.

3.3.1. AWS and international humanitarian law

The discussions related to AWS are centered around international humanitarian law. Therefore, the willingness to use or the existence of the use of AWS in armed conflicts establishes international humanitarian law as a valid normative framework in the evaluation of AWS. In this context, determining the compliance of AWS with international humanitarian law rules will not only provide legitimacy for the use of these systems but also serve as a legal basis.

In the context of international humanitarian law, there is no specific regulation that explicitly addresses the issue of AWS. This absence of clear guidance reflects the multifaceted and contentious nature of this subject. To illustrate, in his work entitled "A Legal Perspective: Autonomous Weapon Systems under International Humanitarian Law," Davinson posits that the deliberations in the extant literature regarding the deployment of AWS under international humanitarian law are superfluous. He advances the argument that the determination and supervision of compliance with international humanitarian law reside with the state that develops and utilises the system (Davinson, 2018, p. 7). With this emphasis, Davinson highlights the necessity for all weapon systems, including AWS, to comply with international humanitarian law during armed conflicts.

On the other hand, those who design and intend to develop and use AI-extended AWS in armed conflicts must conduct studies on two aspects of international law in this context. The first of these examinations is to determine whether the weapon or system is legal. Currently, there is neither any agreement nor any customary law rule that prohibits or restricts AWS. The second review is to determine whether the use of the existing weapon or system is prohibited. As a result of these reviews, the inability to identify any findings regarding the weapon systems reveals the potential for legitimacy in their use.

In essence, the probability of AWS infringing upon international humanitarian law on an individual basis is minimal. Nevertheless, the question of whether international humanitarian law can reasonably establish trust regarding the utilisation of such systems is becoming increasingly evident. In fact, the question raised necessitates a detailed and comprehensive examination of the principles of distinction, proportionality, military necessity, and precaution, which are fundamental cornerstones of international humanitarian law.

One of the most important obligations regarding the legality of new types of weapons, such as AWS, is the principle of distinction. The principle of distinction requires differentiation between civilians and combatants, as well as

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between civilian objects and military objects. The principle of non-discrimination, which necessitates an examination centered on sensory input, is approaching the capacity to distinguish between humans and non-human entities at certain standards due to technological advancements. However, the ability of AWS to distinguish between combatants and civilians, as well as military objects and civilian objects during armed conflicts, points to a problematic area. Although AWS possess advanced technology in terms of hardware and equipment, the changing nature of warfare, the need to revise the data flow in real-time decision-making, the transformation of wars into unconventional dimensions such as urban and guerrilla warfare, and the blurring of distinguishing symbols regarding the distinction between civilians and combatants complicate the applicability of the principle of distinction in armed conflicts, and may even eliminate it altogether. (Chengeta, 2015b, p. 93).

The principle of proportionality forms the most complex normative framework of international humanitarian law. As emphasized in the principle of non-discrimination, the distinction between civilian-combatant and civilian-object – military-object emerges as an issue that must be observed. However, sometimes an attack aimed at a legitimate target can cause collateral damage to civilians and civilian objects. In this regard, the principle of proportionality is manifested. The mental process required under the principle of proportionality involves making complex, value-based decisions that must be measured within the integrity of the conditions (Özer, 2022, pp. 179-180). If the attack to be carried out, in terms of conditions, represents an excess regarding the scope and nature of the principle of proportionality, then the attack should either be canceled, suspended, or revoked. The principle of proportionality points to a subjective area as a flat phenomenon, involving military and legal experience and the knowledge that arises during decision-making, and it requires human judgment. On the other hand, the principle of proportionality prioritizes qualitative data over quantitative data during armed conflict. AWS can clearly determine the expected military advantage of a limited attack within well-defined areas, over a limited time frame, and at specific tactical levels. Nevertheless, quantifying and assessing the military advantage of AWS in a dynamic environment is difficult, if not impossible.

The primary aim in armed conflicts is to achieve political and military objectives. However, the aim of achieving goals does not provide the warring parties with unlimited space. In accordance with the principle of military necessity, actions and behaviours that can be deemed reasonable and necessary for the parties to gain superiority over each other in the conduct of hostilities are considered to be militarily necessary. In other words, the principle of military necessity emerges as the concept of legitimizing and legally using a specific type

and degree of force that is necessary solely to defeat the enemy. (Sehrawat, 2017, p. 20). Like other principles of international humanitarian law, the principle of military necessity also requires human judgment and situational awareness. However, AWS are not only distant from human values and situational awareness, but they also lack the sufficient and necessary equipment and will to determine what is militarily necessary in armed conflicts.

Another important principle of international humanitarian law is the principle of precaution in attacks. The primary purpose and goal of the principle of precaution is to protect civilians and civilian objects from the effects of armed conflicts. However, the ambiguity of battlefields, along with the lack of human judgment and situational awareness that is essential for the adherence of AWS to the principle of precaution in attacks and the requirements of that principle, which include the principles of distinction and proportionality, poses an obstacle to their use in armed conflicts (Thurner, 2013).

Ultimately, the principles and rules of international humanitarian law are closely interconnected. In this context, any violation of a principle of international humanitarian law will inevitably lead to the violation of its other principles, which are interconnected. On the other hand, the issues raised by AWS in terms of international humanitarian law also bring to the forefront the topics of international human rights law, which is directly connected to international humanitarian law, and accountability.

3.3.2. AWS and international human rights law

The demilitarization of wars has negative effects on international human rights law, just as it does in international humanitarian law. Particularly, the use of AWS in armed conflicts significantly impacts many fundamental values of international human rights law, such as human dignity, the right to life, the right to privacy, the right to a fair trial, the right to effective legal remedy, and the right to be free from torture and inhumane treatment. In this context, it is necessary to answer the question of what type and extent AWS will affect the aforementioned rights: One of the main arguments put forward for the prohibition of AWS is based on the notion of human dignity, which is grounded in the value inherent to being human. Human dignity is the most fundamental and defining conceptual framework present at all stages and layers of international human rights law. The killing of a person by an autonomous weapon system, devoid of human emotions and values, undermines human dignity. Because those AWS, which are far from human empathy and devoid of emotion, are unable to grasp the value of individual life or the significance of the loss of human life (Özer, 2022, pp. 262-263).

The right to life stands out as one of the most fundamental rights, as the

existence of other rights is only possible with the individual's life. Whether depriving someone of the right to life in the conduct of hostilities is arbitrary and, consequently, its compliance with international law is determined by reference to international humanitarian law. The use of AWS in conducting hostilities and the subsequent violation of international humanitarian law rules leads to the infringement of the right to life.

In parallel with technological developments, data constitutes a fundamental component of the right to privacy, which is one of the human values and human rights currently under threat. The ways in which data is obtained are actively carried out not only through technology companies but also by governments. The surveillance, listening, and data collection capabilities of states are emerging as the greatest fear of individuals in the digital age. The characteristic structure of AWS has the potential to interfere with the exercise of that right. Because systems equipped with AI lack human sensitivity, they openly reveal situations such as detailed surveillance and data recording through existing sensors and cameras, rapid processing of the obtained data, and detection and tracking of targets or individuals through facial recognition systems, thereby violating the right to privacy (Singer, 2009, p. 322).

One of the issues raised by AWS is related to fair trial rights. The emphasis on equality stemming from human rights in the right to a fair trial can only be realized through humans, not through robots, machines, and autonomous systems. For this reason, it is not possible to attribute equality to AWS. Additionally, targeting carried out by AWS allows for the destruction of a target without giving the individual the opportunity to defend themselves. For this reason, the use of AWS in armed conflicts undermines the presumption of innocence and also infringes upon a person's right to effective legal recourse.

3.3.3. AWS and accountability

Penalties are corrective and restorative in nature. Penal practices have functions such as punishing criminals, preventing re-committing crimes, and deterrence. The use of AWS in armed conflicts is a subject of some discussions in international humanitarian law and international human rights law, as well as in accountability. In other words, the characteristic structure of AWS can cause significant difficulties in attributing responsibility arising from these systems. The potential of AWS to commit international crimes without meaningful human control brings the responsibility of robots, manufacturers, software developers, military commanders, and political decision-makers/civilians to the agenda in accountability discussions.

One of the prominent questions in these discussions is whether the system, namely the robot, can be held responsible for the actions taken. The

existence of punishment only necessitates the occurrence of intentional and unlawful actions. For this reason, AWS, having an algorithmic decision level and not having will, renders the system/robot void within the scope of criminal liability (Kangal, 2021, p. 65). On the other hand, if the manufacturer detects an error or defect in the product produced and does not notify those who buy and use these systems, criminal liability may be in question. However, the changing conditions of war and the lack of meaningful human control in such systems make it impossible to hold the manufacturer/seller criminally liable. Another debate in the literature is about whether responsibility will be attributed to the software developer. Software plays an important role in the mobility and decision-making mechanisms of AWS. If the software developer can establish an algorithmic order that centers on basic values, liability will be eliminated in this sense. However, the unpredictability of the actions of autonomous weapon systems and their ability to adapt to changing conditions, that is, their ability to make decisions on their own, allow these weapon systems to go beyond the algorithmic order created by the software developer. This eliminates the responsibility of the software developer (Okur, 2021, p. 38). On the other hand, the software process represents millions of algorithmic mechanisms and represents a system created by hundreds of software developers. Therefore, it becomes difficult to determine who is responsible.

Another debate focuses on political decision-makers and civilians (Allhoff et al., 2013, p. 356). The fact that political decision-makers allow the use of autonomous weapons systems in the conduct of hostilities brings up the issue of responsibility of politicians. However, the criminal responsibility of politicians for the decisions they have taken has not been recognized within the scope of either national or international mechanisms. The debate about the attribution of responsibility to civilians stems from the fact that they are the main actors in the selection of political decision-makers. However, such a claim is not very realistic.

Finally, the issue of the criminal responsibility of military commanders is raised. The military commander can be held responsible for the crimes committed by his subordinate, including the use of war tools and methods in armed conflicts (Henckaerts et al., 2005, p. 622 Furthermore, the military commander bears the responsibility of preventing a crime if he/she has reason to believe that it will be committed. This situation emerges as a sui generis responsibility. If an autonomous weapon system knows that such systems will commit a crime and does not take precautions against it, criminal liability may arise. However, the lack of meaningful human control in AWS and their ability to act on their own eliminates the responsibility of the military commander. In general, the use of AWS in armed conflicts creates a gap in various areas of

international law, namely international humanitarian law, international human rights law and accountability mechanisms. This allows for violations of basic principles and the normative order to occur.

4. CONCLUSION

The use of AI-based technologies in the military field reveals risks that are much more complex and uncertain than traditional dangers, confirming the ideas in Ulrich Beck's Risk Society approach. Autonomous weapon systems, where the human factor is excluded from the decision-making mechanism, are likely to cause irreversible errors, especially in unexpected and rapidly changing war scenarios. In such cases, it is very difficult to predict and control the risks in advance. In addition, the asymmetric relationship between countries with the technology in question and underdeveloped countries may cause these countries to feel threatened and attempt to achieve balance by using asymmetric methods such as cyber attacks. Global insecurity may escalate the arms race and the possibility of conflict. Beck notes that the risks are not just a technical issue, but also have social and ethical dimensions. The use of AI-based autonomous systems on the battlefield raises ethical questions.

It is seen that technological advances in fields such as AI and robotics have serious potential to both benefit humanity and pose threats that may harm it. Preventing and/or eliminating the dangers that may arise from the dual use of these technologies before they emerge will ensure that the destructive effects that may arise after they emerge will be avoided. However, it is not easy to convince people to take precautions against a danger that does not actually exist yet. The serious lack of accountability for AWS and the inadequacy of international legal regulations show that the claims put forward by social movements opposing AWS are not out of the question. In short, it is possible to say that the Stop the "Killer Robots" campaign, which was put forward to attract attention against a possible danger, is not a complete fantasy, and that if technological advancement continues at this pace, it has the possibility of becoming a reality in the medium term.

The process of creating international legal texts regarding the use of lethal autonomous weapons systems will be possible if the support of major powers that have made serious investments in these technologies can be obtained. The fact that international regimes have been established for very serious lethal threats such as weapons of mass destruction supports optimism about the use of autonomous weapons systems under a certain regime of international control, even if competition among global powers makes such governance very difficult to achieve in the short or medium term.

Risk society theory predicts that technological developments may create new problems that have not been addressed in terms of law and ethics. In this context, the question of who will be held responsible when autonomous weapons make a mistake becomes important. The developer, the user country, or the system itself? According to Beck's theory, modern risks transcend notions of individual responsibility and create situations for which global actors cannot be held accountable. To guarantee responsibility, the existing regulatory void in international law must be addressed, and international collaboration and governance must be secured, particularly among the major countries.

This study draws attention to the risks that may arise from the use of artificial intelligence-based technologies in the military field in the context of Beck's approach. Because these risks are more complex and unpredictable than traditional threats and can have transboundary and global effects. In addition to the limited number of studies that draw attention to the risk in question in the context of international humanitarian law, this study contributes to the literature by presenting a theoretical approach through the concept of Risk Society.

Systematic management, global legislation, and research on establishing ethical frameworks are crucial for mitigating the hazards associated with the use of artificial intelligence in military applications, hence enhancing the existing literature.

5. CONFLICT OF INTEREST STATEMENT

There is no conflict of interest between the authors.

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7. AUTHOR CONTRIBUTIONS

The authors' contributions to the study are equal.

8. ETHICS COMMITTEE STATEMENT AND INTELLECTUAL PROPERTY COPYRIGHTS

The study complied with the ethics committee principles and required permissions were obtained in accordance with the principle of intellectual property and copyright.

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