



## AUTONOMOUS WEAPON SYSTEMS – ETHICAL-RELATED CHALLENGES

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*The proliferation of artificial intelligence in the art of war introduces unprecedented challenges, prompting a critical examination of its impact on the moral action and responsibility of the parties involved. Thus, the use of autonomous weapon systems, capable of making decisions without direct human intervention, or even lethal ones of this type, is presented as a solution that can make a difference, both in present situations and, especially, in future ones. However, the solution is, from many perspectives, far from being a simplistic one, the situation being subject to debate, in relation to the international humanitarian law standards and the UN, NATO or even national ethical guidelines on autonomous weapons. Some of the perspectives of this debate, focusing not only on the definition of autonomy but also on distinction, proportionality and precaution, as fundamental ethical principles, are presented in this article. To meet the stated goal, the main research method employed is document analysis.*

*Keywords: lethal autonomous weapon systems; international organizations; regulations; ethical principles; AI;*

### INTRODUCTION

This article, which aims to present the main themes of the debate regarding the ethical challenges generated by the employment of artificial intelligence (AI) in autonomous weapon systems, is based on qualitative research, mainly entailing a systematic document analysis. In this regard, relevant content has been studied, and the information considered significant, obtained from open sources, has been categorized – AI researchers and developers, international organizations, academia, specialized departments in the military field – with the intention of achieving a systematized presentation of multiple perspectives, based on which conclusions can be drawn with a degree of objectivity as close as possible to the standard of a scientific paper.

It can be stated that AI is already omnipresent in our lives. More recently, generative AI has emerged, a category of systems that, based on impressive volumes of data with which they are fed, can generate content, in various aspects. Given the enormous potential for development, it is estimated that generative AI can overwhelmingly change the interactions of each of us with the world around, thus becoming a major investment area and a market thereof. Examples in this regard can be commercial platforms that use algorithms to recommend products to you, adjust prices and decide which promotions you see. Sometimes, the consumer is not even aware that a “discount” has been specially personalized. In this context, just as in the case of the development of nuclear weapons or in that of the launch of satellites, we can speak of an actual “AI arms race”, first among technology developers, and then in all areas of social life, the military included.

In this regard, especially in the current geopolitical climate, marked by multiple tensions, many actors on the international scene see the development of Autonomous Weapon Systems (AWS) or even of Lethal Autonomous Weapon Systems (LAWS) as a major advantage, capable of providing them with strategic superiority. In the absence

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of an internationally agreed definition, the main characteristic of LAWS is that of using AI to identify and neutralize human targets, without human intervention, which is why they are also called "killer robots". In this context, should the final decision remain with the human operator, it is necessary to mention the Decision Support Systems (DSS), which incorporate AI and which can also generate challenges, given that, although they are not kinetically involved in combat actions, they could influence the decision regarding the employment of LAWS and human fighters alike. Obviously, such perspectives provoke numerous debates, primarily regarding the ethical component, as they are not easy to accept without hesitation, especially considering the short period of time that has passed since their advancement and the fact that they are capable of generating major changes in the way war is waged, as well as in the norms and rules that have existed to date.

Regarding the concept of ethics, we specify that, originally, it, arising from the human Self, is connected with personality and morality. The root of the notion of ethics is in the Greek language, "ethos" meaning character. The first approaches to ethics come from the ancient period, this being a component part of the philosophical schools of thought. Thus, Socrates developed the theory of ethics, by attempting to substantiate basic notions, such as good/bad, duty, honour, virtue, honesty. As a scientific discipline, it has existed since the time of Aristotle, who dedicated to it one of his books, *The Nicomachean Ethics*, in which he stated that "the principle of the moral act, the formal element that determines the quality of an action to be specifically human, free and responsible, is the deliberate choice (which) is the decisive moment, marking the translation into act of the moral intention, a rational process preceded by deliberation on the choice of the appropriate means to achieve the proposed goal". (1988, pp. XII-XIII). Later, Albert Einstein (1953) expressed the idea that ethics is an exclusively human concern, not based on any superhuman authority. As can be seen, the subject has always aroused the interest of those concerned with living in a "better" world, attentive to the needs and aspirations of those around them, designed to appreciate true human values and promote exemplary models of behaviour that demonstrate responsibility for the situation of others.

In this context, it can be stated that AI, lacking its own consciousness, possesses a particular type of knowledge in an ethical sense, namely a copy of human experiences, interpreted ethically. The problem is that ethics does not arise only from knowledge, but from something superior to knowledge, namely from consciousness, which crowns the results of the fusion of the rational and emotional hemispheres. The knowledge to be imported will most likely be an algorithm resulting from rational analysis only, and not from emotional one, AI thus not acquiring an automatic possibility of empathy, but of mimicking empathy, through logical reasoning. As a result, AI will not be capable of manifesting resilient behaviour or other capacities for superior understanding of the analysed situations. Therefore, the AI decision can be controversial and labelled as unethical, because the AI, having no feelings, cannot appreciate the case on its own, but analyses it with the help of association classes, relating it to other known cases from the existing database, the centre of gravity of the analysis being thus on the degree of similarity with the situations in that database, the decision-making process being based on the decision associated with the most similar case in the database, not directly on the case under analysis. Consequently, the ethical quality of the AI-based decision will be limited, in the absence of the creative capacity, manifested by humans through consciousness.

### MAIN CONCERNS RELATED TO THE TOPIC AND REGULATORY FRAMEWORKS ESTABLISHED IN THE FIELD

In the above-defined context, on 28 July 2015, at an international conference on AI, approximately 20,000 people, including 2,981 researchers and developers in the field of robotics and artificial intelligence, signed an open letter expressing their concerns regarding LAWS and, in particular, the fact that such weapons select and engage targets based on predefined criteria, without human intervention. The letter states that autonomous weapons represent the third revolution in warfare, after gunpowder and nuclear weapons, and presents both arguments in favour of using such AI technology – reducing casualties by replacing soldiers with machines, and arguments against it – lowering the decision threshold for engaging in combat by increasing the speed at which such a decision is made.



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The aforementioned document also shows that such weapons can be produced at a lower cost than nuclear weapons, which means that it will only be a matter of time for all significant military powers to mass-produce them and, moreover, for them to end up in the hands of terrorists, dictators who intend to better control their population, military leaders who want to commit ethnic cleansing and so on, as autonomous weapons can be ideal for such tasks. Therefore, the signatories of the letter express their belief that an AI arms race would not be beneficial to humanity, as there are numerous other ways in which AI can make battlefields safer for people, especially civilians, without creating new tools for killing people, concluding that AI has great potential to generate benefits for humanity, and a military AI arms race should be prevented by a ban on offensive autonomous weapons that are not under significant human control (Future of Life Institute, 2015).

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Given that the subject under discussion is at the intersection of several fields of science, it is natural that debates on it should involve multidisciplinary teams, consisting of experts in international humanitarian law, representatives of the academic community, specialized institutes, as well as the military system, in addition to the community of AI technology researchers and developers. Thus, in what follows, we will present some of the main themes highlighted by such organizations.

#### International Committee of the Red Cross

With regard to the principles of International Humanitarian Law (IHL), they enshrine, following the ratification by the signatory state actors of the Geneva Conventions of 12 August 1949 and the Additional Protocols of 1977, the rights of military personnel not actively involved in hostilities, prisoners of war and the civilian population, in times of armed conflict, while also establishing the rights and obligations of belligerents, as well as the limits on the enemy's means of injury. Thus, it becomes obvious that the emergence of LAWS generates debates in this area, especially regarding the proportionality of means of attack and discrimination of targets.

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with a view to developing and adopting an appropriate legal framework for the use of autonomous weapon systems. In a summary presentation, the main expressed concerns relate to the fact that an autonomous weapon system, after its activation or launch by a person, initiates or responds to an attack based on a generalized "target profile". It means that the user does not know the target(s) and/or the location of the autonomous system's action, making it very difficult to anticipate or limit the effect, potentially involving allied combatants, non-combatants, civilians, or escalating the conflict in an unjustified manner. Essentially, these concerns relate to the fact that human decisions regarding life or death are replaced by processes based on sensors, software and machines. The ICRC therefore recommends that states should establish clear internationally agreed limits on autonomous weapon systems, with the aim of ensuring the protection of civilians, respect for international humanitarian law and ethical acceptability, as well as adopt new legally binding rules, possibly prohibiting those autonomous systems with a low degree of predictability, whose effects cannot be sufficiently understood and explained. Furthermore, recommendations are made regarding the prohibition of the autonomous weapon systems that are designed or used to apply force against individuals. As far as limits are concerned, they should take into account the types of targets, the geographical area of application, the human-machine interaction, in particular to ensure effective human oversight and the possibility of timely intervention/deactivation of the system (ICRC, 2021).

#### Stockholm International Peace Research Institute

In the same context, the *Stockholm International Peace Research Institute (SIPRI)* identifies, from a legal perspective, the main questions that should guide the development of a normative and operational framework for the use of LAWS, in compliance with IHL, which should also mention the best practices for developers, commanders and operators. In this regard, the following dimensions should be considered: personal – the type and degree of human-machine interaction required, permitted or prohibited by IHL, as a "subject" or "object" of military action; material – IHL requires, permits or prohibits legally binding value judgments from being entrusted in part or in full



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*LAWS cannot be developed and used without limits, as IHL already provides for the prohibition of any type of weapon (including LAWS) that: (a) has characteristics prohibited by an arms treaty or customary law; (b) is likely to cause unnecessary injury or unnecessary suffering; (c) is indiscriminate in nature; (d) is intended or can be expected to cause widespread, long-term and severe damage to the natural environment, noting that, in the case of the use of LAWS, the principles of distinction, proportionality and precaution are of particular relevance.*

to machines; temporal – the limits imposed by IHL on the time that can elapse between the activation of a LAWS and the moment when its operation must be suspended or terminated; geographical – the spatial limits (if any) imposed by IHL on where LAWS can be deployed and used. Combining these different dimensions and considering systematic responses, in the sense of minimizing the risk of interpretability, are essential elements not only for determining what would make a LAWS illegal per se, but also for assessing how people should exercise their legal obligations in the development and use of a LAWS – who should do what, when, where and how, which leads to assuming responsibility for the use of LAWS. (Boulanin, Goussac, Brunn, 2021, pp. 2-4).

The mentioned report concludes that LAWS cannot be developed and used without limits, as IHL already provides for the prohibition of any type of weapon (including LAWS) that: (a) has characteristics prohibited by an arms treaty or customary law; (b) is likely to cause unnecessary injury or unnecessary suffering; (c) is indiscriminate in nature; (d) is intended or can be expected to cause widespread, long-term and severe damage to the natural environment, noting that, in the case of the use of LAWS, the principles of distinction, proportionality and precaution are of particular relevance. In terms of liability, it must be technically possible to trace whether a violation of IHL is the result of conduct and/or decisions made by certain individuals (including State agents), which presupposes the ability to anticipate, manage and monitor the operation, performance and effects of LAWS. In this regard, a legally problematic lack of predictability could be caused by a design feature that would generate an inherent unpredictability in the system's behaviour, by a failure to comply with the necessary rules in the development and procurement process, meaning that the performance and functioning of the system have not been assessed through appropriate tests and evaluations, as well as by a user's decision to implement a LAWS in an environment that is not sufficiently predictable in itself. Furthermore, the use of a LAWS whose functioning, behaviour and effects cannot be limited in compliance with IHL, in particular the principles of distinction, proportionality and precaution, would be unlawful. (Ib. pp. 51-54).

### Academic community

As for a synthesis of the opinions on LAWS, presented by the academic community, they are summarized below, starting from the fact that there is still no agreed definition of “autonomy”.

Thus, autonomy is viewed in relation to the degree of human intervention in the action of particular weapon systems, which, in the opinion of the representatives of the academic community, generates questions regarding certain dimensions of ethics as well as of human dignity. A synthesis of the relevant bibliography, compiled by teaching staff working in the field of engineering, identifies (in)stability, responsibility attribution, complexity and uncertainty, asymmetry and mutual risk, as well as the fact that such systems cannot understand people's values, with reference to human dignity, as main aspects that must be taken into account by decision-makers (Zaccharias, Schmitt, 2021).

With regard to (in)stability, the cited material shows that, on the one hand, LAWS supporters frequently emphasize the military advantages that could be obtained by using such systems as a force multiplier, allowing battlefield effectiveness, significant resource savings, access to hard-to-reach battlefields, as well as reducing human suffering and loss of life, by involving non-human combatants. On the other hand, LAWS critics warn about the potential of autonomous systems to introduce various types of instability, such as: military instability, through proliferation/arms race, the particular systems being developed in both military and civilian environments; crisis instability, through accelerated escalation from peace to war, or from lower to higher levels of violence during an existing conflict, exceeding the limits of specific commitments. In terms of assigning responsibility for selecting a target, the involvement of non-human agents, in fact complex networks of human and technological actors – engineers, programmers, military decision-makers, various technologies interacting with the system, makes attribution extremely difficult. As for complexity and uncertainty, much of the debate surrounding the ethics of using LAWS is based on the assumption that fully autonomous systems will eventually outperform humans and systems with human involvement in targeting. Even if this is not the case, determining an object as an appropriate target is extremely



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*As AI-enabled systems become increasingly integrated into combat systems such as LAWS, we have identified a piece of research in which the autonomy spectrum framework is applied to real-world scenarios of military operations in which such technologies are involved, citing the example of the MQ-9 Reaper drone used by the US military, which demonstrates an intermediate level of autonomy, requiring human intervention for critical decisions such as engaging a target.*

complex and context-dependent. Numerous analyses highlight the technical difficulties that autonomous systems would face in distinguishing between civilians and combatants, as well as the danger posed by the lack of situational awareness of a technological system. Furthermore, the inherent complexity of such a fully autonomous system increases the likelihood of accidents, especially given that multiple fully autonomous systems deployed in the same area have the potential to generate conflicting objectives. In this context, the asymmetry and mutual risk generated by the involvement of LAWS in the battlefield are also debated. Thus, LAWS proponents advance the ethical conduct that such systems could demonstrate, more accentuated than that of human combatants. On the other hand, critics of such systems emphasize the need to consider more aspects of the principles of war, especially regarding the decision to engage (*jus ad bellum*), in addition to those that apply to conduct during war (*jus in bello*), arguing that the degree of asymmetry represented by LAWS is unprecedented and that, therefore, the lack of mutual risk and reciprocity between combatants would undermine the existing ethics of war, on the one hand, and lead to a potential for destruction for non-combatants that would outweigh the possible benefits of LAWS, on the other hand. (Ib.).

Other perspectives on the transfer of life-and-death decisions to autonomous systems highlight how emerging technologies, including LAWS, intersect with other fields, such as philosophy, ethics being one of its major branches, justice or international law. It raises a debate about the rules of engagement as dictated by existing legal frameworks.

As AI-enabled systems become increasingly integrated into combat systems such as LAWS, we have identified a piece of research in which the autonomy spectrum framework is applied to real-world scenarios of military operations in which such technologies are involved, citing the example of the *MQ-9 Reaper* drone used by the US military, which demonstrates an intermediate level of autonomy, requiring human intervention for critical decisions such as engaging a target. The combination of human control and machine autonomy is considered to guarantee a balance between operational efficiency and ethical considerations, aligning with the principle of “*significant human control*” advocated by the US Group of Governmental Experts (US GGE)

on LAWS. In this context, it is also mentioned the Israeli Harpy system, which operates with much greater autonomy, being designed to detect, engage and destroy radar transmitters autonomously, without human intervention. By applying the Autonomy Spectrum Framework (ASF) to these real-world systems, it becomes apparent that different levels of autonomy generate distinct operational benefits and risks. In environments where rapid decision-making is essential, increased autonomy can be advantageous. However, in complex combat zones where civilian presence is high, greater human oversight is essential to minimize unintended harm. This practical application highlights the need for flexible frameworks that can adapt to the varying requirements of different combat situations. (Marsili, 2024, p. 63).

Thus, starting from the reality that the implementation of LAWS represents a challenge to the established norms of international humanitarian law, in particular the principles of distinction, proportionality and necessity, essential to ensure that military actions avoid excessive harm to civilians and non-combatants, the UN Group of Governmental Experts on LAWS (UN GGE on LAWS) has been at the forefront of the international debate on how to regulate these systems, repeatedly stressing the need for “*significant human control*” over autonomous systems to ensure that they comply with international legal obligations and highlighting the possibility of introducing legally binding treaties to regulate LAWS, in the sense of preventing them from taking unilateral decisions on the use of lethal force without reaching a consensus. (Ib., pp. 64-68).

#### US Department of Defense

In this sense and in accordance with the above-mentioned aspects, namely the ASF, the US Department of Defense (US DoD) developed, in 2012, Directive 3000.09, updated in January 2023, with reference to the autonomy of weapon systems. The mentioned directive defines LAWS as “*weapon system(s) that, once activated, can select and engage targets without the subsequent intervention of a human operator*”, in contrast to human-supervised autonomous weapon systems, in which operators have the ability to monitor and stop the engagement of the target by a specific type of weapon. Another category is represented by semi-autonomous weapon systems, which “*engage only individual*



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Regarding the role of the human operator, DoDD 3000.09 requires that all systems, including LAWS, should be designed to “enable commanders and operators to exercise appropriate levels of human judgment over the use of force”, with appropriate being a flexible term. What is “appropriate” may differ across weapon systems, domains and types of warfare, and operational contexts. Furthermore, “human judgment over the use of force” does not require manual human “control” of the weapon system, but rather human involvement in decisions about how, when, where, and why the weapon will be used, “in accordance with the law of war, applicable treaties, rules of weapon system safety, and applicable rules of engagement”. In this regard, DoDD 3000.09 requires the existence of appropriate training (tactics, techniques, and procedures) and doctrine, “reviewed periodically and used by system operators and commanders to understand the operation, capabilities, and limits of system autonomy under realistic operational conditions”. DoDD 3000.09 also requires that the software and hardware of semi-autonomous and autonomous weapon systems should be tested and evaluated to ensure that they function as expected in realistic operational environments against adaptive adversaries that take realistic and practicable countermeasures. (Congressional Research Service, 2025, pp. 1-2).

#### UN Office for Disarmament Affairs

The United Nations position on lethal autonomous weapon systems was expressed by Secretary-General António Guterres as early as 2018, calling for such systems to be politically unacceptable and morally repugnant, and calling for their prohibition under international law. The call was reiterated in 2023 in the new *Agenda for Peace*, which recommended that, by 2026, states should adopt a legally binding instrument to prohibit lethal autonomous weapon systems that operate without human control or oversight and that cannot be used in compliance with international humanitarian law, as well as to regulate all other types of autonomous weapon systems (Guterres, 2023).

In this context, in 2023, based on the proposals of the states, the topics of a possible legislative approach were discussed in order

to prohibit or restrict the use of certain weapon systems that could have indiscriminate effects, based on the existing Convention on Certain Conventional Weapons (CCW), adopted in Geneva on 10 October 1980, to enter into force in 1983. Thus, the United Nations Department for Disarmament Affairs (UNODA), through the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapon System, developed, in 2023, the *Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects/ CCW/GGE.1/2023/CRP.1*. Among the themes, we mention that weapon systems should not be designed to carry out attacks on the civilian population, to cause, accidentally, loss of human life and excessive damage, as well as that autonomous functions in weapon systems should not be designed to carry out attacks that would not be the responsibility of the human command under which the particular systems would be used, being necessary that they should be developed so that their effects in attacks could be anticipated and controlled, according to the principles of distinction and proportionality (CCW/GGE.1/2023/CRP.1).

Considering the presented aspects, it becomes clear that the proliferation of AI and its use in conflicts, especially through integration into LAWS, introduce unprecedented challenges, which generate debates related to the types of action considered moral and the attribution of responsibility, all of which being essentially related to the reshaping of our relationship with violence that, at the limit, can mean the erosion of moral responsibility and the normalization of brutality, implying numerous redefinitions and recontextualizations of conventional notions of ethical conduct in armed conflicts. The research conducted by a multidisciplinary academic team has highlighted the following main themes in this regard, namely: the integration of AI-enabled weapon systems facilitates the objectification of human targets, leading to an increased tolerance for collateral damage; the biases regarding automation and technological mediation, through the tendency to give them too much trust, weaken moral vigilance among the operators of such systems, diminishing their capacity to make ethical decisions; the industry dynamics, particularly venture capital funding, shape discourses around military-usable AI, influencing



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the perceptions of the responsible use of AI in warfare (Schwarz, 2025). In this context, in direct connection with the ideas of discourse, reality, and norm, we will present some elements of discourse normalization in the case of the use of drones.

### DISCOURSE NORMALIZATION IN THE CASE OF DRONE USE

As can be easily grasp from the above, given the contextual complexity as well as the fact that there are both supporters and opponents of the LAWS involvement in armed conflicts, it becomes evident that the related discourse requires a process of normalization, aimed at increasing not only the number of supporters but also the degree of acceptability of drone use. In general terms, discourse normalization refers to the way of framing and presenting a controversial, innovative or difficult-to-accept situation, with the aim of determining the perception of that situation as rational, normal or necessary, as well as of introducing it into everyday language so that it could be internalized into social understanding.

An example in this regard is the use of drones, Unmanned Aerial Vehicles (UAVs). Initially, drones were perceived as an innovation worthy of science fiction scenarios, being associated with a possible existential threat, through their ability to fly over territories, especially dangerous or difficult to access by other means, to collect and transmit information, as well as to strike, with precision, from a distance. Consequently, the use of attack drones generated debates regarding sovereignty, legality and the number of collateral victims, especially among the population and civilian infrastructure. Subsequently, the discourse relative to the use of drones was normalized, primarily by changing the framework, in the sense of shifting the emphasis on commercial, utilitarian and recreational drones, which were received with neutrality or even enthusiasm, considered necessary, especially through the association with the idea of convenience. Then, by introducing the concept of dual technology, the discrepancy between civilian and military use was diminished, the latter being included, in turn, within the limits of normality, leaving only the regulatory framework for use under debate.

Today, people are talking about the fact that UAVs have transformed the way warfare is conducted, especially in the light

of the recent conflicts in Ukraine and the Middle East, where it is estimated that war has already turned into a battle of algorithms. Therefore, technological advances in the field of AI represent a catalyst for the development of systems capable of selecting and engaging targets autonomously. According to analysts, the conflict in Ukraine serves as a key example of the development and potential of AI-enabled drones, a development that focuses on three main directions, namely target identification, terrain mapping and creation of interconnected drone “swarms”. Moreover, the importance of drones is highlighted discursively. Thus, last year, Analytics Vidhya described Ukraine as a “gold mine” for AI-enabled warfare technology, raising the stakes related to AI supremacy, with significant impact on global security dialogues, as strategists and military decision-makers examine solutions for dominating the “collective mind” of AI-enabled war machines. In the same vein, Reuters has reported that the current arms race focused on drones incorporating AI is moving warfare into uncharted territory, with combatants competing to gain technological, possibly algorithmic, advantage in battle. Swarmer, a company specialized in developing software for networking drones, allowing instant execution of decisions in a swarm with minimal human input, has stated, through the voice of its CEO, that managing swarms of 10 to 20 drones is almost impossible without automation, with each drone being able to plan its own actions, simultaneously anticipating the behaviour of the others in the swarm. As for managing swarms of hundreds of drones, this, in the opinion of the same CEO, far exceeds the capacity of human pilots, automation also helping to protect pilots operating close to the front lines. On the other hand, Russia, aware of the progress that Ukraine has made through the use of drones, has intensified its efforts to keep up, with official statements advancing the idea of building approximately 1.4 million drones by 2024, as well as of developing a new defence strategy, for a period of 10 years, which would focus specifically on artificial intelligence. (Kirichenko, 2024).

### CONCLUSIONS

Algorithms are already an integral part of our daily lives, influencing decisions about and for us in visible and invisible ways. For example, algorithms can analyse your search history and personal interactions and decide for you what content to watch and how often, indirectly



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shaping your opinion, mood, and even life choices. Moreover, commercial platforms use algorithms to recommend products, adjust prices, and offer you personalized “advantages”. The decision-making process can be automatic and almost impossible to challenge. Associated problems could include a lack of transparency (the “black box” of the algorithm), the existence of biases and preconditions (if the system’s data are biased, the decisions will be biased as a result), and, last but not least, a lack of control, in the sense that it is often difficult to attribute responsibility to the decision-maker – the human, the algorithm, or a mix of them. Therefore, there is a debate on the evolution of AI, with supporters emphasizing the benefits brought in areas such as medical, educational, economic, technological and military fields, as well as opponents emphasizing the negative consequences of the development of AI, such as job loss, relationship dehumanization, information manipulation. Both camps seem to meet in the context of the need to establish clear and strict regulations regarding, first of all, the attribution of responsibility in the case of abusive use of AI, the involvement of dangerous technologies or erroneous decision-making processes. This theme becomes even more complex and important in the case of the involvement of AI in the development of autonomous weapon systems that can, more often than not, be lethal, an aspect that also generates debates regarding the ethical dimension of their use, aspects presented in this article.

In this context, the first conclusion is that an unanimously accepted definition of the concept of autonomy has not yet been reached, the spectrum of autonomy being defined by the degree of human intervention in the action of a particular weapon system. This framework is complicated by the existence of decision-making support systems which, in turn, can generate challenges, even without being kinetically involved in combat actions, in the sense that they can influence the decision regarding the employment of LAWS and human combatants alike.

The second conclusion is related to the arguments invoked by the supporters and opponents of the involvement of AI in L/AWS and their use in conflict situations. Thus, the main arguments in favour refer to the advantages offered by such systems as a force multiplier, allowing effectiveness on the battlefield, significant resource savings, access

to hard-to-reach battlefields, as well as reduction of human suffering and loss of human lives, by involving non-human combat agents. The arguments against highlight the potential of autonomous systems to introduce various types of instability, such as military instability, through proliferation/arms race, that of crises, by accelerating escalation, or that of using violence in disproportionate ways. Moreover, in the context of the use of the so-called “killer robots”, ethical challenges and those related to the re/definition of human dignity are invoked.

The third conclusion refers to the materialization of the regulatory process, the article presenting, in this regard, several perspectives nuanced by ICRC, SIPRI, the academic community, DoD, UNODA. Thus, in a synthetic manner, we retain some aspects as follows: the use of advanced technology in armed conflict requires compliance with the principles of distinction, proportionality and precaution, fundamental principles in international humanitarian law; the existing definitions regarding autonomy, ethics, human involvement/control, responsibility attribution should be nuanced. In this context, it is highlighted that the parties involved in a conflict must always distinguish between combatants and civilians, between military objectives and civilian assets respectively. Furthermore, attention is drawn to the fact that there is an interdependence between certain key terms, context and institutional framework. Thus, UNODA uses the phrase significant human control, while DoD refers to adequate human judgment. With all the nuances, it is clear that the main goals of significant human control are related to safety and precision, responsibility and accountability (moral and legal), human dignity. In this context, the principles of distinction, proportionality and precaution, fundamental in international humanitarian law, must be interpreted in the light of new operational realities, taking into account the fact that AI is not the equivalent of a person in itself, being able to only copy and mimic the human being, depending on the information it has in the database, and only at the level of logical thinking, not feelings, which could lead to the adoption of partially correct or even erroneous decisions, especially from an ethical perspective.

The fourth conclusion concerns the fact that, in parallel with the development of new AI-enabled technologies, implicitly L/AWS,



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*In parallel with the development of new AI-enabled technologies, implicitly L/AWS, a process of normalization of the discourse regarding their involvement in conflicts is underway, both at present and, especially, in the future.*



a process of normalization of the discourse regarding their involvement in conflicts is underway, both at present and, especially, in the future. This process is intended to determine the perception of this situation as rational, normal or necessary, as well as its introduction into everyday language and common social understanding. Thus, taking into account the fact that the involvement of AI is presented as the third revolution in warfare, after firearms and nuclear weapons, it can be said that we are in a veritable AI arms race, it being considered capable of making a difference and guaranteeing strategic superiority. Therefore, as what was considered a challenge becomes, day by day, part of everyday reality, we express our hope that, as it has happened in the case of nuclear weapons, at least so far, L/AWS will represent only a significant component of the deterrence equation, the involvement of AI in the military field remaining to contribute only to identifying ways to make the battlefield safer, especially for civilians, and not to the creation of new instruments of mass killing, this time in an autonomous manner.

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