10.21544/2359-3075.v28n3.b

LETHAL AUTONOMOUS WEAPONS SYSTEMS (LAWS): from science fiction to human reality

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SUMMARY

In the current scenario, the state that dominates sensitive technologies, such as 5G, will gain power and influence international politics, and will greatly affect the Society of men in social and labor relations, as well as in the area of security. Thus, disruptive technological innovations such as laws (lethal autonomous weapons systems), may greatly alter the known forms of armed conflicts and bring with them issues in the field of ethics and morals that need studies on this new context, since these weapons can impact society in an unprecedented way. Achievements and advances in the field of technology are, at the same time, valued and feared, in this sense, the creation of rules that delimit their use and in what context they will be used are necessary for the maintenance of agreements and order between states. LAWS, due to their autonomous aspect, generate even more discussion about the need for human intervention. Leaving the decision-making power to a system, especially in a complex situation such as in the case of armed conflicts, is an issue that requires a more in-depth debate that is not restricted to opinions and wants, but is scientific and addresses the relevant points of the use of such weapons.
Keywords: Laws; conflict; autonomous weapons; Artificial intelligence (AI).

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INTRODUCTION

From the end of the First Industrial Revolution (second half of the seventeenth century) and the Second Industrial Revolution (second half of the nineteenth century), man developed new materials, products, machines and weapons that changed the paradigm in relation to the area of work and safety.

Information and Communication Technologies (ICTs) have been revolutionizing society and reaching human relations in the social, labor and security areas. Companies, industries, transport, logistics and military organizations will present a new paradigm in connectivity, represented by the Internet of Things (IoT)[4].

Like every change that affects the relationships between people and society, the new modus faciendi action in the world has practical effects. With regard to states, new technologies, Artificial Intelligence (AI), big data (data collection, storage and processing) along with the Internet of things (connection between machines and systems), allow the creation and robustness of new types of weapons and, consequently, like all disruptive technology, brings with it a new way of seeing the armed conflict[5] as well as a new analysis of how the Armed Forces will behave in this new context.

This context gives rise to disruptive technological innovations, with military or dual application, that may change known forms of conflict. Artificial intelligence in robotic systems and increasingly autonomous platforms, including unmanned ships and aircraft, cyberweapons, nanoweapons, direct energy weapons, missiles with Hypervelocity, are possibilities that have left the world of fiction and emerge on the horizon as the new armaments for the way future conflicts will be fought.

In the current scenario, the system Laws (lethal autonomous weapons systems) has been discussed by academia and by justice system for greatly reaching ethical and moral issues of the armed conflict. Criticism is being made about their employment, given that they will be

4 Term created by Kevin Ashton in 1999 to describe a system of connection, through sensors, between the Internet and the physical world. Available in https://www.historyofinformation.com / detail.php?id=3411 (accessed February 01, 2022).

5 In the present work, we will not specify which type of conflict, but it is worth mentioning, according to the Glossary of Humanitarian Law of the International Committee of the Red Cross (ICRC), the types recognized as conflicts: (i) Armed Conflict; (ii) international armed conflict; (iii) non-international armed conflict; and, (iv) internal conflict.

present in the theaters of operations of men of the future and of intelligent machines, leading to the following question: Who will be responsible for the decisions made by the machine? How the area of morale and ethics will behave in the face of the new weapon system? These issues are pertinent because they affect International Humanitarian Law (PFAFF, 2019). There is an understanding that the theater of military operations of the (possibly very near) future will be shared between humans and robots.

The article is presented in four sections. The first was the introduction, in which the state of the art on the new, so-called Intelligent armaments was explained. The second section will discuss disruptive technologies and the use of artificial intelligence and its ethical and moral dilemmas; the third section will present the definition as well as the discussions that guide the development of lethal autonomous weapons systems, and Section Four will present the main challenges for the use of these weapons in an armed conflict.

DISRUPTIVE TECHNOLOGIES: THE USE OF ARTIFICIAL INTELLIGENCE AND ITS ETHICAL EFFECTS (OR DILEMMAS)

History has shown that states invest massively for the development of S&T, especially in the military area, having reflections on their economies and thus gain power on the International Policy Board new technologies as a way to increase their military power, generate new possibilities for capital accumulation and enhance ways of labor exploitation (MAJEROWICZ, 2017).

Currently, the United States of America and China are competing in the race for dominance of 5G technology, as it's dominance will bring economic benefits and the development of new weapons, new technologies for the transmission of mega data and the control of cyberspace. The advancement of S&T brings in it bulge changes in society, changing the zeitgeist, in addition to the vision and understanding that man has of the universe. There will be new paradigms in the areas of education, in capital-labor relations, and new strategies, doctrines and tactics for the military area must be developed, the president and founder of the International Economic Forum, held in Davos in 2016, Klaus Schwab, referring to the Fourth Industrial Revolution, said that society is at the beginning of a revolution that is fundamentally changing the way of living, working and relating (SCHWAB, 2016).

International actors that dominate the new S & T will gain power and will be able to exert influence on the board of international relations. Thus, the role of Science and technological innovation has become an instrument of power and domination. (MOREIRA, 2012).

In the military area, as already seen, innovations must be achieved by formulating new strategies, doctrines and tactics for new armed conflicts. In the area of naval power, unmanned autonomous ships, submersible drones, satellite information and smart weapons will bring new perspectives to naval conflict. As can be seen in the text by Moreira (2018), the expansion of technology, taking as an example steam - powered ships and the consequent changes that were occurring due to the emergence of new materials, had as effect the desire to explore new regions and possibilities.

About new innovations, Barreiros (2019) suggests paying attention to the development of three categories of innovations that feed each other, and are represented by: (i) drones; (ii) swarming(iii) artificial intelligence. In the author's words:" I believe that this will be the 'triangle that, until 2050, will compose the set of disruptive transformations incident on state and non-state armed forces of the future " (BARREIROS, 2019, P.15).

The interest generated around the advancement of Artificial intelligence translates itself in a practical way into the acquisition of the capabilities to: (i) engage humanity in the free production of data; and, (ii) use analytics, machine learning or statistical learning, aiming to create more engaging computational interfaces that dialogues with users, and to continue to exert more influence, control and power over them (Hernandes, 2019). The author also argues that "states will be able to use their power resources to create a less violent and technologically driven society through the use of intelligent and globally and locally connected Informatics" (HERNANDES, 2019, P.15). It is observed that behind the scenes of the development of S&T is always present the power and the search for hegemony in international politics.

Situations that were once considered possible only in science fiction films have now passed into the sphere of reality, such as, for example, the possibility of a remotely controlled machine, even if by man, being able to carry out an attack on a building or a cyber-attack carried out by hackers that can shut down an electricity distribution plant leaving cities in darkness and chaos, or even hacking into a cyber network belonging to a public administration of another country. This reality has

already arrived, as an example of what happened in Brazil, which on November 03, 2021, when the system of the Superior Court of Justice was invaded by hackers and it's being considered the largest cyber-attack in national history. (Agência Brasil, 2021). On May 10, 2021, the US suffered a cyber-attack on the country's largest pipeline network (Colonial Pipeline), which forced the government to declare a state of emergency, due to a lack of gasoline on the country's East Coast (REUTERS, 2021).

Bringing to light this situation of fiction that turns into reality, recently the website Canaltech reported that the government of Russia announced that it is forming its first armed military fleet, with the use of remotely controlled combat machines, equipped with automatic cannons, flamethrowers and anti-tank missiles. Faced with this new reality, Garcia (2019) argues that "military use projects seek to establish a decisive strategic advantage over enemies, which is why some military powers, such as the United States of America, China, Russia and Israel, already invest massively in Artificial Intelligence (AI)" (GARCIA, 2019, P.3).

The achievements and advances in this field are at the same time incensed and feared, since the reflexes and consequences in various areas, including the military, have not yet been evaluated. A study of ICT for Peace Foundation, an International Foundation based in Switzerland oriented towards policies and capacity building, raises the risks of personalization or anthropomorphism of technology, which, for them, has the potential to depreciate the human factor in relationships and interactions (SURBER, 2018).

Human beings are distinguished by their ability to create a subjective web of meanings from their ability to think, perceive, learn, understand, invent, analyze, etc. To date, machines, no matter how evolved they are, still cannot learn, in the sense attributed by educators as a process of changing behavior from experience. However, a system that can change its behavior in the face of an unexpected event, as is behind the idea of autonomous systems, raises questions about empathy and the ability to build an ethical and moral relationship. It is from this ethical perspective that we can understand the moral behavior of the subject, however, machines do not present a value judgment, good or bad, that guide their actions. In this way, the relationship between humans, in order to create a space of coexistence aimed at the common good, based on an obligation, a duty to act well, part of human virtues, is not established.

Kissinger (2018), warns about how AI, when developing skills

faster than humans, is based on mathematical and non-human principles. In this way, decisions that are based on data interpretation cannot explain or give meaning to the reality that produces these same data, and can cause damage due to their difficulty in contextualizing the information (KISSINGER, 2018; KLINCEWICZ, 2015). Therefore, if there is no contextualization, how can an ethical attitude be charged? The ethical issue debated by historian Leandro Karnal (2016), says that the rules that make society viable from the use of reason are related to acting, whether it is right or wrong. The historian stated that, it is up to society to teach the principle of the limit of the other, what he calls ethics. Ethics, he continues, implies a responsibility to present what can and cannot be done.

Ethics is a philosophical problematization about the establishment of what would be right or wrong and associated with morality helps us reflect on the values and principles that shape society. These concepts are often used synonymously, but when analyzing the use of the word "ethics" it is noticed that it generally refers to actions whose content takes place in the public space. Ethics according to Figueiredo (2008), is a reflection on human conduct based on moral values and acts and morality would be the ability to put ethics into practice in everyday life, when the character is being tested. La Taille (2010) reminds us that morality in Immanuel Kant, orders action, that is, "the moral subject feels intimately obliged to act according to certain rules" (LA TAILLE, 2010, p.2). This idea is consistent with that of Figueiredo (2008) who proposes that ethics examines moral values and from them, seeks to justify and guide their actions.

This digression about ethics and morals is important because it raises the debate about how ethical the use of LAWS is. Plato in thinking about ethics seeks to establish a balance between knowing and doing. As Nosella (2008) puts it, when speaking of the relationship between science and virtue for Plato as a relationship between unlimited and limit, the role of ethics in science would be to give this limit, as science orders and adjusts, from knowledge. And in the case of LAWS who would be the wise men, in the platonic sense, who could judge what the tolerable and accepted limit was?

For Aristotle, the ethical arbiter would be political power, since there is no individual happiness outside of social life and it is up to the state to "provide and preserve the general balance and that of individuals" (NOSELLA, 2008, p.259). However, when speaking of the LAWS and their ability to make complex decisions that may involve human lives, does

not appear a subject / State that is responsible for their accountability. Responsibility for mistakes and crimes seem to be in an ethical limbo that still has no apparent solution.

Pfaff (2019), however, proposes the existence of graduations between LAWS and its capacity for automation, which would imply moral and ethical ”levels of responsibility". But then the author alerts to cases in which these systems can be used by people with ethical and moral values that can be questioned, as in the case of terrorists.

Another important ethical point is the argument that LAWS have a chance to reduce combat deaths of both military personnel and innocent civilians, and if that is a sufficient reason for their use, the “mistakes” that might occur would be justified by the “greater good.” Thus, the ends would justify the means. (PFAFF, 2019; UMBRELLO, TORRES AND DE BELLIS, 2019; JOHNSON AND AXINN 2013).

The so-called ”new weapons" based on technological resources, which evolve rapidly, still need rules that delimit their use and the context in which they will be used. However, as the scale of evolution with which these innovations are created is exponential, there is still no debate that can encompass all the implications and applications of military use that they can achieve and thus establish specific rules that reduce uncertainty and insecurity. Draws attention, in particular to the LAWS or “killer robots“, which are the form of "autonomous technology"(AT) that are the most well-known and debated issues today.

LAWS: LETHAL AUTONOMOUS WEAPONS SYSTEMS

The Future of Life Institute website defines the LAWS as an ”autonomous lethal weaponry or weapon system " that can identify, select and engage targets without significant human control. Beard defines them as: the weapons that “…has the ability to make decisions as a free and independent moral agent” (BEAD, 2014, p. 622). These new weapons have been the subject of debate and questioning, especially regarding legal and ethical issues. The United Nations (UN), in an address to the international community, has already spoken through Secretary-General Antonio Guterres, regarding the LAWS that they are " politically unacceptable and morally repulsive,” suggesting a ban on such weapons. This ban would be similar to the one already applied to the use of chemical and biological weapons as proposed by the International Red Cross and the

non-governmental organization Human Rights Watch.

Since 2012, when the directive of the Department of Defense of the United States of America announced the development and use of autonomous systems, the debate has been fierce. The UN has promoted debates in the CCW commission-also referred to as UN Convention on Certain Conventional Weapons on the topic, to understand the implications that such systems could have on contemporary society. According to Roff and Moyes(2016), the only apparent consensus is the concept of "meaningful human control (MHC)", understood as a policy of control of LAWS by human beings in order to create some interference in how, why and against whom these systems are used, generating responsibility and limits.

Another point raised about the employment of LAWS is how the decision-making process takes place by an autonomous system. It is known that this type of equipment uses algorithms to recognize targets. However, if the datasets used do not present the complexity or robustness necessary to guide the process of choosing who will be targeted, the system will learn incorrectly to make its selection or, perhaps, it will not learn the data that specify exactly what it needs to identify, as occurred in the drone attack on a family in Kabul when ten civilians, including children, were killed when they were mistaken for members of the terrorist group Islamic State of Khorasan (VOGT, 2021).

From the damage caused, questions arise about the use of LAWS; they refer to the type and degree of control that these weapons can have and how far the decision-making process of the machines can go. Under the principles of humanity and public conscience determined in international humanitarian law, mainly in the Martens Clause[6] by establishing that everyone deserves protection, and thus, it is hoped that compassion will motivate human beings to minimize suffering and avoid death, the idea of a completely autonomous system gains relevant contours regarding the issue of confidence in its power of "judgment and responsibility".

This confidence can be extrapolated when a man, who has several autonomous systems under his coordination, ends up depositing in the decision-making capacity of the system a choice that should pass through

6 A provision included in many IHL treaties since 1899 that provides general protection to both civilians and combatants. The Martens Clause states verbatim: in cases not provided for in the written provisions of international law, civilians and combatants are under the protection and regime of the principles of the law of nations, derived from established usages, the principles of humanity and the dictates of public conscience.

his personal sieve (rational?). This reality may become more common than is believed to be possible. With the decision not to let there be systems without human control, man will have to account for a set of complex organizations, simultaneously, greater than his ability to monitor them, in the proportion of up to six to one (WARREN & HILLAS, 2017).

THE CCW - Convention on Certain Conventional Weapons suggests three different approaches to autonomous armaments: technical, human and functional. The first is based on the technical specifications that differentiate automatic artifacts from autonomous ones. The functional approach has as its criterion, the identification of the functions and tasks delegated to the weapon. Regarding the human approach, autonomous weapons are classified into three types: (i) weapons-with-human-control, which are those that can only human control can choose their targets and the use of force ; (ii) weapons-under-human-control, those whose selection of targets and use of force are under the supervision of a human operator who can cancel an action; and, (iii) weapons-without-human-control, not yet existing, capable of selecting the target and using force without human interaction. (GLEBER, 2019; UNIDIR, 2017, BOULANIN, 2016).

However, the LAWS they are not the only form of "autonomous technology" (AT) that are being questioned. Surber (2018) defines an autonomous technological process as one that creates results that humans have difficulty controlling. ATs is not necessarily an evil. Its use has possibilities of use to improve the way of life of countless people. One can list among them autonomous cars (which will also be an important element of the capacity in the future), autonomous systems can investigate security flaws in computer networks with a speed and efficiency greater than humans, use drones for fun, among others.

The characteristic of an autonomous system is to be able to change its course of action in the presence of unexpected circumstances, explore possibilities and decide what its next course of action without the intervention of the human being is a warning to the blind trust that has been placed in this type of technology as an answer to some questions. Some authors such as Kissinger (2018), Tegmark (2017) and Shaaban (2020), have advanced to the eventual risk arising from a superintelligence that would be possible from a recursive self-improvement, which is the possibility of the program to improve itself.

As noted, ATs are not good or bad in and of themselves. What evokes questions is how much responsibility we should have over

autonomous systems, and this depends a lot on the use that is intended to be made of the system. And this use is unlimited, since there is no guarantee that a system, after being created, will maintain the usefulness for which it was developed, since this depends on the creativity and desire of those who will manipulate it. The big problem is the human being, because it has no limits, if there is no control and sanctions, the question that arises is who will control who should be controlling?

The consequences of the use of ATs, and particularly the LAWS, generate a lot of uncertainty in society, so it is necessary to create a governance structure. Thus, new strategies, new tactics and doctrines must be developed for these new types of armaments, as well as new rules of engagement must be elaborated for the new conflicts. Umbrello, Torres and De Bellis, (2019) propose two conditions for the use of LAWS that would be a programming that would include a moral and ethical system, and systems and sensors that would choose the appropriate targets. The only consensus, however, is about the need to think about these autonomous systems and their moral and ethical implications before they are fully employed. This system of governance is what will determine what is legitimate or not, having to foresee the possible courses of action.

Discussions about possible restrictions on systems accompany their development. Kissinger (2018) and Atkinson (2015), advocate on the use of mathematical formulas during the design of technology. These formal methods seek to provide assurance that AT will not act in a manner different from that which has been programmed. However, in this area, Kissinger (2018) also makes important points about how a system that develops autonomously and extremely quickly can be "controlled" by a human thought and values that do not always manage to keep up with it. In this field, Kissinger (2018) deals with how the use of AI has opened up fields of knowledge that were previously inaccessible to humans, due to our restricted ability to deal with phenomena, modifying our own way of seeing the world and relating to it.

Another relevant topic is the "psychopathology of Artificial Intelligence". Psychopathology is the study of maladaptive behaviors and mental disease aimed at explaining the psychic phenomena of pathological mental states (JASPER, 2000). Transposing this concept to autonomous technologies (AT), Atkinson (2015) advances to the possibility of these technologies present abnormal behavior due to problems in software, hardware, errors in logic or malicious programming, which can generate a

cyber-attack. In this scenario, Kissinger (2018) goes further, when thinking about the evolution of technology through a self-learning system, in which, through data analysis, the system begins to have the ability to act, but without the power to contextualize and understand this data, which affects the ethical and moral issue.

Pfaff (2019) points out that in certain situations that cannot be foreseen, there is a gap of responsibility and in this way the application of the convention of war becomes difficult. Responsibility for acts of war is a relevant moral issue, since it is assumed that we follow moral, legal and practical norms that will guide human conduct and if they are not followed, it is necessary to have a responsible person so that the limit is not exceeded. Hold LAWS responsable for misconduct errors can be a way to remove responsibility from the human being and still have a "scapegoat" for actions whose culpability one does not want to have (PFAFF, 2019).

"A graphical representation of data abstracted from the databases of all computers in the human system. An unthinkable complexity " is the definition of cyberspace coined by William Gibson in 1984 (GIBSON, 2003, p.67), and consists of an interdependent information network that includes the internet, telecommunications networks, computer systems.

Some software are used in the form of agents, which are autonomous systems associated with an environment in which they operate and have a goal and an agenda, as well as the ability to learn and modify their perception of the world and their goals. These agents, when interacting in cyberspace, support the decision-making process of the weapons that use AT. Thus, being in possession of this technology and own the state of the art have become a high priority to have the ability to detect vulnerabilities or just collect information from opponents and thus propose action measures if it is programmed to do so.

Still in the cyber field, ATs can act as a weapon of mass disinformation, manipulating information. Autonomous technology has the power to create conflicts and crises between states, being a new type of threat and at the same time a new weapon, even if not in the known sense of a conventional weapon.

CHALLENGES TO THE DEVELOPMENT AND USE OF LAWS

To this point, the emergence of disruptive technologies with the use of Artificial Intelligence for the development of autonomous weapons

systems has been discussed. The topic has been arousing debates about the challenges that arise due to the use of this type of weapon, as well as its use in an armed conflict.

We note that after the Second World War (1939-1945) and its devastating effects, the Geneva Conventions[7] they were signed thinking of the protection, respect and dignity of the human being. In 1977, protocols I and II were added[8], which form the basis for the creation of International Humanitarian Law (IHL). Without intending to discuss here what the protocols say, and in adherence to the proposed subject, Articles 35 and 36 of protocol I, P. 35, are highlighted:

> Article 35-Basic Rules
> In any armed conflict, the right of the parties to the conflict to choose the methods or means of warfare is not unlimited. 2. It is forbidden to use weapons, projectiles and materials, as well as methods of warfare of a nature to cause superfluous injury or unnecessary suffering. 3. It shall be prohibited to use methods or means of warfare designed to cause, or which can be expected to cause, extensive, lasting and serious damage to the natural environment.
>
> Article 36-new weapons
> During the study, preparation or acquisition of a new weapon, means or method of warfare, a High Contracting Party shall have the obligation to determine whether its use would be prohibited in some or all circumstances by the provisions of this protocol or by any other rule of international law applicable to that High Contracting Party.

At the time of the signing of the Conventions, international policy

7 The document in full is available on the website of the International Committee of the Red Cross. Link https://www.icrc.org/pt/publication/convencoes-de-genebra-de-12-de-agosto-de-1949

8 Additional protocols are available in full on the International Committee of the Red Cross website. https://www.icrc.org/pt/publication/os-protocolos-adicionais-convencoes-de-Geneva-de-12-August-1949

regarding security was in another zeitgeist. In 1991, there was a bipolarity in international relations, and its policy entered a new era with the emergence of new threats. Geopolitics has changed and new actors have entered the power game. S & T has evolved and states that hold power have continued to invest massively in new technologies, some of them disruptive, such as artificial intelligence.

The fact that algorithms decide on issues involving the lives of human beings, has been questioned as a violation of international humanitarian law. The International Law of Armed Conflict (ILAC) is based on respect for the physical and moral integrity of the person; thus, civilians or military, will be treated with humanity and without any discrimination.

The ILAC also deals with the principle of proportionality, which indicates the proportional relationship between the use of force and violence to achieve the military objective. However, the right of the parties to choose the methods of combat is limited. Therefore, no belligerent should be attacked if its civilian losses and the number of victims is greater than the military gains, which are expected from this action (BRASIL, 2011). Roff and Moyes (2016), in discussing the need for human control of LAWS, pay attention to the context of the use of force and think about this type of control from the development of weapons, through the use and its responsibility as if they were overlapping layers that interconnect. The topic raises so many questions, that a group of researchers, organized by the Future of Life Institute, met in 2017, in California, to debate the need for cooperation, trust and transparency among those who develop and research on autonomous weapons, making them an integral part of the control and responsible for their use, pointing to the need for an alignment with human values (GARCIA, 2019).

This same line of thinking is followed by the 2018 report of the International Committee of the Red Cross (ICRC), which deals with the ethical issues associated with LAWS. One point of concern is about the loss of human dignity, since they believe that this is affected when the decision to eliminate or reach a target is delegated to a machine. In addition, it is argued that the moral, ethical and legal responsibility for deciding when and how much force should be used is strictly human, and cannot be transferred to computer systems and the use of algorithms. Thus, the ICRC advocates for a minimum level of human control, primarily with respect to the ability to intervene and disable the system, and to have the ability

to place operational constraints on what tasks, operating environment, context, and the theater of operations.

Roff and Moyes (2016) also point out the indispensability of acting in three other layers, called by them ante bellum; in bello; and post bellum. These levels refer to mechanisms of operation before, during and after the use of these technologies during a conflict.

In mbito Jurídico website, the opinion is that, according to Cinelli (2011 apud Piñeiro, 2016), this principle of proportionality unfolds in two dimensions of influence, which are the use of certain weapons and the application of certain methods of attack.

The arguments in favor of the use of this type of weapon affirm that human beings will not be totally excluded from the process, being behind the decisions that involve an ethical judgment of the actions. Also, in favor of this technology, it is advocated that the LAWS, especially robots, tend to act conservatively, because there is no need to protect their own life, they can approach the target to verify how appropriate the action is.

Another point debated as favorable is that robots will not have their judgments covered up by emotions, which is a preponderant factor to avoid untimely acts. A human characteristic considered Negative on a battlefield is the tendency to fill gaps in your history with previous knowledge or perceptions, which can lead to distortion or to neglect contradictory information in stressful situations, and, in this way, the action may be inappropriate. Thus, the LAWS can transform wars into a more ethical environment by eliminating the unethical behavior of combatants (ARKIN, 2010).

Arkin (2010) also presents some positive points for the use of LAWS: (i) they are faster, cheaper, more accurate; (ii) they are immune to chemical and biological weapons; (iii) they can stay on task for a long time (endurance); and, (iv) they reach a greater distance and are able to achieve the mission objective more successfully.

Among other positive factors raised are the fact that the number of rapes and prisoners of war will decrease, as well as the chance that someone innocent will be shot due to fear of the shooter who acted on impulse. This happens as it takes away the emotional stress to which soldiers at war are subjected. (UMBRELLO, TORRES and DE BELLIS, 2019).

Another point that has also been pondered is that the human being, due to physical and mental stress caused by the prolonged situation on the battlefield, has his acting skills decreased, becoming more prone to

error, which does not occur with the lethal autonomous weapons systems. (UMBRELLO, TORRES and DE BELLIS, 2019; KLINCEWICZ, 2015).

It is common to hear the discourse that many soldiers' lives will be saved with the use of LAWS without, on the other hand, a greater discussion about the ethical side of this action. Leaving it up to a system to decide the risk of reaching, in addition to the target, other victims as a side effect, is one of the questions that must be asked. To minimize this "autonomy", one thinks about the need to create some kind of veto or possibility of revoking the action, even if most systems are being created to continue to act when the connection with communication is interrupted. The idea proposed by Arkin (2009) is that by encrypting codes of conduct, rules of engagement and the laws of war present in the Geneva Convention in LAWS it is possible to generate an ethical decision procedure that would reduce the risks of causalities, since it would be expected that the LAWS they would act within the ethical boundaries of war.

The existence of a mechanism for containment and evaluation of proportionality and rules as proposed by Arkin (2009; 2010) has been questioned due to the fact that this mechanism is based on two human characteristics: thinking and evaluating the context. Computers are not able to select, by themselves, the information that is relevant and, in this way, it is not possible to make inferences and predict possible consequences of their actions that have not been pre-programmed. This implies that the ethical codes inserted will lose their value. (KLINCEWICZ, 2015). In addition, context implies an ability to distinguish between different situations and assess which one is relevant for action. It is situating data within a framework that is not always clear or predictable.

Klincewicz (2015) further questions whether when software programs are able to perform such a type of representation and framing of the problem, they will be extremely complex and therefore easier to be hacked.

The non-governmental organization Human Rights Watch has been vigilant in this issue of the autonomy of LAWS raising the issue that this type of weaponry is contrary to international humanitarian law and would have the potential to increase the risk of civilian mortality.

Another issue raised refers to the emotional distance of the one who " pulls the trigger" or program a LAWS to do so. Due to its distance from the action there is no humanization of the target, which is seen only as an object to be eliminated. This objectification of the subject, also

understood as the depersonalization of war, occurs on a battlefield and interferes with decisions. There is a lack of empathy: by not identifying himself with the other, there is no appreciation of their life, and this can be dismissed as an obstacle to the achievement of a goal.

Johnson and Axinn (2013) ask the question that, in their view, is more important than the technical debates that usually involve such systems, about whether we should really allow AT to kill humans. In order to provide a good argument, they appeal to Immanuel Kant's thought, which understands human beings as an end in itself, while objects are means to achieve our goals. Kant also conceptualizes as a difference between men and objects the fact that the former have dignity and honor, which can be understood as an intrinsic value that must be respected.

Following this line of thought, Johnson and Axinn (2013) argue that allowing a machine to decide whether or not to kill a human being, even if he is an enemy, is to take man out of his dignity and treat it as an object. In addition to the fact that only human judgment is able to meet the rules of distinction, proportionality and military necessity the indispensability of acting in a military action and in this case completely exclude it from the action having serious implications on legal and ethical responsibility.

Although fully autonomous weapons are not yet available, the technology that will allow this is already under development, and thus a debate on the topic is essential.

CONCLUSION

The world is experiencing the Fourth Industrial Revolution and several paradigms are being broken by the great development of S&T. It is accompanied by the development and use of disruptive technologies in various segments of society. Disruptive technologies have reached today's armed conflicts, leading to the use of what is conventionally called LAWS – Lethal autonomous weapons systems. This type of system brings with it a broad debate about its use, its ethical and moral questions, the possible consequences and on the establishment of a control, if any, for its use.

There is a breadth of possibilities that the LAWS bring with them, and there is an increasing need for a broad debate to standardize the use of these new technologies, including who will bear responsibility for an attack that results in the deaths of innocent civilians not involved in the

conflict.

The changes occur in such a way that the state does not keep up with its speed, since creating regulations and statutes that normalize and establish legal and social parameters is a lengthy process, thus creating a managerial hiatus, since there is a gap between the speed at which inventions arise and the ability of states to regulate their mode of operation.

This effect is often overlooked when talking about the creation of innovations. The social impact should not and cannot be ruled out, and it is this critical look at this point that will allow to investigate this effect and relativize the role of autonomous technologies in society. Understanding what they are and thinking about the consequences that mastering certain techniques and technologies carry is fundamental for us to grow as human beings and society.

Concerning military strategies, doctrines and rules of engagement, there is a broad debate about the use of this type of weaponry, since mistakes have already occurred and the question that is asked is about the responsibility of the author of the operations and/or actions. At this point, the answers are pulverized, since it is not known who can be hold responsible for the "fault": the person who presses the button, the one who gives the order to press it or the manufacturer who programmed the LAWS.

Since ethics is the thought on the foundations of a moral life, leading human actions to good practices, it is up to the political organizations of human society to establish ethical limits, in this case, the limits of what can or cannot be done, through a broad and robust discussion aimed at establishing the values to be respected. This discussion should help to guide the principles that should lead the conduct during new armed conflicts, explaining the responsibilities and how to act within the fields of ethics and morals.

There is an understanding that venturing into unknown worlds is human nature, being inevitable. However, the care with what can be produced by knowledge and which results can be obtained by it should not be neglected, because knowledge should be included in the ethics of responsibility.

LETHAL AUTONOMOUS WEAPONS SYSTEMS (LAWS): da ficção científica para a realidade humana

RESUMO

No cenário atual, o Estado que dominar as tecnologias sensíveis, como o 5G, ganhará poder e passará a influenciar a política internacional, e afetará sobremaneira a sociedade dos homens nas relações socias e de trabalho, bem como da área de segurança. Assim sendo, inovações tecnológicas disruptivas como as LAWS (lethal autonomous weapons systems), poderão alterar, sobremaneira, as formas conhecidas de conflitos armados e trarão consigo questões para o campo da ética e da moral que carecem de estudos sobre este novo contexto, uma vez que estas armas podem impactar a sociedade de uma maneira sem precedentes. Conquistas e avanços no campo da tecnologia são, ao mesmo tempo, valorizados e temidos, nesse sentido, a criação de regras que delimitem seu uso e em qual contexto serão usadas se fazem necessárias para a manutenção de acordos e ordem entre os Estados. As LAWS, devido ao seu aspecto autônomo, geram ainda mais discussão sobre a necessidade de intervenção humana. Deixar o poder de decisão a cargo de um sistema, principalmente em uma situação complexa como no caso de conflitos armados, é uma questão que requer um debate mais aprofundado que não se restrinja a opiniões e quereres, mas seja científico e aborde os pontos relevantes da utilização de tal tipo de armamento.

Palavras-chave: LAWS; Conflito; Armas Autônomas; Inteligência
Artificial (IA).

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*** Received on August 18, 2022, and approved for publication on February 10, 2023.**