Lethal autonomous weapons systems and power unbalance

Introduction

Technology advances have always had a central impact on the balance of power between states and their military capacities, transforming the characteristics inherent to international security[1]. Current developments focused on the completely autonomous weapons systems will not be an exception to the rule. In fact, these advances, in addition to hardware capacity enhancements, the large volumes of data (Big Data) and machine learning techniques seem to inexorably lead us to the militarization of artificial intelligence.

Considered the third revolution in war as a phenomenon, after the discovery of powder and nuclear weapons, the lethal autonomous weapons systems (LAWS) will be able to select and attack targets without human intervention. A technology with the capacity to surpass the enemy's reach, speed and lethality, and, last but not least, the absence of human casualties and risk factors that may endanger the life of armed forces. This is what Artificial Intelligence applied to the so-called lethal autonomous weapons systems has to offer.

This article affirms that Artificial Intelligence applied to the use of drones in swarming[2] tactics will have a disruptive effect on the way of carrying out armed conflicts, generating new abilities with the capacity of altering the outstanding power balance. This context will imply great challenges to the current arms control policies, the consequent proliferation risk and an international system that will have to adapt to the new demands imposed by the dual use of new technologies.

Although the dynamics of the present international scenario are still moving in a direction opposite to the multilateral order inherent to the international regimes, the present circumstances represent an opportunity for the third sector and civil society organizations. An epistemic community that has accumulated a vast experience pressuring governments in order to implement disarmament agreements and policies.

Artificial Intelligence: a disruptive variable when we think of armed conflicts

The current development of Artificial Intelligence has become key, to the point that some are talking about "AI Superpowers". This led president Putin to declare that "*Artificial Intelligence not only represents Russia's future, but also the future of humankind. The country that leads this field will dominate this world*"[3].

---

[1] Robert Jervis, ¨Cooperation under the security dilemma¨ (Cambridge: Cambridge University Press, 1978)
[2] "Swarm intelligence" is the collective behaviour of self-organized systems, both natural and artificial.
[3] https://nypost.com/2017/09/01/putin-leader-in-artificial-intelligence-will-rule-the-world/

As of today, America is widely leading the Research and Development, though China has considerably gained terrain in this technologic field for the last three years, becoming the only country that can counterbalance the United States. This new area of competency between the superpowers will have large implications on economy and global governance[4].

In fact, we would be facing a new paradigm where the relation between artificial intelligence and economy have a central role. The deep learning technique[5] has meant a revolutionary qualitative leap, giving a surprising cognitive capacity to the machines. However, with this advances, also drastic alterations will come in relation to the job market, as a result of the amount of jobs that will be replaced by artificial intelligence.

The military environment does not escape from this economic logic. Like in any development of a new type of technology, the interest related to cost-benefit comes into play, as well as the calculations on how to achieve the expected military goals in the most economical way as possible. Apart from providing the state with very economical and small-size armed forces, a risk factor would also be eliminated concerning the military personnel's security. The completely autonomous systems would reduce the threshold of going to war before the absence of casualties among the attacking forces[6].

The detachment of the different costs that an armed conflict where LAWS are involved produces, not only affects the combatants and officers, but also the general public. The citizens will stop losing their loved ones, and therefore there will no longer be a count of soldiers that lost their lives defending their countries. There won't be any veterans suffering from post-traumatic stress, so the indifference will turn the general public into mere passive viewers at the moment when their countries enter into war[7].

[4] Kai-fu Lee, ¨AI Superpowers; China, Silicon Valley and the New world¨ (Boston: Houghto Mifflin Harcourt 2004)
[5] Deep learning is an artificial intelligence feature that imitates the human brain's capacities in the way of processing data and creating patterns in the decision making process. It is a subgroup within the "machine learning" concept that possesses networks capable of learning independently from the data in an unstructured form.
[6] Acheson, Ray, ¨A WILPF guide to Killer Robots¨ (Geneva: Women´s International League for Peace and Freedom 2019)
[7] Michael A Guetlein, ¨Lethal Autonomous Weapons – Ethical and Doctrinal¨ (Newport: Naval war College 2005)

The advances in technology have always been decisive in armed conflicts, but what the use of artificial intelligence leaves at stake is the loss of a significant human control on the final decision of the use of a lethal force[8].

Artificial Intelligence before the Power Balance of great powers

A key point in the concept of the "Security Dilemma" in International Relations focuses on the fact that the increase in the security of a country decreases the security of other countries. This affirmation implies an essential variable: if the defense or the attack have the advantage. At the same time, one of the main factors that define which one has the advantage is precisely **Technology**[9].

Technology is a major defining factor of the offensive-defensive balance. When weapons are highly vulnerable, they must be used before they are attacked. With the arrival of the Artificial Intelligence and the so-called Lethal Autonomous Weapons Systems (LAWS), the nuclear security that we currently know would be threatened by the risks of a rise in potential upcoming conflicts.

It is speculated that autonomous systems of this type may visibilize the sea dominion; therefore, the second-strike capability of submarines armed with nuclear missiles would be affected. The use of Artificial Intelligences related to machine learning, in addition to the Big Data analysis[10], would provide new capacities to the use of drones in swarming incursions, being able to evade and overcome the adversary's defense system[11].

At the same time, removing the human criterion from the decision-making process at a moment of crisis by delegating the authority to an autonomous system would challenge the security and credibility that the atomic weapons entail in relation to their dissuasive power. There are uncountable examples in history when the importance of mankind's prudence has mitigated the risk of lack of perception, calculation errors and limits to the use of force[12].

The risks related to the use of lethal autonomous systems operating in dynamic, complex and unknown environments, are still underestimated by the global community of Defense. Disregarding this type of risks, China and Russia plan to incorporate Artificial Intelligence to

[8] Alice Beck, Maaike Beens y Daan Kayser, ¨Conflicted Intelligence: How Universities can help prevent the development of lethal autonomous weapons¨ (Utrecht: Colophon, 2020)
[9] Robert Jarvis, op.cit.
[10] Big Data is a field that uses ways to systematically analyze the extraction of information from large data volumes that are too broad or complex to be managed by traditional data processing applications.
[11] James Johnson, op.cit.
[12] James Johnson, op.cit.

unmanned aircrafts and submarines. Their goal is to deal with US carriers during swarming operations[13].

Ever since the times when the strategic studies of the Cold War took place, the technology factor has been imperative. The technologic development of nuclear weapons had such a dynamic, that it became fast and dramatic. Thus emerged the main feature that at a strategic level positioned technology in the center of the International Security Studies. The fear grounded on the fact that the lack of innovation and updating could turn nuclear powers vulnerable, then more attractive for the attack of enemies. Any development regarding this subject led to the neutralization of the effects of mutual dissuasion[14].

Therefore, the mere perception of the fact that the nuclear capabilities face new strategic challenges may provoke a high level of distrust among the great powers. This gives to the autonomous systems such an impact capacity that would change the rules of the strategy game, like the case of the possible location of submarines equipped with nuclear warheads.

The I.A. impact on the proliferation of Autonomous Weapons Systems

One of the concerns that emerge from the Autonomous Systems is the proliferation risk of this type of technology. The impact that robotics are having on the weapons industry and the implications in the ethics and tactics areas lead us to speculate and think how and who is making use of this force, creating a clear issue of lack of responsibility and accountability.

First, the tendency of capitalist societies to replace work with capital take us on that direction for reasons both productive and destructive. The debates on the incorporation of possible new technologies mostly relate to the effectivity-cost concern and how to achieve the expected military goals in the most economical and effective way as possible[15].

Throughout history, the technologic developments of qualitative order involved the great powers in great arms races regarding precision and times in terms of innovation. Those were developments that exercised a strong pressure on the military options and a central feature of international relations since the Industrial Revolution. In addition to these dynamics in technologic enhancements, we must mention the lobbying power that some weapon industries have in the different countries, being the United States a clear example of how domestic politics are

[13] Barry Buzan, ¨The Evolution of International Security Studies¨ (Edinburg: Cambridge University Press, 2009)
[14] Buzan, op.cit.
[15] Buzan, op.cit.

influenced by the military industrial complex (MIC) in relation to the type and quantity of weapons that a superpower must acquire[16].

Unlike the United States, which possessed an MIC, the Soviet Union was an MIC itself, with a large part of its economy engaged in the production of military capabilities. Afterwards, the Russian Federation inherited a broad range of defense and arms industry technologies that would be part of the know-how, the industrial capacity and the worldwide trademark recognition that would allow it to prevail as a key arms exporter in the market[17].

On the other hand, the Chinese defense industry does not have the reach or the level of excellence shown by Russia or the United States. Indeed, for the last twenty years it developed its domestic capabilities exponentially in order to modernize its military industry and its Defense technologies. The result has been a considerable improvement in the quantity and quality of its military systems, and also a significant positioning in the international arms market, such as in the case of the drones[18].

The characteristics that make the autonomous systems so inexpensive include the absence of a human operator and the small size in comparison with the systems crewed by people or the remotely operated systems. Moreover, the decrease in the number of technicians required for their maintenance should be noted. In fact, their value would be so economical, that it would be more convenient to dispose them and eliminate the maintenance personnel from the equation. Thus, the logistics presence within the operations field and the required staff are considerably reduced[19].

Within the risks of proliferation, it should be noted that these new technologies are hard to design and develop, but would not be so hard to copy. As a precedent, we have the fast proliferation of the use of drones in military operations due to the success in terms of effectiveness and costs. It is also attractive to think that under circumstances when it is not possible to keep a radio or satellite connection, there is not a person in charge of making the decision of not shooting[20].

Thus we can see the different aspects that may induce the beginning of an arms race in relation to the autonomous systems. The present events show the imperative need of an adequate legal framework of binding rules that prohibit the development and use of this type of technologies.

---

[16] Buzan, op.cit.
[17] Boutin Kenneth and Cyrille Bret, ¨Defense Industries in Russia and China: Players and Strategies¨ (Paris: Institute for Security Studies, 2017)
[18] Sharon Weinberger, ¨China has already won the Drone Wars¨ (Foreign Policy, May 10, 2018)
[19] Armin Krishnan, ¨Killer Robots: Legality and Ethicality of Autonomous Weapons¨ (Surrey: Ashgate Publishing Limited, 2009)
[20] Noel Sharkey, ¨Saying ¨No!¨ to Lethal Autonomous Weapons¨ (Journal of Military Ethics, 2010)

A prohibition treaty as preventive action

The present context of crisis and discredit in which the multilateral organizations have fallen must not discourage the pursuit of a preventive action that prohibits the development, production and use of completely autonomous lethal weapons systems. The current discussion stages include the Human Rights Council in Geneva, which later transferred to the Convention on Certain Conventional Weapons (CCW) of the United Nations.

Although there is a general agreement on the need to preserve a significant human control on the weapons systems, the proposals to negotiate an international treaty for the prohibition and regulation of the autonomous weapons systems have been rejected by the major military powers.

The CCW is a legitimate framework to regulate or prohibit the development or use of specific types of weapons that may cause unjustified and unnecessary suffering to combatants or civilians [21]. However, this regulation framework has a clear limitation which is the "consensus rule" as part of its decision-making process. This means that countries like the United States, Russia and China have the capacity to block international rules that prohibit this type of arms[22].

Here is where the non-state actors from the civil society have played a crucial role. A dense network of activists that have problematized the issue through humanitarian practices aiming to achieve disarmament and arms control policies[23].

Focused on the Human security and Critics theory, this action puts human beings as the referent object of security. A change in the focus of international security typical of the Strategic Studies towards a classical regulatory counterpoint that centers in the reduction or elimination of the use of force in international relations inherent to the "Peace Studies"[24].

These are the pressure groups conformed by coalitions of Non-Governmental Organizations, United Nations agencies and related countries that achieved humanitarian disarmament agreements, such as the Treaty against anti-personnel mines, or the one focused on the cluster bombs. Treaties that aimed to totally prohibit certain types of arms and not to merely limit their use and production.

Here is where we can find the "Stop Killer Robots Campaign" as part of a vast transnational network that seeks to ban the Fully Autonomous Weapons Systems. As an organization

[21] UNOG, ¨The Convention on Certain Conventional Weapons.¨ (United Nations Office at Geneva, 2019c.)
[22] Daisuke Akimoto, ¨International Regulation of ¨Lethal Autonomous Weapons Systems¨ (LAWS): Paradigms of Policy Debate in Japan¨ (Seoul: Asian Journal of Peacebuilding Vol.7 No.2, 2019)
[23] Serif Onur Bahçecik, ¨Civil Society Responds to the AWS: Growing Activist networks and Shifting Frames¨ (Global Policy Volume 10. Issue 3, 2019)
[24] Buzan, op.cit.

representing the civil society, it demands a political statement by the countries as a first step for the consecution of an exhaustive international agreement. The act itself is not legally binding, though it is a significant and necessary previous step for the achievement of the main goal, which is the prohibition treaty[25].

The way for the achievement of this goal requires actions from the bases that show the political importance of the cause itself. This involves to publish the basic principles of the campaign in the media in order to inform and raise awareness in part of the group of civil institutions.

This pressure exercised by the civil society may force governments to take the required measures. To reach this goal, we need a strong political leadership at the parliament, as it is happening in many countries that participate in the "Global Parliamentary Campaign". A call to the members of the Parliament of the world to support the negotiation of a treaty for the prohibition of the Lethal Autonomous Weapons Systems[26].

Conclusion

The question of the Lethal Autonomous Weapons Systems (LAWS) is usually analyzed and approached from the perspective of the studies on science, technology and International humanitarian rights. This implied that the academic debate from the International Relations theory has been left behind and weakly contested. That is the motivation of this article, which carries out an analysis that takes into consideration the International Security studies and the field of the international relations, without disregarding the regulatory aspect mentioned by the campaign.

The irruption of the Artificial Intelligence applied to the LAWS will have the capacity to alter the balance of power in relation to the structure of the current international system. As a result of this, the development of these capacities will generate a high risk of proliferation towards a diversity of actors, both state and non-state, although the advance of this type of technologies will be in charge of the military industrial complexes (MIC) of the great powers that will engage in a new arms race.

In this scenario, the preventive action carried out by the "Stop Killer Robots Campaign" is extremely important, since it has a vast experience in arms control policies and the pressure exercised on the governments from the civil society area. An approach to issues of International Security that takes Human Security and Peace studies as a starting point.

[25] Daisuke Akimoto, op.cit.
[26] Erin Hunt, ¨Campaign to Stop Killer Robots: Campaigner´s Kit¨ (Ottawa: Mines Action Canada, 2019)

APP
Asociación para Políticas Públicas