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# **THE FUTURE OF LETHAL AUTONOMOUS WEAPONS SYSTEMS (LAWS)**

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# Abstract

Due to the rapid advancements and adoptions in artificial intelligence in the 21st century, machines are beginning to substitute humans on the battlefield. Several robotics and military specialists believe that ‘killer robots’ are majorly considered lethal autonomous weapons that possess the capacity to identify and attack targets with little or no human intervention. Despite the fact that the rapid execution and expansion of such automated systems appears to be critical for research and other proponents of automated systems, scientists, human rights activists, arms advocates, diplomats, and others are concerned that deploying lethal autonomous weapons on the battleground would significantly reduce human management and control over war missions, ultimately leading to severe violations of various international laws and morals. According to some analysts, Lethal Autonomous Weapons Systems have the potential to usher in a ‘Third Revolution’ in the space of war after nuclear weapons. Like any other weapon technology, the LAWS needs to be planned and operated in accordance with international obligations. This piece investigates the atmosphere of lethal autonomous weaponry as well as developments around the concept of autonomous warfare. It also analyses the legitimacy of this type of a warfare method under International Humanitarian Law (IHL) and the viability of these warfare programmes while noting recent advances and current difficulties in the warfare system. It is critical to comprehend these difficulties because, if implemented, combat technologies such as man-killing machines constitute a significant danger to humankind as well as the foundations of the legislation defending basic human dignity.<sup>1</sup>

## Introduction and Background

**A**rtificial Intelligence (AI) is a scientific & technology discipline that focuses on creating artificial machines that can execute specified tasks in a complex and turbulent environment. It is increasingly being used in a vast range of fields, including science missions, education, public health and research; military applications are no exception, with many emerging countries recognising the promise and investing extensively in AI development and combat missions. Throughout its National Defense Strategy Policy, the

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<sup>1</sup>Martínez, Antonio Pedro Marín. (2022) “Ciberética, Agentes Morales Artificiales y Responsabilidad Jurídica Internacional.” Academia.edu, February 3.  
[https://www.academia.edu/70295244/CIBER%3%89TICA\\_AGENTES\\_MORALES\\_ARTIFICIALES\\_Y\\_RESPONSABILIDAD\\_JUR%3%8DDICA\\_INTERNACIONAL](https://www.academia.edu/70295244/CIBER%3%89TICA_AGENTES_MORALES_ARTIFICIALES_Y_RESPONSABILIDAD_JUR%3%8DDICA_INTERNACIONAL).

United States invested heavily in comprehensive research and substantial investment in the strategic application of AI in order to obtain long-term military advantages in 2008.<sup>2</sup> China issued an AI Development Plan in July 2017, outlining the country's plan to be the leader in Artificial Intelligence war technologies by the year 2030, specifically mentioning how it will be used to strengthen national defence and security. By 2025, the Russian military programme hopes to have AI integrated into 30% of its war combat equipment.<sup>3</sup> For years, the employment of lethal autonomous weaponry has sparked debate regarding armed confrontation and international obligations. Autonomous weapons systems, as stated, are not explicitly governed by international humanitarian law treaties. On the other hand, any LAWS technology must be deployed in line with IHL. As a result, an essential duty for implementing the same rests with any country that develops, deploys, as well as employs LAWS.

The fundamental legality and viability of LAWS have gained traction in the past five years. As Artificial Intelligence progresses quicker every day, questions regarding the feasibility, legality and ethical ramifications of LAWS are becoming more complicated. Despite conflicts revolving around the usage of LAWS in war confrontations, currently nation-states have not found consensus on future advancement and usage of lethal weaponry, with various states advocating for a particular restriction and also for dialogues on a binding legislative treaty. Others, such as the United States, are lobbying for their use, seeing LAWS as a significant technological innovation to meet the International Humanitarian Law (IHL) standards. In the absence of a standard definition of LAWS, the widely accepted one is provided by the U.S. Department of Defense in Directive No 3000.09, stating that:

*“A weapon system that, once activated, can select and engage targets without further intervention by a human operator. This includes human-supervised autonomous weapon systems that are designed to allow human operators to override operation of the weapon system, but can select and engage targets without further human input after activation.”<sup>4</sup>*

In other words, LAWS can monitor and attack targets with little or no human intervention. The introduction of lethal autonomous weaponry has necessitated international negotiations to control their manufacturing and usage. To answer this need, the U.N. Group of Governmental

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<sup>2</sup>“National Defense Strategy.” U.S. Department of Defense. Accessed February 24, 2022.

<https://www.defense.gov/Spotlights/National-Defense-Strategy/>.

<sup>3</sup>Polyakova, Alina. “Weapons of the Weak: Russia and Ai-Driven Asymmetric Warfare.” Brookings, October 25, 2019.

<https://www.brookings.edu/research/weapons-of-the-weak-russia-and-ai-driven-asymmetric-warfare/>.

<sup>4</sup>“Dodd 3000.09, November 21, 2012, Incorporating Change 1 on ...” Accessed February 24, 2022.

<https://www.esd.whs.mil/portals/54/documents/dd/issuances/dodd/300009p.pdf>.

Experts (UN GGE) was established in 2016 as part of the Convention on Certain Conventional Weapons (CCW).<sup>5</sup>

## A Cost-Benefit Analysis of LAWS

Military benefits and monetary savings are the main arguments in favour of LAWS, owing to the fact that such a step would help in achieving a tactical advantage by requiring fewer soldiers, allowing the combat zone to be extended to previously unreachable areas and resulting in fewer casualties by removing people and substituting them with automation for high-risk operations. Furthermore, robots are not bound by the same intellectual or physiological limits as humans. As a result, their emotions would have no bearing on their decisions. According to data from the U.S. Defense department, each warrior in Afghanistan costs the Pentagon four times more per year than a minor vehicle with armaments.

Conformity with humanitarian law, morality, and transparency are the key arguments for opposing the manufacture of autonomous armaments. If humanitarian law is taken into consideration, it is argued that the concepts of difference and vigilance necessitate the least amount of supervision. The self-learning and mechanisation potential of LAWS may introduce an undetermined level of human involvement, possibly violating such principles. Furthermore, Article 36 of Additional Protocol I to the Geneva Convention stipulates that the weapons must be examined prior to being used legitimately.<sup>6</sup>

While some countries think autonomous weapons have the capability to grow within the boundaries of international norms, others argue that this is improbable due to the intricacy of human control. Outsourcing life-or-death decisions to algorithms also raise ethical concerns. In 2013, a group of 37 AI and robotics specialists issued “the Scientists’ Call to Ban Automated Lethal Robots”, arguing that “decisions on the use of lethal force must not be left to computers”. It is difficult to ascertain who is to blame if the tiniest error occurs for traditional soldiers on the war front as who fired the trigger, who gave the order and other such circumstances have a direct line of culpability. On the other hand, lethal weapon systems that function on their own

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<sup>5</sup>Felt, Coley. “Autonomous Weaponry: Are Killer Robots In Our Future?” The Henry M. Jackson School of International Studies, February 14, 2020. <https://jsis.washington.edu/news/autonomous-weaponry-are-killer-robots-in-our-future/>.

<sup>6</sup>“Lethal Autonomous Weapons Systems: Recent Developments.” HLS Clinical and Pro Bono Programs, March 15, 2019. <https://clinics.law.harvard.edu/blog/2019/03/lethal-autonomous-weapons-systems-recent-developments/>.

represent a severe threat when it comes to allocating liability. Furthermore, unlike soldiers, autonomous weapons may decide to make self-governing judgements and are not subject to retaliation. The number of persons responsible for constructing and using these weapons makes it nearly impossible to hold one person guilty.

When it comes to the uncertainty of holding someone accountable, examining the meaning of the “war algorithm” is critical. According to a Harvard Law School study, “a war algorithm is any algorithm represented in computer code, conducted via a constructed system, and capable of working in armed conflict”. The relationship connects the war algorithm to responsibility, extending from governments and their military through inventors, attorneys, managers, corporate organisations, and more. With the progress of these algorithms, a few key ideas that underpin the governance of armed conflicts are being called into question.

## International Developments

To begin with, the Human Rights Watch (HRW) and the Campaign to Stop Killer Robots (CSKR), two of the most vocal supporters of a planned LAWS boycott, have been extremely engaged in the agenda. In August 2018, HRW released “Notice the Call: A Moral and Legal Imperative to Ban Killer Robots”, a paper produced by the Harvard Law School's International Human Rights Clinic (IHRC). HRW demanded a preplanned restriction on the turn of events, establishment, and use of LAWS, as it did in prior reports. In any case, the latest report went above and beyond, claiming that completely independent weaponry is violating the Martens Clause, which was established in the prelude to the 1899 Hague Convention (II) on the Laws and Customs of War on Land and successfully ensures a minimum level of insurance under IHL even in the absence of explicit material deals. According to the HRW and the IHRC, LAWS would be unable to comply with the Martens Clause’s two main lines of support: “standards of mankind” and “dictates of public quiet, tiny voice”.<sup>7</sup>

HRW and CSKR put this idea of a public inner voice to the test a few months later, releasing the findings of a statistical survey on critical, legitimate, and moral repercussions of LAWS.

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<sup>7</sup>Ticehurst, Rupert. “The Martens Clause and the Laws of Armed Conflict: International Review of the Red Cross (1961 - 1997).” Cambridge Core. Cambridge University Press, January 13, 2010. <https://www.cambridge.org/core/journals/international-review-of-the-red-cross-1961-1997/article/abs/martens-clause-and-the-laws-of-armed-conflict/19E402694542E42DD1EDA333027E490B>.

The analysis showed that 61% of adults in 26 countries break the law, a 5% increase over 2017 survey findings. In addition, most respondents in 20 of these nations showed their displeasure with LAWS, particularly those for nations whose states have rejected a precautionary boycott. Similarly, CSKR concluded that “public opinion is in line with [CSKR’s] need for action to prevent the advancement of executioner robots”. Even though these summaries do not directly illuminate investigations under IHL (except if, as HRW and the IHRC recommend, they add to a better comprehension of the “directs of public inner voice”), they provide a fascinating intermediary to how opinion *Juris*—a state’s conviction that something is legitimately obligatory—is forming in relation to LAWS.<sup>8</sup>

Other than CSKR and HRW’s efforts, the U.N. Secretary-General demanded a restriction on LAWS at the Paris Peace Forum commemorating the 100th anniversary of the conclusion of World War I, stating, “Consider the outcomes of a self-contained framework that could target and assault people without the assistance of anyone else. I urge governments to boycott these weapons, which are both politically and ethically abhorrent.” Members of the American Association for the Advancement of Science expressed unhappiness with the GGE’s overall progress during their annual meeting in mid-February.

In the interim, LAWS have gained massive consideration in the private area. In June 2018, Google experienced harsh criticism as a large number of its workers marked a request encouraging the organisation to stop inclusion in Project Maven -an agreement with the Department of Defense to foster artificial reasoning for investigating drone film (which Google representatives dreaded would one day be able to work with the turn of events or utilisation of LAWS). Confronting tension from representatives and innovation specialists across the globe, Google, thus, reported its choice not to re-establish its agreement for Project Maven, the Defense Department as of late entrusted the Defense Innovation Board with creating moral standards to direct the office’s utilisation of A.I. in military equipment and activities.

## International Stances on LAWS

As A.I. advances, nations will have to make a decision on whether or not to use LAWS in conflict situations. AI-driven weapons have both advantages and disadvantages, ranging from

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<sup>8</sup>“Stop Killer Robots.” Stop Killer Robots. Accessed February 24, 2022. <https://www.stopkillerrobots.org/>.

enhanced combat possibilities to impulsive behaviours that may lead to uncontrolled intensification. The planned use of LAWS is the source of many of its reactions. The disappointment or loss of control of a wholly self-contained weapon might result in widespread slaughter, unintentional setbacks, and escalating conflict. Using LAWS and other broad fusions of A.I. innovation for military purposes necessitates an awareness of these potential hazards. The various moral, legal and political drawbacks that LAWS may have on the international community are central to the debate. The central moral concerns are responsibility, direction and whether or not giving computers the ability to connect with and take out a purpose naturally diminishes human existence. During a battle, a robot's inability to process the meaning of human existence can be an asset as well as a liability. Currently, international positions, including a global LAWS boycott, are divided. Several non-governmental organisations (NGOs) have allied to push for a boycott, and entities such as the International Committee of the Red Cross (ICRC) claim that nations should establish "limits on independence in weapon frameworks" (2018). A few governments have also attempted to direct the usage of autonomous weapon systems, while others have attempted to stop and restrict LAWS research entirely.

The urgency of LAWS has grown to the point that more than 60 NGOs have joined forces to support the stoppage of Killer Robots. Several states and the U.N. have been encouraged to implement a worldwide prohibition on lethal autonomous weapons by campaign supporters. International perspectives, on the other hand, are still divided. Although most nations favour a pre-emptive LAWS prohibition, those who are against it have more power in the game, as indicated in Table 01.

Table 1: Nation Stances on LAWS Ban

Support		Other	Oppose
Algeria	Ghana	China <sup>ab</sup>	Australia
Argentina	Guatemala		Belgium
Austria	Holy See		France <sup>a</sup>
Bolivia	Iraq		Germany
Brazil	Mexico		Israel <sup>a</sup>
Chile	Morocco		South Korea <sup>a</sup>
Colombia	Nicaragua		Russia <sup>a</sup>
Costa Rica	Pakistan		Spain
Cuba	Panama		Sweden
Djibouti	Peru		Turkey
Ecuador	Uganda		United States <sup>a</sup>
Egypt	Venezuela		United Kingdom <sup>a</sup>
El Salvador	Zimbabwe		
<sup>a</sup> Countries most capable of developing LAWS			
<sup>b</sup> Supports a ban on the development, but not the use of LAWS			

(Source: Liu, Z., & Moodie, M. (2019). International Discussions Concerning Lethal Autonomous Weapon Systems. Congressional Research Service.)

Regardless, the last possibility is nearly unimaginable without a prevailing global basis capable of authorising such an agreement. Surprisingly, the countries best suited to enacting legislation are either opposed to boycotts or wish to postpone deciding these disparities. It is the responsibility of countries' officeholders to establish a global organisation dedicated to examining the multidisciplinary repercussions of LAWS, exercising control for AI leaps, and collaborating to build usual assumptions and functioning methods for future weakening weaponry. Before progress can outperform current war ideals, a far-reaching legal structure and standards must be constructed and formalised. On the other hand, making global structures can be a politically charged and time-consuming process. Meanwhile, sovereign states may choose to create their councils to ensure greater control, implement public security techniques, and define benchmarks to demonstrate new computer-based intelligence weaponry.

## The Future of LAWS

To avoid disastrous outcomes, states must accept that they cannot address the hazards of advances in robotic military innovation on their own. The public image of mechanised weapons



and related innovation will be critical to future problem development for countries interested in a global agreement on LAWS. One method to influence the global discourse around LAWS is to figure out how these technologies might help public security or residents in the commercial sector. For example, the ability of an AI to quickly sift through vast amounts of data would be helpful in both combat as well as civilian settings.<sup>9</sup> Collaboration is critical in today's globalised world for developing sustainable administrative designs and global standards that can aid in coping with the critical risks related to the inevitable activity of LAWS and other arising developments.

In the absence of an administrative mechanism in place, one risks repeating the late reaction that occurred after the first nuclear bomb was used. According to M.A. Thomas, a teacher at the United States Armed Forces School of Advanced Military Studies, "Simulated intelligence is likely to have both advantages and disadvantages. It may be erroneously inclined or biased, capricious, untrustworthy, dark, and less capable of fine segregation" in the various functional and essential levels of combat.<sup>10</sup>

## Conclusion and Proposed Solutions

According to the Armed Conflict Rule (LOAC) of International Humanitarian Law, the Lethal Autonomous Arms Programme is not treated any differently from other weapons. Despite the fact that the U.S. is now using such a system that consists of killer robots, helicopters and other weapons, 28 nations at the U.N. are advocating for a complete moratorium on LAWS. However, one issue remains: why can't robots be held accountable? Moreover, there has been continuous debate over AI personality and AI systems' potential criminal responsibility. But in this case, would that technique make a significant difference? Apart from how AI systems may be punished, AI designers and developers would undoubtedly need to be re-involved. Alternatively, a pool of AI-related claims may be subject to a no-fault compensation structure. Developing strict safety standards is going to be critical on the regulation front, but administering an acceptable structure is going to be tough in the near future.

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<sup>9</sup>"U.S. Export Regulations." International Trade Administration | Trade.gov. Accessed February 24, 2022. <https://www.trade.gov/us-export-regulations>.

<sup>10</sup>"Time for a Counter-AI Strategy - Air University." Accessed February 24, 2022. [https://www.airuniversity.af.edu/Portals/10/SSO/documents/Volume-14\\_Issue-1/Thomas.pdf](https://www.airuniversity.af.edu/Portals/10/SSO/documents/Volume-14_Issue-1/Thomas.pdf).

Owing to the complexity of the field, guidance from A.I. specialists would be necessary to construct some formal structure, which means that advisory committees to lawmakers and administrations must be established as soon as feasible. Recognising the potential benefits of AI, creating, improving, and implementing regulations and processes that add value to public welfare and defence without stifling innovation or putting pressure on enforcement must be a priority.

LAWS possess the potential to increase the harm to people during combat. Because technology is rapidly evolving and a few states favour this framework and have already begun working on creating such weapons, nations must take urgent action to adopt legislation prohibiting them. Furthermore, if international coordination is not achieved soon, the application of these technologies may endanger the international community, states, and individuals. As a result, international discussions on autonomous armaments should find more unanimity. On ground, the private sector should work with the government to ensure that the initiatives are well-designed and regulated. States should prohibit the development, manufacturing, and use of autonomous weapons by a legally binding agreement or treaty that establishes a preventive prohibition. Lethal autonomous armaments research and development should be examined and monitored on a set timeframe, and a moral code of ethics must be devised to address the hazards of such research and innovation. At last, states can pass laws and regulations prohibiting such weaponry on a national level.<sup>11</sup>

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<sup>11</sup>Martínez, Antonio Pedro Marín. “Ciberética, Agentes Morales Artificiales y Responsabilidad Jurídica Internacional.” Academia.edu, February 3, 2022.  
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