

THE CCW REVIEW PROCESS WITHIN ARMS-PRODUCERS AND NON-PRODUCERS

Authors: Sabrina E. Medeirosⁱ
Italo B. Potyⁱⁱ

POLICY STATEMENT

Artificial Intelligence (AI) is already transforming industries and has received significant investments from arms-producing economies. This raises serious ethical questions about the military use of artificial intelligence, particularly concerning deploying autonomous lethal weapons systems that operate without human control. Furthermore, ethical concerns surround the ancillary use of AI in military missions, such as target selection and reconnaissance through image analysis.

Another critical issue arises from the power asymmetry between arms-producing countries with advanced industries and non-arms-producing countries, particularly those in the Global South. The military utilisation of artificial intelligence reinforces systemic inequalities between developed and developing nations. These demands discussing establishing multilateral mechanisms to regulate the AI arms race among significant powers seeking dominance in disruptive technologies within the military sector. Conversely, countries in the Global South, leveraging their collective economic weight, can advocate for rules and norms in multilateral institutions that address the ancillary use of AI in military missions and prohibit the deployment of AI-powered lethal weapons.

The connection between different realities and positions in the international defence system can leverage the capacity to promote agreement development and commitment. This would help reduce power asymmetry and create a more peaceful global scenario.

BACKGROUND

The Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems is currently deliberating proposals to consider a group of measures related to the normative and operational framework concerning emerging technologies in this field. These proposals encompass existing protocols within the Convention and other legal, military, and technological options. The objective of the Group of Governmental Experts related to emerging technologies about lethal autonomous weapon systems is to discuss and provide recommendations on such systems capable of selecting and engaging targets without human intervention. Its work aims to strengthen 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.

According to the final report of the 2023 Meeting of the High Contracting Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or Have Indiscriminate Effects, it was decided that the work of the open-ended Group of Governmental Experts related to emerging technologies in the area of lethal autonomous weapon systems will continue to strengthen the Convention. The draft protocol addresses the significant ethical, legal, humanitarian, and security risks and challenges posed by autonomous weapon systems while ensuring progress in the access, development, research, production, procurement, transfer, and peaceful use of emerging technologies.

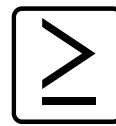
The consensus decision-making process of the GGE presents essential challenges. Notably, two major groups present whose interests are affected differently, the Producers and non-producers of weapons of the high technological impact of artificial intelligence.

FINDINGS

It is worth noting that legal, military, and technological expertise has been brought in to develop a normative and operational framework for autonomous weapon systems. High Contracting Parties proposed several measures in the draft protocol on autonomous weapon systems. These measures include:

- Adhering to the principle of transparency regarding developing autonomous weapon systems across their entire life cycle, including national review processes.
- Identifying and sharing information and good practices on the conduct of reviews of autonomous weapon systems with other High Contracting Parties voluntarily.
- Ensuring practical and comprehensive risk assessments and mitigation measures as part of the entire life cycle of emerging technologies in the area of autonomous weapon systems.
- Instituting additional regulatory measures and mechanisms to ensure full compliance with international humanitarian law in using autonomous weapon systems and upholding accountability.
- Reviewing weapon systems under development or modification that change the effects or use of existing weapon systems, including because of self-learning processes, to ensure compliance with international law.

According to the specialised literature (1) (Webb, 2019), there are two basic types of artificial intelligence: narrow AI, which consists of systems able to perform specific tasks and learn from experience, and general AI, which refers to systems capable of performing multiple tasks with a level of intelligence comparable to that of humans. The first type is the one that already exists and has been more commonly used for over ten years in the smartphones we use. It involves the invisible AI infrastructure present in applications whose algorithms provide us with directions, text correction, and content recommendations, among other specific tasks. General AI, according to Hoadley and Lucas (2),



is still decades away from being achieved. Therefore, much of the investment in the sector today is allocated to the development and enhancement of narrow AI.

In the military sector, this type of AI can be observed, for example, in Unmanned Aerial Vehicles (UAVs), or drones, which are endowed with specific abilities such as selecting and attacking targets without human control (3). Additionally, AI can be employed in existing technologies to augment them, functioning as an "enabler" technology (4). For instance, AI can be used in military support activities, such as processing and interpreting data from image recognition algorithms captured by drones behind enemy lines or satellite imagery. Another example would be in the area of command and control, where rapid analysis of large amounts of data can optimise decision-making processes in military conflicts.

A central feature of AI is the ability to learn from experience, called machine learning, which allows a system to adapt to new information, incorporate it into existing knowledge, and detect patterns so that the system can function autonomously. Autonomous systems equipped with artificial intelligence have already been employed by the United States in military missions in Iraq and Syria, with algorithms created to locate targets on the battlefield (5) automatically. In this case, AI was used as an enabling technology, providing situational awareness on the battlefield.

The ethical problems of using AI for military purposes are set against the backdrop of geopolitical competition between the United States, China, and Russia. The DoD strategy (6) places high investments made by China and Russia as critical justifications for accelerating the development and deployment of new AI-powered systems on the battlefield. China is the main competitor of the US in the international AI market, with a strategic plan to lead investments in the field by 2025. China's strategy for military use of AI, according to Kania (7), is influenced by US strategic plans.

China is the main competitor of the US in the international AI market, with a strategic plan to lead investments in the field by 2025. This plan proposes applying technology in the Chinese economy and society, including industry, the judiciary, public security, and the military sector. The Chinese strategy for the military use of AI, according to Kania (8), is influenced by US strategic plans. In this sense, the guiding principle is the use of AI as a facilitating technology for analysing large amounts of information quickly and efficiently, and to improve decision-making on the battlefield, rather than as lethal autonomous systems. However, China has also been developing autonomous land, air, and sea vehicles and drones that act coordinated via AI, forming swarms, a tactic known as drone swarms.

On the other hand, Russia has emphasised developing AI for military use, although it has less financial capacity for R&D compared to the US and China. According to Bendett (9), Russian AI research focuses on autonomous vehicles and robotics, potentially replacing soldiers and human pilots of aircraft and tanks with AI-powered systems. These developments in the field of AI are driven by the competition between great powers, which poses an increasing threat to peace and makes the security of non-arms-producing countries more vulnerable. Establishing an international AI non-proliferation regime is challenging due to its software nature. As Ewers et al. (10) point out, software has a diffuse character and proliferates faster than hardware, as it can be easily replicated, transmitted, stolen, copied, and

reproduced on a large scale. Consequently, there are additional difficulties in implementing and enforcing international legal instruments that prevent the creation and dissemination of AI algorithms. This challenges non-arms-producing countries in the Global South to create such instruments and prevent proliferation.

CONCLUSIONS

Positions on artificial intelligence (AI) in weapons can vary among countries, influenced by factors such as strategic interests, technological capabilities, ethical considerations, and domestic policies. However, it is essential to note that individual positions can differ significantly, and generalisations may not apply to all arms-producing or non-producing countries. At the GGE meeting of May 15-19, 2023, a draft protocol was published by a group of non-core countries, mostly from the Global South (Argentina, Ecuador, El Salvador, Colombia, Costa Rica, Guatemala, Kazakhstan, Nigeria, Palestine, Panama, Peru, Philippines, Sierra Leone and Uruguay). The document specifies measures to deal with the serious risks and challenges presented by these systems, ensuring that humans always maintain control over the use of force (11).

Arms-producing countries:

- Strategic interests.
- Investment in research and development.
- Regulation and control.

Non-arms-producing countries:

- Ethical and humanitarian concerns.
- Engagement in international discussions.
- Support for diplomacy and negotiations.

It is essential to acknowledge that these positions can evolve and differ based on technological advancements, geopolitical shifts, and discussions in international forums regarding the regulation of AI in weapons. Each country develops its own approach, considering a combination of strategic, legal, ethical, and security factors.

RECOMMENDATIONS

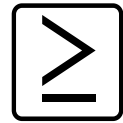
Arms-producing states might adopt measures to regulate and control the development and use of autonomous weapons. They may engage in international debates regarding the ethics and legality of autonomous weapons, seeking to strike a balance between technological innovation, security considerations, and human rights concerns. Arms-producing countries invest in research and development of AI technologies for military applications. As so, they aim to create autonomous or semi-

autonomous systems to improve combat decision-making, self-defence capabilities, and other military functionalities. Countries with defence and weapons production industries are motivated to develop and utilise AI technologies to enhance their weapons systems' effectiveness, accuracy, or lethality. But they should not perceive AI only as a means to gain military advantage and bolster their defence capabilities due to dehumanisation risks.

The Non-arms-producing states can actively participate in international debates concerning autonomous weapons. They may advocate for regulations and prohibitions on certain types of weapons systems based on ethical and humanitarian concerns. They may seek clear international standards and mechanisms for oversight to ensure the responsible use of AI in military contexts. States without arms production industries tend to approach AI in weapons more cautiously. Non-arms-producing states can be informed and participating actors in the dialogue about potential risks, such as insufficient human control, human rights errors or violations, and the risk of uncontrolled escalation in conflicts. At the same time, these countries can support diplomatic efforts to establish international agreements and treaties that limit or prohibit the development and use of autonomous weapons. They may seek to foster consensus among nations regarding ethical and legal principles related to AI in weaponry.

REFERENCES

- (1) Hoadley, Daniel; Lucas, Nathan. 2018. "Artificial Intelligence and National Security." Congressional Research Service. April 26. Access on 26 MAY 2023. <https://fas.org/sgp/crs/natsec/R45178>; Webb, Amy. 2019. The big nine: How the tech titans and their thinking machines could warp humanity. Hachette UK.
- (2) Hoadley, Daniel; Lucas, Nathan. 2018. "Artificial Intelligence and National Security." Congressional Research Service. April 26. Access on 26 MAY 2023
- (3) Cummings, M. 2017. "Artificial intelligence and the future of warfare". Research Paper of the Royal Institute of International Affairs, n. 208223. Access on 26 MAY 2023. <https://www.chathamhouse.org/sites/default/files/publications/research/2017-01-26-artificial-intelligence-futurewarfare-cummings-final.pdf>
- (4) Horowitz, M. 2018. "Artificial intelligence, international competition and the balance of power". Texas National Security Review 1 (3): 36-57. Access on 26 MAY 2023. <https://doi.org/10.15781/T2639KP49>
- (5) Hoadley, Daniel; Lucas, Nathan. 2018. "Artificial Intelligence and National Security." Congressional Research Service. April 26. Access on 26 MAY 2023
- (6) United States of America. 2018. Summary of the 2018 Department of Defense Artificial Intelligence Strategy, DoD, 2018. Access on 26/05/2023. <https://media.defense.gov/2019/Feb/12/2002088963/-1/-1/1/SUMMARY-OF-DOD-AI-STRATEGY.PDF>>.
- (7) Kania, Elsa B. 2017. "Battlefield Singularity: Artificial Intelligence, Military Revolution, and China's Future Military Power". Center for a New American Security, November 28, 2017. Access



on 26 MAY 2023. <https://www.jstor.org/stable/resrep16985>.

- (8) Idem.
- (9) Bendett, Samuel. 2017. "Red Robots Rising: Behind the Rapid Development of Russian Unmanned Military Systems". The Strategy Bridge, December 12, 2017. Access on 26 MAY 2023. <https://thestrategybridge.org/thebridge/2017/12/12/red-robots-rising-behind-the-rapid-development-of-russian-unmanned-military-system>
- (10) Ewers, E. et al. 2017. Drone proliferation: policy choices for the Trump administration. Washington: Center for a New American Security, 2017. Access on 26 MAY 2023. <https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-security-studies/resources/docs/CNASReport-DroneProliferation-Final.pdf>.
- (11) [https://docs-library.unoda.org/Convention_on_Certain_Conventional_Weapons_-_Group_of_Governmental_Experts_on_Lethal_Autonomous_Weapons_Systems_\(2023\)/CCW_GGE1_2023_WP.6_2.pdf](https://docs-library.unoda.org/Convention_on_Certain_Conventional_Weapons_-_Group_of_Governmental_Experts_on_Lethal_Autonomous_Weapons_Systems_(2023)/CCW_GGE1_2023_WP.6_2.pdf) / <https://meetings.unoda.org/meeting/67246/documents> Access on 26 MAY 2023.

ⁱ Teacher at Lusophone University Lisbon, Researcher at LusoGlobe. Researcher at InterAgency Institute and IDN.

ⁱⁱ PhD in International Political Economy, PEPI/UFRJ. Independent Researcher.