Shaping Responsible AI Governance and GAC's Role in Regulating Lethal Autonomous Weapons

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Issue

The advent of Lethal Autonomous Weapons Systems (LAWS) introduces severe and novel risks to human rights and in conflict, which must be addressed through international AI governance. Canada can kickstart the normative process of ensuring meaningful human control is maintained in remotely-controlled and autonomous weapons, to limit their uncontrolled proliferation and usage to safeguard human rights.

Background

What are LAWS?

LAWS are autonomous military systems that reduce and delegate the decision to kill to an algorithm trained through machine learning. This makes it possible for LAWS to complete an entire targeting cycle—selecting, tracking and engaging a target—without any human intervention (Sauer 2020). Enabling this degree of autonomy in a weapon's "critical functions" ("Views of the International Committee of the Red Cross (ICRC)" n.d.) has raised concerns about the ethical and technical threats created by LAWS and the risks they pose to human rights globally. There is a growing international movement to restrict the use of LAWS, primarily represented through the organization *Campaign to Stop Killer Robots* – consisting of 160 NGOs ("Killer Robots: Growing Support for a Ban" 2020).

However, the lack of existing regulation through a robust norms-based, political and legal framework affords Canada the opportunity to start a process leading towards the regulation of LAWS in military applications, while forging new—and strengthening existing—multilateral partnerships with like-minded governments and civil society organizations to protect human rights. Through Canada's influential role in negotiating the 1997 Ottawa Treaty, it has established credibility in regulating military technologies along humanitarian lines (Maslen and Herby 1998). Pursuing a similar political strategy in advancing the global effort on LAWS, Canada must spearhead the international governance of this AI technology, while upholding a commitment to human rights and democratic values.

Who is using LAWS?

LAWS have been used by several governments in active conflict. Azerbaijan used Israeli-supplied IAI Harpy drones against Armenia in 2020, which allowed autonomous drones to recognize targets and attack them, an ability that is described as fully autonomous by the weapon's manufacturer (*Stopping Killer Robots* 2020). Additionally, Israel has exported these drones to a growing list of countries including the United Arab Emirates, Chile, China, India, South Korea, and Turkey, many of which are now developing and exporting their own comparable systems (ibid). During Libya's civil war in 2020, a small swarm of Turkish Kargu-2 drones attacked soldiers without requiring data connectivity between the

operator and the munition, displaying a 'fire, forget and find' capability, the first incident capturing the attention of many international media outlets (UN. Panel of Experts Established pursuant to Security Council Resolution 1973, 2021). Former Secretary of Defense of the U.S, Mark Esper, notes that Chinese manufacturer Ziyan has advertised a fully autonomous system, the Blowfish A3 helicopter drone, which has reportedly been exported to the Middle East (Sayler 2021).

Canada's Stance on LAWS

Canada was among the first group of countries to sign the United Nations Convention on Certain Conventional Weapons (CCW) when it opened for signature in 1981 (Global Affairs Canada 2017). The CCW is now the only international forum where LAWS are subject to negotiation (ibid). In December 2019, the federal government announced its position towards a potential ban on such systems for the first time through a ministerial mandate letter. Therein, the Prime Minister's office advised the Minister of Foreign Affairs to "advance international efforts to ban the development and use of fully autonomous weapons systems" ("ARCHIVED - Minister of Foreign Affairs Mandate Letter" n.d.).

Risks posed by LAWS

The risks posed by LAWS can be categorized into technical and ethical threats. Starting with the former, the most consequential risk is that of LAWS' proliferation, which is virtually guaranteed to happen in an exponential and uncontrollable manner once the technology becomes widely (financially) accessible (Horowitz and Fuhrmann 2017). LAWS are likely to spread through "technology diffusion", which is the omnidirectional spread from countless points of origins, brought about by dual-usage—the concept of using civilian hardware and technology (for example, self-driving vehicles or recreational drones) for military applications (Sauer 2020). The necessary hardware is commercially available and the software that enables autonomy can simply be copied and pasted. This allows for extremely easy co-option and access to previously inaccessible military capabilities, even to non-state actors. The intensity of how inexpensive remotely-controlled drones are, and their use in Ukraine, is a forbearer of what is to come, once they can fly and fight autonomously. Due to the superhuman speed of algorithmic decision-making, and their deliberately unpredictable design, LAWS usage will lead to significant and unintentional outcomes, accidents and perhaps irrevocable escalations in conflicts (Horowitz 2019). The massive cost reduction and significantly lowered physical risks to the user pose immensely strong incentives to drive the development and proliferation of LAWS forward (Sauer 2020). These operational benefits would not just fuel their diffusion globally, but also lower the threshold to use violence in times of conflict.

The ethical risks are focused on how LAWS can be (mis) used. LAWS enable select targeting of groups via a range of identifiers such as race, gender, ethnicity or any other pseudo-scientifically defined category (Wyatt 2020). While contemporary facial recognition technology sustains this, the algorithms and AI system underpinning LAWS remain brittle; they function along very narrow parameters on which they have been trained. Furthermore, computer systems inevitably have bugs and errors, adversaries may actively try to counter and interfere with LAWS and the complexity of reality surpasses any training simulation's parameters (Scharre 2016; Borrie 2016). Thus, mistakes and accidents are inevitable, and it is impossible for LAWS to adhere to principles of proportionality (AI cannot understand context), distinction (AI cannot reliably distinguish between civilian and combatant) and accountability (a machine cannot be held accountable) all foundational aspects of the Geneva Conventions (Scharre 2016)

International and Domestic Engagement Opportunities

Developing an international governance framework for the use and misuse of LAWS requires a multifaceted and interdisciplinary approach with international and domestic partners. The approach would ultimately position Canada as a global strategic partner and determine how, along with other global leaders, to best harness resources and expertise on the rules-based international stage.

International Governance Structures

The CCW serves as the only global forum to consult on LAWS. In November 2017, the CCW established the Group of Governmental Experts on Autonomous Weapon Systems to discuss the legal, ethical and technological dimensions of LAWS (*The Convention on Certain Conventional Weapons – UNODA,* n.d.).

In addition to the CCW, AI, Defense and Economic forums have been identified as sites for engagement. For AI and defense, NATO's call for the *AI Partnership for Defense*, launched in September 2020, is a key forum for discussing the use of LAWS among allied nations in a military context ("AI Partnership for Defense Is a Step in the Right Direction – But Will Face Challenges" 2020). Canada can also engage further with NATO. The NATO Artificial Intelligence Strategy's principle of responsibility and accountability for AI technologies (North Atlantic Treaty Organization 2022) can be built upon to advance the criticality of human control over LAWS' usage. These are key military forums to discuss the ethical and responsible use of LAWS among allied nations and work toward ensuring meaningful human control over their use. Both these forums enable Canada to engage with international partners and develop more coherent and ethical military-civil standards regarding the use of LAWS.

In 2020, the LAWS industry generated $11.56 billion (Allied Market Research 2021). By 2030, it is projected to reach $30.16 billion, with a projected compound annual growth rate (CAGR) of 10.4% between 2021 and 2030 (Ibid). The economic dimension of LAWS in the AI space is set to grow significantly and therefore Canada should position itself in relevant forums to protect human rights in the face of rapid economic expansion of LAWS. The economic forum that Canada should engage with to this end is the US-EU Trade and Technology Council (TTC). The TTC's commitment to safeguarding human rights in the face of rapidly emerging AI technologies is particularly exemplified in working group six, which is dedicated to the "misuse of technology threatening security and human rights" ("Digital in the EU-US Trade and Technology Council | Shaping Europe's Digital Future." n.d.) Engagement with the TTC is a pathway where Canada can foster discussion on the ethical and responsible use of AI, which is directly linked to LAWS and therefore must be considered. A particular focus ought to be on the dual-use aspects of civilian technology to limit unfettered development and proliferation of AI technology.

Domestic Engagement Opportunities

Nationally, there are significant opportunities for interdepartmental partnerships. There are two key dimensions for engagement: military and security. GAC must partner with National Defense Canada, the Canadian Armed Forces and Canadian Security Intelligence Services to develop key military, security, and defense strategies that can provide insights for the ethical and responsible use of LAWS and ensure human responsibility over their use. This can remedy the gap in understanding and approach when it comes to LAWS. For example, National Defense, in their policy document "Strong, Secure, Engaged," states the importance of "appropriate human involvement" in military operations that use lethal force capabilities (Canadian Armed Forces and National Defense 2017). However, this is not defined and there is opportunity to do so.

Recommendations

1. **Canada shall further build and strengthen their international rules-based approach in all relevant global forums, namely the** AI Partnership for Defense **with the United States and the** United Nations Convention on Certain Conventional Weapons **with global partners.** The consensus-based model of the CCW poses strict limitations on creating binding legal instruments around the ethical use of LAWS. However, the unique role of the CCW in providing broad representation of expertise—through the Group of Governmental Experts (GGE)—and a venue to place state parties in conversation with one another on the issue is invaluable. We, therefore, recognize the global importance of the CCW as the epicenter of the global discussion on LAWS and strongly believe that Canada should continue to actively participate in this forum going forward.

2. **Canada should open parallel pathways to work alongside the CCW, taking advantage of the broad consensus within it and circumventing its procedural deadlock, without abandoning the UN CCW framework. Canada should host a summit with like-minded states among the CCW's state parties (a majority) to consult on a way forward on the international regulation of LAWS with a coalition of the willing and based on the GGE recommendations.** Canada can field the credibility it gained by starting the process that led to the Ottawa Treaty to do the same with LAWS now. During the CCW consultations on anti-personnel mines in the 1990s when the procedure was stuck and the result inadequate, Canada took initiative to host a meeting with those states willing to go ahead with a ban

amongst themselves. Canada is uniquely placed to leverage its (past) position to do so again, and it is in Canada's interest to pursue a similar path and break the current deadlock.

3. **Canada should unilaterally declare a positive self-obligation to never field or develop LAWS without meaningful human control over the decision to kill, and to use that statement to begin a global norm building process with the end goal of having some, rather than no, limitation on the use of LAWS.** Canada should aim to influence like-minded states to declare the same or a similar self-obligation to kickstart the normative process of establishing meaningful human control over LAWS, meaning that a human shall always be involved in the critical functions of a (lethal) targeting cycle (selecting and engaging the target). This would prevent Canada and other states from being deadlocked in endless theoretical and philosophical discussions pertaining to the legal definition of autonomy, automation and LAWS, and instead apply a functionalist approach of norm building. The establishment of a legally binding instrument, such as a treaty, is a long-term goal that should not be used as a starting point or a requirement before *any* other action can be taken.

4. **Global Affairs Canada should appoint a special envoy tasked with attending, co-signing, and presenting the Canadian perspective at all relevant military and defense forums, including convening and chairing the aforementioned special summit**. This envoy should work with national security agencies such as National Defense Canada, the Canadian Armed Forces and Canadian Security Intelligence Services, as well as relevant industries to develop a coherent national strategy that encompasses military, security, and defense considerations and that defines and states the necessity of ethical, responsible and human-centered use of LAWS. This should be done in tandem with a unitary positive self-obligation as a component of the Canadian strategy to project a strong national position and build and diffuse norms with like-minded states.

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