Written Material

Autonomous Weapons: Ethical and Legal Challenges

The Killer Robots Metaphor and the Reality of AI-Enabled Weapons

Autonomous weapons are often sensationalized as “killer robots,” but this metaphor obscures the reality of how these technologies function and the ethical dilemmas they pose. According to Professor Mitt Regan, AI-enabled weapon systems are integrated into complex processes, involving humans and machines collaborating across multiple stages of decision-making. These systems challenge the adequacy of traditional concepts of human control, as reliance on machine outputs can lead to “automation bias,” where humans defer to machine recommendations without meaningful oversight.

Principles of International Humanitarian Law

Key principles of international humanitarian law (IHL) guide the lawful use of force, including distinction, proportionality, and precaution. Distinction requires that combatants be targeted intentionally while avoiding civilians unless they directly participate in hostilities. Proportionality mandates that anticipated civilian harm must not be excessive relative to the expected military advantage, while precaution requires all feasible measures to minimize harm to civilians and civilian infrastructure. Professor Regan notes that these principles, while central, are strained by AI systems that lack the ability to assess context or interpret human intent—factors critical to compliance with IHL.

Lethal Autonomous Weapon Systems (LAWS) under the United Nations

Since 2018, United Nations Secretary-General António Guterres has called for their prohibition under international law. In his 2023 New Agenda for Peace, the Secretary-General recommended that States conclude, by 2026, a legally binding instrument to prohibit lethal autonomous weapon systems that function without human control or oversight, and which cannot be used in compliance with international humanitarian law, and to regulate all other types of autonomous weapons systems. He noted that, in the absence of specific multilateral regulations, the design, development and use of these systems raise humanitarian, legal, security and ethical concerns and pose a direct threat to human rights and fundamental freedoms.

Challenges of Defining Autonomous Weapons

Efforts to regulate autonomous weapons face significant obstacles, starting with the lack of consensus on what constitutes a “lethal autonomous weapon system.” Professor Regan highlights the diverse ways AI is integrated into military tools, from target identification to decision-augmentation processes. Without clear definitions, regulation becomes challenging. States have proposed requiring human control over the final selection and striking of targets, but

Professor Regan cautions that human involvement at the last step does not guarantee meaningful oversight throughout the system.

AI's Role in Innovation and Risks

AI-enabled technologies are transforming warfare, as seen in the ongoing conflicts in Ukraine and Israel. These technologies allow for rapid data processing, aiding in target identification and military strategy. However, this increased precision comes with risks. Professor Regan identifies a “paradox of precision,” where confidence in AI’s accuracy can lead to more strikes, resulting in greater cumulative harm to civilians. Furthermore, adversaries could exploit vulnerabilities in AI systems through hacking or “spoofing,” leading to unintended or escalated conflicts.

Toward Meaningful Human Control

Professor Regan underscores the importance of meaningful human judgment across all stages of the targeting process—not just at the final decision point. Human judgment provides context and evaluates intent, areas where AI falls short. As he explains, the U.S. Department of Defense and other organizations are developing ethical guidelines to ensure that AI-enabled systems comply with IHL and maintain accountability.

The Future of AI in Warfare

The use of AI extends beyond weaponry, influencing areas such as war crime documentation and environmental monitoring in conflict zones. AI’s ability to process vast amounts of data has proven invaluable in identifying civilian harm and war crimes. While these innovations have potential benefits, Professor Regan emphasizes the need for robust legal frameworks and international cooperation to address the ethical and legal challenges posed by these technologies.