



CCW REPORT

Civil society perspectives on the CCW Meeting of Experts on
Lethal Autonomous Weapon Systems
13–16 May 2014



Reaching Critical Will

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IN THIS ISSUE

- 1 | Editorial
- 2 | Report: Technical and operational concerns
- 3 | News in Brief

EDITORIAL: LAW AND MORALITY

Ray Acheson | *Reaching Critical Will of WILPF*

Wednesday's discussions pitted philosophers against legal scholars in a debate about the morality and legality of autonomous weapon systems. While the philosophers highlighted ethical challenges posed by turning over decisions about the life and death of human beings to machines, the legal scholars argued that autonomous weapons might be more effective in protecting human beings. They also claimed that such weapons are not "inherently illegal" and that existing international law is adequate to regulate the use of such weapons. However, as several delegations highlighted during the ensuing discussion, the fact that a weapon is not necessarily inherently illegal does not mean it is necessarily lawful or moral to develop or use.

"Morality is a process," argued Professor Peter Asaro of the International Committee for Robot Arms Control (ICRAC). Moral decision-making is not just about choosing what action to take, but choosing what perspective from which to take it and what kind of world you want to live in. He noted that a machine would not make decisions based on these factors. The inability of a machine to engage in moral reasoning—to consider the implications of an action in relation to the value of human life—means that they should not be programmed to make decisions about the use of force.

Arguing the opposite perspective, Professor Matthew Waxman suggested that autonomous weapons would handle this responsibility more objectively. Such weapons, he argued, would be more likely

to avoid abuse, violations, and outrages "that can only be committed by human beings" because of emotions. But the crux of all three legal scholars' arguments was that autonomous weapons, since they do not yet exist and thus cannot be reviewed, cannot be preemptively declared illegal. They seemed to argue that until such weapons are proven to inherently violate IHL, they must not be subject to prohibition.

This attitude is extremely shortsighted. It precludes preventative action, even though, as several delegations argued, including Japan and Sweden, it is questionable that autonomous weapons could comply with IHL. It also assumes that weapons reviews—of existing or future technologies—are infallible. However, on the basis that the level of autonomy of a system has an inverse relationship to its predictability, it is hard to see how fully autonomous systems could be effectively reviewed for legality.

In this regard, Article 36—an NGO named after the weapons review requirement—has suggested that a better legal framing for autonomous weapons could be that the principles of humanity require meaningful human control over the use of force: "We cannot simply rely on a determination of whether or not such weapons can comply with rules on distinction, proportionality, or precaution. The principles of humanity can be seen to require deliberative moral reasoning, by humans, over each individual attack decision." •

CCW Report is produced by the Reaching Critical Will programme of the Women's International League for Peace and Freedom (WILPF), a member of the Campaign to Stop Killer Robots.



**CAMPAIGN TO STOP
KILLER ROBOTS**

When	What	Where
10:00-13:00	Legal issues (Part 2): Other areas of international law	Room XIX
13:00-14:30	Side event: Ethical and moral concerns	Room XXII
15:00-18:00	Operational and military aspects	Room XIX

REPORT: TECHNICAL AND OPERATIONAL CONCERNS*Thomas Nash | Article 36*

Tuesday's lunchtime side event organised by the Campaign to Stop Killer Robots considered technical aspects of the discussion on autonomous weapons. Speaking once again to a full room of delegates, representatives from ICRAC and Article 36 covered the relationship between autonomous weapons and military stability, command and control, levels of human supervision, and the concept of meaningful human control. ICRAC member Dr. Denise Garcia of Northeastern University chaired the discussion.

Dr. Juergen Altmann, co-chair of ICRAC and a physicist from the University of Dortmund, presented an analysis of how developments in autonomous weapons may influence military stability and consequently undermine international peace and security. Recognising that the principle question is whether autonomous weapons could comply with IHL once conflict has started, Altmann recalled that the CCW's preamble clearly situates the instrument within a broader process towards constraining violence and promoting peace. On this basis, it is reasonable to look beyond IHL arguments and to consider peace and security and military stability as a rationale for controlling autonomous weapons.

Dr. Noel Sharkey, co-chair of ICRAC and a roboticist at the University of Sheffield presented his model of the different levels of human supervisory control over weapons. Donning his psychologist hat for the event, Dr. Sharkey introduced the notion of meta-cognition, "the ability to think about what you are thinking about." Setting out the difference between automatic and deliberative reasoning, Dr. Sharkey suggested that while computers are better suited to automatic reasoning, humans are better suited to deliberative reasoning, which is essential for selecting and engaging targets during the use of force. Dr. Sharkey underlined the requirement for meaningful human control. This should involve deliberative engagement, with full contextual and situational understanding of the target and target areas; full capacity to respond to unanticipated changes in the situation since the attack was planned; and the means to abort or suspend the attack.

ICRAC member Dr. Heather Roff of the University of Denver set out her concerns about the challenges autonomous weapons posed to command and control processes within the military. Command and control processes require cognitive deliberation and it is unclear that machines can fulfill these tasks. Machines would not only need to distinguish between civilian and military objects, but also to distinguish between objects whose status may have changed from military to civilian and vice versa. Such systems would need to be pre-programmed with targeting

lists, which are cumbersome, non-reactive and do not match the realities of conflict. As a result, such systems might be considered as "taskable agents," able to select their own targets. This would require artificial intelligence equivalent to a depth of knowledge currently available only on the basis of engagement of several military officers.

Maya Brehm of Article 36 set out the central thesis that meaningful human control should be the basis for assessing the acceptability of autonomous weapons. The development of increasingly autonomous weapons systems may come to erode what we today consider to be necessary for the control of weapons. It is encouraging that many states have agreed this week that weapons must always remain under human control. However, as Ireland has noted, human control cannot merely be nominal. It must be sufficient, adequate, and meaningful. Those who plan and decide on an attack have an obligation to understand the target area so that they can predict the results of an attack. If the target is selected by a machine, the results of the attack become less predictable, making it harder to apply the law. Currently, for example in relation to the use of sensor-fused weapons, human control is exercised through limitations on the time and space within which a weapon operates independently. Proxy indicators are the mechanism by which we seek to ensure that the weapon attacks the right target rather than targets it does not wish to attack. At the moment, limiting time and space makes it easier to exercise meaningful human control over individual attacks. The future, however, could see greater sophistication in proxy indicators, and fewer limitations over this space and time so that meaningful human control is undermined. This suggests that the requirement for meaningful human control over individual attacks should be codified now on a legal basis.

Australia asked whether meaningful human control was necessary solely in order to ensure compliance with IHL or had broader significance. New Zealand asked whether the erosion of meaningful human control is a problem only for the future or whether existing systems already called it into question. Panelists emphasised that a range of law applies to the question of autonomous weapons, but that even beyond this, a wider moral question applies related to the principles of humanity and moral reasoning over the use of force. Existing systems pose significant questions in relation to meaningful human control and the answers to these questions should inform debate on the risks related to development of autonomous weapons. •



NEWS IN BRIEF

Ray Acheson and Gabriella Irsten | *Reaching Critical Will of WILPF*

Morality and ethics

- Peter Asaro argued that a machine is not capable of considering the value of human life.
- Germany noted that the main ethical question is whether we want machines that can take life autonomously.
- Canada noted that the moral aspects of autonomous weapons (AWs) are important and must be part of the CCW discussions.
- The ICRC stated that it is not useful to think about weapons in terms of whether they are lethal or not, noting that the lethality of a weapon depends on context.
- Japan and Pakistan warned that AWs could lower the threshold for the use of force.
- Japan called for safety measures that would ensure that a machine can't harm a human without human control.
- Sierra Leone emphasised that we are talking about human lives so we need to consider the implications of errors in operation of AWs.

Meaningful human control

- Germany suggested that meaningful human control over the use of force should be the key consideration and this should be further discussed.
- ICRC noted that humans need to exercise meaningful control over weapons in order to counter the limitations of autonomy.
- The US stated that its requirements for appropriate levels of human judgment applies to the full

range of human activity in developing and use of weapons.

- Dr. Lambert called for states to exercise human control over autonomous weapons systems.
- Dr. Asaro called for establishment of a norm or value that there must always be meaningful human control over each and every use of violent force. He argued that meaningful control necessitates reasoning and deliberation.

IHL

- Asaro emphasised that the notion of human judgment is built into the Geneva Conventions.
- Asaro noted that the laws of war are based on a recognition of the other humans whose lives are about to be lost.

Research and development

- Switzerland emphasised the dual-use considerations of this technology, stating that the development of autonomous weapons will depend on a wide spectrum of advanced technology, going far beyond the question of military applications.
- Czech Republic saw difficulties in prohibiting research into autonomous weapons because of the close links to civilian research in robotics.

Legal aspects part 1

Definitions

- Melzer distinguished between the operation of systems with a human in the loop (directly human controlled), with a human on the loop (independent targeting but under real-time supervision), and with a human out of the loop (can search, identify, select, and attack without human control).
- Melzer also defined automated as restricted to a predefined and controlled environment and autonomous as able to operate in an open and unpredictable environment.

Legality of autonomous weapons (AWs)

- Melzer and Waxman argued that AWs are not inherently illegal and argued that a weapon is per se illegal if it is indiscriminate, causes unnecessary suffering, or if its effects cannot be controlled.
- Germany said the concept of meaningful human control might not be a legal principle but should guide legal considerations.
- Germany highlighted the distinction between weapons law and targeting law and said a weapon must satisfy both aspects before it may lawfully be used.
- Pakistan said AWs may not be inherently illegal, but when an article 36 review is applied it will

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Reaching Critical Will
a programme of the Women's International
League for Peace and Freedom

777 UN Plaza, 6th Floor, New York, NY 10017
ph. +1 212.682.1265
email: info@reachingcriticalwill.org
web: www.reachingcriticalwill.org

Editor: Ray Acheson

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Stop Killer Robots.*



News in Brief, continued

likely be found that they cannot comply with IHL, making the weapons illegal.

- US said current international law would not prohibit autonomy in weapons systems.
- US asked if weapon can be used lawfully, what basis is there for declaring it illegal per se?
- Netherlands agreed that AWs are not necessarily inherently illegal.
- ICRC noted that an AW operating in a cluttered environment might be inherently illegal.
- ICRC argued that increasing autonomy increases unpredictability, raising questions about how an AW can be adequately tested and verified.
- France questioned what predictable means and to what degree are AWs predictable.
- Sassòli said that predictability is imperative, but that every weapon can malfunction.
- China also asked, if AW do not yet exist, how can we ascertain their legality or prejudge how they might be used in the future.

IHL

- Waxman argued IHL provides a robust system to regulate the development and use of new technologies, including AWs, and argued that “radical proposals such as a ban are not only unnecessary but inappropriate.”
- Waxman questioned the idea that there is something inherent in human judgment required for compliance with IHL.
- Sassòli argued that it is not technically impossible to develop robots that would be as capable of distinguishing targets as existing human soldiers are.
- UK said that if AW were not able to comply with IHL then its unrestricted use would be unlawful.
- There might be circumstances where a system could be used, such as where civilians would not be present, though this would require high level of human oversight.
- Russia said IHL was written for human beings; and this increases in importance when the weapon itself has autonomy.
- The Netherlands said IHL is currently equipped to deal with this subject but wondered how the notion how meaningful human control can be recognized in existing IHL.
- Switzerland recalled that under IHL the same rules apply to offensive or defensive attacks.
- Japan said that at this stage it is questionable whether AWs will meet IHL requirements.

- Sweden said that at this stage IHL precludes the use of AWs, though technological developments may overcome this issue.

Martens clause

- Waxman argued the Martens clause clarifies that the absence of treaty law doesn’t necessarily make a weapon legal, because we also look to customary law, but it does not impose a “public conscience requirement” and does not stand as a general bar to AWs.
- US argued that the Martens clause is not a rule that prohibits any weapon, much less any which does not exist, but that it simply reiterates the application of customary principles where specific law does not exist.
- US also questioned the notion that public opinion might influence the acceptability of weapons, warning this would mean changing the content of IHL as public opinion changes.
- ICRC argued that the Martens clause does precisely allow for new technologies of warfare to be judged against the principles of humanity and public conscience.

Morality and military effectiveness

- Melzer argued AWs have a “great military potential” for avoiding abuse, violations, and outrages that only humans can commit because of emotion.
- Waxman argued that AWs may reduce risk to civilians by minimizing mistakes and emotions and argued there may be potential moral costs to preemptively banning AWs.
- Sassòli argued that only human beings can be inhumane and that AWs would be better able to evaluate the military advantage and risks to civilian populations.
- US asked if an AW could have a self-deactivation feature in face of changed circumstances that might not be available to humans in face of lost communication.

Next steps

- Melzer encouraged states to launch an intergovernmental process to develop guidance for article 36 legal reviews and consensus on ethical limits.
- Waxman called for states to share best practices on weapons reviews.
- UK said it has no plans to develop fully autonomous weapons and that it is committed to human oversight and meaningful human control over all weapons.