



CCW REPORT

Civil society perspectives on the CCW meeting of experts
on autonomous weapon systems
11-15 April 2016



Reaching Critical Will

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The 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.

EDITORIAL: LAWS FOR LAWS

Ray Acheson | *Reaching Critical Will* of WILPF

Wednesday's discussions focused on potential issues surrounding lethal autonomous weapon systems (LAWS)'s compliance with international law or accountability for violations of such laws. To this end, participants considered weapon review processes and accountability frameworks. The legal challenges posed by LAWS, however, are only one part of the problem. The moral or ethical challenges posed by the delegation of life and death to a machine by taking human beings out of the loop on the selection of targets and individual attacks are equally important. All of these challenges, however, point to the need for meaningful human control and a prohibition on LAWS.

Law

As Switzerland's paper notes, IHL and human rights law are relevant for governing the development and use of LAWS, while international criminal law governs individual criminal responsibility for violations of these laws. There are a number of rules under each that are relevant for LAWS; during the course of discussions on Wednesday states and civil society seemed most concerned with LAWS' (in)ability to comply with the IHL principles of prevention, distinction, and proportionality. Questions arise about the ability to programme a machine to respect international law, and about the ability of this programme to adapt to complex, changing environments in the battlefield, which requires ongoing tactical decisions throughout the course of operations.

Accountability

Panellists, states, and civil society also raised concerns about accountability. A fundamental principle of international law is that an individual should be held responsible for actions that violate law. LAWS, Bonnie Docherty of Human Rights Watch argued, threaten to undermine that

fundamental norm. "They would have the potential to create an accountability gap because under most circumstances a human could not be found legally responsible for unlawful harm caused by the weapons. Operators, programmers, and manufacturers would all escape liability."

Panellist Neha Jain of the University of Minnesota examined the application of criminal law to LAWS. Control in criminal law is about the ability to execute or obstruct the commission of an offence according to one's will. This control must exist at the time of the act. LAWS raise significant questions about how someone would exercise control over an autonomous weapon operating without meaningful human control over targeting and attacks.

The UK argued that accountability would be no different for LAWS than for any other weapon systems, suggesting that the person who deploys the weapon—the commander—would be responsible for its actions. Panellist Roberta Arnold argued that a human "in the loop," such as a programmer, deployer, or operator, can be held accountable for the misuse of LAWS. Under criminal law, she noted that commanders and other superiors are criminally responsible for war crimes. But as Dr. Docherty pointed out,

Command responsibility holds commanding officers indirectly responsible for subordinates' actions if they knew or should have known their subordinates committed or were going to commit a crime and they failed to prevent the crime or punish the subordinates. If a robot acted in an unforeseeable way after being deployed, a commander could not have known in advance what it would do. It would be unfair and legally challenging to hold a commander responsible in such a situation. At the same time, a commander could be held not be

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CAMPAIGN TO STOP
KILLER ROBOTS

Editorial, continued

held liable for failing to punish an unpunishable machine.”

Robin Geiß of University of Glasgow argued that even if individual accountability is not necessarily attributable, the state deploying the autonomous weapon would be responsible for its unlawful use if it was used by a state actor. WILPF would argue that the state and those individuals involved the development and deployment of LAS have a responsibility to act with due diligence to prevent harm. Arguably the most effective due diligence is preventative, such as a prohibition on weapon systems operating without meaningful human control.

Human control

Panellist Kimberley Trapp, University College London, noted that human control is clearly required over weapons given all the complexity involved on a battlefield. Switzerland’s paper seems to agree, arguing that “given the current state of robotics and artificial intelligence, it is difficult today to conceive of an AWS that would be capable of reliably operating in full compliance with all the obligations arising from existing IHL without any human control in the use of force, notably in the targeting cycle.”

This position is consistent with many other delegations speaking at the CCW, as well as many civil society organisations, which have emphasised the need for meaningful human control over critical functions of weapon systems. For the Campaign to Stop Killer Robots and some states, such critical functions include the selection of targets and each individual attack.

As was laid out by the Campaign in a side event on Wednesday, the requirement of meaningful human control over critical functions provides the basis for prohibiting weapon systems that do not have a human being involved in targeting selection and engagement. The requirement of meaningful human control over critical functions could also constitute a test for article 36 national-level weapon reviews of LAWS, as suggested by The Netherlands.

Weapon reviews

Such reviews, while welcome in general, are not sufficient to deal with LAWS on their own. It was welcome to see many presentations from delegations on their weapon review practices and to hear that others are currently assessing their practices. However, this approach is not enough to address the challenges of LAWS. As speakers at the side event noted, the majority of countries do not undertake weapon reviews; such reviews are not consistent in approach or content among states nor do they have any international oversight; there is no common definition of weapons, means, and methods of warfare; such reviews would miss ethical considerations, which are imperative to consider when it comes to

LAWS; they do not appear to take into account how LAWS will affect the resort to the use of force; and they cannot guarantee that a system will operate the same way in all circumstances, which might undermine the predictability requirement.

Peter Asaro of the International Committee for Robot Arms Control (ICRAC) noted that the law assumes a human agent will take responsibility for decision-making during unpredictable situations on the battlefield. He questioned how such decisions could be built into the machine in advance by a programmer. There is a disconnect between what takes place during a legal weapon review and what might happen on the battlefield from a technical standpoint.

Prohibiting LAWS

Once again, requiring meaningful human control over the critical functions of a weapon system appears to be the most straightforward approach. It is the only way to ensure that a human being is making the decisions about target selection and each individual attack. It is the only way to meet the legal imperative to hold an individual responsible for unlawful acts. It is the only way to ensure respect for ethics and morality in relation to preventing fully mechanised violence in which machines take human life without any human intervention. Prohibiting weapon systems that would operate without meaningful human control over target selection and attacks is imperative for legal and moral reasons; this is becoming ever more clear as discussions continue at the CCW. •

CALENDAR OF EVENTS

| When | What | Where | Who |
|-------------|---------------------------------|-----------------------|--------------------------------|
| 10:00-13:00 | Human rights and ethical issues | Conference Room XVIII | |
| 13:10-14:50 | A Normative Perspective | Conference Room XXIV | Campaign to Stop Killer Robots |
| 15:00-18:00 | Security issues | Conference Room XVIII | |



EVENT: TRANSPARENCY IS NOT ENOUGH: WHY A PREEMPTIVE BAN IS NEEDED NOW

Jessica Lawson | *Reaching Critical Will of WILPF*

This side event is the first of three events hosted by the Campaign to Stop Killer Robots. Moderated by Ray Acheson of WILPF's Reaching Critical Will, this event looked at why initiatives that fall short of a legally-binding instrument, such as transparency measures and Article 36 weapon reviews, represent an insufficient response to the challenges raised by autonomous weapons. Miriam Struyk from PAX, Thomas Nash from Article 36, and Peter Asaro from the International Committee for Robot Arms Control (ICRAC) gave brief presentations that initiated an interactive debate and fruitful discussion.

Article 36 of Additional Protocol 1 of the 1977 Geneva Conventions requires states to review new weapons, means, and methods of warfare. In light of CCW discussions this week, the event highlighted the significant issues associated with solely focusing on Article 36 weapons reviews in relation to LAWS.

As pointed out by Ms. Struyk, the vast majority of states do not conduct weapon reviews. Only 15-20 states actually conduct these reviews. Further, weapon reviews, which are conducted on a national level, do not address what is essentially an international issue requiring an international response.

Mr. Nash, in welcoming the discussion of Article 36 reviews and the sharing of general national practices, noted that these reviews in the past have been shrouded in secrecy. Further, discussions around Article 36 weapon reviews do not adequately address the essential issues around meaningful human control. Not only is adherence to Additional Protocol

1 not universal, but even among states that do conduct weapon reviews, many have differing positions on weapons. This was also noted by Brazil during the plenary meeting, in regard to nuclear weapons.

The best approach to these discussions is to focus on the concept of "meaningful human control," he argued. Even if weapon review processes included testing of meaningful human control, an idea Mr. Nash supported, this would only be meaningful if there were affirmations about the meaningful human control of weapon systems in each individual attack.

Dr. Asaro highlighted the technical challenges involved in building considerations contained in Article 36 reviews into machines. He raised some of the issues with computer technology in relation to LAWS, since computers can and do fail, even if they are subjected to review processes. As with nuclear power plants and airliners, external conditions change rapidly and the engineers of computer technology cannot always predict failures. Also, like nuclear power plant and airliners, LAWS are vulnerable to adversaries.

Some of the issues raised during the general discussion included the definition of meaningful human control and at what point it should apply. For example, should there be a human in the loop up to the point of commanding an attack, or should the human control be maintained throughout the attack. In this context, there was general consensus from the panel that meaningful human control should apply not just to the overall deployment of the weapon but also to each individual attack and selection of targets.

In response to a question from the audience regarding the military utility of LAWS, Jody Williams from Nobel Women's Initiative recalled her comment during the general debate: "What military necessity are we talking about? If these weapons didn't exist, we wouldn't have the military necessity. Just because the military want something, it does not mean they need it."

This panel event demonstrated that a preemptive ban is necessary and achievable. Interventions in the CCW during this week have been largely positive way as many states have indicated support for the application of meaningful human control during their interventions. This shows that there is at least broad understanding that LAWS that operate without meaningful human control are unethical and potentially unlawful.

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Reaching Critical Will, or the Campaign to*



NEWS IN BRIEF*Mia Gandenberger | Reaching Critical Will of WILPF*

The News in Brief is not a comprehensive summary of all statements. It highlights positions on a few critical issues covered during plenary discussions.

**Challenges to International Humanitarian Law
Part I**

- Gilles Giacca of the ICRC recalled why legal reviews are important, their scope, and what the specific challenges arising from LAWS to these reviews are. He thought that, in particular issues with the principles of IHL, e.g. proportionality, arise when human beings are being taken out of the process. Therefore, he considered that there are limited circumstances in which LAWS could be used legally and there are significant risks associated with their use.
- Chris Ford of the US Naval War College elaborated on ways autonomy can complicate the rules of IHL, such as respecting the rules of distinction, proportionality, and taking precautions in attack. Further there is the potential for unpredictability. For Article 36 reviews to be effective, he suggested that reviews should occur at three stages, namely, before development, before fielding, and periodically based upon feedback on how the weapon is functioning.
- Kimberly Trapp of University College London focused on the obligation to take precautionary measures as contained in Article 57 (2)(a) of Additional Protocol I of the Geneva Convention. Compliance with this obligation requires states to do everything feasible under the objectives of two other obligations, namely to use available means to develop relevant information capacities and to put technologies to good and diligent use. LAWS would have implications for the respect of these elements.
- Neha Jain of University of Minnesota reviewed conceptions of autonomy and how they implicate compliance with IHL requirements. She thought control and foreseeability of action is crucial for compliance. For the former, the notion of temporality, namely that the control must exist at the time of the act, would possibly have to be re-conceptualised and moved to the decision to deploy. Here risks of recklessness or negligence would come into play. Foreseeability is very important to ensure strict liability.
- France stressed that legal reviews form the vital basis for responding to challenges of new weapons, including those that aim to increase autonomy.
- France inquired if systems could be configured to integrate rules of IHL into the system and also so that the system would respect the rules.
- Poland raised the human ability to doubt and wondered if machines could be programmed to replicate that ability. It also questioned if the ability to assess the proportionality of any attack could be programmed into an AWS. Further, in case of violations, who would be held responsible?
- China, Brazil questioned the effectiveness of Article 36 reviews to prevent the development of weapons that could not comply with IHL.
- The UK thought Article 36 reviews are an adequate measure to assess new weapons, noting also that all weapons could be misused by a reckless actor.
- The Netherlands proposed a GGE to address Article 36 reviews
- The Netherlands reiterated the concept of MHC as a benchmark for discussions.
- Switzerland stressed the importance of compliance with international law, including IHL, IHRL, and international criminal law.
- Norway underlined that all weapon systems must be able to be used in consistence with IHL and IHRL, saying it is difficult to envision LAWS could be compliant with these principles.
- The Netherlands, Germany, Switzerland, Sweden, UK, Belgium, Canada, US, and Israel shared information about their weapon review processes.
- India underlined that the discussion of legal reviews of LAWS should not be converted to a discussion on legal review per se.
- India further questioned the value of transparency in itself. While recognizing the importance of transparency and confidence-building measures for the CCW it wondered how this could be balanced with national security considerations.
- Sierra Leone wondered if LAWS could be realistically expected to comply with IHL given an unstructured and dynamic environment. Further it questioned how Article 36 could ensure AWS conformity with IHL.
- The Philippines asked if states should seek ways to curtail the development of technologies for AWS or even to ban these weapons. If so, what methodologies for assuring compliance with either instrument could be used?
- The UK repeated its concept of an intelligent partnership between humans and machines.
- New Zealand wondered about how accountability could be ensured, if significant amounts

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News in brief, continued

of data and/or technology would have to be required to analyze the causes of breaches of law by LAWS. In that context, what should be done if the data could not be assessed or adequately verified or understood by those reviewing it?

- Canada stressed the difference between Article 36 obligations and the lawfulness of targeting decisions.
- Iraq raised concerns about the risks of proliferation of LAWS to non-state actors.
- In her closing remarks, N. Jain identified three sets of emerging themes: uncertainty, responsibility, and preventative precautions. She reminded states that uncertainty is an inherently human condition, however, for the uncertainty assessment of LAWS states would have to decide if that uncertainty was qualitatively different in any way.
- With regard to NZ's question about the review of information, N. Jain explained that the introduction of LAWS would render the task trickier, but would not present a barrier.
- In responding to a question by France regarding military and civil responsibility, N. Jain saw no basic difference. That would arise with greater use and the application of the precautionary principle, in which the greater the harm, the more the law will insist on preventative precautions.
- Trapp shared the UK's and Norway's view that complying with IHL requires human judgment.
- In responding to Brazil about Article 57 (2)(a) of Additional Protocol I of the Geneva Convention, Trapp pointed out that those deciding everything feasible in this article are directed at human operator.
- Ford thought for compliance with IHL discussions the matter of proportionality is the most complex, yet not an insurmountable one.
- G. Giacca thought that Article 36 reviews as domestic endeavours require self-discipline. They could be considered as both a filter for preventing certain weapons as well as a facilitator, but not for weapons that would not comply with IHL. Even if states agreed on a ban, national legal reviews would be entry point for the assessment of a weapon if it fell under the categories of said ban.

Part II

- Robin Geiß of University of Glasgow reviewed the question of state responsibility in connection to LAWS. He thought that fine-tuning the risk management, harm prevention aspects, and the state obligation for due diligence could clarify

state responsibilities. Further, in cases of high risk remaining for the deployment of LAWS, the state deploying the weapon and "benefitting" from it should also be the one bearing the consequences of the risks involved.

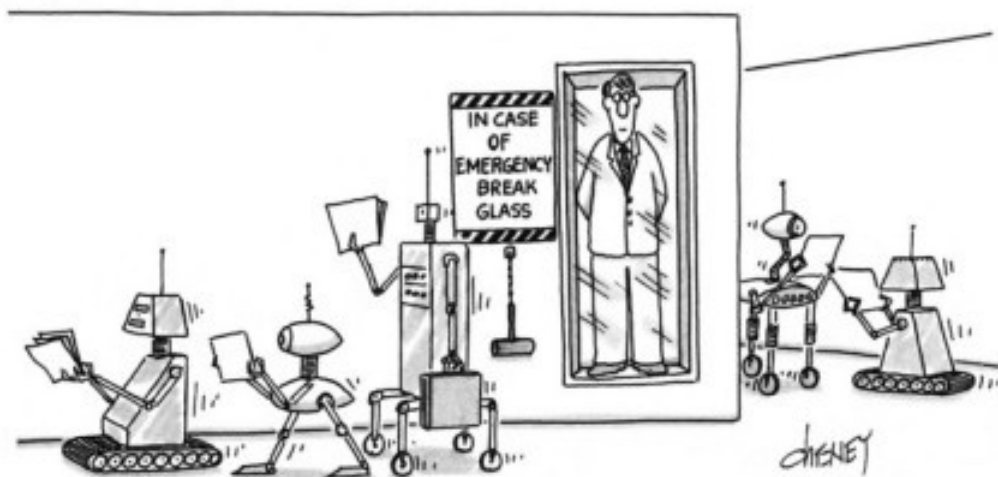
- Cecile Hellesveit of ILPI discussed LAWS and accountability for IHL violations in international armed conflict situations. She concluded that LAWS cannot assume individual accountability, therefore it would have to be clarified who will be held accountable in their place and suggested some fine-tuning to clarify certain aspects of how the use of LAWS would comply with IHL.
- Roberta Arnold former legal advisor, focused on criminal responsibility for IHL breaches by the use of LAWS. She discussed possible synergies between the different bodies of international law that could apply to LAWS. The challenges regarding accountability are not specific to LAWS within international criminal law (ICL), which will always apply as long as there is a human in the loop. From an ICL perspective, she saw no need for new law.
- Martin Hagström of the Swedish Defence Research Agency discussed technical aspects of possible fielding decisions of LAWS. Generally, fielding discussions would require a full understanding of the weapon and its usage, predictability within specific context, and reliability of functions. Fielding LAWS would require an LAWS with reliable complex software, which might pose some challenges. Further suitable doctrines, manuals, and training would be necessary. He also highlighted the difficulties of building confidence in complex systems among states.
- Cuba shared its general position on LAWS, which in its view cannot comply with the provisions of IHL and therefore should be prohibited.
- Mexico too is in favor of negotiating an explicit preventive prohibition of LAWS.
- China posed a number of questions regarding the accountability of different actors in certain scenarios.
- Algeria too asked about the accountability in the particular scenario.
- Germany requested clarification by R. Geiß regarding presumptive liability.
- Pakistan raised the general problem of enforcing ICL and wondered if that would not also extend to LAWS and whether it would not be more practical to develop positive international law to govern LAWS.

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News in brief, continued

- Brazil raised the question of *mens rea* in relation to machines and their use. In dealing with the *mens rea* of a commander, that commander could not only be accountable under command responsibility, but also responsible for the action itself.
- HRW reiterated that a fundamental principle of IL is that an individual should be held responsible for actions that violate it. IHL and ICL include an obligation to prosecute war crimes. IHRL establishes a right to a remedy and ensuring individual responsibility for abuses is a state obligation. A straightforward solution to maintain control and prevent an accountability gap is to prohibit LAWS.
- In responding to China, M. Hagström suggested that one way of building confidence without sharing the functionality of systems would be to establish their reliability.
- R. Arnold reiterated that ICL has strict requirements aimed at repressing certain acts. Politicians can be understood as other superiors in one responsibility level with commanders. If no one individual can be held liable, prevention is in order.
- C. Hellesveit highlighted the extremely complex task of distinguishing between combatants, civilians, etc., as it relies very much on contextual information. She questioned if LAWS would be able to fulfill that task.
- C. Hellesveit further wondered about the implications between LAWS and combatants, would ordinary rules apply? Would this disadvantage the human soldier? Would it lead to incentives for IHL breaches?
- R. Geiß agreed with HRW regarding the accountability gap for individuals, however for the state the responsibility is clear, he argued—even in a case where a system has passed its initial review, but then proved problematic in the field. •



CN
COLLECTION

Meaningful human control

BACK IN THE CCW: HONEST QUESTIONS OR OBFUSCATION & CONFUSION

Jody Williams | Nobel Women's Initiative

This is my third week at the CCW in three years after years of absence. In many ways it is interesting as the CCW is dealing with killer robots, weapon systems that would target and kill human beings on their own, without meaningful human control. We sincerely hope that the CCW will be able to preemptively prohibit such weapons—as it did two decades ago with blinding laser weapons.

We were justifiably pleased when the CCW took up discussion of what it calls “lethal autonomous weapons systems” (LAWS aka killer robots) not long after our Campaign to Stop Killer Robots was launched in April 2013. But at this third year of informal discussions, we have seen only incremental movement forward on seriously addressing autonomous weapons.

We are reaching the point that “incremental” threatens to become meaningless human control over the topic as robotic technology leaps forward exponentially. One speaker noted that soon we could be presented with a *fait accompli*.

One critical reason for the slow and sometimes tepid response in the CCW is, in my view, efforts to obfuscate and confuse states without access to high-tech and emerging robotic weapons technology by continuously raising questions about the inability to define autonomous weapons. When states with such technology keep indicating that it is difficult to define these complex and emerging technologies, it logically follows that nations without this access would echo the view.

I do not believe I have to be able to build an autonomous weapon system to understand that when a weapon crosses a threshold where humans longer control target and kill functions, that weapon is a programmed, autonomous killing machine. As I said the other day, Google has no problem defining autonomy as it continues its research and development of fully autonomous cars. It is hard to imagine that militaries suddenly are plunged into confusion and difficulty when it comes to defining autonomy in weapons. This is especially the case in view of the fact that the US Department of Defense has a definition of such weapons: “a weapon system(s) that, once activated, can select and engage targets without further intervention by a human operator.”

Another issue that is making it difficult to focus discussion on an international instrument dealing with killer robots is the curiously strong focus by some states on Article 36 weapons reviews as a sufficient means of dealing with the emergence of autonomous technology. Despite calls by NGOs and at least one state to include Article 36 reviews in discussions of other weapons in past CCW meetings, that call has been ignored—until now.

As various members of the Campaign to Stop Killer Robots have pointed out, while Article 36 reviews are important in general and we would like to see them more universally and rigorously developed and applied, they do not replace an international treaty that would ultimately create a new international norm. Pushing for a workplan on Article 36 reviews of autonomous weapons in the CCW diverts states from dealing with the fundamental issues related to creating and using fully autonomous weapons systems that can target and kill on their own.

It is important as the CCW moves forward on autonomous weapons systems that discussions not continue to be bogged down on these points as they have been for these three years. As has been pointed out over and over again, in treaty negotiations, the definition is the last point finalized in a treaty. States begin with a working definition as a point of departure that will ultimately end up with embellishments, exclusions, etc. as the negotiations near conclusion.

As one ambassador noted on the opening day, the CCW deliberations on lethal autonomous weapon systems gives it a chance to demonstrate credibility in dealing with emerging weapons systems. If it doesn't, will it not demonstrate weakness bordering on irrelevance? Simply “because we can” is neither a moral nor an ethical reason to proceed with the unbridled development of weapons systems that can target and kill human beings on their own.

The Campaign to Stop Killer Robots honestly and sincerely hopes that the CCW will be able to feel the Martens Clause “ugh factor” of weapons that we believe, among legal and many other limitations, violate the principles of humanity and the dictates of the public conscience. •





**CAMPAIGN TO STOP
KILLER ROBOTS**

The Campaign to Stop Killer Robots is pleased to invite you to a

SIDE EVENT

in the margins of the Convention on Conventional Weapons on

A Normative Perspective

*Legal, Ethical, and Technical Approaches to Defining Fully Autonomous Weapons
according to the Principle of Meaningful Human Control*

Thursday, 14 April 2016

13:00-14:30

Conference Room XXIV
UN Palais des Nations, Geneva

Sandwiches and refreshments will be provided

Featured speakers:

- Ms. Bonnie Docherty, **Human Rights Watch/Harvard Law School's International Human Rights Clinic**
- Prof. Ian Kerr, **University of Ottawa and ICRC**
- Prof. Toby Walsh, **University of New South Wales**

Moderated by Ms. Yukie Osa, **Association for Aid and Relief, Japan**

This briefing will consider possible legal, ethical, and technical approaches to defining fully autonomous weapons from the perspective of the principle of meaningful human control.

No RSVP required. For more information, please see: www.stopkillerrobots.org or contact Ms. Mary Wareham at: Tel. (646) 203-8292, wareham@hrw.org