Briefing Paper

Committee: DISEC

Topic: The Question of the Regulation of the Usage of Autonomous Weapons in Warfare

Chair: Lucas Argent

School: Haberdashers' Elstree Schools

Summary

Autonomous Weapons Systems (AWS) are weapons that select and fire upon targets without further human intervention past the initial point of activation. More specifically, Lethal autonomous weapons systems (LAWS) are AWS that have the potential to kill. The United States, China, Russia, Israel, South Korea, Turkey and the UK are the primary nations involved in the development of such weapon systems.

The current international framework in place is the Convention on Certain Conventional Weapons (CCW), through which discussions have taken place. There is also a Group of Government Experts (GGE) discussing the issue of LAWS. There are no current legally binding treaties in reference to AWS or LAWS. The international framework that is in place stems from existing International Humanitarian Law.

The key issues with these systems include the lack of human control over potentially fatal decisions, a lack of compliance with existing international law, increased capacity for mistakes, such as confusing civilian and combatant, and moral considerations over the humanity of machines killing humans. Furthermore, there are concerns about the accountability gap, as it is unclear as to whether blame should fall to the programmer, commander, manufacturer, state itself or some other entity.

This briefing paper examines the issue of AWS and LAWS and discusses the way in which DISEC can address it. It looks at previous attempts to solve the issue, the key ethical issues and their grounding and potential solutions that could be carried out.

Definition of Key Terms

Autonomous Weapon System (AWS) – Weapon that, once activated, selects and engages targets independently without human input. Disputed: Varies on degree of independence needed.

Lethal Autonomous Weapon System (LAWS) – AWS designed to apply lethal force without human intervention after activation. Disputed: Some prefer AWS over LAWS to avoid focus on lethality.

Fully Autonomous Weapons – Systems that select and engage targets with no meaningful human control. Disputed: Whether current systems qualify is contested.

Semi-Autonomous Weapon System – Uses autonomy for targeting but requires human approval to fire.

Meaningful Human Control – Sufficient human involvement to ensure ethical and legal decisions. Disputed: No agreed definition of "meaningful."

Human Oversight – Monitoring and ability to intervene in or stop a system's actions.

International Humanitarian Law (IHL) – Rules protecting civilians and regulating warfare, including Geneva Conventions.

Principle of Distinction – Obligation to separate combatants from civilians.

Principle of Proportionality – Civilian harm must not be excessive relative to military gain.

Precautions in Attack – Feasible steps to minimise civilian risk.

Predictability – Ability to foresee a system's behaviour in its environment. Disputed: Adaptive AI often seen as unpredictable.

Killer Robots – Informal term for fully autonomous weapons that decide to kill. Disputed: Considered sensational by some.

Automated System – Follows fixed rules for predictable outcomes, unlike adaptive autonomous systems.

Adapting Capabilities – Ability to learn or change behaviour through machine learning. Disputed: Raises major concerns about control.

Two-Tiered Approach – Regulatory model with prohibitions on some systems and rules for others.

Convention on Certain Conventional Weapons (CCW) – UN treaty framework hosting LAWS discussions.

Group of Governmental Experts (GGE) – CCW body examining and proposing rules on autonomous weapons.

Rolling Text – Evolving draft document in CCW negotiations.

Consensus Requirement – CCW rule needing full agreement, often causing delays.

Accountability – Assignment of responsibility for a system's actions, especially when errors occur.

Background Information

Existing International Framework

The Convention on Certain Conventional Weapons (CCW) was established in 1980 to restrict weapons with the potential to inflict disproportionate and unnecessary harm and suffering. Decisions in the CCW are made through consensus, meaning one state objecting can prevent agreements. It is currently viewed as the best forum for discussion on the issue of AWS and LAWS as it reflects previous work of the CCW on emerging technology. However, it can lead to very slow progression due to the consensus nature of decision making.

The GGE on LAWS was established under the CCW in 2016 with a mandate to examine emerging technologies relating to LAWS. Specifically, it analysed the definition of autonomy, applicating of existing humanitarian and other rules of war, the concept of meaningful human control and how to allocate responsibility for mistakes. So far, it has passed an agreement that all LAWS must follow International Humanitarian Law and in 2019 outlined 11 guiding principles on the use of LAWS. These were not legally binding.

Definitional challenges have represented the majority of discussion so far. There is no universally agreed upon definition of an AWS or a LAWS given the complexity of the technology involved. Much of this debate has related to the spectrum of autonomy, with some systems maintaining degrees of autonomy but requiring final human approval and others being entirely autonomous past the point of activation.

Key Ethical Concerns

The largest issue created by the use of LAWS is the creation of an accountability gap. Machines are unable to be held accountable or face punishment in line with existing legal framework. When mistakes occur and civilians occur, it is unclear where accountability lies. Many actors, such as programmers, manufacturers, military personnel and the states operating the weapons all could be held accountability but there is no agreement as to how responsibility should be divided.

Furthermore, many have argued that allowing AI systems to make decisions about life and death removes dignity from the element of war. It reduces civilian death to decisions made by an algorithm.

Finally, there are also practical concerns that such systems would increase suffering in two ways. Firstly, through failures in technology which still remain flawed leading to far more frequent misidentification of civilians and increased casualties. Secondly, it reduces the threshold for war as the human risk of aggressive states is reduced. There are concerns that increased usage of such weaponry would lead to increases in the number of global conflicts.

Technological Context

There have been rapid advances in the development of Artificial Intelligence (AI) systems, machine learning and sensor technology. This had led to increasing integration into military systems, including but not limited to drones, munitions, missile defence systems and AWS and LAWS. New technology has included the capacity to identify targets, track targets, decide whether or not a person is a civilian or a combatant and the ability to make decisions.

Such technologies have had incredibly rapid expansions both in civilian use and military integration. This has made regulation harder as there are constant advancements and changes making regulation and information quickly become redundant. Furthermore, the potential implications on civilian technological development must also be considered.

Major Countries and Organizations Involved

The United States, China and Russia have all invested heavily in AWS, LAWS and other automated military equipment, including drones and defence systems. All three powers have opposed explicit regulation, opposed tighter definitions and suggested that original international law frameworks are sufficient to address the issue. Russia has frequently prevented consensus agreements in the CCW. China has openly expressed some willingness to prohibit LAWS but has always been ambiguous in terms and opposed regulation in practise.

Israel and South Korea both equally have invested in AWS but in both instances primarily in a defensive capacity. Both states have primarily deployed these systems on borders with states they deem as hostile. Although both states are opposed to blanket bans, they have both been in favour of further discussion to reach agreement on limits.

The EU collectively have been in favour of much stronger regulation of AWS and LAWS. The EU parliament has called for prohibition of fully autonomous weapons systems. Individual states have varied positions, but almost all are in favour of increased discussion and regulation to some extent. The expansion into these weapon systems themselves has been far more limited compared with other states. European but non EU states, such as the UK and Ukraine both have AWS and oppose bans. Much of the global south, including Brazil, Mexico and Chile, but with India as a notable exception, have come out in favour of similar regulation to many EU states.

Other groups and organisations involved include the UN itself, NATO, various technology companies and the Campaign to Stop Killer Robots. The UN has been the main forum for debate so far. The UN Secretary-General has called for legally binding regulations to be implemented. Within Nato, there is no unified position, but many key members, including the USA and the UK are opposed to regulation, as discussed above. Technology companies have become involved as a result of the development of dual use (for civilian and military purposes) technology. However, there is a lack of consensus within the group, with many developers not wanting to cause harm but others opposed to the harm potential restrictions could have on further technological

advancements. The Campaign to Stop Killer Robots is a group of NGOs formed in 2013 and has worked closely with states to call for a legally binding ban on LAWS.

Timeline of Events (Relevant UN Treaties)

1949 – Geneva Conventions: Four treaties which form the basis of modern international humanitarian law protecting civilians, prisoners of war and outlining conditions for more humane warfare.

1977 – Additional Protocol I (Article 36 Weapons Reviews): Created a new requirement for states to review all new weapon systems to ensure compliance with preexisting international law. Reviews are conducted nationally but are not internationally enforced.

1980 – Convention on Certain Conventional Weapons (CCW): Created with a mandate to restrict or prohibit weapons deemed to have the potential to cause unnecessary harm and suffering, operating on a consensus basis for decision making.

1995 – CCW Protocol IV (Blinding Laser Weapons): CCW successful in banning blinding laser weapons prior to their widespread use in active combat. Set a precedent for regulating emerging technology.

1997 – Ottawa Treaty (Mine Ban Treaty): Banned anti-personnel landmines. This was crucial as it was negotiated outside of the CCW due to slow progress, setting a precedent for this to be done when necessary.

2016 – Establishment of the CCW GGE: Formal body for negotiations created through the CCW with a mandate to examine emerging LAWS technology. Further information outlined above.

2019 – Adoption of 11 Guiding Principles: First major agreement, agreeing that international humanitarian law applied to autonomous weapons, that there must continue to be human responsibility and further principles.

Previous Attempts to Solve the Issue

Similar situations to the current one have been seen in the process of deescalation from the cold war. Strategic Arms Limitation Talks (SALT) took place between the US and the Soviet Union. SALT I, through the Anti-Ballistic Missile treaty limited missile defence system to ensure that mutually assured destruction prevented escalation. Furthermore, it froze the development of further offensive arms. It was the first cap on nuclear weapons and demonstrated a capacity for international agreement to prohibit arms. SALT II furthered regulation placing further limits. However, due to increased stringency, it was never ratified by the US senate, demonstrating the importance to balance regulation with both enforceability and willingness of states opposed to comply.

The major attempts to solve the issue of AWS / LAWS so far have come through the GGE established. Although they were able to pass the eleven guiding principles, they have ultimately

been largely unsuccessful as they aren't legally binding. This has led to the continued development and usage of AWS in ongoing conflicts in the world today. However, they have been successful in further identification of core concerns to be addressed, including human control, accountability, predictability and other issues outlined above.

Attempts to create legally binding regulations, both inside and outside of existing frame works have remained unsuccessful because of the unwillingness to cooperate of major military powers, namely China, the USA and Russia. In addition to having significant influence, they also are the main powers to have invested in such technology and so are needed to comply. This has been furthered by the consensus nature of agreements in the CCW. The Campaign to Stop Killer Robots has proved somewhat successful in increasing political pressure through measures such as open letters to world leaders and other forms of campaigning but have been unable to implement real change for the reasons outlined above.

Possible Solutions

1. Total prohibition of AWS and LAWS. Modelled on CCW Protocol IV on blinding laser weapons or the Ottawa treaty if the CCW proved ineffective. Blanket bans avoid much of the definitional challenge and the issue of gradients of autonomy. Would be clear and comparatively easier to enforce. However, would likely be unsuccessful in gaining support from large military powers as discussed above.

2. Two tiered regulation system. Prohibit offensive use of autonomous weapons which are unpredictable and fail to comply with existing humanitarian law whilst regulating defensive systems with international compliance. This approach has been supported by the UN Secretary-General and many states as discussed above. Allows for technology to provide better defensive systems whilst minimising harm. Would still likely be opposed by the United States, Russia, China and other powers.

3. Soft law approach through political declaration. Encourage individual states to regulate, reinforce humanitarian principles and declare opposition to LAWS. This approach does not require support from opposed powers but equally isn't legally binding and so cannot ensure compliance.

4. Major Power Agreement. Modelled off of previous agreements such as SALT, agreements between major powers involved in these weapons systems (USA, China, Russia). Although this ensures compliance, agreements reached may disregard the interests of less powerful states with concerns about the use of LAWS.

5. Strengthening Existing International Humanitarian Law Framework. This could include measures such as the expansion of article 36, standardising review methodologies and increasing transparency within the system. This would have limited political disruption as it would built upon already agreed upon frameworks.

6. General regulation on the development of AI. More direct regulation over dual use AI and AI for civilian purposes will slow down the rapid development of these systems. This will reduce the prevalence of such short term and allow international law to keep up with regulations.

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