# GA1: Disarmament

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**Issue:** Assessing the potential risk of the weaponization of Artificial Intelligence

TIMUN '20

Turkish International Model United Nations

THIMUN Affiliated Conference

Committee: Disarmament Committee (GA1)

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# I. Introduction

In the last 20 years alone, artificial intelligence (AI) has become an integral part of our lives, whether it be our daily google searches, iPhones that open with face recognition, or our Instagram explore pages. While technology seems harmless in these contexts, the same technical structure is used to develop intelligent weapons systems. It's said that whoever takes the lead of AI technology (especially in a militaristic context) will be in the position to lead the world, which is why there is a tug of power between China and the US. The rapidly increasing applications of AI into weapons systems raises technical, strategic, and legal concerns, all of which will be discussed in this report. To narrow the focus of and give direction to the debate, the report will focus on the application of AI for lethal autonomous weapons systems (LAWS), which could have direct effects on civilians, rather than cyber warfare.

# II. Involved Countries and Organizations

## The United States of America

Artificial intelligence is a big part of the US's Third Offset Strategy, launched in 2014, which aimed to uphold the US' technological and militaristic advantage over other states. The US is currently the leader in the integration of AI technologies into the military, though China poses a great threat to its position. That said, the US does face some constraints, external and internal, for developing more advanced military technologies. The most prominent constraint stems from the leading R&D private institutions such as Google, Facebook, and Amazon voicing their unwillingness to cooperate with the military, mainly due to ethical concerns on how their breakthroughs should be used.

Both the Obama and the Trump Administrations have released numerous reports on the policies and strategies regarding AI, but a national AI strategy still hasn't been adopted, an action that the Department of Defense has been calling for.

That said, AI is the leading nation in AI technology and has had an advantage over other states in terms of testing out intelligent weapons systems, due to its involvement in various different wars. This last fact, while good for the further training of AI weapons, has meant that there have been a significant number of casualties. The US, and specifically the Obama Administration, has been criticized for its bombing of

civilians, whether anticipated or accidental, in the Middle East and Southwest Asia (namely Pakistan, Afghanistan, Yemen, and Iran).

### China

China has been a very prominent threat to the US's throne in AI R&D. China has already stated that by 2025 it expects to overtake the West in AI R&D and become the world leader by 2030. China is infamous for using AI for mass domestic surveillance, but they also have applied AI to the military. The Chinese government's funding of AI R&D has increased by 350% between 2005 and 2015 and is now approximated to be very close to that of the US.

Compared to the US, there are certain systematic and strategic advantages that favor China. The driving strategy behind China's military AI R&D is the civil-military integration and the development of dual-use technology. As opposed to the US, the government and private institutions in China are working closely together. There is also a lot of research carried out in military universities and research institutes. In contrast to the US, China has adopted a national AI policy and has rolled out numerous plans regarding the future of AI R&D.

One problem of the Chinese is the lack of available real data to train their systems. Unlike the US, China is not involved in multiple conflicts, and so there is no real data to train its weapons systems in. So, the government is using simulated data and war games to train its intelligent weapons systems.

That said, it should be noted that despite this setback the Chinese government has been very successful in militarizing AI, especially in the form of autonomous unmanned vehicles, and more specifically swarm drones. In 2017, China broke the US record of 103 by flying a swarm of 119 drones.

In 2018, the Chinese delegation to the UN Group of Governmental Experts on LAWS said that they would accept a new protocol in which the usage of fully autonomous lethal weapons systems was banned. It should be noted that for China, this doesn't mean that the development of fully autonomous lethal weapons systems would be banned. The protocol was not adopted due to the protest of some other states.

## III. Focused Overview of the Issue

### A GENERAL INTRODUCTION TO KEY AI CONCEPTS (TECHNICAL ASPECT)

*What is AI?*

To put it simply, artificial intelligence is a branch of computer science dealing with the simulation of intelligence. It involves "the theory and development of computer systems to be able to perform tasks that normally require human intelligence such a visual perception, speech recognition, decision making, and translation between languages." (NYT) There are 2 types of artificial intelligence:

1. *Narrow AI:* systems capable of performing a limited set of tasks, or a specific domain of knowledge.
2. *General AI:* systems capable of human intelligence that are able to perform a variety of different tasks.

For an effective debate, it is vital to have an intuitive understanding of key concepts relating to artificial intelligence. When we first hear AI, many of us picture weapons such as drones, or human-like robots. However, this isn't a comprehensive approach to AI. Artificial Intelligence should be considered "an enabler, a general-purpose technology, with a multitude of applications," much like electricity. Kevin Kelly, a technology expert compared AI and electricity to be similar in the way they enabled advancements, as "just as electricity brings objects all around us to the life with power, so too will AI bring them to life with intelligence."

*But, what exactly do we mean by intelligence?*

As we advance our technology, what we consider to be "intelligent" always changes. While in the 1960s computers playing chess were considered to be "intelligent", now we tend to view it as just a regular computer program. That said, intelligence can be broadly defined as the measurement of "a systems ability to determine the best course of action to achieve its goals in a wide range of environments." (UNIDIR, 2)

The intelligence of a system is tied closely to its complexity. Simple systems are limited in the kind of tasks they can perform, whereas more complex systems are able to accomplish more difficult and multi-layered tasks in a range of environments. One simple way to exemplify this would be the comparison calculators: while the calculator on an iPhone can perform simple tasks such as addition, multiplication, subtraction, etc; a graphing calculator such as TI can carry out complex tasks of different kinds, such as solving differential equations, graphing higher degree polynomials or creating probability distribution graphs.

*How are these AI systems created?*

Traditional programming operates on an if-then logic. Here, we input the data and establish rules (e.g. an algorithm) and the system gives us an answer. However, since the late 1950s, we have found a different and much more complex way to create intelligent systems called "machine learning." Contrary to traditional programming, we do not need to establish a set of rules in machine learning. Rather, we supply

the system with data and the results/outcome, and the system works to find a fitting set of rules/an algorithm that can accurately describe the relationship between the data and the results. There are 3 types of machine learning techniques:

1. Supervised Learning: the system is trained on human-labeled data. So, we provide the data and the results, and the algorithm is fed more and more inputs like this to better itself.
2. Unsupervised Learning: the system is trained on unlabeled data. We provide an unsorted data set to the system and it tries to come up with the best categorization of data, by identifying patterns in the data set.
3. Reinforcement Learning: the system is trained by interacting with its environment. The system takes action, observes the effects on its environment, and decides whether this action is useful to achieve its goal.

Besides these three techniques, there is also another approach to machine learning, called deep learning, which utilizes deep neural networks. Neural networks are basically more complex systems of data analysis, which do not directly map the input to output but rather relies on several layers of processing units. The function and number of layers are determined by the software engineers. If there is more than one layer between the input and output, it is considered a deep neural network.

Deep learning is carried out by feeding large amounts of data into the system, which allows for the connections between the layers to get strengthened, producing more and more accurate algorithms.

An AI system can be trained for various purposes and applications. Some of the most common ones are:

- Data analytics
- Controlling autonomous systems
- Predicting future trends or behavior from data
- Object classification and recognition
- Detecting anomalous activity
- Optimizing systems to achieve a goal
- Performing simple automated tasks at scale.

These are essentially general applications and abilities of AI systems, which can then be put to multiple different areas of usage, which is why they are commonly referred to as the “dual-use” applications of AI.

## The Use of AI in Weapons Systems (Strategic/Militaristic Aspect)

As explained above, many of the core applications of weaponized AI are dual-use, most notably natural language processing, image recognition and analysis, and detecting anomalous activity. AI is also widely used to control autonomous weapon systems. The extent of the use of AI in controlling weapons systems, as opposed to human control, is the main concern around the issue.

### Control

There are three levels of machine autonomy during operation, dependent on the balance of control between human and AI (CNAS,9):

1. Semi-autonomous operation: the machine performs a task and then stops and waits for approval from the human operator before continuing. This control type is often referred to as "human in the loop."
2. Supervised autonomous operation: the machine, once activated, performs a task under the supervision of a human and will continue performing the task unless the human operator intervenes to halt its operation. This control type is often referred to as "human on the loop."
3. Fully autonomous operation: the machine, once activated, performs a task and the human operator does not have the ability to supervise its operation and intervene in the event of system failure. This control type is often referred to as "human out of the loop."

The types of control are significant as they are the main criteria that define the human-machine interaction, which is at the core of determining issues regarding the risk of a system as well as the potential benefits and drawbacks.

### Complexity

Complexity refers to the number of parameters at play in a given situation, and it also contributes to a human operator's ability to interact with a system, alongside the type of control. Increasingly complex and intelligent systems are taken to be the answers for the issue of brittleness found in simpler systems, as intelligent systems can better adapt to unexpected situations since they are able to take more variables into account in decision making.

That said, the partial elimination of brittleness does come with the partial elimination of transparency. As a system becomes more complex, its inner workings and the decision-making process become less opaque to even the most well-trained officers. This limits their ability to predict the behaviour of a system, which in turn limits the officer's ability to intervene if anything does go wrong. The decreased transparency also makes it more difficult to predict under which conditions a system will fail, as the inner workings of the

system are not clear. This means that there can be fewer precautions taken to limit system failure before a mission. It's important to assess the drawbacks the complexity brings alongside its benefits before employing an intelligent system in a mission.

### The Issue of Unintended Engagement

Autonomous weapons identify their targets by criteria programmed by humans. However, human operators do not choose specific targets themselves. In the field, according to the criteria set, the autonomous weapon system identifies and engages targets on its own. The potential problem here is that the autonomous weapon system can select and engage targets that are different from what was intended.

### Causes of Unintended Engagement

Unintended engagement occurs when a system starts to act in an unexpected manner. There are many reasons as to why a system can act unexpectedly (CNAS, 13-14):

Malfunction and bugs: as a system becomes more complex, more parts of the system can malfunction or be coded improperly

- System failure: Occurs due to unanticipated interactions between different parts of a system. As a system becomes more complex, it becomes virtually impossible to verify all possible combinations of the inner workings of a system.
- Unanticipated interactions with the environment: The more complex the environment that the system operates in, the higher chance of an unexpected interaction. There is a better chance of an automatic car making a mistake in traffic, with pedestrians on the sidewalks, than there is in an isolated parking lot.
- Adversarial hacking: Occurs when enemies (in war) try to exploit the vulnerabilities of a system. Even the simplest system is susceptible to hacking, however, the more complex a system becomes, the harder it gets to both identify and correct any vulnerabilities. Adversarial hacking can be carried out in a myriad of ways:
    - Hacking: gathering control over a system
    - Spoofing: sending false data to the system
    - Behavioral manipulation: taking advantage of predictable behaviors to "trick" the system into performing a certain way.

## Factors that Determine the Risk of Unintended Engagement

The risk depends on the probability of failure and the consequence of failure. While the probability of failure can be said to increase with the complexity of the system and the environment, the consequence of failure is linked to the damage potential of a system. The damage potential of LAWS is affected by:

- The inherent hazard, determined by the type of weapon, and specific qualities such as,
    - The level of armament
    - Magazine depth
    - Type of target
- The geographical reach
- The total operational time
- The speed of engagement, since the faster a system engages with its target the less time there is for verification or intervention
- The time between failure and corrective action, which is dependent mainly on the type of control the system operates with

Looking at these factors, it's evident that the intrinsic nature of autonomous weapons systems makes them much more dangerous than an equivalent (in terms of inherent hazard) semi-autonomous weapon. A fully autonomous radar hunting drone that is programmed to engage with multiple targets over a wide range of time and area is much more dangerous than a semi-autonomous missile system that has the same explosive capacity.

Another important factor contributing to the risk is the number of certain LAWS operating on the field. For example, if there are 20 identical drones operating in a field, all given the same instructions, and one starts malfunctioning due to unexpected interactions with the environment, there is a great chance that the other drones could also malfunction. Thus, the collective damage potential of drones should also be considered.

*What could be the consequences of Unintended engagement?*

A failure within a LAWS could lead to multiple unintended engagements across a wide geographic area until the ammunition is exhausted. Unintended engagements like these can have many consequences such as civil casualties, fratricide, and escalation of the conflict, especially in times of war, potentially creating diplomatic tension.

Though it is not uncommon for humans to also make mistakes, creating situations of unintended engagement, human diversity and heterogeneity on the battlefield allow for an inherent resilience against

mass failure, since it is unlikely that thousands on the field will make the same mistake in the same way. The absence of this idiosyncrasy in automated systems means that they are more susceptible to mass failure as a group, causing greater damage.

### Benefits of Using Autonomous Weapons Systems

Examining the drawbacks and the potential damage of LAWS in detail might make it seem as though they have little to no benefits, but they prove to be useful especially in times of war, since:

- Having no humans on board, they can be sent to more dangerous territories without risking any human life.
- Automated target selection and engagement allows for quicker reactions to enemy attacks.
- Fully automated decision-making in target identification and engagement means that a drone can defend itself even if all communications are jammed.
- Their ability to engage quickly with the enemy without the need for human approval makes them appealing for militaries, as they make them terrifying to the civilians. It is crucial to understand the benefits and drawbacks of utilizing such weaponry during the war and ensure that they are not used more than necessary.

### The International Law Surrounding Laws (Legal Aspect)

Before diving deeper into the issue, a brief explanation of what the sides involved desire as the outcome of the legal debate around LAWS. The movements to ban killer robots want to establish a multilateral treaty, similar to the successful Land Mines Convention). The developed nations such as the US and the UK want to employ a more Westphalian policy, founded on auto-interpretation, where the states are free to interpret and reach different conclusions about the international law surrounding the matter. The debate is currently integrated into an existing institutional setting, the CWC.

A key component of the slow diplomatic and legal progression for the regulations on LAWS is the lack of a general definition for what an autonomous weapon means. A definition by the US for autonomous weapons is given as: “a weapons system that once activated, can select, and engage targets without further intervention by a human operator.” As the definition indicates, the autonomous weapons debate generally revolves around lethal autonomous weapons that employ kinetic energy to kill. Truly, fully autonomous lethal weapons, like the ones we often see in science-fiction movies, do not yet exist. This is partially the reason why some countries object to discussing regulations on their ban: how can you ban something that doesn’t exist yet? It should also be noted that such states are the most developed nations such as the US who are the very ones developing such technology, aiming to delay the diplomatic discussion, hoping to achieve the technology before anybody can regulate their use. Hence, many

humanitarian organizations are concerned that once such weapons are conceived it will be too late to regulate their use. While the developed nations follow a “regulate later” approach and the underdeveloped countries alongside humanitarian organizations employ a “regulate now” approach, some legal experts argue a more gradual approach: “the gradual evolution and gradual evolution and adaptation of long-standing law of armed conflict principles—to regulate what seems to many like a revolutionary technological and ethical predicament.” (Hollis, 11)

The legal discussion on the issue is mostly how the use of LAWS fits into International Humanitarian Law (IHL). At the heart of the discussion around the application of IHL is the degree to which LAWS have “meaningful human control”, to abide by “humanitarian legal requirements such as distinction, proportionality, precautions against attacks on civilians.” In short: if an autonomous lethal weapon commits an act, who is responsible for it? Is it the machine itself, or the software engineers that write its lines of code, or the operators on the field who carry out the attacks, or the commanders that supervise the operators? Advocates for the full ban of LAWS say that machines cannot be held accountable as they lack the assessments and judgments that require “uniquely human” behavior. It also does not make sense to punish the programmers seeing each only write a part of the millions of lines of code, mostly unaware of other parts. It could also be unfair to punish the operators who are simply following orders. The commanders also might be following orders or policies by higher-ranking individuals.

Besides who should be subjected to IHL, another important is what kind of regulation the subjects will be exposed to. The IHL regulations arise with different levels of precision, each of which would present a different advantage when applied to LAWS (Hollis, 12-13):

1. Rules: seek to bind their subjects to respond in specific, determinate ways when certain facts exist.
    - Rules pose less risk of unpredictable behavior by LAWS than directives that apply a principle.
2. Standards: work better after the fact, as an evaluation encompassing a wider range of circumstances and background values and policies.
    - Standards involve judgments that appear best made not by the autonomous system alone, but by third parties authorized to evaluate whether the system adequately accounted for factors such as “foreseeability” or “reasonableness.”
3. Principles: set forth broad considerations for evaluating future behavior without delineating a precise norm for the behavior itself.
    - Principles (by their breadth) retain the flexibility to accommodate novel technologies that rules, with their rigidity, often lack.

To create an effective regulatory framework for the development and use of LAWS, an effective combination of rules, standards, and principles should be established.

There are currently no major international regulations on LAWS. Each year the CWC forum meets to discuss the issue further, but there have been no major steps to limit or even regulate the use of LAWS. The major reason for this is the fact that the CWC operates by consensus, meaning that even if all states except one want to move forward with a treaty, the motion fails. This is why delegates could consider moving such discussion to a different forum.

Outside of the formal legal setting, the work done by NGOs can also greatly influence the formation of regulatory frameworks. Campaigns such as the Campaign to Stop Killer Robots create influential communities that can devise a common understanding of the law, and establish new norms. These norms can even serve as the precursor for the adoption of a greater legal framework. Even if they do not, they can spread wide enough to obtain an extra-legal character, becoming a moral or professional norm, affecting what are considered to be the appropriate boundaries of behavior.

## IV. Key Vocabulary

Failure (of a system): A loss of effective control—a situation in which the autonomous system no longer is behaving in accordance with human operator intention. (CNAS,8)

*System failures are usually attributed to unintended interactions between the elements of a system.

Risk: Referring to the risk of failure is composed of 2 key aspects:

- The probability of failure: the likelihood of the system behaving in a manner inconsistent with human operator intentions in a particular environment.
- The consequence of failure: the potential damage the autonomous system could do in that environment until such time as the human operator can undertake corrective action

(CNAS,8)

Damage potential: The amount of damage an autonomous system could do if it failed to perform appropriately before a human operator could take corrective action. (CNAS,10)

Auto-(...) Systems: Simple, threshold-based systems with easily predictable reflexive responses to external input.

- Automated Systems: Usually referring to more complex, rule-based systems, such as self-driving vehicles and many modern military weapons.

- Autonomous Systems: often reserved for systems that exhibit some degree of learning, adaptation, or evolutionary behavior; or used to refer to complex rule-based systems that exhibit goal-oriented behavior, systems that some might call "automated."

*It is important to note that there is no set-definition for these terms, and so no clear distinctions between them.

Brittleness: The inability (of a system) to adapt to unexpected conditions and step outside of its instructions/programming.

Conventional Weapon: Weapons whose ability to damage comes from kinetic or incendiary, or explosive energy, excluding weapons of mass destruction.

*The fact that most LAWS also employ kinetic energy to kill is why the debate is held under the CWC forum.

## V. Important Events & Chronology

| Date (Day/Month/Year) | Event |
|---|---|
| 10 October 1980 | The Convention on the Certain Conventional Weapons was adopted |
| 10 April 1981 | The Convention on the Certain Conventional Weapons was opened for signature. |
| 18 August 2007 | Prof. Noel Sharkey warned against the development of LAWS (fully autonomous) and called for international regulation. |
| 1 September 2009 | the International Committee for Robot Arms Control (ICRAC) is founded. |
| 1 April 2011 | In her article for the International Journal of Intelligence Ethics, Jody Williams, a Nobel Peace Prize Laureate, called for a ban on fully autonomous lethal weapons. |
| | |
| 19 November 2012 | Human Rights Watch and Harvard Law School collaboratively launched a 49-page report called *Losing Humanity: the Case Against Killer Robots*, calling for a preemptive ban on fully autonomous weapons. |
| 21 November 2012 | The US Department of Defense issued a policy directive on autonomous weapons, making them the first government to spell out its policy on the topic. |
| 22 April 2013 | The Campaign to Stop Killer Weapons was launched in London. |
| 27 February 2014 | The European Parliament adopted its first resolution calling for a ban on "development, production, and use of fully |

| | |
|---|---|
| | autonomous weapons which enable strikes to be carried out without human intervention". |
| 5 March 2014 | Campaigners against LAWS briefed the UN Secretary-General's Advisory Board on Disarmament Affairs regarding the emerging international concern about killer robots. |
| 28 July 2015 | Over 1000 AI and robotics researchers alongside 15,000 endorsers signed an open letter calling for the ban on fully autonomous lethal weapons systems. |
| 7 June 2017 | Izumi Nakamitsu, the Under-Secretary-General High Representative for Disarmament Affairs, made her first public remarks on the matter. |
| 13 March 2018 | Campaign to Stop Killer Robots issued an open letter to Google, inviting them to call for the ban of fully autonomous weapons systems, and raises concerns over their participation in a controversial Pentagon-funded project to autonomously process video footage shot by US surveillance drones. |
| 7 June 2018 | Google published a set of ethical principles, where they pledged to refrain from developing AI for military use. |
| 27 March 2020 | Parliamentarians for Global Action launches a campaign to endorse the negotiation for a Treaty on the Prohibition of Fully Autonomous Weapons, urging states to sign *Global Parliamentary Declaration In Support of the Negotiation of a Treaty on the Prohibition of Fully Autonomous Weapons.* |

## VI. Past Resolutions and Treaties

Convention on Certain Conventional Weapons (CCW):

According to ACA, the convention aims to protect military troops from inhumane injuries and prevent noncombatants from accidentally being wounded or killed by certain types of arms. When the treaty entered into force, it applied to incendiary weapons, mines and booby-traps, and weapons designed to injure through very small fragments. Since then, CCW has been amended tı include 5 more protocols.

European Parliament resolution of 12 September 2018 on autonomous weapon systems (2018/2752(RSP)):

After the failed attempts at reaching a consensus in the UN, the European Parliament passed this resolution in order to showcase its support for the movement of banning autonomous weapon systems. This resolution is a small yet significant step for establishing strict regulations on LAWS on international platforms.

Working Resolution by Germany

There has been no UN Resolution passed on the matter. There also has been no enrollment of further legislation to ban/regulate the use of LAWS during the CCW meetings.

## VII. Failed Solution Attempts

There have been a lot of protests around the issue of lethal autonomous weapons systems, especially in the scientific community to bring a ban to LAWS. For example, in July 2015, more than 3000 artificial intelligence researchers, scientists, and related professionals signed an open letter that called for the ban of AWS. The signatories included 14 past or present presidents of robotics and AI companies, and other professional organizations. Some of the more high-profile signatories include Tesla and SpaceX CEO Elon Musk, Prof. Stephen Hawking, Apple co-founder Steve Wozniak, and Skype co-founder Jaan Tallinn. Similarly, another open letter to the UN was signed by the founders of 116 robotics and AI companies, across 26 countries, calling for the ban of AWS once more.

The Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects (generally referred to as the Convention on Certain Conventional Weapons, CCW) was adopted on October 10, 1980. UN Office at Geneva explains the nature of the convention as:

"The structure of the CCW – a chapeau Convention and annexed Protocols – was adopted in this manner to ensure future flexibility. The Convention itself contains only general provisions."

In 2013 CCW Meeting of State Parties called for the arrangement of an Informal Meeting of Experts, which continued to reconvene each year from 2014 until 2016. Approximately 8 countries, alongside certain NGOs and key UN agencies, participated in the informal Meetings spanned over 3 years. The meetings focused on a variety of aspects surrounding the issue of LAWS: technical, ethical and sociological, legal, and operational, and militaristic.

Building on the 3 informal expert meetings, the High Contracting Parties, during the Fifth CCW Conference (2016) decided to establish a Group of Governmental Experts (GGE) on LAWS, which would meet in 2017 with the "mandate to assess questions related to emerging technologies in the area of lethal autonomous weapons systems." GGE continued its meetings throughout 2018 and 2019, with two meetings per annum.

On September 12, 2018, the European Parliament passed (with 82% of members voting in favor) a resolution that called for an international ban on autonomous weapon systems. The EU hopes that this

resolution can act as a catalyst for the slow-in-coming progress regarding the regulation or prohibition of LAWS.

The truth of the matter is, despite the public outcry, and warnings from prominent figures of the scientific community, there has been little progress made toward the regulation or ban of LAWS on international platforms. Though many countries have called for their ban, some countries do not want to place international regulations on the LAWS, especially for the R&D stages. Due to the nature of CCW, there can be no progress made if even one state opposes the motion. The countries that have taken the strongest stances against the regulation of LAWS are the United States of America, the Russian Federation, Israel, and South Korea.

## VIII. Possible Solutions

The main issue is the lack of international legislation regarding the regulation of LAWS. First, a common definition of critical terms such as “intelligence” and “autonomous systems” to ensure a more structured discussion. Then it should be decided whether to continue the legal debate on LAWS should under LAWS, establish a new forum (that doesn’t operate with consensus), or adopt a more Westphalian approach. Afterward, which topics the regulations should focus on, such as but not limited to: differentiating and limiting the utilization of dual-use technologies for militaristic aspirations, the highest type of autonomy the weapons have and the kinds of environments they operate in, or the international technical tests (on the accuracy, precision, and bias) any autonomous weapon should pass before being deployed for a mission. Alongside these, NGOs could work to raise both professional and public awareness around the issue to establish new norms.

While working to solve the issue, the delegates should consider who should be subjected to the law if an autonomous weapon is to commit an “unethical” act or cause unintended engagement. Another important thing to consider is whether “legal” and “ethical” mean the same thing. In his New York Times interview, Paul Scharre remembers how their position was compromised by a small girl observing them and telling their location to the enemy. He explains how “legally” the girl could pass as an enemy combatant, giving a non-emotional being, like a machine, sufficient reason to shoot her, where the soldiers wouldn’t even consider the possibility. This gives rise to a more technical issue that the delegates should try to tackle: how can we create ethical LAWS, especially since there are multiple ethical theories that try to generalize this human instinct?

## IX. Useful Links

- The New York Times' coverage of this issue is a good place to get an overview of the issue: https://www.youtube.com/watch?v=GFD_Cgr2zho.
- A short (5 minute) video explaining what AI aims to do: https://www.youtube.com/watch?v=2ePf9rue1Ao.
- To gain a more concrete understanding of the underlying technology behind AI, you may want to skim through this free edX course: https://www.edx.org/course/artificial-intelligence-for-everyone
- You may start to research your country's stance on the issue or their previous actions/policies on the matter from this report: https://www.hrw.org/report/2020/08/10/stopping-killer-robots/country-positions-banning-fully-autonomous-weapons-and.

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