Acta Univ. Sapientiae, Legal Studies, **11**, 2 (2022) 81–97

DOI: 10.47745/AUSLEG.2022.11.2.05

The Limits of Protection of Human Rights in Warfare Led by AI

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Abstract. We live in a world of increasing geopolitical tensions, and we are witnessing a military artificial intelligence arms race. In this competition, the goal is to develop lethal autonomous weapons systems, sometimes called 'slaughter-bots', which use AI to recognize, select, and eliminate human targets without any person's assistance. The protection of human rights is difficult in all wars, especially in today's warfare. Innovative technologies offer a way to accomplish political aims, for instance, in the grey zone between war and peace. New technological advances, however, may provide choices to better recognize, comprehend, protect against, and counter hybrid threats. Therefore, it is crucial for academia and industry to have a thorough grasp of the ramifications of cutting-edge technology in a hybrid warfare/conflict setting as well as for political, civilian, and military leaders and decision-makers. In my study, I attempt to examine the role of AI in modern warfare, the weapons used in it, and how human rights can be protected in such circumstances. The morality of giving robots the authority to choose who lives and who dies on the battlefield is discussed in relation to lethal autonomous weapons systems.

Keywords: artificial intelligence, lethal autonomous weapons, hybrid warfare, cyber warfare

1. Introduction. Some Thoughts on Modern Warfare

We live in the age of fourth-generation warfare, also known as hybrid warfare. There is a distinct hybrid manner of fighting that now pervades all armed conflict. Its focal point is not largely in the military sphere in contrast to military-centric dynamic combat. The practical form of hybrid warfare can be unexpectedly fresh and vary from case to case, yet it is far from original in its essence. Three important traits and their hybrid orchestration help to distinguish this warfare in the limited meaning, which is of a strategic nature:

1. Focusing the decision of war/conflict primarily on a broad spectrum of non-military centres of gravity.
2. Operating in the shadow of various interfaces, such as between war and peace, friend and foe, internal and external security, civil and military domains, state and non-state actors.
3. Utilizing a creative combination, hybrid orchestration and the parallel use of different civil and military, regular and irregular, open as well as covert means, methods, tactics, strategies and concepts of warfare, thereby creating 'ever-new' mixed hybrid forms.[1]

It must be stressed that hybrid warfare has the ability to involve all escalation stages even if hybrid warfare actors typically deploy innovative and indirect techniques of limited conflict and a restricted use of armed force. The game will always involve friction and uncertainty, and the use of force that is thought to be reasonable may escalate. In order for hybrid warfare participants to achieve their political objectives, a military decision as such is not always necessary due to its concentration on a wide range of non-military centres of gravity. While pursuing a decision on a non-military centre of gravity, the hybrid warfare actor may be able to stop its opponent from determining the conflict on the military battlefield. In this situation, morale and legitimacy can be effective weapons.

Due to its enormous potential for surprise and offensive action, especially against militarily stronger adversaries, hybrid warfare often favours the offensive. By acting covertly in the murky spaces between interfaces, concealing or credibly denying an actor's intention and position as a combatant, and using force sparingly and only as a last resort, this builds on the ability to ambiguously resolve conflicts. Hybrid actors have the ability to create new situations that are nearly impossible to reverse later without expending excessive effort by employing long-term, indirect, or veiled 'salami tactics' or, alternatively, by carrying out swift, unexpected offensive operations and obtaining a fait accompli. As a result, the offensive capability of hybrid warfare poses a unique challenge to the defender: being caught off guard and not even realizing that one is under hybrid attack until it is too late.

Future conflicts will be waged differently as a result of a technologically advanced and interconnected globe. Cross-domain connectivity and the virtualization of functions in military forces and societies are being driven by the tremendously dynamic, continuing technological race. This merges real life and virtual reality, as well as personal and professional lives. The success of the Russian and Chinese rise in military strength across all operational domains – space, cyber, air, sea, and land –, which lies at the absolute centre of their excellence in hybrid warfare, has been largely attributed to the combination of the potential of new technologies and the subsequent development of operational concepts. In the areas of anti-access and area denial, they have developed capabilities such as ballistic and cruise

1 Schmid–Thiele 2019. 213.

missiles, offensive cyber weapons, and electronic warfare. They are now the West's technological and military opponents, and they are starting to gain an advantage.

Hybrid techniques and tools are accelerated by new technologies. They aid to increase the range of hybrid players' activities and their chances of success by enhancing the initial conditions for hybrid action and growing their toolkits. New technical advancements may provide choices to better recognize, comprehend, defend against, and defeat hybrid threats at the same time. It is crucial for political, civilian, and military officials and decision-makers, as well as for academia and industry to develop a shared and thorough knowledge of the consequences of new technologies in a fourth-generation conflict context in order to prevent, deter, and, if necessary, outmanoeuvre hybrid opponents.

There can be as much as 19 technologies that are relevant for the evolution of hybrid challenges, namely:

> 5G; additive manufacturing; artificial intelligence; autonomous systems; biotechnology; cloud computing; communication networks; cyber and electronic warfare; distributed ledger; directed energy; extended reality; hypersonics; the Internet of things; microelectronics; nano-materials; nuclear modernization; quantum sciences; space assets; and ubiquitous sensors. These emerging technologies are likely to drive developments in hybrid conflict/warfare in the coming years. Seven of these technologies would appear to have a prominent role and have been examined in more depth: 5G; artificial intelligence; autonomous systems; cyber and electronic warfare; extended reality; quantum sciences; and space.[2]

Artificial intelligence enables data to reach its full potential. It is the top choice for strategic anticipation, enhancing judgment and situational awareness, targeting, and serving as a crucial enabler of human–machine teaming. Autonomous systems have emerged as a crucial tool for both virtual and real-world applications. They will inevitably bring a large number of people to the area of combat. Some of them will serve in crucial missions as disposables. Electronic and cyber warfare are important facilitators of hybrid threats. Spectrum warfare is a new, essential capacity for mission success that combines cyber and electronic warfare.

In essence, hybrid warfare and conflict are nothing new. However, technological developments point to a significant expansion of the spectrum of hybrid dangers. They provide new opportunities for aggression and the use of force in a hybrid warfare/conflict setting because of their disruptive potential. Hybrid techniques and tools are accelerated by new technologies. They aid to increase the range of hybrid players' activities and their chances of success by enhancing the beginning conditions for hybrid action and growing their toolkits. Modern technology offers

2 Schmid–Thiele 2021.

a means of achieving political objectives at numerous interfaces, such as the line between war and peace. New technology advancements, however, may provide choices to better recognize, comprehend, protect against, and counter hybrid threats. Therefore, it is crucial for industry and academia to have a thorough knowledge of the ramifications of new technologies in a hybrid warfare/conflict context as well as for political, civilian, and military leaders and decision-makers.

2. The Use of Artificial Intelligence in Hybrid Warfare

What category of technology does artificial intelligence fall under? Machine learning and neural networks are two AI techniques that are utilized by researchers, businesses, and governments. Artificial intelligence is the use of machines, or computers, to replicate actions that are supposed to require human intelligence. Existing research on the trajectory of AI technology development indicates that there is a large deal of ambiguity, even among AI researchers, concerning the potential rate of advancements in AI.[3]

How will the development of artificial intelligence alter the way battles are fought?

> The answer, of course, depends. And it mainly depends on what type of wars are being fought. AI could very well change the fundamental nature of conventional conflicts between states. Technologies enabled by AI could become so powerful and ruthless that war as we know it becomes too deadly and costly to contemplate. But what about the shadow wars? What about irregular wars between states, non-state groups, and proxies? In other words, how will AI affect the type of wars that the United States is most likely to fight?[4]

In irregular warfare, where information and understanding supremacy might prove decisive by enhancing the speed, precision, and effectiveness with which information is used in these battles, AI will drive an evolution. However, developments in AI over the next ten years are unlikely to be revolutionary, especially in a type of warfare where people have historically outperformed hardware.

Armed forces all across the world are accelerating research and development due to the promise of AI, which includes its capacity to quickly and accurately improve everything from logistics and battlefield planning to human decision-making. Why militaries are interested in AI is illustrated by three possible application areas. The first issue is that many modern militaries confront the same data difficulty as businesses or the government at large – there is frequently too much data, and it

3 Horowitz 2018.

4 Egel–Robinson–Cleveland–Oates 2019.

is difficult to process it quickly enough. Narrow AI applications for information processing have the ability to accelerate the process of data interpretation, freeing up human labour for more complex tasks. Second, senior military and civilian authorities think that the pace of warfare is accelerating, from hypersonics to cyberattacks. Speed is about decision-making. For example, an aircraft piloted by AI and liberated from the restrictions of protecting a human pilot might exchange many of the benefits of having human pilots in the cockpit for speed and manoeuvrability, exactly like with remotely piloted systems. Third, AI might make a range of new military strategies for use in combat possible. But AI faces challenges when used as military adoption. AI systems are educated for highly specific tasks, such as playing chess or analysing photos, according to their specific nature. However, because of friction and what is called the 'fog of war', the environment quickly changes throughout combat, and AI systems may be unable to adapt.[5]

My research conducted in the military and defence fields aimed to learn how and where AI is now used by militaries and intelligence agencies around the world, as well as the potential benefits AI may soon bring to the industry. AI is useful in military and defence organizations for: 'Autonomous Weapons and Weapons Targeting; Surveillance; Cybersecurity; Homeland Security Logistics and Autonomous Vehicles'.[6] Computer vision is now used by autonomous weapon platforms to recognize and track targets. In order for a weapon to be considered autonomous, it must be able to recognize and track targets within the area it has been sent to protect. So, how can we be sure that this will work perfectly? How can anybody assure us that these weapons will not shoot civilian targets? Theoretically, nowadays there are no autonomous weapon platforms that are being designed to fire its ordnance without the express approval of a monitoring operator. There is, however, a significant demand for AI cybersecurity solutions. Due to the significant amount of danger involved with data breaches in military and defence networks, this seems reasonable in terms of cybersecurity. Machine learning appears to be used by a number of AI businesses and defence contractors to provide security products that can recognize and foresee threats before they have an impact on networks. Threats to cybersecurity arise in a variety of forms and dimensions. Artificial intelligence has the potential to significantly contribute to preventative actions.

Some theories about AI can be exaggerated, while others warn that a dystopian future with killer machines is more likely than we believe. An 'enabler' rather than a weapon, AI is viewed from a more measured perspective. When it comes to national security and defence, AI is best understood as a collection of tools and software that may assist militaries in resolving specific problems during a variety of tasks. Urban warfare is one of the biggest problems the American military is now

5 Horowitz 2018.
6 Roth 2019.

confronting. The U.S. military still has to work on how it prepares, equips, and organizes for operations in crowded urban settings – urban warfare specialists have noted. Additionally, as cities become progressively bigger and more complicated, the U.S. military will struggle to maintain its technological and operational edge in these crowded, disputed areas. Therefore, urban environments offer a useful test case for assessing the advantages, dangers, and ramifications of AI on the battlefield.

The speed and accuracy of decision-making on the urban battlefield will enhance with AI-enabled intelligence, surveillance, and reconnaissance. Because of the massive volumes of data that cities generate, intelligence, surveillance, and reconnaissance are one of the fields with most potential for AI applications in urban combat. Military and intelligence analysts can now access thousands of publicly available datasets for insights into the demographic, social, economic, and logistical characteristics of cities and their inhabitants thanks to advancements in high-fidelity sensing, image recognition, and natural language processing.

Automated intelligence processing has the potential to change the game. Currently, experts spend hours combing through pictures and videos taken by unmanned aerial vehicles. Urban warfare success depends on having accurate and timely intelligence about the enemy's capabilities, whereabouts, and actions as well as the topography, infrastructure, and people of the city. However, the sheer volume of information is disorienting. In addition to enhancing battlefield decision-making, AI has the ability to lessen the danger of casualties, 'friendly fire', and collateral damage in urban conflict. Some AI and machine learning developments might actually prolong urban violence. Technologies with AI capabilities will enhance force protection and sustainment, boosting survivability and lowering military casualties. Soldiers who are well equipped and protected can fight longer. For example, the use of drones has allowed the United States to carry out deadly counter-terrorism operations globally for almost 20 years now. Because drone strikes do not threaten the lives of U.S. military personnel and are thought to be relatively inexpensive, American public opinion continues to be mostly favourable despite conflicting information regarding their effectiveness and multiple instances of civilian casualties. This cycle might continue with AI-enabled devices and tools that improve urban combat survivability.[7]

When it comes to supporting human decision-making, artificial intelligence has emerged as one of the most crucial technologies for any country. Data-driven and algorithm-driven, AI will change practically every element of life, from how people are educated through how they earn a living to how they protect against attacks in almost every field. AI outcomes in the machine learning branch of AI are mostly influenced by training data. Trained algorithms currently function as 'black boxes'. As a result, these algorithms may exhibit opacity, flaws, or intentional manipulation. Making sure that AI development and integration processes are transparent, understandable, and verifiable will be essential.

7 Konaev 2019.

One of the fundamental technologies of the digital age is AI. Nowadays, established economic sectors are under pressure to change as a result of digitalization. As new added value arises by combining data with AI systems, this pressure will increase. The development of big data and AI technology is currently accelerating dramatically, with significant potential ramifications for business and industry, politics and society, as well as a variety of military applications. Warfare will become more sophisticated as a result of AI. The future of warfare and the effects of AI and machine learning in the military can best be seen as a set of enabling technologies that will be used across the majority of the military realm. It will considerably help push the boundaries in grey zones in hybrid warfare. AI presents a wide range of opportunities for enhancing the skills of those with great abilities in this area, resulting in a set of technologies and applications that can assist military in overcoming real-world problems during a variety of operations. Better cost-efficiency, lessening the burden on humans, and enhanced cyber capabilities are just a few of them. Instead of being used by humans as tools, AI-driven autonomous tools will become 'useful teammates' for them.

By accelerating the speed, accuracy, and efficacy with which information is used and rendered usable, AI technology will lead to an evolution in hybrid warfare where information superiority and awareness can prove crucial. AI will make it possible for group behaviours to be imitated, influenced, and changed in hybrid conflicts, hence influencing their social and economic repercussions. Artificial intelligence is a top priority for armed forces and intelligence services in coping with hybrid warfare eventualities because of its potential to streamline complex operations and make them more effective. For instance, it will become far more difficult to conceal soldiers, proxies, or their equipment, as facial recognition, biometrics, and behavioural signature identification technology becomes more commonplace. A nation-state can do a lot to combat a hybrid insurgency if it has an extensive intelligence-gathering, processing, and exploitation apparatus powered by AI. 'Aggressors will increasingly have the opportunity not merely to spread disinformation or favorable narratives or to damage physical infrastructure, but to skew and damage the functioning of the massive databases, algorithms and networks of computerized or computer-dependent things on which modern societies will utterly depend.'[8]

Over the next 10 to 15 years, artificial intelligence will be a key enabler of innovation, impacting every business as well as the nature of daily activities for private persons in their real world and online. Furthermore, as practical, real-world applications of AI have just recently begun to emerge, it is possible to overestimate the degree of AI's penetration into powerful economies or what the technology could do in the hands of a social manipulator. It is crucial to keep in mind that the pace of AI development or its potential applications over the coming ten years should not be overstated when assessing the implications for social manipulation and virtual

8 Thiele 2020. 11.

societal violence. Nevertheless, they are probably important.[9] 'Military decision making plays a key role across different domains – land, maritime, air, space, and cyber – and across organizational levels – strategic, operational, tactical, technical.'[10]

3. Cyber Warfare

It is widely known that computers are getting quicker and more commonplace. Every day, machines are becoming more powerful and smaller. Robotics, nano- and biotechnology, artificial intelligence, distributed ledgers, sensor technologies, and 5G are all examples of fundamental advancements. Prototypes, vehicle and weapon pieces, and other items are produced using additive manufacturing techniques (the better today's computers are, the more they contribute to enhancing future computers). As the vast potential of artificial intelligence is becoming more and more significant, its adoption by various actors is brisk, as are governmental authorities' and criminal actors' use of it. We may anticipate that a wide range of technology will contribute to hybrid warfare and its goals. To find hybrid operations, real-time analytics and anomaly detection will be key components. The ability to process online data streams will be crucial to a situational awareness, which alerts to certain actions, flags complex events, or highlights new developments. Sensors (the Internet of Things), people (social media), systems (logs), mobiles (locations), etc. are generating continuous and/or event-driven data.

Data now underpins any nation's might, both economically and militarily. Remotely connected robotics combines computers and automation in novel ways through data and communication networks. Data is the new oil in a world where connectivity is always present. And the new oil rigs are networks. Similar to how crude oil must be refined to produce useful goods like gasoline, data must be refined to provide knowledge that can be put to use.

The Internet, a massive global network for information transfer and a complicated, difficult-to-understand 'system of systems', is the backbone of the information or digital age. Digital transformation has had a significant impact on all facets of society, including business, the economy, and governmental sectors like security and defence.

4. LAWs against Human Rights

Lethal autonomous weapons (LAW), or 'killer robots', are drones (as opposed to the sci-fi concepts of humanoid robots, which are still very difficult to create and power), which would make up the majority of the proposed AI-driven weapons. They might

9 Mazarr–Bauer–Casey–Heintz–Matthews 2019. 68.
10 Kerbusch–Keijser–Smit 2018.

be produced at a lower cost and in a considerably smaller size than the current military drones. Although there are ways to use AI to lessen the collateral damage and negative effects of war, fully autonomous weapons would also introduce a number of new legal, ethical, practical, and strategic issues. For this reason, scientists and activists have urged the United Nations and other international governments to consider a pre-emptive ban. The simplest defence of autonomous weapons from a military standpoint is that they provide a plethora of new capabilities. There can only be a certain number of drones in the sky at once if each one must be piloted by a human who decides when the drone should shoot. Fully autonomous weapons will make it easier and cheaper to kill people. Some experts are in favour of LAWs:

> The most interesting argument for autonomous weapons (…) 'is that robots can be more ethical'. Humans, after all, sometimes commit war crimes, deliberately targeting innocents or killing people who've surrendered. And humans get fatigued, stressed, and confused, and end up making mistakes. Robots, by contrast, 'follow exactly their code' (…). Unlike human soldiers (…) machines never get angry or seek revenge.[11]

Fortunately, the current consensus on 'killer robots' among legal and military experts is that they would do greater harm. Some say that robots designed to follow the laws of war would not take morality into account. Soldiers occasionally go well beyond what the law allows them to do. However, other times they do better since they are human and are subject to moral as well as legal imperatives robots could not be subjected to. You can prevent both types of errors by collaborating between humans and machines, as they make distinct sorts of errors. Weapons may be created that are programmed to understand the laws of war and, as a result, will disobey any orders from humans that break those laws. These weapons would also not have the power to murder without human intervention.

5. The Possible Protection Afforded by Human Rights against Autonomous Weapons Systems

The rise of autonomous weapons systems, or weapons that allow computers to operate them rather than humans, has received a lot of attention in recent years. Artificial intelligence and other technologies have advanced significantly during the last ten years. These will enable the creation and use of completely autonomous weapons systems that, when activated, select, attack, destroy, or injure human targets while functioning effectively without direct human supervision. 'These

11 Piper 2019.

weapons systems are often referred to as lethal autonomous robotics (LARs), lethal autonomous weapons systems (LAWS) or, more comprehensively, autonomous weapons systems (AWS).'[12] The rapid development of these weapons systems raises extremely serious concerns regarding human rights, undermining the right to life, the prohibition of torture, and other forms of ill-treatment, the right to personal security, and other human rights. It could also fundamentally alter how military operations are conducted. Autonomous weapons systems can be made to have deadly or less deadly consequences and can be utilized in armed conflict and/or military scenarios. As they spread, it is likely that private companies, people, and armed non-state groups will start using them. Autonomous means weapons that can choose targets and launch an assault without real or effective human control that can guarantee the proper use of force. Such systems could have a negative impact on a person's human rights since they would employ violence (including less-than-lethal force) against persons. It is urgently necessary to pay attention to and consider the questions surrounding the development and potential use of autonomous weapons systems outside of armed conflict (and the ability of such systems to abide by human rights laws), as these issues are at least as challenging as those pertaining to their use on the battlefield. Only then will concrete steps that address this significant area of international law be taken.

There are five important human rights problems to take into account in the present autonomous weapons systems discussion: 1) the scope of the Convention on Certain Conventional Weapons does not cover non-conflict situations; 2) autonomous weapons systems will not be able to comply with relevant international human rights law and policing standards; 3) developments in existing semi-autonomous weapons technology pose fundamental challenges for the international human rights law framework; 4) in the absence of a prohibition, autonomous weapons systems must be subject to independent weapons reviews; 5) autonomous weapons systems will erode accountability mechanisms.[13] The issues identified are by no means exhaustive but rather seek to elicit the principal concerns around the potential use of autonomous weapons systems in military operations.

It would be fundamentally incompatible with international human rights legislation to utilize autonomous weapons systems, including less-than-lethal robotic weapons, in military operations since it would result in unjustified murders, injuries, and other human rights crimes. Additionally, the use of autonomous weapons systems would make it extremely difficult to hold people accountable for grave transgressions, and it could further cement the impunity for crimes against international law. Therefore, there is need for a preventative prohibition on the development, transfer, deployment, and use of autonomous weapons systems,

12 Amnesty International 2015.
13 Ibid.

including fully autonomous systems that use less-than-lethal weaponry but have the potential to kill or seriously injure people.

A key tenet of international human rights law is that no one's life may be taken arbitrarily. The right of everyone 'to life, liberty, and security of person' is upheld by the Universal Declaration of Human Rights (UDHR, Article 3). Every human being has the intrinsic right to life, according to Article 6(1) of the International Covenant on Civil and Political Rights (ICCPR). The law must defend this right. No one's life may be taken unlawfully. International human rights law states that this clause cannot ever be altered, waived, or suspended, not even 'in time of public emergency which threatens the life of the nation'. The right not to be arbitrarily deprived of one's life is therefore in theory applicable even in situations of outright armed conflict; however, in such areas, the definition of 'arbitrary' is typically decided by the provisions of international humanitarian law. Article 9 of the ICCPR safeguards the right to liberty and security of the person. This means that a person's freedom cannot be arbitrarily or unjustly taken away, and arbitrary detention or arrest is forbidden. The Human Rights Committee recently stated that the right to security of person 'protects individuals against intentional infliction of bodily or mental injury, regardless of whether the victim is detained or not. For instance, when they do bodily harm without justification, representatives of the States parties infringe the right to personal security.'[14] They further state that actors during conflicts 'should also prevent and redress unjustifiable use of force in [the] military and protect their populations against abuses by private security forces, and against the risks posed by excessive availability of firearms'.[15] Autonomous weapons systems could potentially be used to transgress laws against torture and other cruel, inhumane, or humiliating treatment or punishment. Similar to the ban on unlawful killings, deprivation and torture are also forbidden in all situations, including armed combat, and cannot ever be excused. No matter which international treaties a state has ratified, this prohibition is an absolute requirement of international law that must be abided by all parties.[16]

In particular, with appropriate attention to the protection of the rights to life and security of person, as well as the avoidance of torture and other ill-treatment, the international community has developed guidelines to help guide nations in guaranteeing human-rights compliant use of force in military. To be able to conduct lawful military operations, autonomous weapons systems would need to be able to effectively assess the degree to which there was an imminent threat of death or serious injury, correctly identify who posed the threat, consider whether force is necessary to neutralize the threat, be able to identify and use means other than force, be able to deploy different modes of communication and policing weapons

14 Amnesty International 2015.
15 Ibid.
16 Ibid.

and equipment, etc. To compound matters, each case would necessitate a distinct and one-of-a-kind answer, which would be incredibly difficult to reduce to a sequence of sophisticated algorithms. Without meaningful and effective human control and judgment, it is impossible for autonomous weapons systems to comply with these rules, especially in uncertain and ever-changing circumstances.[17]

Under Article 36 of the 1977 Additional Protocol I to the four Geneva Conventions of 1949 (henceforth, Article 36) and in accordance with international humanitarian law and other relevant international law, States Parties to the Convention are required to assess whether a new weapon, means, or technique of conflict is legitimate: 'In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.'[18]

For weapons and their usage to be compliant with international law, national legislation, and pertinent international and national standards, transparent weapons evaluations are therefore essential. In debates over autonomous weapons systems, an increasing number of states have claimed that Article 36 may offer a means to ensure that such systems will abide by international humanitarian law without the necessity for banning them. Although the discussion of and involvement with Article 36 is useful, it is insufficient for a number of reasons.

Firstly, it is unclear from Article 36 how the examination of weapons should be conducted. It is known that only a small number of nations have formal evaluation processes in place for new weapons. States that have created formal review processes have done so using various levels of specificity and according to various criteria. Additionally, there is sometimes a lack of openness and transparency in how, when, and how often states perform evaluations of their weapons.

Secondly, a review of firearms under Article 36 does not apply to all equipment and weapons, and it does not look at how they may be employed in policing and military activities. It is legal to employ some weapons in armed combat but not in policing, and the opposite is also true. As a result, such weapon assessments would not include certain dangerous and less-than-lethal autonomous weapons systems. Despite the fact that Article 36 also calls for States Parties to consider whether new weapons, means, and methods of warfare are permissible under any other rule of international law applicable to the High Contracting Party', which inevitably entails a review of compliance with international human rights law, this would only apply to military operations during armed conflicts. Therefore, as arguments about the application of Article 36 go on, states, civil society groups, technical, legal, and other experts who are now looking into the topic of autonomous weapons

17 Ibid.

18 United Nations 1949.

systems must fill this vacuum 'on the fly', i.e. in the absence of a restriction on such systems.

Important questions regarding individual criminal liability and responsibility for human rights breaches are raised by the creation, implementation, and usage of autonomous weapons systems. In order to hold those responsible accountable, every fatality and serious injury that occurs during a military operation must be the subject of a mandatory documentation and investigation under judicial oversight. In order for this to happen, there must be a comprehensive and open mechanism in place to hold military officers responsible for their choice to use force. This necessitates the presence of a third-party accountability mechanism with the authority to conduct thorough, fair, and impartial inquiries. States are required to respect the ban on the arbitrary taking of life and to take all necessary steps to stop, look into, punish, and make amends for the harm caused by private individuals or entities violating human rights. States are also required by international human rights legislation to investigate claims of human rights abuses and prosecute the offenders as part of the right to an actual solution, which is a right that is applicable at all times. It is impossible to bring a robot to court in the case of fatal and less-than-lethal autonomous weapons systems use. Instead, those engaged in the development, production, and operation of Autonomous Weapons Systems, as well as higher-ranking officers and political figures, could be held liable. However, given the numerous variables autonomous weapons systems may encounter, none of these players could possibly predict how it will respond in any given situation. Furthermore, without efficient human control, higher officers would not be able to stop an autonomous weapons system from engaging in illegal activities or discipline it for misbehaviour.

In addition, it is doubtful that autonomous weapons systems could adhere to global norms governing the use of force given the state of technology at the time and the impossibility that it could ever achieve the human levels of discretion necessary in the legal conduct of military action. Particularly questionable is the ability of autonomous weapons systems to uphold the fundamental human rights standards of legality, necessity, and proportionality. Without meaningful and efficient human management, deadly and less-than-lethal autonomous weapons systems would not be able to accurately assess complicated military scenarios and adhere to international standards that forbid the use of lethal force unless in defence against an immediate threat of serious harm or death. The issues that autonomous weapons systems bring up are not adequately covered by current international humanitarian law. The issues presented could be addressed by a new treaty to regulate systems of weapons in accordance with international humanitarian law, morality, international human rights legislation, responsibility, and security. Governments have been encouraged to begin negotiating a new

international treaty on killer robots.[19] By incorporating the following components, such an instrument would address the ethical, security, accountability, and legal issues that such systems raise:

– A broad scope that covers all weapons systems that select and engage targets on the basis of sensor inputs—that is, systems in which the object to be attacked is determined by sensor processing, not by humans;
– A general obligation to retain meaningful human control over the use of force;
– A prohibition on the development, production, and use of weapons systems that by their nature select and engage targets without meaningful human control;
– A prohibition on the development, production, and use of autonomous weapons systems that target people; and
– Positive obligations to ensure other autonomous weapons systems cannot be used without meaningful human control.[20]

During armed conflict, the rules of international humanitarian law must still dominate. For example, the international humanitarian law that governs armed conflicts contains an implicit need for human judgment. The principles of distinction, proportionality, and military necessity enshrined in international treaties like the 1949 Geneva Conventions and deeply rooted in international customary law specifically contain this need as an implicit part. International human rights law, which guarantees certain human rights for all persons regardless of their national origins or local regulations, also implicitly upholds similar concepts. Autonomous weapons systems raise a host of ethical and social concerns, including issues of asymmetric warfare and risk redistribution from combatants to civilians and the potential to lower the thresholds for nations to start wars.[21] There is a separate concern that such systems may not have an identifiable operator in the sense that no human individual could be held responsible for the actions of the autonomous weapons system in a given situation.[22]

The main technical question is still whether it is possible to create a robot that can recognize legitimate targets, such as military objectives, combatants, and civilians directly engaged in hostilities on the one hand and those protected from attacks by international humanitarian law, such as civilians and civilian objects, specially protected objects like cultural properties on the other. While it might be hard to program autonomous weapons for every scenario that can arise in a battle, could it be possible for them to 'learn'? It will be difficult to implement some components of international humanitarian law in a computer program, such as the concept of direct participation in hostilities. What constitutes an international

19 Human Rights Watch 2021a.
20 Human Rights Watch 2021b.
21 Asaro 2008.
22 Sparrow 2007.

armed war and a non-international armed conflict are the real issues at hand. What level of violence must occur before there is an armed conflict between a state and a non-state actor? These inquiries are not unique to robots, and human beings must provide the answers even when autonomous weapons are utilized.

6. Conclusions

In today's world, it is very difficult to protect human rights and privacy, as AI may be used as a weapon of hybrid warfare. Robotization of battlefields and the subsequent creation and integration of artificial intelligence in traditional weapons platforms will advance quickly. For example, when a conquering army wants to take a major city instead of troops fighting in the urban area, it is easier to send dozens of small drones with simple instructions: 'Shoot everyone holding a weapon.'[23]

The political and economic justification for waging wars rather than preventing them may change as a result of developments in autonomy and artificial intelligence that help lower the danger to military troops and enhance sustainment. Therefore, even while AI has the potential to exacerbate politics and war, this is not because it will aid in the automation of human labour. Instead, it is because AI will alter how various human groups – such as the military, civilian leadership in charge of making decisions about the use of force, and the general public that either approves of or criticizes these actions – relate to one another. In the AI era, war will still be politics carried out in a different way. But as war becomes less expensive as a result of technology and political leaders no longer have to pay as much for their actions, why cease fighting? Technological advancements that potentially alter civilian–military relations, political authority, and the methods used to conduct war have significant ethical ramifications. And it is these questions that should keep us up at night, not sensationalized images of self-aware terminators and self-driving drone swarms.[24]

Half a dozen countries are at various phases of developing lethal autonomous weapons systems or robotic weapons such as self-driving robotic vessels designed to travel thousands of miles to find and destroy submarines and sea mines with not even one crew member present. However, despite the fact that the militaries of developed nations are competing to develop lethal autonomous weapons systems to carry out a variety of tasks on the battlefield, a significant portion of robotic engineers, ethical analysts, and legal experts are adamant that robotic weapons will never meet the standards of distinction and proportionality required by the laws of war and will, therefore, be illegal.

23 Piper 2019.
24 Konaev 2019.

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