Robots in the Sky: The Need for Preemptive International Regulation of Autonomous Weaponry

by Griffin Spencer

I. Introduction

Since their founding in 2012, the Campaign to Stop Killer Robots ("Stop Killer Robots") has united over 180 member organizations to "ensure human control in the use of force" and "call[] for new international law on autonomy in weapons systems."[1] Stop Killer Robots addresses how autonomous weapons dehumanize the individual by reducing the value of life to a data point.[2] Increasingly, this reality is becoming far more alarming as militaries around the world race to develop these military technologies.[3] Analysts have raised concerns about the risk that autonomous weapons systems will cause unnecessary bloodshed and "uncontrolled escalation."[4] The response to these dangers include calls for either a preemptive ban on autonomous weapons systems or new regulations on their use in international armed conflict.[5]

While some call for a preemptive ban, such as Stop Killer Robots,[6] proponents of autonomous weapons systems argue that new regulations are unnecessary as the existing body of international humanitarian law sufficiently regulates autonomous weapons systems.[7] They even argue that autonomous weapons systems are far more capable than conventional weapons systems in understanding a situation and developing a response,[8] and thus do not need to be unduly restricted by new regulations.[9] Additionally, some argue that this technology not only provides a tactical military advantage but allows less time for the situation to change and may result in civilian lives being saved.[10]

Despite these potential benefits of autonomous weapons systems, it is still necessary to create clear and definitive rules surrounding their use through the implementation of a new international treaty.[11] This is due to the numerous legal and ethical questions raised by

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[1] *About Us*, CAMPAIGN TO STOP KILLER ROBOTS, https://www.stopkillerrobots.org/about-us/ (last visited Apr. 10, 2023) [https://perma.cc/6K9W-UTTS].

[2] *Problems with Autonomous Weapons*, STOP KILLER ROBOTS, https://www.stopkillerrobots.org/stop-killer-robots/facts-about-autonomous-weapons/ (last visited Apr. 10, 2023) [https://perma.cc/6TAU-94UQ].

[3] MICHAEL T. KLARE, ARMS CONTROL ASS'N, ASSESSING THE DANGERS: EMERGING MILITARY TECHNOLOGIES AND NUCLEAR (IN)STABILITY 3 (2023), https://www.armscontrol.org/sites/default/files/files/Reports/ACA_Report_EmergingTech_digital.pdf [https://perma.cc/SS9P-QS38].

[4] *Id*.

[5] *See, e.g.*, Bonnie Docherty et al., *Making the Case: The Dangers of Killer Robots and the Need for a Preemptive Ban*, HUMAN RTS. WATCH (Dec. 9, 2016), https://www.hrw.org/report/2016/12/09/making-case/dangers-killer-robots-and-need-preemptive-ban [https://perma.cc/7N9V-FZAL].

[6] *A Shared Movement*, STOP KILLER ROBOTS, https://www.stopkillerrobots.org/a-global-push/a-shared-movement/ (last visited Apr. 10, 2023) [https://perma.cc/4DU3-NV9Y].

[7] Kenneth Anderson & Matthew C. Waxman, *Debating Autonomous Weapon Systems, Their Ethics, and Their Regulation Under International Law* 1097, 1104 (Am. Univ. Wash. Coll. of L., Research Paper No. 2017-21, 2017).

[8] *Id.* at 1102–1103.

[9] Charles P. Trumbull IV, *Autonomous Weapons: How Existing Law Can Regulate Future Weapons*, 34 EMORY INT'L L. REV. 533, 535 (2020).

[10] Anderson & Waxman, *supra* note 7, at 1102–1103.

[11] *See* Bonnie Docherty, The Need for and Elements of New Treaty on Fully Autonomous Weapons 1 (June 2020) (unpublished manuscript), https://www.hrw.org/sites/default/files/media_2020/06/202006arms_rio_autonomous_weapons_systems_2.pdf [https://perma.cc/66HE-WNJQ] [hereinafter Docherty, New Treaty].

autonomous weapons systems and their use in military operations.[12] The goal of this new international treaty would be to expound upon the current principles of International Humanitarian Law by clarifying how to apply the principles of distinction and proportionality to autonomous weapons systems. Further, this proposed treaty will also seek to address the accountability issues raised by autonomous weapons systems.

This paper will begin by arguing that autonomous weapons systems are unethical as used in military operations. This paper will then analyze the current state of International Humanitarian Law through the four primary principles that govern international armed conflict: (1) humanity, (2) necessity, (3) distinction, and (4) proportionality. When examining each of these principles, this paper will demonstrate how these legal principles fail to provide full clarity in their application to autonomous weapons. Further, this paper argues that current regulations are also insufficient to fully regulate autonomous weapons systems. Lastly, this paper will conclude with a proposed international treaty that would address these shortcomings and restrict the use of autonomous weapon systems in military operations.

II. The Need for International Regulations are Rooted in the Ethical Concerns Presented by Autonomous Weapons

There are three primary categories of problems posed by autonomous weapons. The first category includes the immediate dangers posed by autonomous weapons, which include the risk of uncontrollable escalation of conflict,[13] and the potential that a reduction in the cost of war will lead to more frequent bloodshed.[14] The second category includes the more existential ethical questions that arise when taking the human out of the decision-making process in the decision to kill[15] and reducing a human life to a data point.[16] The third category results from the fact that the current body of law governing armed conflict—international humanitarian law as established in the Hague Conventions of 1899 and 1907 and the Geneva Convention of 1949—fails to adequately address autonomous weapons systems in their current structure.[17]

A. The Dangers Posed by Autonomous Weapons Systems

Advocates of a preemptive ban towards autonomous weapons systems warn of the potential risks associated with the wide-spread use of the technology in military operations.[18] In 2015, the International Joint Conference on Artificial Intelligence released an open letter calling for a complete ban on the use of Artificial Intelligence (AI) in weapons systems beyond meaningful human control.[19] Their motivation behind the ban was rooted in the fundamental shift of warfare

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[12] Peter Asaro, *On Banning Autonomous Weapon Systems: Human Rights, Automation, and the Dehumanization of Lethal Decision-Making*, 94 INT'L REV. RED CROSS 687, 709 (2012).
[13] Nathan Leys, Note, *Autonomous Weapon Systems, International Crises, and Anticipatory Self-Defense*, 45 YALE J. INT'L L. 377, 381 (2020).
[14] *See generally Autonomous Weapons Open Letter: AI & Robotics Researchers*, FUTURE OF LIFE INST. (Feb. 9, 2016), https://futureoflife.org/open-letter/open-letter-autonomous-weapons-ai-robotics/ [https://perma.cc/EYG9-QUYK].
[15] KLARE, *supra* note 3, at 3.
[16] *See* Andrew Stroehlein, *Deadly Digital Dehumanization*, HUMAN RTS. WATCH: DAILY BRIEF (Mar. 15, 2023), https://www.hrw.org/the-day-in-human-rights/2023/03/15 [https://perma.cc/PD83-2CQ2].
[17] *See generally* KLARE, *supra* note 3 (arguing that emerging technologies, like autonomous weapons, should be regulated).
[18] *Autonomous Weapons Open Letter: AI & Robotics Researchers*, *supra* note 14.
[19] *Id.*

that would occur through automation.[20] This includes the idea that war would become more frequent as autonomy reduces human capital that must be expended while conducting an operation.[21] However, their most pressing concern was an arms race amongst every military power in the world, a race that could have the long-run consequence of making AI-powered weapons "ubiquitous and cheap for all significant powers to mass-produce."[22] In the end, they fear autonomous weapons would fall into the hands of bad actors, such as dictators who could use the AI-enabled weapons to conduct ethnic cleansings or seek to control their population.[23] Due to these potential dangers, adversaries sought to prevent the autonomous weapons systems-arms race before it ever began.[24] Unfortunately, they failed in their pursuit to ban autonomous weapons systems.[25]

Currently, militaries are increasingly relying on AI to process large masses of information on the battlefield.[26] This reliance naturally increases the pace of warfare as other militaries adopt artificial intelligence, leading the U.S. military to incorporate artificial intelligence through the Joint All-Domain Command and Control Program ("JADC2").[27] As it currently stands, JADC2 functions to digest large volumes of situational information and "provide commanders with a menu of possible combat options."[28] As of now, JADC2 is only used in traditional military operations; however, it is considered inevitable that as automation continues, the system will be integrated with the nation's nuclear systems,[29] thus amplifying the potentially catastrophic and irreversible consequences of automation.

B. Philosophical Concerns of Autonomous Weapons

The philosophical concerns related to autonomous weapons are deeply rooted in critics' inherent opposition towards delegating matters of life-or-death decisions to non-human intelligence.[30] Critics argue that when these life-or-death matters are delegated to non-humans, it devalues human life as a whole,[31] further proposing that the only decision-makers that may be capable of taking a life are humans, for they are the only individuals that are morally capable of a decision of such magnitude.[32] Contained within this argument is the idea that humanity's own understanding of morality is evolving, raising the question of how any AI could be sufficiently capable to make these decisions.[33] This argument also goes into International Humanitarian Law, as some scholars argue that autonomous weapons are incapable of complying with the Martens clause of the Hague Convention of 1899, which dictates that international law is "derived from

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[20] *Id.*
[21] *Id.*
[22] *Id.*
[23] *Autonomous Weapons Open Letter: AI & Robotics Researchers*, *supra* note 14.
[24] *Id.*
[25] *See* Stroehlein, *Deadly Digital Dehumanization*, *supra* note 16 ("Many countries are already using precursors to these weapons, like armed drones.").
[26] KLARE, *supra* note 3, at 6.
[27] *Id.*
[28] *Id.*
[29] *See, e.g.*, *id.*
[30] Amitai Etzioni & Oren Etzioni, *Pros and Cons of Autonomous Weapons Systems*, MIL. REV., May–June 2017, at 72, 75.
[31] *See, e.g.*, *Digital Dehumanisation*, STOP KILLER ROBOTS, https://www.stopkillerrobots.org/stop-killer-robots/digital-dehumanisation/ (last visited Apr. 10, 2023) [https://perma.cc/EJM8-DYYJ].
[32] Bob Lambrechts, *May It Please the Algorithm*, 89 J. KAN. BAR ASS'N, Jan. 2020, at 36, 41.
[33] *Id.*

established custom, from the principles of humanity, and from the dictates of human conscience."[34] For some, the removal of human conscience is not only unethical, but also a fundamental violation of this clause of International Humanitarian Law that is inscribed in Additional Protocol I.[35]

With all these tangible and potential risks associated with the use of autonomous weapons systems in mind, there is a need for international regulation of some form to govern the use of autonomous weapons in international conflict. The question is, do the current regulations go far enough in protecting against these ethical and tangible dangers? And, if not, what can be done to curb these existential dangers?

III. The Legal Issue: Application of International Law to Autonomous Weapons Systems

It is widely accepted that the current law of armed conflict[36] and International Humanitarian Law applies to autonomous weapons systems.[37] International Humanitarian Law is the governing body of law that provides the legal framework for armed conflicts and is currently the law that regulates autonomous weapons systems.[38] International Humanitarian Law contains four primary principles within it: (1) Humanity, (2) Necessity, (3) Proportionality, and (4) Distinction.[39] These four principles provide the guidelines of when a violation of international armed conflict law has occurred.[40] Therefore, if an autonomous weapons system violates one of these principles, it has broken International Humanitarian Law.[41]

A. Humanity

The principle of humanity prohibits the "infliction of suffering, injury, or destruction unnecessary to accomplish a legitimate military purpose."[42] Legal scholars consider humanity to be the least problematic principle of International Humanitarian Law, or the Law of Armed Conflict, when applied to autonomous weapons systems.[43] Under this understanding, in order for autonomous weapons systems to comply with the humanity principle of the Law of Armed Conflict, it must be demonstrated that these weapons do not unnecessarily increase civilian casualties through their use[44] and are not inherently inhumane through their use.[45]

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[34] Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts, art. 1, ¶ 2, *opened for signature* Dec. 12, 1977, 1125 U.N.T.S. 1, 7.
[35] *See* Tyler D. Evans, *At War with the Robots: Autonomous Weapon Systems and the Martens Clause*, 41 HOFSTRA L. REV. 697, 700 (2013).
[36] Lieutenant Colonel Christopher M. Ford, *Autonomous Weapons and International Law*, 69 S.C. L. REV. 413, 427 (2017).
[37] Anna Fosberg, Comment, *From Siri to Sci-Fi: Are Lethal Robots People Too?*, 124 PA. ST. L. REV. 501, 515 (2020).
[38] Trumbull, *supra* note 9, at 535.
[39] *E.g.*, Fosberg, *supra* note 37, at 515.
[40] *See, e.g.*, Kelly Cass, Comment, *Autonomous Weapons and Accountability: Seeking Solutions in the Law of War*, 48 Loy. L.A. L. Rev. 1017, 1032–1033 (2015).
[41] *Id.*
[42] *E.g.*, Fosberg, *supra* note 37, at 516.
[43] *See* Cass, *supra* note 40, at 1038.
[44] *See id.* at 1039.
[45] Bradan T. Thomas, Comment, *Autonomous Weapon Systems: The Anatomy of Autonomy and the Legality of Lethality*, 37 HOUS. J. INT'L L. 235, 251 (2015).

Currently, it is difficult to understand the full implications of whether autonomous weapons will increase the number of civilian casualties through their use. Some commentators would raise the concerns cited earlier in this paper, that the use of autonomous weapons would lead to a significant increase in the amount of war as the human cost of war goes down.[46] Other commentators have drawn comparisons between autonomous weapons and their more existent analog, drones.[47] Studies conducted suggest that the use of drones in Pakistan, when compared to traditional weapons systems, did not increase the number of civilian casualties.[48] While an incomplete analog to autonomous weapons, the study does highlight that evolving technologies do not necessarily increase civilian fatalities in armed conflict.

Other than increasing the amount of civilian fatalities, there are other avenues through which a weapon can violate the principle of humanity, which includes when a weapon causes an unnecessary amount of harm through the weapon's design.[49] Scholars point to international law decisions that have found some weapons, through their specific design and purpose, to violate the principle of humanity on this basis.[50] Specific examples of these violations include the use of poison or dum-dum bullets, which have been declared to inflict damage beyond what is required to disable the enemy.[51] When applying this legal analysis to autonomous weapons, the restriction is based on the capabilities of the autonomous weapon, rather than the fact that it is an autonomous weapon. For example, the use of dum-dum bullets is inherently disproportionate and violates the law of humanity because dum-dum bullets are excessive in their use of force necessary to disable a target, thus violating the law of humanity. Conversely, autonomous weapons themselves do not violate the law of humanity *per se* because they are not always capable of such damage.[52]

B. Distinction

In addition to the principle of humanity, the principle of distinction provides another guiding law of how to consider and handle autonomous weapons systems.[53] Distinction presents not only one of the most difficult issues for autonomous weapons to comply with,[54] but has also been described by the International Court of Justice as one of the fundamental principles that make up the "fabric of humanitarian law."[55] The principle of distinction in international conflict found in Additional Protocol I states that, during a conflict, parties will "at all times distinguish between the civilian population and combatants . . . and accordingly shall direct their operations only against military objectives."[56] In its most simplistic terms, distinction requires that combatants must only target attacks at military targets.[57] Therefore, in order for autonomous

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[46] *See, e.g.*, *Autonomous Weapons Open Letter: AI & Robotics Researchers*, *supra* note 14.
[47] *See* Cass, *supra* note 40, at 1039.
[48] *Id.*
[49] Thomas, *supra* note 45, at 251.
[50] *Id.* (citing Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226 (July 8)).
[51] *Id.*
[52] *See id.*
[53] Ford, *supra* note 36, at 434–435.
[54] Elliot Winter, *The Accountability of Software Developers for War Crimes Involving Autonomous Weapons: The Role of the Joint Criminal Enterprise Doctrine*, 83 UNIV. PITT. L. REV. 51, 67–68 (2021) [hereinafter Winter, *The Accountability of Software Developers*].
[55] Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. Rep. 226, ¶ 78 (July 8, 1996).
[56] Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts, *supra* note 34, art. 48. *See also* Fosberg, *supra* note 37, at 516.
[57] Cass, *supra* note 40, at 1034.

weapons to comply with the principle of distinction, they must be able to differentiate between combatants and civilians.[58]

The ability of autonomous weapons systems to differentiate between combatants and non-combatants strikes at the very core of the debate because it raises the question of whether an AI is capable of making this decision and, more importantly, should it? The reality of modern warfare is that combatants hide behind civilians or in densely populated areas, which places a heightened burden on distinguishing between combatants and civilians.[59] The issue arises in just how subtle these distinctions can be, which at times can come down to nearly intangible cues that only humans would be able to interpret, such as behavior, "gestures, and tone of voice."[60] Some scholars argue that, as it stands today, the technology of autonomous weapons is incapable of complying with distinction.[61] That is because contemporary AI retains inherent deficiencies in judgement capabilities.[62]

C. Proportionality

Autonomous weapons systems also struggle to comply with the principle of proportionality because of the fact-dependent nature of the principle.[63] Proportionality is defined by Additional Protocol I as a prohibition on attacks "which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated."[64] Essentially, proportionality is a subjective balancing test that balances the military necessity of an attack with the expected civilian harm of the attack. [65]

The proportionality principle is a highly fact-dependent inquiry such that the legality of an attack can change through only minor variations in a situation.[66] Commentators doubt the ability of autonomous weapons systems to ever be able to carry out this analysis and thus comply with the proportionality principle without heavy use of human control guiding the system.[67]

Further, the principle of proportionality raises the question of how to go about calculating the military advantage of a target. There is the issue that even if a human was in the room when proportionality was calculated, and then an autonomous weapon system was launched, the situation may have changed.[68] That is because proportionality requires an exact decision based on all of the information available the moment the decision is made to strike.[69] Therefore, small

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[58] Elliot Winter, *The Compatibility of Autonomous Weapons with the Principle of Distinction in the Law of Armed Conflict*, 69 INT'L & COMPAR. L.Q. 845, 859 (2020) [hereinafter Winter, *Compatibility of Autonomous Weapons*].
[59] Docherty, New Treaty, *supra* note 11, at 2.
[60] *Id.*
[61] *E.g.*, Winter, *Compatibility of Autonomous Weapons*, *supra* note 58, at 875–76.
[62] *Id.*
[63] Cass, *supra* note 40, at 1037.
[64] *See* EMANUELA-CHIARA GILLARD, PROPORTIONALITY IN THE CONDUCT OF HOSTILITIES 3 (2018) (citing Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts of 8 June 1877, *supra* note 34, art. 51(5)(b)).
[65] Docherty, New Treaty, *supra* note 11, at 2.
[66] Cass, *supra* note 40, at 1037.
[67] Docherty, New Treaty, *supra* note 11, at 2.
[68] Ford, *supra* note 36, at 445.
[69] Drew F. Cohen, *Autonomous Drones and the Ethics of Future Warfare,* HUFFINGTON POST, http://www.huffingtonpost.com/drew-f-cohen/autonomous-drones-and-the_b_4428112.html (Feb. 14, 2014) [https://perma.cc/5KLR-JA8X].

changes like the sudden emergence of a bus in a crowded urban area can bring a strike from compliant to illegal.[70] The difficulty for autonomous weapons in complying with this principle is that they will have to be "constantly updated" with information on the situation as it develops.[71]

D. Necessity

The principle of necessity restricts the use of force to those military targets that provide a military advantage.[72] Therefore, to comply with the principle of necessity, autonomous weapons systems will have to be able to distinguish between military targets generally and those targets that bring about a military advantage.[73] This draws a natural comparison to the ability of the autonomous weapons to comply with the principle of distinction, and it is clear that in the technology's current state, autonomous weapons are unable to comply.[74]

E. The Accountability Problem

The final glaring issue that faces autonomous weapons systems in relation to international law is the potential accountability gap that these systems could bring forth through their more widespread use and implementation in military operations. The accountability gap is rooted in the idea of who will bear the burden of a mistake made by an autonomous weapon in carrying out an attack on a military target that inadvertently violates the principles of International Humanitarian Law.[75] Will it be the commander who is held responsible for the actions of the autonomous weapon? Is it the autonomous weapon itself? Or, as some scholars have pondered, will it be the developers of the code?[76]

Currently, these questions remain unanswered by International Humanitarian Law. As Rebecca Crootof noted, the current restraint of holding autonomous weapons accountable is that in order for autonomous weapons systems to be analogized to current actors, such as combatants or conventional weapons, legally salient characteristics must be omitted, and false connections must be implied.[77] Analogizing current actors to autonomous weapons results is unsatisfying at best, leaving holes where the existing law cannot be properly applied to autonomous weapons.[78] At the core of the issue is that autonomous weapons are a rapidly evolving technology, and as their capabilities increase, so will the need for specially tailored solutions.

With these rules, some observers view all of these requirements to be inherently human in how they must be applied, something that autonomous weapons are simply incapable of complying with by their very nature.[79]

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[70] *Id.*
[71] Ford, *supra* note 36, at 445.
[72] Thomas, *supra* note 45, at 265.
[73] *Id.*
[74] *See* Cass, *supra* note 40, at 1034–35.
[75] Docherty, New Treaty, *supra* note 11, at 2.
[76] *Id.*; Winter, *The Accountability of Software Developers*, *supra* note 54, at 68.
[77] Rebecca Crootof, *Autonomous Weapon Systems and the Limits of Analogy*, 9 HARV. NAT'L SEC. J. 51, 58 (2018).
[78] *Id.*
[79] *E.g.*, Ford, *supra* note 36, at 427.

IV. PROPOSED NEW TREATY TO ADDRESS THE SHORTCOMINGS OF INTERNATIONAL HUMANITARIAN LAW

It is clear that International Humanitarian Law leaves much to be desired in regard to the regulation of autonomous weapons systems. The fundamental issue is that laws which were designed for humans are being applied to a form of technology that is non-human and exponentially evolving,[80] leaving behind a framework that is simply so unclear that it will take years, if not decades, of litigation to fully understand how it should apply to autonomous weapons system. By the time that decisions are made on how to apply the existing law, the technology will have already reached the next phase of its evolution. This is why creating pre-emptive regulations is so important. One only needs to look at the current pace of AI progress[81] and technological progress in general[82] over the past two decades to understand this shortcoming.

The treaty proposed by this paper is one that will clearly demonstrate how to apply current International Humanitarian Law to autonomous weapons. International Humanitarian Law provides clear details and instructions for how to engage in combat and has the potential to effectively regulate autonomous weapons.[83] However, it must resolve these issues with certainty in order to be effective.

It would be unreasonable to expect that countries will agree to a preemptive ban against all autonomous weapons systems, with countries such as the United States, United Kingdom and Germany outright opposing a preemptive ban.[84] These countries proclaim that the benefits of autonomous weapons would not only allow for military advantage, but also a reduced risk to civilians when compared to conventional weapons.[85] These countries also propose that the current rules of International Humanitarian Law are sufficient to control the use of autonomous weapons.[86]

With this in mind, it would be more feasible to create a treaty that articulates how the current principles of International Humanitarian Law are to be applied to autonomous weapons. The goal of this new regulation will be to reduce the current uncertainty that exists in the current application of International Humanitarian Law and to create guidelines that will hopefully steer the development of autonomous weapons in a direction that retains the human element in the decision-making process.

Therefore, this paper suggests a preemptive ban on the ability of autonomous weapons systems to engage in distinction. Next, this paper proposes a restriction on the use of proportionality so that a human must be the final decision maker when AI is used within the decision-making process. Lastly, this paper proposes strict liability for states in order to close the accountability gap. All of these regulations would be accomplished through a new International Treaty.

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[80] *See generally* Xuli Tang, et al., *The Pace of Artificial Intelligence Innovations: Speed, Talent, and Trial-and-Error*, 14 J. INFORMETRICS, Sept. 21, 2020 (measuring the speed at which AI technology is developing).
[81] *Id.*
[82] *See generally* Juan José Gómez Camacho (Permanent Rep. of Mexico to the U.N.), *Keeping Pace with an Accelerated World: Bringing Rapid Technological Change to the United Nations Agenda*, UN CHRON. (Dec. 2018), https://www.un.org/en/un-chronicle/keeping-pace-accelerated-world-bringing-rapid-technological-change-united-nations [https://perma.cc/6Z7G-995B] (describing the rate of growth in technology across sectors).
[83] Trumbull, *supra* note 9, at 535.
[84] Kelley M. Sayler, *International Discussions Concerning Lethal Autonomous Weapon Systems,* CONG. RSCH. SERV. 1 tbl.1, (Feb. 14, 2023) https://sgp.fas.org/crs/weapons/IF11294.pdf [https://perma.cc/9NN9-X9JC].
[85] *Id.* at 2.
[86] *See id.*

A. Addressing Distinction Through a New International Treaty

Based on the current limitations of autonomous weapon systems and their inability to comply with the International Humanitarian Law principle of distinction[87] there exists an urgent need to create new regulations that will more accurately control the proliferation of autonomous weapons systems. Specifically, how to handle the ability of autonomous weapons systems to engage in distinguishing between civilians and combatants.

The first way that this may be accomplished is through a preemptive ban on the ability of autonomous weapons to distinguish between civilians and combatants. The reason for this is simple, the technology is not yet fully capable of complying with distinction.[88] That is because distinction requires any actor to engage in a judgment of whether or not someone is a military combatant or civilian.[89] AI, in its current state, relies on machine learning to engage in certain strategies or to partake in judgement.[90] This allows for AI to process large swaths of data, to iterate, and develop strategies that can even trump those of humans.[91] While these complex decisions can overcome the processes of humans, this is not an example of an AI engaging in the nuanced and complex deliberation required by the principle of distinction.

Therefore, as it currently stands, fully autonomous weapons systems should be preemptively barred from engaging in distinction. There may come a time where AI may surpass the distinction-making capabilities of humans, but that time is too far in the future to allow autonomous weapons that capability now.

At the same time, this ban would not inhibit the development of autonomous weapons in the same way a complete prohibition would. This would allow the opportunity for the technology to have the time needed to grow and hopefully reach the promised potential of saving civilian lives. This ban would also prevent the technology from entering warfare before it is fully developed, mitigating the risk of unnecessary bloodshed through a glitch in code.

B. Addressing Proportionality Through a New International Treaty

The new proposed International Treaty will also be required to address the principle of proportionality for many of the same reasons for which it must address distinction. The current limitations of AI lack the nuanced judgement capabilities that are envisioned by the principle of proportionality.[92] Further, the need for regulation in this sphere arises from the timing of the attack, as discussed *supra*.

Therefore, this paper proposes the novel regulation that autonomous weapons systems must be restricted from making decisions regarding proportionality. Unlike distinction, it does not propose a complete ban. Rather it proposes a guideline that restricts the amount of autonomy permitted. The reasoning behind this restriction is that AI is extraordinary at processing large swaths of data, and rapidly making decisions based on this data. This ability is well-suited towards the principle of proportionality, which requires rapid situational diagnosis and a constant balancing test.

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[87] *See generally* Winter, *The Compatibility of Autonomous Weapons*, *supra* note 58 (noting the current deficiencies in artificial intelligence to make nuanced distinctions).
[88] *Id.* at 876.
[89] *Id.* at 868.
[90] *See id.* at 876.
[91] *Id.* at 873 (noting the deep mind Artificial-Intelligence AlphaGo was "able to beat human champions at the ancient Chinese strategy game 'Go'").
[92] *See* Winter, *The Compatibility of Autonomous Weapons*, *supra* note 58, at 876.

This information would be extraordinarily beneficial in assisting a commander to make the most informed decision possible. However, the ultimate restriction is that it must be a human that makes the final decision regarding proportionality of the attack. The goal of this regulation will be to allow autonomous weapons to be a useful and beneficial tool, but not the final arbitrator of death. When combined with the strict liability for states towards violations of International Humanitarian Law regarding autonomous weapons proposed later in this paper, the concerns that this would shift accountability towards AI would be mitigated.

C. Addressing the Accountability Gap Through a New International Treaty

One of the simplest ways to address the accountability gap of autonomous weapons will be through a strict-liability structure that holds states accountable for violations of International Humanitarian Law through their use of autonomous weapons. As noted earlier, the current accountability gap towards regulation of autonomous weapons occurs due to the lack of specifically tailored regulations for autonomous weapons. Moreover, autonomous weapons are a rapidly evolving technology,[93] and many current proposals are merely a best guess of where the technology may go.[94] Therefore, this paper proposes the novel solution of a strict liability system where states are automatically held accountable for any violation of International Humanitarian Law that their autonomous weapons system engages in.

The benefits of a strict-liability system would account for not fully understanding what autonomous weapons development holds over the coming years. We do not know how involved humans will be in the decision, or whether it will be a combination of commanders making decisions based on data processed by AI, as is the case in the JDAC2 program.[95] Therefore, this proposal acknowledges that states themselves must be held accountable for the risks they bring into warfare through new technologies. Under this proposal, anytime that there is an AI element introduced into the decision-making process of a weapon, or whether to use a weapon, the state would be held liable for any violation of International Humanitarian Law brought through its' use.

Some may argue that this is unnecessary, as some scholars argue the current accountability legal regime is sufficient.[96] However, even these scholars understand the "significant evidentiary and analytical challenges" that are raised when applying the current accountability standards to autonomous weapons.[97] That is why the strict-liability solution should be adopted, so that there is time to develop the technology, but in its beginning phases it should be treated with a healthy skepticism and states must not be allowed the opportunity to shift the blame to technologies they created.

V. Conclusion

In the end, the rise of AI proposes novel problems that will require legal solutions just as innovative as the technology they seek to govern. The potential stakes are also extraordinarily high and the time for action is now. As AI and autonomous weapons become more integrated

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[93] *See generally* Tang et al., *supra* note 80 (measuring the speed at which AI technology is developing).
[94] *See* Duncan B. Hollis, *Setting the Stage: Autonomous Legal Reasoning in International Humanitarian Law*, 30 TEMP. INT'L & COMP. L. J. 1, 12–13 (2016).
[95] KLARE, *supra* note 3, at 6.
[96] Trumbull, *supra* note 9, at 535.
[97] *Id.* at 589.

into military systems, it will only become more difficult to untangle this complex issue. Therefore, the proposals in this paper seek to give a cushion between the current state of International Humanitarian Law and the next phase, hopefully providing the necessary time for action to take place, something that is running out.