

AUTONOMOUS WEAPONS SYSTEMS UNDER INTERNATIONAL LAW

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Autonomous weapons systems (AWS) have been described as the “third revolution of warfare,”¹ after gunpowder and nuclear weapons. Currently in development, these weapons systems are powered by advanced algorithms that can make decisions to target and use lethal force against enemy soldiers on their own, without human intervention. Countries around the world are eager to be the first to develop and capture the advantages of AWS, while scholars and activists have sounded the alarm on the legal and ethical issues of delegating the decision to kill an enemy soldier to algorithms. Described as the dehumanization of war, the unique nature of AWS highlights an unresolved international law issue of whether and how international humanitarian law and human rights law can operate concurrently in armed conflict. Specifically, AWS raise the question of whether international humanitarian law, specialized law that governs the armed conflicts in which AWS would be deployed, would be the sole body of international law that regulates AWS, or whether human rights law would also govern the use of AWS in armed conflict. This Note argues that: 1) Human rights law applies to the use of AWS and prevails over international humanitarian law where the two bodies of law conflict, and 2) AWS’ use of lethal force violates human rights law’s prohibition against arbitrary deprivations of life.

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¹ *Autonomous Weapons: An Open Letter from AI & Robotics Researchers*, FUTURE LIFE INST. (July 28, 2015), <https://futureoflife.org/open-letter-autonomous-weapons>.

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INTRODUCTION

Imagine the following scenario: State *A* has deployed a newly developed weapons system against State *B*. Described as fully autonomous, this weapons system consists of a wall along the border between the two states, mounted with “10-meter-tall metal towers, each topped with an advanced surveillance and response unit,”² and capable of firing “fully automatic .50-caliber machine guns”³ State *A* has deployed this weapons system in order to use the wall to combat and deter militias crossing the border from State *B*. The wall can use force against border crossers by making targeting decisions based on algorithms developed from training data that included “millions of images, video footage, computer models, and other information derived from prior instances of armed conflict, civil unrest, and criminal activities during peacetime.”⁴ This training data has been tagged—or filtered—

² This hypothetical is adapted from the fact pattern in the 2020 Jessup International Moot Court Competition. The fact pattern is styled as an International Court of Justice (ICJ) order: *Helian Hyacinth (Adawa v. Rasasa)*, Order, 2019 I.C.J. ¶ 1 (Sept. 2019) [hereinafter *Jessup Fact Pattern*], <https://www.ilsa.org/Jessup/Jessup2020/2020%20Compromis%20FINAL.pdf>. See *Jessup 2020 Problem Now Available*, INT’L L. STUDENTS ASS’N (Sept. 20, 2019), <https://www.ilsa.org/2019/09/20/jessup-2020-compromis-now-available> (announcing and providing link to fact pattern).

³ *Jessup Fact Pattern*, *supra* note 2.

⁴ *Id.* ¶ 20.

by State *A*'s software engineers, police officers, and military officials in order to “highlight[] aspects of the training data that indicate[] armed threats, as well as indicators of retreat, surrender, incapacity, and other factors.”⁵ These indicators inform the weapons system's assessment of whether a border crosser is a combatant or civilian. Imagine State *A* is the United States, Russia, or China, with this new technology ready to deploy along its borders or in an overseas conflict. Would this weapons system violate international law, and if so, which body of international law?

The described weapons system is an example of fully autonomous weapons systems (AWS). It is powered by artificial intelligence (AI) and capable of targeting and using lethal force on its own.⁶ It is considered *fully* autonomous because it can make targeting decisions entirely independent of contemporaneous human control, and can “instantaneously and appropriately decide whether and how to respond to any given threat, without any intervention by human actors.”⁷ While this particular fact pattern is hypothetical, a future in which these kinds of autonomous weapons systems exist is not far off. In February 2019, the U.S. Army put out a call to solicit information on technologies to improve its Advanced Targeting and Lethality Automated System (ATLAS), an AI-powered targeting system. The Army planned to use AI developments to improve the targeting and fire control technology on the ATLAS in order to “provid[e] ground combat vehicles with the capability to acquire, identify, and engage targets at least 3X faster than the current manual process.”⁸ While the ATLAS includes a human override of the system's target selections as a failsafe, states are rapidly developing the technology to create autonomous systems capable of making targeting decisions without

⁵ *Id.*

⁶ See DUSTIN A. LEWIS, GABRIELLA BLUM & NAZ K. MODIRZADEH, HARVARD LAW SCH. PROGRAM ON INT'L LAW & ARMED CONFLICT, WAR-ALGORITHM ACCOUNTABILITY vii (2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2832734 (framing fully autonomous weapons systems as “any algorithm that is expressed in computer code, that is effectuated through a constructed system, and that is capable of operating in relation to armed conflict”). There is no settled definition of an autonomous weapons system, but the various definitions offered by states and scholars emphasize the absence of human input. The United Kingdom, for example, defines AWS as systems “capable of deciding a course of action, from a number of alternatives, without depending on human oversight and control” U.K. MINISTRY OF DEF., JOINT DOCTRINE PUBLICATION 0-30.2: UNMANNED AIRCRAFT SYSTEMS 72 (2017), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/673940/doctrine_uk_uas_jdp_0_30_2.pdf.

⁷ Jessup Fact Pattern, *supra* note 2, ¶ 24.

⁸ U.S. Army, *Industry Day for the Advanced Targeting and Lethality Automated System (ATLAS) Program*, FEDBIZOPPS (Feb. 22, 2019, 4:13 PM), https://web.archive.org/web/20190414094948/https://www.fbo.gov/index.php?s=opportunity&mode=form&id=29a4aed941e7e87b7af89c46b165a091&tab=core&_cview=0 (last accessed June 13, 2020).

human intervention. For instance, in 2016, the U.S. Department of Defense released a video of a swarm of autonomous drones currently under development.⁹ The swarm's flight pattern was determined entirely by artificial intelligence, without human operators directing the swarm.¹⁰

Governments, scholars, and activists are preparing for a future in which fully autonomous weapons systems become part of states' arsenals. In 2015, an open letter from AI and robotics researchers described AWS as "the third revolution in warfare, after gunpowder and nuclear arms."¹¹ Currently, thirty states are developing autonomy in weapons systems, with the United States, Russia, and Israel in the lead.¹² Russian officials have expressed interest in "seek[ing] to completely automate the battlefield,"¹³ while China is recruiting "patriotic" high school students to train to develop AI weapons systems.¹⁴ A U.S. Air Force report predicted that "by 2030 machine capabilities will have increased to the point that humans will have become the weakest component"¹⁵ To these states, there are advantages to developing AWS: Robots are more resilient than soldiers, can be more lethal, and can cost less to train, house, and feed.¹⁶

However, researchers have sounded the alarm on the legal and ethical concerns AWS pose. Organizations like Human Rights Watch have raised the legal concern that fully autonomous weapons sys-

⁹ U.S. Dep't of Def., *Perdix Swarm Demo Oct. 2016*, DVIDS (Oct. 26, 2016), <https://www.dvidshub.net/video/504622/perdix-swarm-demo-oct-2016>.

¹⁰ For a further discussion of autonomous drone swarms, see Alexis C. Madrigal, *Drone Swarms Are Going to Be Terrifying and Hard to Stop*, ATLANTIC (Mar. 7, 2018), <https://www.theatlantic.com/technology/archive/2018/03/drone-swarms-are-going-to-be-terrifying/555005>, and Billy Perrigo, *A Global Arms Race for Killer Robots Is Transforming the Battlefield*, TIME (Apr. 9, 2018, 2:12 PM), <https://time.com/5230567/killer-robots>.

¹¹ FUTURE LIFE INST., *supra* note 1.

¹² See Paul Scharre, *A Million Mistakes a Second*, FOREIGN POL'Y, Fall 2018, at 23 ("At least 30 countries . . . employ human-supervised autonomous weapons to defend bases, vehicles, and ships.")

¹³ Noel Sharkey, *Killer Robots from Russia Without Love*, FORBES (Nov. 28, 2018, 12:12 PM), <https://www.forbes.com/sites/noelsharkey/2018/11/28/killer-robots-from-russia-without-love>.

¹⁴ Stephen Chen, *China's Brightest Children Are Being Recruited to Develop AI 'Killer Bots'*, SOUTH CHINA MORNING POST (Nov. 8, 2018, 2:00 AM), <https://www.scmp.com/news/china/science/article/2172141/chinas-brightest-children-are-being-recruited-develop-ai-killer>.

¹⁵ U.S. AIR FORCE, TECHNOLOGY HORIZONS: A VISION FOR AIR FORCE SCIENCE & TECHNOLOGY DURING 2010-2030, at 131 (2011), https://www.airuniversity.af.edu/Portals/10/AUPress/Books/B_0126_TECHNOLOGYHORIZONS.pdf.

¹⁶ See, e.g., Amitai Etzioni & Oren Etzioni, *Pros and Cons of Autonomous Weapons Systems*, MIL. REV., May-June 2017, at 72-74, <https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/pros-and-cons-of-autonomous-weapons-systems.pdf> (describing potential advantages AWS can provide to states).

tems—capable of making the decision to target and kill without human input—violate international law. They argue that AWS would not be able to adhere to the principles of international humanitarian law (IHL), including the distinction between combatants and civilians, or would violate international human rights law, including the right to life.¹⁷ Moreover, there are concerns that the opacity of the processes by which algorithms learn from environmental inputs—algorithmic “black boxes”¹⁸—would make it nearly impossible to determine whether an AWS programmer, manufacturer, commander, or operator would be responsible for the machine’s targeting decisions.¹⁹

There are also ethical concerns with developing AWS. Relying on a gut-reaction uneasiness to the idea of algorithms making lethal targeting decisions against humans, organizations like the Campaign to Stop Killer Robots emphasize moral and ethical grounds for opposing delegating the decision to kill to algorithms.²⁰ Similarly, in the 2018 meeting of the General Assembly of the United Nations, Secretary-General António Guterres addressed the potential danger of autonomous weapons to global peace and security, noting that “[t]he prospect of machines with the discretion and power to take human life is morally repugnant.”²¹ This Note recognizes but does not address the ethical debates on AWS.

Instead, this Note explores the legal regulation problem posed by fully autonomous weapons systems capable of using lethal force

¹⁷ See HUMAN RIGHTS WATCH, SHAKING THE FOUNDATIONS: THE HUMAN RIGHTS IMPLICATIONS OF KILLER ROBOTS 14–16 (2014) [hereinafter SHAKING THE FOUNDATIONS], https://www.hrw.org/sites/default/files/reports/arms0514_ForUpload_0.pdf (“Fully autonomous weapons would have the potential to kill arbitrarily and thus violate the right that underlies all others, the right to life.”). Section III.B, *infra*, discusses what “arbitrary” means under the human rights prohibition against arbitrary deprivations of life.

¹⁸ INT’L COMM. RED CROSS, AUTONOMY, ARTIFICIAL INTELLIGENCE AND ROBOTICS: TECHNICAL ASPECTS OF HUMAN CONTROL 15–16 (2019), <https://www.icrc.org/en/document/autonomy-artificial-intelligence-and-robotics-technical-aspects-human-control> (“Unstructured machine learning systems, on the other hand, produce their output without any explanation. They constitute ‘black boxes’, in that we do not know how or why they have produced a given output.”). Additionally, algorithms in general are notoriously susceptible to detecting and amplifying human biases. For a further discussion of algorithmic discrimination, see *infra* notes 192–203 and accompanying text.

¹⁹ See SHAKING THE FOUNDATIONS, *supra* note 17, at 19 (“It is unclear who would be liable when an autonomous machine makes life-and-death determinations about the use of force without meaningful human intervention.”).

²⁰ See *The Threat of Fully Autonomous Weapons*, CAMPAIGN TO STOP KILLER ROBOTS, <https://www.stopkillerrobots.org/learn/#problem> (last visited Oct. 7, 2020) (arguing that machines lack human faculties, like compassion, that are necessary to making complex ethical choices about who should live or die).

²¹ António Guterres, Sec’y-Gen., United Nations, Address to the General Assembly (Sept. 25, 2018).

against human soldiers.²² While autonomy in weapons systems can span a wide spectrum, fully autonomous systems lack any human input and represent the extreme of what legal regulation must eventually cover. At a minimum, IHL, which regulates states' wartime obligations, will govern when AWS are deployed on the battlefield.²³ However, IHL may not be enough to address the concerns posed by algorithmic decisionmaking, and an open question is whether international human rights law (HRL), which governs states' obligations to individuals at all times, can impose standards on the use of AWS.²⁴ This Note argues that: 1) HRL applies to the use of AWS and prevails over IHL where the two bodies of law directly conflict, and 2) AWS' use of lethal force violates HRL's prohibition against arbitrary deprivations of life.

This Note proceeds in three Parts. Part I explores the problem of AWS, describing their features and discussing advantages of and concerns with this technology. Part II provides background on IHL and HRL, two bodies of international law that may govern states' obligations when deploying AWS, and explains why IHL is insufficient for regulating AWS. This Part examines the international jurisprudence and varying state practice on whether and how human rights operates during armed conflict. Part III argues that in the context of AWS, the legal doctrine and normative considerations point to not only the concurrent application of HRL and IHL during armed conflict, but the prioritization of HRL obligations over IHL obligations where they

²² There is also an empirical question of "whether a computer, machine, or automated process could make . . . decisions of life and death and achieve some performance that is deemed acceptable." Peter Asaro, *On Banning Autonomous Weapon Systems: Human Rights, Automation, and the Dehumanization of Lethal Decision-Making*, 94 INT'L REV. RED CROSS 687, 699 (2012). This Note presupposes that one day it will be technically possible to program AWS to comply with international humanitarian law principles discussed in Section II.A.1.

²³ See Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field art. 2, Aug. 12, 1949, 75 U.N.T.S. 31 [hereinafter Geneva Convention (I)] ("[T]he present Convention shall apply to all cases of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties, even if the state of war is not recognized by one of them."); Geneva Convention (II) for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea art. 2, Aug. 12, 1949, 75 U.N.T.S. 85 [hereinafter Geneva Convention (II)] (same); Geneva Convention (III) Relative to the Treatment of Prisoners of War art. 2, Aug. 12, 1949, 75 U.N.T.S. 135 [hereinafter Geneva Convention (III)] (same); Geneva Convention (IV) Relative to the Protection of Civilian Persons in Time of War art. 2, Aug. 12, 1949, 75 U.N.T.S. 287 [hereinafter Geneva Convention (IV)] (same).

²⁴ Currently, no treaty on AWS exists, but the Committee of Parties of the Convention on Conventional Weapons has been extensively discussing the problem of AWS and whether to regulate them by treaty. See *Background on Lethal Autonomous Weapons Systems in the CCW*, UNITED NATIONS GENEVA, [https://www.unog.ch/80256EE600585943/\(httpPages\)/8FA3C2562A60FF81C1257CE600393DF6](https://www.unog.ch/80256EE600585943/(httpPages)/8FA3C2562A60FF81C1257CE600393DF6) (last visited July 3, 2020).

directly conflict. This Part concludes by arguing that AWS' use of lethal force would constitute arbitrary deprivation of life in violation of HRL.

I

THE FUTURE OF WARFARE

This Part explores the development and functions of AWS. Section I.A discusses the features that define AWS. Section I.B examines the advantages of AWS and the concerns that their development raises.

A. *Defining Autonomous Weapons Systems*

When we imagine a weapon, we imagine a tool that an individual wields to inflict damage on another person, such as a knife or a gun. These are considered inert weapons, which require “contemporaneous operation by a human being”²⁵ in order to be lethal. A weapon’s decisionmaking capabilities exist on a spectrum, ranging from inert to fully autonomous weapons.²⁶ In between inert and fully autonomous weapons are automated weapons, which are “purely reactive”²⁷ to a trigger in the environment and become lethal based on parameters predetermined by a human operator. These automated weapons include tripwires, spring guns, and landmines, which, once “deployed,” will explode when stepped on.²⁸ None of these automated weapons have a “choice” in whether to fire or not—they simply react once triggered.

Autonomous weapons systems exist on the far end of this spectrum. States have deployed semi-autonomous weapons systems like the U.S. military’s ATLAS targeting system, which can make certain targeting decisions on its own, but is ultimately subject to a human override that can change the decision.²⁹ These “human-in-the-loop” systems remain subject to human input in the targeting process.³⁰ In contrast, fully autonomous technology would take humans “out of the loop,” meaning that the weapons system would have the capability of

²⁵ Rebecca Crootof, *The Killer Robots Are Here: Legal and Policy Implications*, 36 CARDOZO L. REV. 1837, 1864 (2015).

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.*

²⁹ See U.S. Army, *supra* note 8 (detailing the technical functions of the ATLAS system).

³⁰ See Crootof, *supra* note 25, at 1864.

making targeting selections and using lethal force without any human intervention.³¹

Fully autonomous weapons systems are not one type of weapon, like a knife or gun. Rather, AWS are AI-powered targeting systems attached to lethal firing systems.³² While states have offered slightly different working definitions of AWS,³³ a recent academic report notes that the two primary components of autonomous systems are “an algorithm expressed in computer code”³⁴ and “a suitably capable constructed system.”³⁵ The algorithms are “any well-defined computational procedure that takes some value, or set of values, as *input* and produces some value, or set of values, as *output*.”³⁶ These algorithms would be the sole actors making targeting decisions “in light of the input and in accordance with programmed parameters”³⁷ to use lethal force against human soliders, raising concerns about whether fully autonomous weapons systems can comply with international legal standards.³⁸

AWS’ algorithmic targeting systems are paired with “constructed systems” that can be any “manufactured machine, apparatus, plant, or platform that is capable . . . of effectuating a ‘choice’ . . . derived through an algorithm”³⁹ For example, in 2016, Russia unveiled

³¹ See VINCENT BOULANIN & MAAIKE VERBRUGGEN, STOCKHOLM INT’L PEACE RESEARCH INST., MAPPING THE DEVELOPMENT OF AUTONOMY IN WEAPON SYSTEMS 5 (2017), https://www.sipri.org/sites/default/files/2017-11/siprireport_mapping_the_development_of_autonomy_in_weapon_systems_1117_1.pdf (describing the meaning of autonomy).

³² See *id.*

³³ For example, the United States defines AWS as: “A weapon system that, once activated, can select and engage targets without further intervention by a human operator. This includes human-supervised autonomous weapon systems that are designed to allow human operators to override operation of the weapon system, but can select and engage targets without further human input after activation.” U.S. Dep’t of Def., Directive 3000.09, *Autonomy in Weapon Systems*, at 13–14 (Nov. 21, 2012) (as changed May 8, 2017), <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/300009p.pdf?ver=2019-02-25-104306-377>.

³⁴ LEWIS, BLUM & MODIRZADEH, *supra* note 6, at 15; see *id.* at 16 (“[T]hese algorithms [are] a key ingredient in what most commentators and states mean when they address notions of autonomy.”).

³⁵ *Id.* at 15.

³⁶ *Id.* at 15–16 (quoting THOMAS H. CORMEN, CHARLES E. LEISERSON, RONALD L. RIVEST & CLIFFORD STEIN, *INTRODUCTION TO ALGORITHMS* 5 (3d ed. 2009)).

³⁷ *Id.* at 16.

³⁸ See HUMAN RIGHTS WATCH, *LOSING HUMANITY: THE CASE AGAINST KILLER ROBOTS* 3–4 (2012), https://www.hrw.org/sites/default/files/reports/arms1112_ForUpload.pdf (describing how algorithms lack the human qualities necessary to comply with international human rights law).

³⁹ LEWIS, BLUM & MODIRZADEH, *supra* note 6, at 17.

the Vikhr (Whirlwind) unmanned ground combat vehicle.⁴⁰ The Vikhr can be customized with a range of weapons, including “anti-tank guided missiles,” “heavy machine gun[s],” and “reactive flame throwers.”⁴¹ Once paired with an algorithmic targeting system, a combat vehicle like the Vikhr becomes an autonomous system, capable of engaging its weapons on targets it selects of its own accord.

For the past few years, the United States, the United Kingdom, China, Russia, and Israel have led the race to develop autonomy in weapons systems.⁴² As of April 2017, there exist 381 military systems that incorporate autonomy in some aspect of their functions.⁴³ Autonomy can be integrated into a diverse range of weapons systems, including air defense systems, robotic sentry weapons, guided munitions systems,⁴⁴ or even “marine, terrestrial, aerial, or space vehicles; missile systems; or biped or quadruped robots.”⁴⁵ In the United States, semi-autonomous weapons systems are currently used to defend military bases and equipment.⁴⁶ These systems “cannot independently search for and strike enemy assets on their own, and human operators are always present to assume control if needed.”⁴⁷ The U.S. Navy, for example, employs the AEGIS combat system on naval vessels to detect incoming rockets and to fire to eliminate these rockets if a human supervisor does not intervene.⁴⁸

The fully autonomous, offensive targeting weapons systems that this Note envisions are different from the semi-autonomous technology currently in use.⁴⁹ Semi-autonomous systems are programmed to wait for a human operator’s approval before selecting a target, or

⁴⁰ See ANDREW FEICKERT, JENNIFER K. ELSEA, LAWRENCE KAPP & LAURIE A. HARRIS, CONG. RESEARCH SERV., U.S. GROUND FORCES ROBOTICS AND AUTONOMOUS SYSTEMS (RAS) AND ARTIFICIAL INTELLIGENCE (AI): CONSIDERATIONS FOR CONGRESS 11–12 (2018).

⁴¹ *Id.* at 12.

⁴² See Scharre, *supra* note 12, at 23.

⁴³ See BOULANIN & VERBRUGGEN, *supra* note 31, at 19.

⁴⁴ See *id.* at 36, 41, 44, 47, 50.

⁴⁵ LEWIS, BLUM & MODIRZADEH, *supra* note 6, at 18.

⁴⁶ See Scharre, *supra* note 12, at 23.

⁴⁷ Michael T. Klare, *Autonomous Weapons Systems and the Laws of War*, 49 ARMS CONTROL TODAY (Mar. 2019), <https://www.armscontrol.org/act/2019-03/features/autonomous-weapons-systems-laws-war>.

⁴⁸ See *AEGIS Weapon System*, U.S. NAVY, <https://www.navy.mil/Resources/Fact-Files/Display-FactFiles/Article/2166739/aegis-weapon-system> (last updated Jan. 10, 2019) (detailing the technical functions of the AEGIS system). A system like this prevents against saturation attacks designed to overwhelm human operators by launching a swarm of rockets at the same time. See Scharre, *supra* note 12, at 23.

⁴⁹ See, e.g., Rebecca Crootof, *War Torts: Accountability for Autonomous Weapons*, 164 U. PA. L. REV. 1347, 1349 (2016) (“[AWS] capacity for self-determined action makes them uniquely effective and uniquely unpredictable.”).

for the human operator to select the target before determining how to carry out a strike against the target.⁵⁰ These decisions still “remain linked to human judgment.”⁵¹ In contrast, fully autonomous systems would be able to make targeting decisions in response to stimuli in the environment without any human intervention.⁵² The consensus is that future deployments of fully autonomous technology on the battlefield are all but “inevitable.”⁵³

B. *Assessing the Risks of Autonomous Weapons Systems*

As states develop early prototypes of autonomous systems, scholars and activists have pointed to advantages and concerns associated with AWS. This Section explores both in turn.

1. *Advantages*

States around the world are racing to develop AWS because there are distinct advantages to these systems. AWS would have the benefit of better sensors and data processing, and would be capable of making faster and more complex targeting decisions than humans can.⁵⁴

⁵⁰ See Crotoof, *supra* note 25, at 1865 (“Semi-autonomous weapon systems have some autonomous capabilities, which may include functions relevant to target selection and engagement, but they cannot independently both select and engage targets.”).

⁵¹ Jack M. Beard, *Autonomous Weapons and Human Responsibilities*, 45 GEO. J. INT’L L. 617, 667–68 (2014).

⁵² See Kathleen Lawand, *Fully Autonomous Weapon Systems*, INT’L COMM. RED CROSS (Nov. 25, 2013), <https://www.icrc.org/eng/resources/documents/statement/2013/09-03-autonomous-weapons.htm> (“A truly autonomous weapon system would be capable of searching for, identifying and applying lethal force to a target, including a human target (enemy combatants), without any human intervention or control.”).

⁵³ KENNETH ANDERSON & MATTHEW WAXMAN, *LAW AND ETHICS FOR AUTONOMOUS WEAPON SYSTEMS: WHY A BAN WON’T WORK AND HOW THE LAWS OF WAR CAN 2* (2013), http://media.hoover.org/sites/default/files/documents/Anderson-Waxman_LawAndEthics_r2_FINAL.pdf; see also Beard, *supra* note 51, at 633 (“[M]ilitary technologies appear to be steadily moving along the continuum of autonomy to an ominous endpoint: the deployment of mobile, autonomous, combatants that will replace many humans on and above battlefields and at sea.”); Ariel Conn, *The Risks Posed by Lethal Autonomous Weapons*, FUTURE OF LIFE INST. (Sept. 4, 2018), <https://futureoflife.org/2018/09/04/the-risks-posed-by-lethal-autonomous-weapons/>; Jonah M. Kessel, *Killer Robots Aren’t Regulated. Yet.*, N.Y. TIMES (Dec. 13, 2019), <https://www.nytimes.com/2019/12/13/technology/autonomous-weapons-video.html>; Nicholas Weaver, *‘Slaughterbots’ and Other (Anticipated) Autonomous Weapons Problems*, LAWFARE (Nov. 28, 2017, 9:00 AM), <https://www.lawfareblog.com/slaughterbots-and-other-anticipated-autonomous-weapons-problems>.

⁵⁴ See Daniel N. Hammond, Comment, *Autonomous Weapons and the Problem of State Accountability*, 15 CHI. J. INT’L L. 652, 660 (2015) (noting that advantages of AWS include the fact that “their computing capabilities are expected to surpass those of other systems in terms of speed and strength” and that “[t]heir enhanced computing capacities will also allow them to complete the targeting process much more quickly than remotely piloted aircrafts”).

Moreover, machines would make decisions unclouded by emotions rather than reacting to fear or anger, and would be able to process stimuli from their surroundings better than humans are able.⁵⁵ Roboticist Ronald Arkin has argued that unlike humans, autonomous systems would not have a self-preservation instinct that leads to rash decisionmaking and a “shoot-first” mentality.⁵⁶ And unlike human operators, AWS would be able to perform tasks for longer periods of time, without risk of fatigue, boredom, or stress.⁵⁷

AWS would also reduce the risk to the lives of human soldiers by distancing them from the frontlines. They can potentially reduce human casualties by distancing soldiers from the frontlines of battle, minimizing the number of soldiers for a single mission, or by limiting the number of soldiers on particularly dangerous missions.⁵⁸ At the same time, AWS would be able to access areas of a battlefield that humans cannot, including near radiological material.⁵⁹ And where drones face the possibility of cyber-attacks that can cut the link between the remote pilot and the aircraft,⁶⁰ AWS would be able to “lethally strike even when communications links have been severed,” as they would operate independently after an initial deployment.⁶¹ Additionally, AWS may one day cost less than human soldiers—a single soldier in Afghanistan can cost the U.S. Department of Defense \$850,000 per year, while a TALON robot that can be outfitted with weapons costs \$230,000 per year.⁶² This could mean that future battlefields will see deployments of more AWS than of human soldiers.

⁵⁵ See Ronald C. Arkin, *The Case for Ethical Autonomy in Unmanned Systems*, 9 J. MIL. ETHICS 332, 333 (2010) (“Unmanned robotic systems can be designed without emotions that cloud their judgment or result in anger and frustration with ongoing battlefield events.”); see also Gregory P. Noone & Diana C. Noone, *The Debate over Autonomous Weapons Systems*, 47 CASE W. RES. J. INT’L L. 25, 29–30 (2015) (arguing that AWS remove human emotions from decisionmaking processes, which may lead to fewer violations of the laws of armed conflict).

⁵⁶ Etzioni & Etzioni, *supra* note 16, at 74 (citing Arkin, *supra* note 55, at 332–41).

⁵⁷ See Hammond, *supra* note 54, at 661 (“AWSs will be able to both stay on assignment for longer periods than manned machines and perform tasks that humans would prefer to avoid.”).

⁵⁸ See Marc Cannellas & Rachel Haga, *Lost in Translation: Building a Common Language for Regulating Autonomous Weapons*, IEEE TECH. SOC’Y MAG., Sept. 2016, at 50 (“The drivers of military demand can be summed up as force multiplication, expanding the battle-space, extending the warfighters’ reach, and casualty reduction.”).

⁵⁹ See Etzioni & Etzioni, *supra* note 16, at 72.

⁶⁰ See Hammond, *supra* note 54, at 660–61.

⁶¹ Etzioni & Etzioni, *supra* note 16, at 72 (quoting U.S. Army Major Jeffrey S. Thurnher).

⁶² *Id.* However, commentators like Lt. Col. Douglas Pryer warn that the advantages of AWS may make wars easier to wage and “fuel perpetual war,” even if these wars will be less harmful to human soldiers. See Douglas A. Pryer, *The Rise of the Machines: Why*

2. *Concerns*

In response to the eagerness with which governments around the world have been developing autonomous systems, organizations like Human Rights Watch and the Campaign to Stop Killer Robots have advocated for a ban of AWS altogether, raising concerns about the technology.⁶³ Some commentators believe that programmers will never be able to program AWS to comply with international law.⁶⁴ They argue that machines will never be able to comply with IHL targeting rules, because it would require an algorithm to distinguish between combatants and civilians and decide on proportional uses of force—tasks that can only be done with human judgment, and are “difficult even for humans.”⁶⁵

Others are concerned about AWS even when they function exactly as they are programmed to do, as in the scenario described in the Introduction.⁶⁶ Scholars point out that states are not incentivized to maintain any sort of human control in the targeting decisions of AWS because this “runs against the very forces that are driving the creation of these systems in the first place.”⁶⁷ Those opposed to AWS argue that once fully autonomous systems are left on their own to make lethal targeting decisions, these systems may be able to conform to IHL rules, but may still cause problems because an algorithm, including potentially a biased one, is deciding whether to kill humans on the battlefield.⁶⁸

This Note engages with the concerns of the latter set of commentators, and explores whether—even if fully autonomous weapons systems can comply with IHL—the use of algorithms in lethal targeting decisions violates human rights standards. In the scenario described in the Introduction, the training data that enabled the wall to decide which border crossers to target included images from prior instances of armed conflict, and were filtered by military engineers to highlight aspects of the data that indicated threatening behavior by enemy com-

Increasingly ‘Perfect’ Weapons Help Perpetuate Our Wars and Endanger Our Nation, MIL. REV., Mar.–Apr. 2013, at 14, 15.

⁶³ See CAMPAIGN TO STOP KILLER ROBOTS, *supra* note 20; *Killer Robots*, HUM. RTS. WATCH, <https://www.hrw.org/topic/armas/killer-robots> (last visited June 22, 2020).

⁶⁴ See *infra* Section II.A.1.

⁶⁵ See Etzioni & Etzioni, *supra* note 16, at 75.

⁶⁶ See *supra* text accompanying notes 2–5.

⁶⁷ Beard, *supra* note 51, at 671 (noting that the advantages of AWS, including their processing and response speed in the “ever-increasing tempo of modern combat,” mean that “human operators are already increasingly proven to be not only redundant, but also disadvantageous in the functioning of these systems”).

⁶⁸ See, e.g., SHAKING THE FOUNDATIONS, *supra* note 17, at 15–16.

batants.⁶⁹ Both the selection of the type of training data used to develop the algorithms and the filtering of the data by the military could encode bias into the algorithm. Like with algorithmic bias problems in other fields,⁷⁰ the complexity of an algorithm's decision-making processes may make it impossible to determine when bias was introduced and whether any individual actor can be held accountable. As the next Part discusses, these features of AWS highlight an existing tension in international law over whether and how human rights can operate in armed conflict.

II

WHAT LAW GOVERNS AUTONOMOUS WEAPONS SYSTEMS?

This Part provides an overview of the legal framework that governs AWS. Section II.A describes two bodies of international law that could apply to AWS—international humanitarian law and international human rights law. While IHL applies in all situations of armed conflict, there has been a debate about whether HRL, which protects rights during peacetime, applies concurrently during armed conflict. Section II.B examines the jurisprudence and state practice on the question of whether states are bound by their human rights obligations during armed conflict, and explores the legal and normative reasons of why one body of law might prevail over the other in certain situations. This Section discusses two areas of disagreement among states and international tribunals regarding the concurrent application of IHL and HRL: whether HRL can ever apply alongside IHL during armed conflict, and if so, which body of law controls when the IHL and HRL obligations conflict.

A. *International Humanitarian Law Versus Human Rights Law*

1. *International Humanitarian Law*

International humanitarian law regulates armed conflict. It emerged from the customs that developed from centuries of interstate wars, and is codified in treaties that a vast majority of states have ratified.⁷¹ The first of these treaties are the Hague Conventions of 1899

⁶⁹ See Jessup Fact Pattern, *supra* note 2, ¶ 20.

⁷⁰ See, e.g., Karen Hao, *This Is How AI Bias Really Happens—and Why It's So Hard To Fix*, MIT TECH. REV. (Feb. 4, 2019), <https://www.technologyreview.com/s/612876/this-is-how-ai-bias-really-happens-and-why-its-so-hard-to-fix> (noting the problem of algorithmic bias in hiring practices, lending, and the criminal justice system); Michael Li, *Addressing the Biases Plaguering Algorithms*, HARV. BUS. REV. (May 13, 2019), <https://hbr.org/2019/05/addressing-the-biases-plaguering-algorithms> (collecting examples).

⁷¹ See, e.g., *Treaties, States Parties and Commentaries: Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field*, INT'L

and 1907, which restrict the conduct of certain military operations against other combatants, and contain provisions that ban specific weapons and methods of warfare.⁷² In the wake of World War II, more treaty regulations followed with the ratification of the four Geneva Conventions. These conventions regulate wartime treatment of “protected persons”: wounded and sick combatants, prisoners of war, and civilians.⁷³ In 1977, states updated the laws of armed conflict with the Additional Protocols to the Geneva Conventions, which blended elements from both the Hague and Geneva Conventions.⁷⁴ Certain provisions from all of these treaties are considered codifications of customary international law, unwritten international rules with the binding force of law.⁷⁵ Thus, even though some states, including the United States, have not ratified the Additional Protocols, provisions of the Protocols that are considered custom are binding on all states regardless of ratification status.⁷⁶ Under the common “triggering provision” of the Geneva Conventions, these treaties apply when states engage in “armed conflict,”⁷⁷ which

COMM. RED CROSS, https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/States.xsp?xp_viewStates=Xpages_NORMStatesParties&xp_treatySelected=365 (last visited June 29, 2020) (there are 196 state parties to each of the Geneva Conventions).

⁷² See Hague Convention (II) with Respect to the Laws and Customs of War on Land, July 29, 1899, 32 Stat. 1803 [hereinafter Hague Convention II]; Hague Convention (IV) Respecting the Laws and Customs of War on Land, Oct. 18, 1907, 36 Stat. 2277.

⁷³ See *supra* note 23 (Geneva Convention (I) concerns the wounded and sick in armed forces; Geneva Convention (II) concerns the wounded, sick, and shipwrecked in armed forces at sea; Geneva Convention (III) concerns treatment of prisoners of war; Geneva Convention (IV) concerns the protection of civilians).

⁷⁴ See Protocol Additional to the Geneva Conventions Relating to the Protection of Victims of International Armed Conflicts, June 8, 1977, 1125 U.N.T.S. 3 [hereinafter Additional Protocol I] (incorporating elements from the Hague and Geneva Conventions in different parts of the Protocol); Protocol Additional to the Geneva Conventions Relating to the Protection of Victims of Non-International Armed Conflicts, June 8, 1977, 1125 U.N.T.S. 609 [hereinafter Additional Protocol II] (same).

⁷⁵ See Statute of the International Court of Justice art. 38(1). Customary international law is considered to have legal force because it reflects general state practice and *opinio juris*, or states’ belief that an action is legally obliged. See Int’l Law Comm’n, Draft Conclusions on Identification of Customary International Law, U.N. Doc. A/73/10, at 124–25 (2018). Whether there is sufficient state practice or *opinio juris* to form a particular customary rule can be contentious, but that debate regarding the customary rules mentioned herein is beyond the scope of this Note.

⁷⁶ See Jakob Kellenberger, *Forward* to JEAN-MARIE HENCKAERTS & LOUISE DOSWALD-BECK, CUSTOMARY INTERNATIONAL HUMANITARIAN LAW VOLUME I: RULES, at xvi (2005), <https://www.icrc.org/en/doc/assets/files/other/customary-international-humanitarian-law-i-icrc-eng.pdf> (“[The Additional Protocols] apply only between or within States that have ratified them. Rules of customary international humanitarian law . . . bind all States . . .”); see *generally id.* (listing the customary international law rules of IHL).

⁷⁷ See Geneva Conventions (II), *supra* note 23, art. 2 (“[T]he present Convention shall apply to all cases of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties . . .”).

requires what is generally considered a low threshold.⁷⁸ An armed conflict can exist when two states engage in hostilities (an international armed conflict), or when a state engages in hostilities with rebel forces within its own territory (a non-international armed conflict).⁷⁹

Once deployed in an armed conflict, AWS would be subject to IHL targeting principles, which dictate the lawful targets of military force.⁸⁰ The four primary targeting principles in IHL are proportionality, military necessity, humanity, and distinction.⁸¹ The principle of proportionality prohibits attacks that cause incidental civilian losses “excessive in relation to the concrete and direct military advantage anticipated.”⁸² This means that AWS must be able to calculate the advantages gained versus harms inflicted in an attack to ensure its attacks are proportional. Similarly, the principle of military necessity requires attacks to advance military objectives,⁸³ and the principle of humanity prohibits actions that create suffering unnecessary to

⁷⁸ See *International Armed Conflict*, RULAC, <http://www.rulac.org/classification/international-armed-conflict#collapse1accord> (last updated Aug. 30, 2017) (“The threshold for an international armed conflict to exist is very low: whenever there is resort to hostile armed force between two States, there is an international armed conflict.”); see also *Commentary of 2016: Article 2: Application of the Convention*, INT’L COMM. RED CROSS, https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/Comment.xsp?action=OpenDocument&documentId=BE2D518CF5DE54EAC1257F7D0036B518#_Toc452462848 (last visited Aug. 18, 2020) (“Even minor skirmishes between the armed forces, be they land, air or naval forces, would spark an international armed conflict and lead to the applicability of humanitarian law.”).

⁷⁹ This Note limits the scope of discussion to the use of AWS in international armed conflicts.

⁸⁰ Prior to the deployment of a new weapon, IHL imposes an obligation on states to conduct a review of weapons in development. See Additional Protocol I, *supra* note 74, art. 36 (“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 . . .”). This Article 36 obligation during pre-deployment review of a weapon is another instance in which AWS would be subject to IHL. Additionally, human rights bodies have called for states to consider human rights obligations during a weapons review. See Human Rights Comm., General Comment No. 36 on Article 6 of the International Covenant on Civil and Political Rights, on the Right to Life, ¶ 65, U.N. Doc. CCPR/C/GC/36 (Oct. 30, 2018) [hereinafter General Comment 36], https://tbinternet.ohchr.org/Treaties/CCPR/Shared%20Documents/1_Global/CCPR_C_GC_36_8785_E.pdf. However, implementation of Article 36 has been irregular among states. Justin McClelland, *The Review of Weapons in Accordance with Article 36 of Additional Protocol I*, 85 INT’L REV. RED CROSS 397, 414 (2003) (noting that “the manner in which countries approach their obligations under Article 36 differs markedly”). A discussion of pre-deployment review of AWS is beyond the scope of this Note.

⁸¹ See *Fundamental Principles of IHL*, INT’L COMM. RED CROSS, <https://casebook.icrc.org/glossary/fundamental-principles-ihl> (last visited June 22, 2020).

⁸² See Additional Protocol I, *supra* note 74, art. 51(5)(b).

⁸³ See *id.* art. 48 (“Parties to the conflict shall at all times distinguish between the civilian population and combatants . . . and accordingly shall direct their operations only against military objectives.”).

achieving military purposes.⁸⁴ This would also require AWS to understand military objectives, calculate relative advantages, and refrain from inflicting unnecessary suffering and destruction. Finally, the principle of distinction prohibits the targeting of civilians not participating in hostilities.⁸⁵ Compliance with this principle would require AWS to identify whether their target is an active combatant or civilian bystander.

Because fully autonomous technology is still under development, the debate over whether a fully autonomous weapons system can be programmed to comply with these principles remains theoretical. This Note assumes that AWS will one day be able to comply with the rules of IHL.⁸⁶

2. *Human Rights Law*

The human rights regime emerged after World War II from the international community's desire to ensure fundamental protections for individuals. In 1948, the UN General Assembly adopted the Universal Declaration of Human Rights (UDHR), a non-binding instrument containing a wide-ranging set of human rights standards.⁸⁷ Since then, HRL has been concerned with identifying individual rights and ensuring states protect those rights. The primary and most-ratified human rights treaties are the International Covenant on Civil and Political Rights (ICCPR)⁸⁸ and the International Covenant on

⁸⁴ See *id.* art. 52(2) (“Attacks shall be limited strictly to military objectives.”).

⁸⁵ See *id.* art. 51(3) (“Civilians shall enjoy the protection afforded by this Section, unless and for such time as they take a direct part in hostilities.”).

⁸⁶ Even if AWS can be programmed to comply with IHL targeting principles, the risk of malfunction can still exist. Experts caution that “[f]rom a technical point of view, it is impossible to guarantee that an autonomous machine will never fail, because it is impossible to enumerate all the possible combinations of events that might lead to a failure.” INT’L COMM. RED CROSS, AUTONOMOUS WEAPON SYSTEMS: IMPLICATIONS OF INCREASING AUTONOMY IN THE CRITICAL FUNCTIONS OF WEAPONS 37 (2016). Even humans do not comply with battlefield rules one hundred percent of the time, and experts remain concerned with the idea of algorithms making the decisions to kill on the battlefield. See, e.g., HUM. RTS. WATCH, MIND THE GAP: THE LACK OF ACCOUNTABILITY FOR KILLER ROBOTS 1–4 (2015) [hereinafter MIND THE GAP], <https://www.hrw.org/report/2015/04/09/mind-gap/lack-accountability-killer-robots>.

⁸⁷ G.A. Res. 217 (III) A, Universal Declaration of Human Rights, art. 3, 25 (Dec. 10, 1948) (including civil and political rights like “life, liberty, and the security of person,” and economic, social, and cultural rights like the right to an adequate standard of living).

⁸⁸ International Covenant on Civil and Political Rights, Dec. 16, 1966, 999 U.N.T.S. 171. The ICCPR describes the right to life in Article 6. This Note will focus in particular on the interpretation of the right to life in the ICCPR, as it is the most widely-ratified human rights instrument, but other human rights treaties also protect the right to life. See, e.g., European Convention on Human Rights art. 2, Nov. 4, 1950, E.T.S. No. 005 (on the right to life). The right to life is also considered a customary international law principle. See, e.g., Christof Heyns & Thomas Probert, *Securing the Right to Life: A Cornerstone of the Human*

Economic, Social, and Cultural Rights (ICESCR),⁸⁹ both adopted in 1966 in order to convert the UDHR's provisions into binding law.⁹⁰ HRL also consists of treaties that address specific rights, like the Convention Against Torture,⁹¹ and treaties that protect specific populations, like the Convention on the Elimination of All Forms of Discrimination Against Women.⁹² Certain provisions of human rights treaties, like the prohibition against torture, are considered codifications of customary international law.⁹³ Human rights treaties, with the purpose of protecting fundamental individual rights, are meant to apply broadly and at all times.⁹⁴ However, these treaties allow for the possibility that states will face exigent circumstances that may preclude the application of certain rights. The ICCPR, for example, contains a derogation clause which provides that some rights are derogable during times of public emergency, like during an armed conflict.⁹⁵

While HRL regulates states' obligations at all times and "spans a seemingly ever-growing range of dealings an individual, community, or nation may have with the state,"⁹⁶ IHL is considered "emergency law," or the law that governs under the special circumstances of armed conflict.⁹⁷ Certain situations and rights are governed exclu-

Rights System, EJIL:TALK! (May 11, 2016), <https://www.ejiltalk.org/securing-the-right-to-life-a-cornerstone-of-the-human-rights-system> (discussing the right to life as a rule of customary international law).

⁸⁹ International Covenant on Economic, Social and Cultural Rights, Dec. 16, 1966, 993 U.N.T.S. 3.

⁹⁰ Unlike the UDHR, which is considered non-binding "soft law," treaties are a binding source of international law. See Statute of the International Court of Justice art. 38(1).

⁹¹ Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, Dec. 10, 1984, 1465 U.N.T.S. 85.

⁹² Convention on the Elimination of All Forms of Discrimination Against Women, Dec. 18, 1979, 1249 U.N.T.S. 13.

⁹³ *The Legal Prohibition Against Torture*, HUM. RTS. WATCH (Mar. 11, 2003, 3:51 PM), <https://www.hrw.org/news/2003/03/11/legal-prohibition-against-torture> ("Under customary international law as well as under international [sic] human rights treaties, torture or other cruel, inhuman or degrading treatment is prohibited at all times and in all circumstances.")

⁹⁴ See, e.g., International Covenant on Civil and Political Rights, *supra* note 88, pmbl. (noting states' "obligation . . . to promote universal respect for, and observance of, human rights and freedoms").

⁹⁵ See *id.* art. 4 ("In time of public emergency which threatens the life of the nation and the existence of which is officially proclaimed, the States Parties to the present Covenant may take measures derogating from their obligations under the present Covenant . . ."). Derogations may only occur to the extent required by the public emergency, and as long as the derogation does not conflict with a state's other international obligations, and as long as the derogation does not discriminate solely on the "race, colour, sex, language, religion or social origin." *Id.*

⁹⁶ LEWIS, BLUM & MODIRZADEH, *supra* note 6, at 80.

⁹⁷ Tom Ruys & Sten Verhoeven, DRC v. Uganda: *The Applicability of International Humanitarian Law and Human Rights Law in Occupied Territories*, in INTERNATIONAL

sively by one regime or the other. For instance, during armed conflict, the Third Geneva Convention is the authority on how states must treat prisoners of war.⁹⁸ In contrast, there are some individual rights guarantees provided solely by HRL. The ICCPR, for example, recognizes the freedom of assembly—even if its derogation clause permits this right to be suspended during public emergencies⁹⁹—while the IHL treaties are silent on this issue.¹⁰⁰

For other situations and rights, both HRL and IHL contain provisions that govern states' obligations. While HRL focuses on protections for the individual, IHL takes into consideration limits on individual rights called for by the exigencies of armed conflict.¹⁰¹ This raises the question of how states can adhere to their human rights obligations during armed conflict. For some rights, the answer is easy: The derogation clause of human rights treaties permits states to suspend these rights during armed conflict.¹⁰² For example, in an armed conflict, if a state suspends the ICCPR's prohibition against "arbitrary arrest or detention"¹⁰³ pursuant to the ICCPR's derogation clause, then only the state's IHL obligations govern its detention operations. If a state suspends an HRL provision like the freedom of expres-

HUMANITARIAN LAW AND HUMAN RIGHTS LAW: TOWARDS A NEW MERGER IN INTERNATIONAL LAW 155, 182 (Roberta Arnold & Noëlle Quénivet eds., 2008) ("In general, the presence of an armed conflict provides a *prima facie* example of a 'public emergency.'").

⁹⁸ See Geneva Convention (III), *supra* note 23 (describing the treatment of prisoners of war); see also Cordula Droege, *The Interplay Between International Humanitarian Law and International Human Rights Law in Situations of Armed Conflict*, 40 ISR. L. REV. 310, 336 (2007) ("[R]ights that are exclusively matters of humanitarian law, for instance, are those of prisoners of war.").

⁹⁹ International Covenant on Civil and Political Rights, *supra* note 88, art. 4 (permitting derogation of some rights, including the right to assembly).

¹⁰⁰ *What Is the Difference Between IHL and Human Rights Law?*, INT'L COMM. RED CROSS (Jan. 22, 2015), <https://www.icrc.org/en/document/what-difference-between-ihl-and-human-rights-law> ("[H]uman rights law deals with aspects of life that are not regulated by IHL, such as the freedom of the press, the right to assembly, to vote, to strike, and other matters.").

¹⁰¹ See Oona A. Hathaway, Rebecca Crootof, Philip Levitz, Haley Nix, William Perdue, Chelsea Purvis & Julia Spiegel, *Which Law Governs During Armed Conflict? The Relationship Between International Humanitarian Law and Human Rights Law*, 96 MINN. L. REV. 1883, 1926 (2012) ("Humanitarian law permits state agents to intentionally kill combatants and incidentally kill civilians (within clearly proscribed limits) in circumstances that human rights law does not countenance.").

¹⁰² See International Covenant on Civil and Political Rights, *supra* note 88, art. 4(1) ("In time of public emergency which threatens the life of the nation and the existence of which is officially proclaimed, the States Parties to the present Covenant may take measures derogating from their obligations under the present Covenant . . .").

¹⁰³ See *id.* art. 9(1) ("Everyone has the right to liberty and security of person. No one shall be subjected to arbitrary arrest or detention.").

sion¹⁰⁴ and IHL is silent on the issue, then that right is not protected during armed conflict.

The more complicated answer on how states can adhere to their human rights obligations during armed conflict relates to human rights provisions that are non-derogable—provisions that states are explicitly forbidden from suspending at any time for any reason. Under the ICCPR, the right to life is a non-derogable right.¹⁰⁵ For non-derogable rights, a state's HRL and IHL obligations may pull in two different directions, with HRL imposing broad protections for the individual and IHL recognizing limits on individual protections. For instance, human rights jurisprudence has developed a broader definition of the right to life that includes the right to a decent quality of life,¹⁰⁶ whereas IHL, recognizing that war requires killing, does not prohibit combatants from taking the lives of other combatants pursuant to the rules of armed conflict.¹⁰⁷ The ways that different states and international bodies have tried to resolve this question of concurrent application of HRL and IHL obligations is discussed further in Section III.B.

The features of AWS and their potential use on future battlefields present a novel situation that highlights this existing tension between HRL and IHL. Even if AWS could comply with IHL targeting principles—proportionality, military necessity, humanity, and distinction—concerns about the effect of algorithmic decisionmaking would still remain. The next Section considers how past practice might affect AWS by discussing the different ways that international tribunals and states have previously attempted to clarify the scope of human rights obligations in armed conflict.

B. *Human Rights in Armed Conflict*

The question of whether states are bound by both their IHL and HRL obligations during armed conflict has been a much-debated topic for the international community since the emergence of the human rights regime after World War II. This Section reviews the International Court of Justice's jurisprudence and state practice on the applicability of human rights in armed conflict.

¹⁰⁴ See *id.* art. 19(2) (“Everyone shall have the right to freedom of expression . . .”).

¹⁰⁵ See *id.* art. 4(2) (prohibiting derogations from Article 6, the right to life).

¹⁰⁶ See, e.g., General Comment 36, *supra* note 80 (recognizing that the right to life includes, *inter alia*, the rights to bodily integrity, protection from gender-based violence, and access to food and water).

¹⁰⁷ See Adil Ahmad Haque, *Human Rights in Armed Conflict, Part II*, JUST SECURITY (Nov. 23, 2016), <https://www.justsecurity.org/34815/human-rights-armed-conflict-part-ii> (noting that instead, IHL merely “constrains the use of deadly force by . . . State armed forces . . .”).

1. *International Court of Justice Jurisprudence*

Prior to the International Court of Justice's seminal advisory opinions on human rights in armed conflict,¹⁰⁸ the international community had advanced disparate theories on this issue. In 1968, when the Tehran Human Rights Conference addressed the issue of "human rights in armed conflicts," it failed to provide a consensus on the extent to which IHL and HRL were separate legal regimes.¹⁰⁹ In the 1970s, some scholars advocated against the overlapping application of IHL and HRL, arguing that the two bodies of law were "fundamentally distinct because of differing origins, theories, nature and purposes,"¹¹⁰ and that IHL was a "derogation from the normal regime of human rights."¹¹¹ However, a different strain of thought emerged in 1990, when a group of experts developed the Turku Declaration of Minimum Humanitarian Standards, subsequently adopted by the UN Commission on Human Rights, which proclaimed that certain principles are "applicable in all situations . . . [and] cannot be derogated from under any circumstances."¹¹²

When the International Court of Justice (ICJ)¹¹³ first addressed this issue in 1996, it noted that IHL obligations during armed conflict do not completely displace HRL obligations, giving weight to the view that IHL and HRL apply concurrently in armed conflict.¹¹⁴ In the *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons* ("Nuclear Weapons"), the ICJ considered the question of whether the prohibition on arbitrary deprivations of life in Article 6 of the ICCPR (a human rights instrument) applied during armed con-

¹⁰⁸ See *infra* notes 113–29.

¹⁰⁹ Noëlle Quénivet, *The History of the Relationship Between International Humanitarian Law and Human Rights Law*, in *INTERNATIONAL HUMANITARIAN LAW AND HUMAN RIGHTS LAW: TOWARDS A NEW MERGER IN INTERNATIONAL LAW* 1, 4–5 (Roberta Arnold & Noëlle Quénivet eds., 2008) (noting that the conference called for further study of how international humanitarian conventions could better ensure protections for individuals in armed conflicts).

¹¹⁰ *Id.* at 6.

¹¹¹ G.I.A.D. Draper, *Humanitarian Law and Human Rights*, 1979 *ACTA JURIDICA* 193, 205.

¹¹² Declaration of Minimum Humanitarian Standards, *reprinted in* Comm'n on Human Rights, Rep. of the Subcomm. on Prevention of Discrimination and Prot. of Minorities on Its Forty-Sixth Session, U.N. Doc. E/CN.4/1995/116 (1995).

¹¹³ Considered the preeminent "world court," the ICJ may provide advisory opinions on international legal issues through its advisory jurisdiction. Advisory opinions have no binding force, but they are highly persuasive legal authorities and "contribute to the clarification and development of international law." See *Advisory Jurisdiction*, INT'L CT. JUST., <https://www.icj-cij.org/en/advisory-jurisdiction> (last visited Nov. 12, 2019).

¹¹⁴ *Legality of Threat or Use of Nuclear Weapons*, Advisory Opinion, 1996 I.C.J. 226, ¶ 25 (July 8) [hereinafter *Nuclear Weapons*].

flicts.¹¹⁵ Perhaps due to the devastating impact of nuclear weapons, some states contended that nuclear weapons were illegal because they violated Article 6's right to life.¹¹⁶ Other states countered that the ICCPR governed only "the protection of human rights in peacetime, but that questions relating to unlawful loss of life in hostilities were governed by the law applicable in armed conflict."¹¹⁷ Moreover, states argued that the right only prohibited *arbitrary* deprivations of life, and that the use of nuclear weapons during war did not arbitrarily deprive life.¹¹⁸ The United Kingdom, for example, claimed that "[d]eaths caused by the use of nuclear (or conventional) weapons would violate the right to life only if the particular use of the weapons was contrary to the laws of armed conflict."¹¹⁹ Under this view, a deprivation of life consistent with IHL would not be arbitrary under HRL.

In examining whether the use of nuclear weapons was a violation of Article 6, the Court concluded that the ICCPR "does not cease in times of war" and that "the right not arbitrarily to be deprived of one's life applies also in hostilities."¹²⁰ However, the Court suggested that the meaning of "arbitrary deprivation" could not be gleaned solely from human rights jurisprudence, but rather from reference to IHL, noting that:

whether a particular loss of life, through the use of a certain weapon in warfare, is to be considered an arbitrary deprivation of life contrary to Article 6 of the [ICCPR], can only be decided by reference to the law applicable in armed conflict and not deduced from the terms of the Covenant itself.¹²¹

The Court determined that even though human rights applied during armed conflict, ascertaining what constitutes an "arbitrary" deprivation of life must be made by importing meaning from IHL, which permits the taking of life and thus has a different standard than HRL for what constitutes "arbitrary."¹²² Many states and international tribu-

¹¹⁵ *Id.* ¶ 24.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ See Letter Dated 16 June 1995 from the Minister for Foreign Affairs a.i. of the Netherlands, Together with Written Statement of the Government of the Netherlands, *Nuclear Weapons*, 1996 I.C.J. 226, ¶ 27 (July 8, 1996), <https://www.icj-cij.org/files/case-related/95/8690.pdf> ("[A]n example of a deprivation of life which is not arbitrary [is] 'the performance of lawful acts of war.'").

¹¹⁹ See Letter Dated 16 June 1995 from the Legal Adviser to the Foreign and Commonwealth Office of the United Kingdom of Great Britain and Northern Ireland, Together with Written Comments of the United Kingdom, *Nuclear Weapons*, 1996 I.C.J. 226, ¶ 3.100 (July 8, 1996), <https://www.icj-cij.org/files/case-related/95/8802.pdf>.

¹²⁰ *Nuclear Weapons*, 1996 I.C.J. 226, ¶ 25.

¹²¹ *Id.*

¹²² *Id.*

nals have since adopted this understanding of the concurrent application of IHL and HRL, and it has quickly become highly persuasive authority on how these legal regimes interact.¹²³

Eight years after *Nuclear Weapons*, the ICJ again considered the question of human rights in armed conflict, this time in the context of one state's occupation of another state. A state of occupation, which is subject to IHL, occurs when there is "partial or total occupation of a territory by a hostile army."¹²⁴ In the 2004 *Advisory Opinion on the Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory* ("Wall"), the Court considered the status of Israel's long-term occupation of the Occupied Palestinian Territories (OPT). The Court examined whether Israel was bound by its obligations under human rights treaties—specifically, the ICCPR, the International Covenant on Economic, Social and Cultural Rights, and the Convention on the Rights of the Child—at the same time that IHL governed Israel's actions in the OPT.¹²⁵ Israel denied that human rights instruments applied to its actions in the OPT, and argued that "humanitarian law is the protection granted in a conflict situation such as the one in the West Bank and Gaza Strip, whereas human rights treaties were intended for the protection of citizens from their own Government in times of peace."¹²⁶ Palestine, however, argued that Israel's human rights obligations applied to the occupation because the OPT was under a state of long-term occupation, a circumstance that the drafters of the Geneva Conventions never envisioned. The Conventions, which "plainly intended that occupations should be temporary, and . . . that occupations should cease once hostilities have ceased, or very soon thereafter,"¹²⁷ were never meant to regulate long-term occupation.

¹²³ See Conor McCarthy, *Legal Conclusion or Interpretative Process? Lex Specialis and the Applicability of International Human Rights Standards*, in INTERNATIONAL HUMANITARIAN LAW AND HUMAN RIGHTS LAW: TOWARDS A NEW MERGER IN INTERNATIONAL LAW 101, 102 (Roberta Arnold & Noëlle Quéniévet eds., 2008) ("The proposition that international human rights standards are, in some manner, applicable alongside humanitarian law . . . has been authoritatively and widely accepted, not just by the ICJ but also in a range of other authoritative determinations.").

¹²⁴ *Contemporary Challenges to IHL — Occupation: Overview*, INT'L COMM. RED CROSS (June 11, 2012), <https://www.icrc.org/en/doc/war-and-law/contemporary-challenges-for-ihl/occupation/overview-occupation.htm> ("Occupation law - as a branch of IHL - regulates the partial or total occupation of a territory by a hostile army.").

¹²⁵ See *Legal Consequences of Construction of Wall in Occupied Palestinian Territory*, Advisory Opinion, 2004 I.C.J. 136, ¶¶ 103–04 (July 9) [hereinafter *Wall*].

¹²⁶ *Id.* ¶ 102.

¹²⁷ *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory*, Request for an Advisory Opinion, Written Statement Submitted by Palestine, ¶ 395 (Jan. 30, 2004), <https://www.icj-cij.org/en/case/131/written-proceedings>.

In rendering its decision, the Court reaffirmed the conclusion in *Nuclear Weapons* that a state's human rights obligations under the ICCPR do not cease during times of war. Expanding the scope of its opinion beyond the ICCPR, the Court concluded that provisions of the human rights treaties at issue also applied to Israel's occupation of the OPT.¹²⁸ Without explicitly addressing whether the unique character of long-term occupation drove its decision, the Court indicated that HRL in general applies during armed conflict, declaring that "the protection offered by human rights conventions does not cease in case of armed conflict."¹²⁹

Since *Nuclear Weapons* and *Wall*, other human rights bodies have recognized the applicability of states' human rights obligations during armed conflict. The Human Rights Committee, the treaty body that interprets the ICCPR, has concluded that the ICCPR applies during armed conflict.¹³⁰ The European Court of Human Rights (ECHR), the Inter-American Commission on Human Rights, and the Inter-American Court of Human Rights have all held that their respective regional human rights treaties apply during armed conflict.¹³¹

In *Wall*, the evolving nature of occupation raised the question of whether a state's human rights obligations can concurrently apply alongside its IHL obligations during armed conflict. The decades-spanning Israeli-Palestinian conflict upended the idea of temporary occupation that the IHL occupation rules assumed.¹³² As long-term occupation took on a character similar to peacetime, states argued that IHL as it stood was not equipped to regulate the situation, and that HRL would be appropriate to apply.¹³³ *Wall* demonstrates that the idea of human rights in armed conflict has to adapt as new circum-

¹²⁸ See *Wall*, 2004 I.C.J. 136, ¶ 106.

¹²⁹ *Id.*

¹³⁰ Human Rights Comm., *General Comment No. 31 [80]: The Nature of the General Legal Obligation Imposed on States Parties to the Covenant*, ¶ 11, U.N. Doc. CCPR/C/21/Rev.1/Add.13 (May 26, 2004).

¹³¹ See *Cyprus v. Turkey*, 2001-IV Eur. Ct. H.R. 1, 25 (applying the European Convention on Human Rights to Turkey's occupation of northern Cyprus); *Coard v. United States*, Case 10.951, Inter-Am. Comm'n H.R., Report No. 109/99, OEA/Ser.L.V/II.106, doc. 6 rev. ¶¶ 38–43 (1999) (holding that the American Declaration of the Rights and Duties of Man applies in armed conflicts); *Bámaca-Velásquez v. Guatemala*, Merits, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 70, ¶¶ 209–10 (Nov. 25, 2000) (holding that the American Convention on Human Rights applies in armed conflicts). Opinions of these regional human rights bodies have persuasive weight outside of their regional systems, as part of the "soft law" of the international human rights regime.

¹³² INT'L COMM. RED CROSS, *supra* note 124 ("Under occupation law . . . [i]t is presumed that occupation will be temporary and that the occupying power shall preserve the status quo ante in the occupied territory.").

¹³³ See, e.g., Written Statement Submitted by Palestine, *supra* note 127, ¶¶ 414–16.

stances in armed conflict emerged. Similarly, AWS present a situation in which technological developments will outpace the law, creating a new context in which to reexamine what it means for human rights to apply in armed conflict.

2. *State Practice*

Despite the ICJ advisory opinions presenting highly persuasive interpretations of the concurrent application of IHL and HRL, there still exists contrary state practice and opinions by other international tribunals. While authoritative, the ICJ's advisory opinions are not binding on any state, and no *stare decisis* doctrine exists in international law to mandate that international tribunals follow ICJ decisions.¹³⁴ A variation in state practice indicates that states may act in different ways upon their conflicting IHL and HRL obligations related to future deployments of AWS.¹³⁵ In particular, there are two areas of disagreement among states regarding the applicability of HRL in armed conflict: whether there should ever be concurrent application of IHL and HRL during armed conflict, and if so, and an irreconcilable conflict between a state's IHL and HRL obligations arises, which obligation to observe.

The first point of disagreement is whether states' human rights apply at all during armed conflict. Most states and international tribunals follow the ICJ's conclusion that HRL and IHL both apply in armed conflict.¹³⁶ In contrast, the U.S. position is that IHL completely displaces HRL during armed conflict, pursuant to the general principle of *lex specialis derogat legi generali*.¹³⁷ Under *lex specialis*, where a general and a specific area of law conflict, the specific area of law prevails.¹³⁸ The United States has argued that pursuant to this principle, the original understanding of the interaction of HRL and IHL was that during armed conflict, HRL, as the general area of law that governs the human rights of individuals at all times, is completely dis-

¹³⁴ See Gilbert Guillaume, *The Use of Precedent by International Judges and Arbitrators*, 2 J. INT'L DISP. SETTLEMENT 5, 8–9 (2011) (recounting the history of the ICJ emphasizing that its decisions lack binding precedential value).

¹³⁵ Moreover, variation in state practice means that no rule of customary international law exists on the concurrent application of IHL and HRL. See, e.g., Int'l Law Comm'n, *supra* note 75, at 136 (2018) (noting that formation of customary international law requires "widespread and representative" state practice).

¹³⁶ See *supra* notes 123, 131.

¹³⁷ See Hathaway et al., *supra* note 101, at 1895. The term *lex specialis derogat legi generali* means "more specific rules will prevail over more general rules." *Lex Specialis*, INT'L COMM. RED CROSS, <https://casebook.icrc.org/glossary/lex-specialis> (last visited July 3, 2020).

¹³⁸ See *Legality of Threat or Use of Nuclear Weapons*, Advisory Opinion, 1996 I.C.J. 226, ¶ 25 (July 8).

placed by IHL, the *lex specialis*, during armed conflict.¹³⁹ For instance, HRL's conception of the right to life would be displaced by IHL rules. To justify its global counterterrorism activities, the United States has claimed that "detention operations [in Guantanamo, Afghanistan, and Iraq] are governed by the law of armed conflict, which is the *lex specialis* applicable to those operations."¹⁴⁰

States that view HRL and IHL as concurrently applicable during armed conflict disagree with the bluntness of the United States's position, and how it acts as a blanket exclusion of any opportunity for HRL to protect rights during armed conflict.¹⁴¹ Still, among these states, there exists a second point of disagreement over whether HRL or IHL obligations control if irreconcilable conflict arises between the two regimes. This kind of irreconcilable conflict is especially apparent when states use force against individuals—while IHL does not prohibit the targeting of combatants, HRL prohibits any arbitrary deprivations of life.

States and tribunals have adopted three approaches in choosing the body of law to prioritize when faced with irreconcilable conflicts between a state's HRL and IHL obligations.¹⁴² First, states such as Australia subscribe to the view that IHL should displace HRL only in specific situations over the course of an armed conflict where IHL and HRL conflict directly, because it is the *lex specialis* of that *particular situation*.¹⁴³ This approach differs from the United States's position, which holds that IHL displaces HRL over the course of an *entire* conflict, which can span many years and multiple battlefields.¹⁴⁴

Second, when some human rights tribunals have considered this question, the tribunals have applied HRL as the rule of decision.¹⁴⁵ This practice is the product of jurisdictional constraints on these human rights courts—because their mandates are to interpret human rights treaties, they must base their judgments on human rights instru-

¹³⁹ See Hathaway et al., *supra* note 101, at 1885 n.5.

¹⁴⁰ *Id.* at 1896 n.36.

¹⁴¹ See *id.* at 1896–97 ("The bluntness of the approach, which denies any role for human rights law during the course of an armed conflict, has been regarded by most as inconsistent with a serious commitment to human rights law.").

¹⁴² See *id.* at 1902.

¹⁴³ See, e.g., Human Rights Comm., Replies to the List of Issues to Be Taken up in Connection with the Consideration of the Fifth Periodic Report of the Government of Australia, ¶ 19, U.N. Doc. CCPR/C/AUS/Q/5/Add.1 (Feb. 5, 2009) ("[I]n circumstances in which the principles of international humanitarian law applied . . . Australia accepts that there is some scope for the rights under the [ICCPR] to remain applicable, although in case of conflict between the applicable standards under the [ICCPR] and the standards of international humanitarian law, the latter applies as *lex specialis*.").

¹⁴⁴ See Hathaway et al., *supra* note 101, at 1902.

¹⁴⁵ See *id.* at 1909.

ments, resulting in the courts applying HRL over IHL. For example, in the European Court of Human Rights's case *McCann v. United Kingdom*, regarding Britain's 1988 antiterrorism operations against the Irish Republican Army in Gibraltar, the Court applied the standards within the European Convention on Human Rights.¹⁴⁶ Despite acknowledging that an armed conflict existed, it held that the United Kingdom violated the right to life standards of a human rights instrument.¹⁴⁷

Finally, some tribunals have resolved the HRL and IHL conflict by choosing, on a case-by-case basis, to apply the body of law that is "more specifically tailored"¹⁴⁸ to a particular situation. For example, in a report on human rights in Colombia,¹⁴⁹ the Inter-American Commission recognized that an armed conflict involving drug trafficking groups existed within Colombia, but applied HRL to "extra-judicial killings of 'marginal groups' engaged in criminal activities."¹⁵⁰ The Commissions observed that HRL, rather than IHL, was more specifically tailored to criminal activity peripheral to the armed conflict.

These examples demonstrate that while states are generally in agreement that HRL applies concurrently alongside IHL during armed conflict, there is significantly more disagreement about whether HRL or IHL obligations take precedence when their obligations directly conflict. The next Part argues that pursuant to HRL's goal of safeguarding individual rights and ensuring wide adherence to human rights obligations,¹⁵¹ a state deploying AWS has an HRL duty against arbitrary deprivations of life that should prevail over its IHL obligations to govern AWS' use of lethal force in armed conflict.

¹⁴⁶ *McCann v. United Kingdom*, 324 Eur. Ct. H.R. (ser. A) at 53–54 (1995).

¹⁴⁷ *Id.*; see also Hathaway et al., *supra* note 101, at 1910.

¹⁴⁸ See Hathaway et al., *supra* note 101, at 1910.

¹⁴⁹ Inter-Am. Comm'n H.R., Third Report on the Human Rights Situation in Colombia, OEA/Ser.L/V/II.102, doc. 9 rev. 1, ch. 4, ¶ 30–32 (1999). The Inter-American Commission is an expert body of the Organization of American States, a regional inter-governmental organization similar to the United Nations. The Commission is made up of individual experts tasked with interpreting the American Convention on Human Rights and "promoting and protecting human rights." See *Inter-American Commission on Human Rights*, ORG. AM. STATES, http://www.oas.org/en/about/commission_human_rights.asp (last visited July 3, 2020). The Commission is distinct from the Inter-American Court of Human Rights, the judicial organ of the Organization of American States. See *I/A Court History*, INTER-AM. CT. HUM. RTS., <http://www.corteidh.or.cr/historia-en.cfm> (last visited July 3, 2020). Both the Commission and the Court interpret the human rights instruments in the Inter-American system.

¹⁵⁰ Hathaway et al., *supra* note 101, at 1916.

¹⁵¹ See, e.g., International Covenant on Civil and Political Rights, *supra* note 88, pmb1. (noting "the obligation of States under the Charter of the United Nations to promote universal respect for, and observance of, human rights and freedoms").

III

THE CONCURRENT APPLICATION OF INTERNATIONAL HUMANITARIAN LAW AND HUMAN RIGHTS LAW TO AUTONOMOUS WEAPONS SYSTEMS

The development of autonomous weapons systems raises questions about how international law can regulate this new technology. Is the use of AWS in armed conflict governed solely by IHL, or does HRL's broad conception of the right to life apply to the use of these weapons systems? This Part argues that 1) HRL applies to the use of AWS and prevails over IHL where the two bodies of law directly conflict, and 2) AWS' use of lethal force violates HRL's prohibition against arbitrary deprivations of life. Section III.A recognizes that HRL and IHL obligations can concurrently exist in armed conflict, not only because the ICJ's advisory opinions favor this view, which has been adopted by a majority of states, but also because HRL and IHL share a common purpose of maximizing the protection of individuals. This Section argues that in the context of AWS' use of lethal force, certain HRL obligations should prevail over IHL obligations when they directly conflict because IHL is unable to fulfill this common purpose if it is the sole body of law regulating algorithmic targeting decisions. Section III.B argues that the use of AWS violates HRL's prohibition against arbitrary deprivations of life because of their unpredictability, potential to discriminate when targeting, and transparency and accountability gaps.

A. *Applying Human Rights Law to Autonomous Weapons Systems*

Ever since the ICJ's *Nuclear Weapons* opinion, the topic of human rights in armed conflict has been "one of the most intensely contested issues in international law."¹⁵² This Section argues that in order to uphold the "humanitarian underpinnings"¹⁵³ of HRL and IHL, states must recognize that their human rights obligations continue to exist during armed conflict. Specifically in the context of AWS' use of lethal force, HRL's prohibition against arbitrary deprivations of life should prevail over IHL.

Most states and international tribunals have recognized that HRL and IHL obligations exist concurrently during armed conflict,¹⁵⁴

¹⁵² Janina Dill, *General Comment 36: A Missed Opportunity?*, JUST SECURITY (Feb. 11, 2019), <https://www.justsecurity.org/62473/general-comment-36-missed-opportunity>.

¹⁵³ Dale Stephens, *Human Rights and Armed Conflict—The Advisory Opinion of the International Court of Justice in the Nuclear Weapons Case*, 4 YALE HUM. RTS. & DEV. L.J. 1, 24 (2001).

¹⁵⁴ Counterarguments raised by dissenting states against recognizing any applicability of human rights in armed conflict—including the argument that human rights treaties are not

including in circumstances of detention, internment, and occupation, with the driving normative principle that “international law should, as much as possible, afford individuals continued human rights protections during armed conflict” and “reduc[e] unjustified individual rights violations on the battlefield.”¹⁵⁵ This normative aspiration is justified by HRL and IHL’s shared common goal of protecting individual rights and human dignity, as reflected in the ICJ’s *Nuclear Weapons* and *Wall* opinions and inherent in the history and development of both bodies of law.¹⁵⁶ Human rights law aims to promote “universal respect for and observance of human rights and fundamental freedoms.”¹⁵⁷ In the same vein, even though IHL codifies rules on the conduct of war, the treaties that make up IHL also express a desire to safeguard the lives of individuals during conflict. The four Geneva Conventions of 1949 protect vulnerable populations during armed conflict, including the wounded and sick in armed forces, prisoners of war, and civilians.¹⁵⁸ Common Article 3 in all four conventions, which addresses non-international armed conflict, stipulates a minimum threshold of humane treatment of individuals by requiring that protected persons “shall in all circumstances be treated humanely.”¹⁵⁹ Moreover, the Martens Clause, found in the Hague Convention of 1899 and Additional Protocol II of 1977, requires states that are party to a conflict to abide by principles stemming from “the laws of humanity and the dictates of the public conscience.”¹⁶⁰

extraterritorial—are linked to an interest in avoiding accountability for possible human rights violations in global conflicts, a position that undermines the strength of the human rights regime. See Harold Koh, Legal Adviser, U.S. Dep’t of State, Memorandum Opinion on the Geographic Scope of the International Covenant on Civil and Political Rights (Oct. 19, 2010) (criticizing the position that the United States’ human rights obligations do not apply overseas).

¹⁵⁵ See Dill, *supra* note 152.

¹⁵⁶ See *Coard v. United States*, Case 10,951, Inter-Am. Comm’n H.R., Report No. 109/99, OEA/Ser.L./V/II.106, doc. 6 rev. ¶ 39 (1999) (noting that IHL and HRL “share a ‘common nucleus of non-derogable rights and a common purpose of protecting human life and dignity’”); Jakob Kellenberger, President, Int’l Comm. of the Red Cross, International Humanitarian Law and Other Legal Regimes: Interplay in Situations of Violence, Address at the 27th Annual Round Table on Current Problems of International Humanitarian Law (Sept. 4, 2003), https://www.icrc.org/en/doc/assets/files/other/irrc_851_kellenberger.pdf (“The common underlying purpose of international humanitarian and international human rights law is the protection of the life, health and dignity of human beings.”).

¹⁵⁷ G.A. Res. 217 (III) A, *supra* note 87, pmbl.

¹⁵⁸ See *supra* note 23.

¹⁵⁹ *Id.* art. 3.

¹⁶⁰ Hague Convention II, *supra* note 72 (“[P]opulations and belligerents remain under the protection and empire of the principles of international law, as they result from the usages established between civilized nations, from the laws of humanity and the requirements of the public conscience.”); Additional Protocol II, *supra* note 74 (“[T]he

Even among states that agree on the concurrent application of HRL and IHL, certain situations arise that highlight unresolved disagreement over whether HRL or IHL obligations should prevail when irreconcilable conflicts of norms between the two bodies of law exist.¹⁶¹ Some states and tribunals have prioritized one body of law over the other based on the desire to apply the law that provides greater protections to individuals. For instance, in the Inter-American Commission's *Abella v. Argentina* case, concerning Argentina's treatment of armed persons following an attack on army barracks, the Commission recognized a principle of applying the body of law most favorable to an individual, stating, "where there are differences between legal standards governing the same or comparable rights in the American Convention [a human rights instrument] and a humanitarian law instrument, the Commission is duty bound to give legal effort to the provision(s) of that treaty with the higher standard(s) applicable to the right(s) or freedom(s) in question."¹⁶²

If AWS use lethal force on the battlefield, determining the scope of the right to life presents a scenario where HRL and IHL provide conflicting standards, because "at bottom the two bodies of law give fundamentally different answers to the question of when state agents can use lethal force."¹⁶³ In this kind of scenario, HRL's conception of the right to life should prevail in order to honor the shared goals of HRL and IHL and, along the lines of the Commission's reasoning in *Abella*, in order to prevent states from "limiting more favorable or less restrictive rights to which an individual is otherwise entitled."¹⁶⁴ Here, HRL provides the "higher standard" applicable to the right to life: IHL's balancing between military purposes and protections for individuals fails to account for issues with algorithmic decisions to use lethal force,¹⁶⁵ while HRL provides a broader understanding of the right to life.¹⁶⁶ HRL provides a host of enforcement mechanisms that IHL lacks, including state reporting duties to the Human Rights Committee, individual complaint mechanisms under the ICCPR, and the ability for other states and non-governmental organizations to

human person remains under the protection of the principles of humanity and the dictates of the public conscience.").

¹⁶¹ See *supra* Section II.B.2.

¹⁶² *Abella v. Argentina*, Case 11.137, Inter-Am. Comm'n H.R., Report No. 55/97, OEA/Ser.L/V/II.95, doc. 7 rev. ¶ 165 (1997). The Commission ultimately applied humanitarian law in this case, recognizing that it ensured certain minimum legal protections. *Id.* ¶ 174, 176.

¹⁶³ Hathaway et al., *supra* note 101, at 1926.

¹⁶⁴ *Abella v. Argentina*, doc. 7 rev. ¶ 165.

¹⁶⁵ See *supra* Section I.B.2 (describing concerns with AWS).

¹⁶⁶ See *supra* notes 106–07 and accompanying text.

publicly advocate against human rights violations.¹⁶⁷ Indeed, HRL provides individuals with the right to an effective remedy,¹⁶⁸ so that victims have at least an opportunity to “claim reparations for violations of IHL that would otherwise not succeed in obtaining any form of justice.”¹⁶⁹ Moreover, claims under IHL are exceedingly difficult for victims to bring due to “the lack of clear IHL norms allowing victims to bring claims directly against the responsible State” and the fact that “reparation claims solely based on IHL tend to be rejected by domestic courts.”¹⁷⁰ In contrast, HRL’s guarantee of a right to life can be utilized “to ameliorate many of the brutal consequences of armed conflict because it provides a substantive basis for bolstering [IHL] provisions that seek to preserve human life and promote human dignity.”¹⁷¹ Accordingly, the next Section explores the consequences of applying human rights standards to AWS’ use of lethal force.

B. *Autonomous Weapons Systems and Arbitrary Deprivations of Life*

Applying human rights standards on the right to life to AWS’ use of lethal force suggests that such use would violate HRL’s prohibitions against arbitrary deprivations of life. This Section describes the Human Rights Committee’s recent guidance on the meaning of “arbitrary,” before arguing that use of lethal force by AWS would constitute arbitrary deprivations of life due to their unpredictability,

¹⁶⁷ See International Covenant on Civil and Political Rights, *supra* note 88, at art. 40(1) (“The States Parties to the present Covenant undertake to submit reports on the measures they have adopted which give effect to the rights recognized herein and on the progress made in the enjoyment of those rights”); Optional Protocol to the International Covenant on Civil and Political Rights, Mar. 29, 1967, 999 U.N.T.S. 171; Emilie M. Hafner-Burton, *Sticks and Stones: Naming and Shaming the Human Rights Enforcement Problem*, 62 INT’L ORG. 689, 689–91 (2008) (describing “naming and shaming” as a potentially effective method of enforcing human rights norms).

¹⁶⁸ See, e.g., International Covenant on Civil and Political Rights, *supra* note 88, art. 2(3)(a) (“Each State Party to the present Covenant undertakes [t]o ensure that any person whose rights or freedoms as herein recognized are violated shall have an effective remedy”); see also Human Rights Comm., Concluding Observations on the Fourth Periodic Report of the United States of America, ¶ 9, U.N. Doc. CCPR/C/USA/CO/4 (Apr. 23, 2014).

¹⁶⁹ Vito Todeschini, *The Human Rights Committee’s General Comment No. 36 and the Right to Life in Armed Conflict*, OPINIO JURIS (Jan. 21, 2019), <http://opiniojuris.org/2019/01/21/the-human-rights-committees-general-comment-no-36-and-the-right-to-life-in-armed-conflict>.

¹⁷⁰ *Id.*; see also BVerfG, 2 BvR 2660/06, 2 BvR 487/07, Aug. 13, 2013 (Ger.), https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/DE/2013/08/rk20130813_2bvr266006.html (holding that victims of a NATO airstrike in the Federal Republic of Yugoslavia cannot claim damages for harms caused by war).

¹⁷¹ Stephens, *supra* note 153, at 23.

potential to discriminate when targeting, and transparency and accountability gaps.

1. *The Meaning of “Arbitrary”*

Under the ICCPR, Article 6 provides that “[n]o one shall be arbitrarily deprived of his life.”¹⁷² The term “arbitrary” in this provision is key to determining whether a deprivation of life is lawful. It recognizes that the right to life is not absolute, and indeed, there are situations in which deprivations of life—like a killing necessary for self-defense—are not considered arbitrary. The Human Rights Committee’s recent interpretation of the right to life offers some guidance on the meaning of “arbitrary.” In its 2018 report General Comment 36, the Committee presented a comprehensive interpretation of Article 6’s right to life.¹⁷³ General Comment 36 interprets the right to life broadly, and explicitly addresses the implications of AWS, implying that HRL applies to AWS and that killings by a fully autonomous machine may violate the right to life.¹⁷⁴ Further, General Comment 36 notes that elements of arbitrariness include “lack of predictability [and] due process of law,”¹⁷⁵ and states that “[a]ny deprivation of life based on discrimination in law or fact is *ipso facto* arbitrary in nature.”¹⁷⁶

General Comment 36 reflects and expands upon a generally accepted understanding of the meaning of “arbitrary.” The African Commission on Human and Peoples’ Rights has stated that “[a]rbitrariness should be interpreted with reference to considerations such as appropriateness, justice, predictability, reasonableness, necessity and proportionality. Any deprivation of life resulting from a violation of the procedural or substantive safeguards . . . including on the basis of discriminatory grounds or practices, is arbitrary and as a result

¹⁷² International Covenant on Civil and Political Rights, *supra* note 88, art. 6 § 1.

¹⁷³ The Committee is the treaty organ tasked with interpreting the ICCPR. While General Comments, as guidance reports interpreting the meanings of ICCPR provisions, are considered “soft law” and not legally binding, they are seen as highly persuasive by most states and international tribunals. *See, e.g.*, Ahmadou Sadio Diallo (Guinea v. Dem. Rep. Congo), Judgment, 2010 I.C.J. 639, ¶ 66 (Nov. 30) (“Although the Court is in no way obliged . . . to model its own interpretation of the [ICCPR] on that of the [Human Rights] Committee, it believes that it should ascribe great weight to the interpretation adopted by this independent body that was established specifically to supervise the application of that treaty.”).

¹⁷⁴ *See* General Comment 36, *supra* note 80, ¶ 65 (“The Committee is therefore of the view that such weapon systems should not be developed and put into operation, either in times of war or in times of peace, unless it has been established that their use conforms with article 6 and other relevant norms of international law.”).

¹⁷⁵ *Id.* ¶ 12.

¹⁷⁶ *Id.* ¶ 61.

unlawful.”¹⁷⁷ Similarly, in the 1982 case *Suarez de Guerrero v. Colombia*, an individual petition before the HRC, the Committee analyzed the “(a) sufficient legal basis; (b) legitimate purpose; (c) absolute necessity; and (d) strict proportionality” of an alleged deprivation of life to determine whether it was arbitrary.¹⁷⁸

In addressing whether this HRL conception of the prohibition against arbitrary deprivations of life prevails over IHL norms, General Comment 36, attempts to reconcile the two standards, suggesting that states that comply with their IHL obligations are also in compliance with their human rights obligations, since “[u]se of lethal force consistent with international humanitarian law and other applicable international law norms is, in general, not arbitrary.”¹⁷⁹ This characterization, reflecting the practice of some states and tribunals, mirrors the ICJ’s analysis in *Nuclear Weapons*, which held that the content of human rights obligations during armed conflict must be determined with reference to IHL standards.¹⁸⁰

This Note, however, disagrees with the view that every use of lethal force consistent with IHL renders a deprivation of life non-arbitrary. For example, Ryan Goodman has noted that General Comment 36’s qualification of “in general” leaves open the possibility that in some instances, a use of lethal force consistent with IHL may nevertheless violate HRL’s right to life.¹⁸¹ Janina Dill, in a response to

¹⁷⁷ African Comm’n on Human & Peoples’ Rights, General Comment No. 3 on the African Charter on Human & Peoples’ Rights: The Right to Life ¶ 12 (Nov. 18, 2015) [hereinafter General Comment 3], <https://www.achpr.org/legalinstruments/detail?id=10>. The African Commission on Human and Peoples’ Rights is a regional human rights body charged with interpreting the African Charter on Human and Peoples’ Rights. See *About ACHPR*, AFR. COMMISSION ON HUM. & PEOPLES’ RTS., <https://www.achpr.org/about> (last visited Sept. 8, 2020).

¹⁷⁸ See *Arbitrary Deprivation of Life*, U.N. OFF. ON DRUGS & CRIME (July 2018), <https://www.unodc.org/e4j/en/terrorism/module-8/key-issues/arbitrary-deprivation-of-life.html>; see also Human Rights Comm., Communication No. 45/1979: Colombia, ¶¶ 13.2–13.3, U.N. Doc. CCPR/C/15/D/45/1979 (Mar. 31, 1982), <https://casebook.icrc.org/case-study/human-rights-committee-guerrero-v-colombia>. Additionally, the Inter-American Court and Inter-American Commission view “disproportionate use of force in armed conflict” as a scenario in which arbitrary deprivations of life may occur. See U.N. OFF. ON DRUGS & CRIME, *supra*.

¹⁷⁹ General Comment 36, *supra* note 80, ¶ 64; see also Todeschini, *supra* note 169 (“[T]he HRC excludes the possibility for States to be held responsible under the ICCPR for acts that are lawful under IHL.”).

¹⁸⁰ See *Legality of Threat or Use of Nuclear Weapons*, Advisory Opinion, 1996 I.C.J. 226, ¶ 25 (July 8).

¹⁸¹ See Ryan Goodman, Christof Heyns & Yuval Shany, *Human Rights, Deprivation of Life and National Security: Q&A with Christof Heyns and Yuval Shany on General Comment 36*, JUST SECURITY (Feb. 4, 2019), <https://www.justsecurity.org/62467/human-life-national-security-qa-christof-heyns-yuval-shany-general-comment-36> (suggesting that one example of use of force consistent with IHL and yet still “arbitrary” could be the “long-term public health consequences of military targeting operations if international

General Comment 36, provided some examples of situations where this could happen, noting that “[a]t least three areas of divergence [between IHL and HRL] exist.”¹⁸² First, IHL permits the killing of combatants in continuous combat functions even if it is possible to capture the combatants, while the General Comment notes that Article 6 requires lethal force to be used as the last resort. Second, while the incidental killing of civilians in accordance with the principle of proportionality is permissible under IHL, this may still constitute an arbitrary deprivation of life for the civilian, especially as, from the civilian’s perspective, military strikes seem inherently unpredictable. Third, while IHL provides the same permissions to use lethal force to combatants on both sides of a conflict, HRL provides permission to use lethal force only to those who use force as a last resort for self-defense.¹⁸³

These categories are not the only areas where a use of force consistent with IHL nevertheless violates HRL. AWS’ use of lethal force in armed conflict would create another situation in which use of AWS consistent with IHL can nonetheless violate HRL because a killing made by algorithmic decision constitutes an arbitrary deprivation of life. The following Sections analyze how lethal force used by AWS would constitute arbitrary deprivations of life pursuant to the HRC’s characterization of arbitrariness to include “lack of predictability,”¹⁸⁴ “discrimination,”¹⁸⁵ and lack of “due process of law.”¹⁸⁶

2. Predictability

The International Committee of the Red Cross, an expert body that interprets the Geneva Conventions,¹⁸⁷ has noted that predictability is the “knowledge of how the weapon system will function in any given circumstances of use, including the effects that will result.”¹⁸⁸ Predictability includes knowing the *outcome* that will result from deploying AWS in a particular situation, and knowing the *process* by which AWS make their targeting decisions.¹⁸⁹ For example, a

humanitarian law considers such effects too remote to include in a proportionality analysis”).

¹⁸² See Dill, *supra* note 152.

¹⁸³ See *id.*

¹⁸⁴ General Comment 36, *supra* note 80, ¶ 12.

¹⁸⁵ *Id.* ¶ 61.

¹⁸⁶ *Id.* ¶ 12.

¹⁸⁷ See *The ICRC’s Mandate and Mission*, INT’L COMM. RED CROSS, <https://www.icrc.org/en/mandate-and-mission> (last visited June 25, 2020).

¹⁸⁸ INT’L COMM. RED CROSS, *AUTONOMY, ARTIFICIAL INTELLIGENCE AND ROBOTICS: TECHNICAL ASPECTS OF HUMAN CONTROL* 10 (2019), <https://www.icrc.org/en/document/autonomy-artificial-intelligence-and-robotics-technical-aspects-human-control>.

¹⁸⁹ See *id.* at 2.

landmine's process is predictable because it detonates when activated by a certain weight, but its outcome is unpredictable because who or what triggers the landmine is unknown.¹⁹⁰

AWS are unpredictable in both their outcomes and processes. The outcome of deploying AWS is unpredictable because it can be triggered by environmental factors unforeseeable at the time of deployment. The process by which AWS select targets is also unpredictable because the very nature of the machine-learning decision-making process is "unpredictable *by design*."¹⁹¹ The algorithms that power AWS would be programmed to learn from training data that define the AWS' functions, meaning that these algorithms that learn and act by "build[ing] their own model . . . based on sample data input representing the input or task they are to learn, and then us[ing] this model to produce their output, which may consist of carrying out actions, identifying patterns or making predictions."¹⁹² The outputs of these algorithms—and thus the targeting decisions of AWS—would be unknowable to the humans that deploy these weapons systems because "the AI not only is performing a specified action but also is making decisions and thus potentially taking an action that a human did not order. . . . [N]o individual action would be completely predictable or preprogrammed."¹⁹³ In the similar case of self-driving cars, testing in real traffic conditions is one way of ensuring predictability, but obtaining enough data to simulate all possible scenarios would require "millions or billions of kilometres [of road for] testing."¹⁹⁴ For AWS, simulating complex battlefield conditions would require so much training data that "any assessment of the predictability and reliability of an autonomous robotic system can only ever be an estimate."¹⁹⁵

3. *Discrimination*

General Comment 36 notes that discriminatory deprivations of life are "*ipso facto* arbitrary."¹⁹⁶ The algorithms that drive AWS adjust

¹⁹⁰ See *id.* at 11. Partly because of their indiscriminate effects on civilians, landmines were banned by the 1997 Anti-Personnel Mine Ban Convention. See Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction, Sept. 18 1997, 2056 U.N.T.S. 211.

¹⁹¹ INT'L COMM. RED CROSS, *supra* note 188, at 12 (emphasis added).

¹⁹² *Id.* at 14; see also ROYAL SOC'Y, MACHINE LEARNING: THE POWER AND PROMISE OF COMPUTERS THAT LEARN BY EXAMPLE 19 (2017), <https://royalsociety.org/~media/policy/projects/machine-learning/publications/machine-learning-report.pdf> (providing an overview of the process of machine learning using training data).

¹⁹³ Etzioni & Etzioni, *supra* note 16, at 78.

¹⁹⁴ INT'L COMM. RED CROSS, *supra* note 188, at 13.

¹⁹⁵ *Id.*

¹⁹⁶ General Comment 36, *supra* note 80, ¶ 61.

based on human behavior, potentially amplifying human biases,¹⁹⁷ meaning any killings based on the biased algorithms of AWS would constitute an arbitrary deprivation of life. The scenario provided in the Introduction¹⁹⁸ provides an example of how training data could feed biases into the algorithms of AWS at both the data-selection and data-filtering stages. At the data-selection stage, an algorithm would be trained on existing data of targeting decisions made by humans. However, if there is a history of humans making targeting decisions based on ethnic, religious, or other biases, the algorithm could learn and reinforce those biases.¹⁹⁹ At the data-filtering stage, the individuals who filter the data could also influence an algorithm with bias. In the scenario in the Introduction, the training data of the autonomous security wall were tagged by military personnel of the deploying state. These military personnel may have their own biases, and may, for example, be prone to labeling certain categories of individuals more often as combatants rather than civilians.²⁰⁰

This raises a question of why algorithm-driven discriminatory targeting could be considered arbitrary deprivations of life when individual soldiers may exhibit similar biases on the battlefield. The case of the individual soldier is different because an individual soldier's violations can be regulated under existing legal frameworks. Egregious examples of biases *would* be violations of IHL, and could result in international criminal liability.²⁰¹ When human soldiers take action,

¹⁹⁷ See, e.g., Claire Cain Miller, *When Algorithms Discriminate*, N.Y. TIMES: THE UPSHOT (July 9, 2015), <https://www.nytimes.com/2015/07/10/upshot/when-algorithms-discriminate.html> (describing how “machine learning algorithms adjust what they do based on people’s behavior” and therefore “reinforce human prejudices”).

¹⁹⁸ See *supra* text accompanying notes 2–5 (describing military personnel involved in both selecting data and filtering data to inform the targeting decisions of a deployed AWS).

¹⁹⁹ See Hao, *supra* note 70 (providing an example of data reflecting existing prejudices “when Amazon discovered that its internal recruiting tool was dismissing female candidates” and that “[b]ecause it was trained on historical hiring decisions, which favored men over women, it learned to do the same”).

²⁰⁰ See *id.* (“[C]hoosing which attributes to consider or ignore can significantly influence your model’s prediction accuracy. But while its impact on accuracy is easy to measure, its impact on the model’s bias is not.”).

²⁰¹ See, e.g., Rome Statute of the International Criminal Court, art. 6, 7(1)(h), July 17, 1998, 2187 U.N.T.S. 3 (describing the crime of genocide as acts committed with intent to destroy “a national, ethnical, racial or religious group” and a crime against humanity as the “[p]ersecution against any identifiable group or collectivity on political, racial, national, ethnic, cultural, religious, [or] gender . . . grounds”); see also Statute of the International Tribunal for the Former Yugoslavia, in U.N. Secretary-General, *Report of the Secretary-General Pursuant to Paragraph 2 of Security Council Resolution 808*, art. 4(2), 5(h), U.N. Doc. S/25704 (May 3, 1993) (describing the crime of genocide as acts committed with intent to destroy “a national, ethnical, racial or religious group” and a crime against humanity as “[p]ersecutions on political, racial and religious grounds”); S.C. Res. 955, art. 2(2), 3(h) (Nov. 8, 1994) (same).

the ultimate decision to use lethal force remains in the hands of a human being who can be held accountable. Algorithms, in contrast, could discriminate in unpredictable and unknowable ways, making it difficult to hold anyone accountable, as discussed in the next Section.

4. *Transparency and Accountability*

AWS also raise transparency and accountability problems that render their targeting decisions arbitrary. General Comment 36 indicates that states should maintain transparency by “disclos[ing] the criteria for attacking with lethal force . . . including the legal basis for specific attacks, the process of identification of military targets and combatants or persons taking a direct part in hostilities, [and] the circumstances in which relevant means and methods of warfare have been used”²⁰² However, even an algorithm’s programmer may find it impossible to predict its sophisticated decisions.²⁰³ Without transparency in targeting decisions, it would be exceptionally challenging to determine where an erroneous attack went wrong and how to prevent similar errors from reoccurring. Moreover, the drafters of General Comment 36 have indicated that a deprivation of life can be rendered arbitrary through “a failure to investigate potentially unlawful deprivation of life during armed conflict.”²⁰⁴ A lack of transparency in AWS’ use of lethal force decisions creates precisely the kind of procedural shortcoming that the drafters imagined.

Another problem related to transparency is an accountability gap from potential violations of targeting rules. General Comment 36 notes that states must abide by procedural requirements to “investigate alleged or suspected violations of Article 6 in situations of armed conflict in accordance with the relevant international standards.”²⁰⁵ However, use of lethal force by AWS could mean a lack of accountability for any alleged or suspected violations.²⁰⁶ Under international law, there are two forms of accountability: state responsibility and

²⁰² General Comment 36, *supra* note 80, ¶ 64. The African Commission for Human Rights concurs with this assessment of transparency, noting that “[t]ransparency is a necessary part of accountability. Transparency about laws, policies, practices and the circumstances of any limitations of the right to life . . . is a necessary element in fulfilling the right to life.” General Comment 3, *supra* note 177, ¶ 21.

²⁰³ See, e.g., Yavar Bathaee, *The Artificial Intelligence Black Box and the Failure of Intent and Causation*, 31 HARV. J.L. & TECH. 889, 901 (2018) (noting that “machine-learning algorithms . . . internalize data in ways that are not easily audited or understood by humans”).

²⁰⁴ Goodman, Heyns & Shany, *supra* note 181.

²⁰⁵ General Comment 36, *supra* note 80, ¶ 64.

²⁰⁶ See, e.g., MIND THE GAP, *supra* note 86, at 1 (arguing that “[n]either criminal law nor civil law guarantees adequate accountability for individuals directly or indirectly involved in the use of fully autonomous weapons”).

individual responsibility.²⁰⁷ State responsibility is perhaps the obvious answer to AWS accountability problems—hold the state that deployed the AWS responsible. Wrongful acts of states require accountability from the state.²⁰⁸ The Articles on State Responsibility²⁰⁹—rules of an “international torts” system—provides that wrongful acts consist of “breach of an international obligation of the State.”²¹⁰ The legal consequences of a wrongful act are for the state to “cease that act”²¹¹ and “make full reparation for the injury caused by the internationally wrongful act.”²¹² But there are limitations to state responsibility as a solution to AWS violations. Without sufficient transparency on how AWS come to their targeting decisions, it would be difficult to attribute responsibility for any AWS errors to a deploying state. Furthermore, states often vigorously deny that they have committed wrongful acts, and there are jurisdictional and procedural hurdles to bringing a claim in the ICJ or in domestic courts for damages.²¹³ Additionally, state responsibility is often an inadequate solution for individual victims of human rights violations because “the State responsible for the violation has to compensate the State injured by the violation; it does not confer a right to compensation on the individual victims of violations.”²¹⁴

The second category of accountability is individual responsibility. AWS’ algorithmic transparency problem could entirely preclude a finding of individual responsibility, undermining the objectives of

²⁰⁷ See *id.* at 13 (distinguishing between state responsibility, which aims to change a state’s conduct, and personal accountability, which punishes an individual’s conduct).

²⁰⁸ See Int’l Law Comm’n, Responsibility of States for Internationally Wrongful Acts, art. 1 (2001) [hereinafter Articles on State Responsibility] (“Every internationally wrongful act of a State entails the international responsibility of that State.”).

²⁰⁹ These Articles on State Responsibility are considered a codification of the customary international law on state responsibility. See *Customary Law on State Responsibility*, GEO. L. LIBR., <https://guides.ll.georgetown.edu/c.php?g=371540&p=2511830> (last visited June 30, 2020).

²¹⁰ Articles on State Responsibility, *supra* note 208, art. 2(b).

²¹¹ *Id.* art. 30(a).

²¹² *Id.* art. 31(1). Similarly, Additional Protocol I, which governs situations of armed conflict, also states that “A Party to the conflict which violates the provisions of the [Geneva] Conventions or of this Protocol shall, if the case demands, be liable to pay compensation.” Additional Protocol I, *supra* note 74, art. 91.

²¹³ See, e.g., Hammond, *supra* note 54, at 657 (noting that “the sharp limitations on [the ICJ’s] personal jurisdiction will likely obstruct its power to hear AWS disputes” and that “the doctrine of sovereign immunity could very well bar [domestic suits] from proceeding past the filing stage”); see also MIND THE GAP, *supra* note 86 at 28.

²¹⁴ *State Responsibility*, INT’L COMM. RED CROSS, <https://casebook.icrc.org/law/state-responsibility> (last visited June 30, 2020); see also DEP’T OF DEF., LAW OF WAR MANUAL ¶ 18.16.4 (2016) (“Customary international law and the 1949 Geneva Conventions do not provide a private right for individuals to claim compensation directly from a State; rather, such claims are made by other States.”).

international criminal law.²¹⁵ International criminal law recognizes that in armed conflict, despite acting under the auspices of state authority, a soldier who commits certain crimes would nevertheless be held *individually* responsible.²¹⁶ One of the principal crimes over which the International Criminal Court has jurisdiction is war crimes, defined as violations of the laws of armed conflict.²¹⁷ Similarly, the UN created the International Criminal Tribunal for the Former Yugoslavia and the International Criminal Tribunal for Rwanda in order to prosecute crimes that occurred during armed conflicts in these states.²¹⁸ However, the use of lethal force by AWS threatens to upset the norms underpinning international criminal law, because AWS’ “propensity for unpredictable action . . . undermine a foundational principle of international criminal law: that serious violations of international humanitarian law will not occur without an individual acting intentionally or recklessly.”²¹⁹

Even though it is often difficult to establish individual accountability in various areas of international law,²²⁰ what makes accountability especially challenging in the AWS context is that it may be impossible, not merely improbable, to establish—whether in the form of direct individual responsibility, command responsibility, or strict liability for designers, manufacturers, and programmers of AWS. Establishing direct individual responsibility could be impossible because the algorithm’s decisionmaking process can obscure the true source of a violation. The “sheer complexity of an autonomous weapon system’s program may make it impossible for human beings to predict how it will act . . . or even reconstruct why it acted a certain

²¹⁵ See Crootof, *supra* note 49, at 1351 (“Individual criminal liability for war crimes grew from a deep-seated desire to hold individuals accountable for atrocities and to discourage future occurrences.”).

²¹⁶ See *id.* at 1385 (“[T]he Nuremberg judges declared that [c]rimes against international law are committed by men, not by abstract entities, and only by punishing individuals who commit such crimes can the provisions of international law be enforced.” (internal quotations omitted)).

²¹⁷ See Rome Statute of the International Criminal Court, *supra* note 201, art. 8(2)(a) (defining war crimes as grave breaches of the Geneva Conventions).

²¹⁸ See S.C. Res. 827, at 2 (May 15, 1993) (establishing the International Criminal Tribunal for the Former Yugoslavia); S.C. Res. 955, *supra* note 201, at 2 (establishing the International Criminal Tribunal for Rwanda).

²¹⁹ Crootof, *supra* note 49, at 1354.

²²⁰ See, e.g., Carolyn Kenney & John Norris, *International Justice on Trial?: Taking Stock of International Justice over the Past Quarter Century*, CTR. FOR AM. PROGRESS (Mar. 28, 2018, 9:01 AM), <https://www.americanprogress.org/issues/security/reports/2018/03/28/448415/international-justice-trial> (noting gaps in international criminal investigations and challenges international criminal tribunals face in prosecuting perpetrators of war crimes).

way after the fact,”²²¹ and if the programming does not result in predictable outcomes, “it would be almost impossible to attribute the autonomous system’s behavior directly to a particular human.”²²²

Furthermore, command responsibility would also be nearly impossible to establish. Command responsibility, an international criminal law principle, attributes responsibility to commanders any failures to prevent crimes committed by forces under their effective control, with the purpose of incentivizing commanders to supervise their subordinates’ actions.²²³ The requirement is that the commander “either knew or . . . should have known”²²⁴ that a subordinate would commit a crime. A fully autonomous weapon, however, would be able to make decisions to target certain individuals outside of what a commander would know or reasonably should know. In the scenario in the Introduction,²²⁵ the deploying state constructed the AWS precisely because the “decisions are made so rapidly that second-guessing by humans is practically impossible.”²²⁶ For any real-life AWS deployed with this kind of processing speed, no human soldier supervising the machine would be able to predict or intervene in the machine’s targeting decisions. Thus command responsibility is an imperfect solution for establishing individual accountability.²²⁷

Finally, just as AWS’ decisionmaking processes are unknown to the individual soldier or commander, they would also be obscure to a designer, manufacturer, or programmer.²²⁸ For these reasons, holding these actors strictly liable for AWS errors is infeasible, as “the entire concept of autonomy presupposes that AWSs will take actions other than those that its designers predicted or intended.”²²⁹

The challenges of establishing state responsibility is not unique to the problem of AWS, but paired with the likelihood that individual responsibility may be impossible to establish, the absence of these

²²¹ Crootof, *supra* note 49, at 1373.

²²² Beard, *supra* note 51, at 65 (quoting Darren M. Stewart, *New Technology and the Law of Armed Conflict: Technological Meteorites and Legal Dinosaurs?*, 87 INT’L L. STUD. 271, 290 (2011)).

²²³ See MIND THE GAP, *supra* note 86 at 2–3, 25.

²²⁴ Rome Statute of the International Criminal Court, *supra* note 201, art. 28(a).

²²⁵ See *supra* text accompanying notes 2–5.

²²⁶ Jessup Fact Pattern, *supra* note 2, ¶ 24.

²²⁷ See, e.g., Hammond, *supra* note 54, at 665 (“[Holding] a commander responsible for an AWS action that he could neither control nor foresee would thus go beyond the traditional scope of command responsibility.”).

²²⁸ See Crootof, *supra* note 49, at 1373 (“To the extent autonomous weapon systems employ artificial neural networks—which are designed to mimic biological neural networks and take action based on varied kinds of inputs—the reason for the resulting action may be opaque even to the system’s designers.”).

²²⁹ Hammond, *supra* note 54, at 667.

dual axes of accountability creates an accountability vacuum. Moreover, coupled with the unpredictable nature of AWS and their potentially discriminatory targeting decisions, these elements suggest that deprivations of life by AWS would be arbitrary in violation of HRL.

CONCLUSION

This Note's analysis of whether human rights law can apply concurrently with international humanitarian law to autonomous weapons systems sheds some light on the legal standards that should govern this next frontier of battlefield technology. To ensure wide protection of individual rights, HRL's conceptualization of the right to life must prevail over IHL to govern the use of lethal force by AWS in armed conflict. Further, the Human Rights Committee's interpretation of the right to life in General Comment 36 indicates that such use of lethal force by fully autonomous weapons systems would constitute arbitrary deprivations of life in violation of HRL.

What are the implications, then, of the conclusion that fully autonomous weapons systems violate the right to life? Certainly, considering the challenges inherent to AI, states that value their human rights commitments cannot currently deploy fully autonomous systems. Rather, if states wish to use these weapons in the future, more attention must be paid to removing bias from machine-learning processes, and creating a system of accountability that ensures that algorithmic decisionmaking will not shield individual actors from liability.

There may be little in the way of stopping the development of these weapons, but continuing discussions on the role of human rights in armed conflict can help protect the ideals of human life and dignity that serve as the underpinnings of both human rights and humanitarian law.