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ARTICLE

WAR TORTS:

ACCOUNTABILITY FOR AUTONOMOUS WEAPONS

REBECCA CROOTOF†

Unlike conventional weapons or remotely operated drones, autonomous weapon systems can independently select and engage targets. As a result, they may take actions that look like war crimes—the sinking of a cruise ship, the destruction of a village, the downing of a passenger jet—without any individual acting intentionally or recklessly. Absent such willful action, no one can be held criminally liable under existing international law.

† Ph.D. Candidate in Law, Yale Graduate School of Arts and Sciences; Resident Fellow, Yale Information Society Project (ISP). Thanks are due to BJ Ard, Jack Balkin, Molly Brady, Kristen Eichensehr, David Grewal, Monica Hakimi, Oona Hathaway, Doug Kysar, Ryan Mitchell, Portia Pedro, Paul Scharre, Amanda Shanor, Scott Shapiro, Shelly Welton, and John Witt for their insights and contributions. Thanks particularly to Alex Bedrosyan and Jen Daskal for numerous substantive and structural suggestions. This Article also benefited from feedback during presentations at the Yale ISP, the American Society of International Law (ASIL) Midyear Research Forum, and the ASIL International Law in Domestic Courts Working Group.

Criminal law aims to prohibit certain actions, and individual criminal liability allows for the evaluation of whether someone is guilty of a moral wrong. Given that a successful ban on autonomous weapon systems is unlikely (and possibly even detrimental), what is needed is a complementary legal regime that holds states accountable for the injurious wrongs that are the side effects of employing these uniquely effective but inherently unpredictable and dangerous weapons. Just as the Industrial Revolution fostered the development of modern tort law, autonomous weapon systems highlight the need for "war torts": serious violations of international humanitarian law that give rise to state responsibility.

INTRODUCTION

"*There can be no justice in war if there are not, ultimately, responsible men and women*."[1]

Imagine a marine autonomous weapon system, armed with torpedoes, designed to patrol within a preset region and attack anything it identifies as an enemy warship. Is anyone liable if it sinks a cruise ship, resulting in the deaths of all aboard? Or envision a mobile, land-based autonomous weapon system, meant to provide force protection, that enters a remote village and kills every man, woman, and child it encounters. Who is responsible for that massacre? On July 17, 2014, Malaysia Airlines flight MH17 was shot down over eastern Ukraine, resulting in the deaths of all 298 individuals on board.[2] Many were quick to argue that this action should have spurred prosecution, either as a war crime under international law or as murder under domestic criminal laws.[3] But if an autonomous weapon system had fired the missile that downed the plane, could anyone be held accountable?

Autonomous weapon systems are fundamentally different from prior forms of weaponry: their capacity for self-determined action makes them uniquely effective and uniquely unpredictable. Unlike conventional weapons or remotely operated drones, an autonomous weapon system can select and engage targets without human direction or oversight.[4] And unlike landmines, trip-wire sentry guns, or other automated weapon systems, autonomous weapon systems do not simply react to preset triggers. Instead, they gather information from their environment and make independent calculations as to

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1 MICHAEL WALZER, JUST AND UNJUST WARS: A MORAL ARGUMENT WITH HISTORICAL ILLUSTRATIONS 288 (2d ed. 1992).

2 *MH17 Malaysia Plane Crash: What We Know*, BBC (Oct. 14, 2015), http://www.bbc.com/ news/world-europe-28357880 [https://perma.cc/8SRB-U9KW].

3 *See, e.g.*, Alexis Flynn, *Will the MH17 Disaster Be Prosecuted as a War Crime?*, WALL ST. J. (July 22, 2014, 12:01 PM), http://blogs.wsj.com/law/2014/07/22/will-the-mh17-disaster-be-prosecuted-as-a-war-crime [https://perma.cc/B3BQ-DXTE]; Kevin Jon Heller, *MH17 Should Be Framed as Murder, Not as a War Crime*, OPINIO JURIS (Aug. 11, 2014, 9:33 AM), http://opiniojuris. org/2014/08/11/mh-17-framed-murder-war-crime [https://perma.cc/HFJ5-EXG7].

4 Rebecca Crootof, *The Killer Robots Are Here: Legal and Policy Implications*, 36 CARDOZO L. REV. 1837, 1842 (2015) [hereinafter Crootof, *Killer Robots*] (defining an "autonomous weapon system" as "a weapon system that, based on conclusions derived from gathered information and preprogrammed constraints, is capable of independently selecting and engaging targets"); *see also* U.S. DEP'T OF DEF., DIRECTIVE NO. 3000.09, AUTONOMY IN WEAPON SYSTEMS 13-14 (2012) (defining "autonomous weapon systems" as ones which, "once activated, can select and engage targets without further intervention by a human operator"). Most drones in operation today are merely semi-autonomous, insofar as they require a human operator both to select and engage targets. Crootof, *Killer Robots*, *supra*, at 1844 n.10.

Contrary to the general consensus, autonomous weapon systems are not some possible futuristic weaponry; rather, they exist and have been integrated into states' armed forces. *Id.* at 1840 (mentioning the examples of China, Russia, South Korea, the United Kingdom and the United States).

how to act.[5] The sheer complexity of autonomous weapon systems' methods for making these determinations may make it impossible for human beings to predict what the systems will do,[6] especially to the extent they operate in complex environments and are subject to various types of malfunction and corruption. More advanced autonomous weapon systems might even "learn" from in-field experiences or make probabilistic calculations.[7]

Given their destructive capacity and their inherent unpredictability, if autonomous weapon systems continue to be fielded, they will inevitably be involved in an accident with devastating and deadly consequences. Assuming that no one intended for the accident to occur or acted recklessly, it is unlikely that any person could be held individually liable under existing international criminal law. By definition, war crimes—serious violations of international humanitarian law that give rise to individual criminal liability[8]—must be committed by a person acting "willfully," which is usually understood as acting intentionally or recklessly.[9] By challenging the presumption that

5 Any attempt to distinguish between automated and autonomous systems based on their level of complexity runs into a line-drawing problem. And yet, the fact that some systems and not others are capable of conducting in-field, program-based, independent analysis does seem to be a relevant distinction, insofar as their actions are not entirely predetermined or predictable. *See id* at 1855-56; *see also* PAUL SCHARRE, AUTONOMOUS WEAPONS AND OPERATIONAL RISK 12 (2016) http://www.cnas.org/sites/default/files/publications-pdf/CNAS_Autonomous-weapons-operational-risk.pdf [https://perma.cc/72G9-CYRB] (describing different categories of autonomy and distinguishing them from the complexity of the system, the level of human supervision, and the task the system is designed to perform).

6 It is tempting to suggest that responsibility for a given action can subsequently be determined by "looking at the code"—but this underestimates the sheer complexity of modern systems. *See, e.g.*, Gary E. Marchant et al., *International Governance of Autonomous Military Robots*, 12 COLUM. SCI. & TECH. L. REV. 272, 284 (2011) ("[P]rograms with millions of lines of code are written by teams of programmers, none of whom knows the entire program; hence, no individual can predict the effect of a given command with absolute certainty, since portions of large programs may interact in unexpected, untested ways.").

7 *See* Ryan Calo, *Robotics and the Lessons of Cyberlaw*, 103 CALIF. L. REV. 513, 538-45 (2015) (discussing robotic "emergence," the ability of robotic systems to adapt to circumstances and "learn" from mistakes).

8 *See, e.g.*, Prosecutor v. Tadić, Case No. IT-94-1-I, Decision on the Defence Motion for Interlocutory Appeal on Jurisdiction, ¶ 94 (Int'l Crim. Trib. for the Former Yugoslavia Oct. 2, 1995), http://www.icty.org/x/cases/tadic/acdec/en/51002.htm [https://perma.cc/KT77-8AFL] (stating that a war crime requires a "serious" violation of international humanitarian law that entails "the individual criminal responsibility of the person breaching the rule"); ANTONIO CASSESE, INTERNATIONAL CRIMINAL LAW 65-66 (3d ed. 2013) (same); *see also Rule 156. Definition of War Crimes*, INT'L COMMITTEE RED CROSS CUSTOMARY INT'L HUMANITARIAN L. DATABASE, https://www.icrc.org/customary-ihl/eng/docs/v1_rul_rule156 [https://perma.cc/E3P3-9LHM] (last visited Apr. 15, 2016) [hereinafter *ICRC Rule 156*] ("[State p]ractice in the form of legislation, military manuals and case-law shows that war crimes are violations committed either by members of the armed forces or by civilians . . . .").

9 *See, e.g.*, INT'L COMM. OF THE RED CROSS, COMMENTARY ON THE ADDITIONAL PROTOCOLS OF 8 JUNE 1977 TO THE GENEVA CONVENTIONS OF 12 AUGUST 1949, at 994 (Yves Sandoz, Christophe Swinarski & Bruno Zimmermann eds., 1987), http://www.loc.gov/rr/frd/Military_Law/pdf/Commentary_GC_Protocols.pdf [https://perma.cc/5XKM-QQYV] [hereinafter ICRC COMMENTARY]; *see also* Prosecutor v. Delalić, Case No. IT-96-21-T, Trial Chamber

serious violations of international humanitarian law will not occur absent willful human action, autonomous weapon systems threaten to destabilize nearly seventy years of efforts to establish international criminal law.

Individual criminal liability for war crimes grew from a deep-seated desire to hold individuals accountable for atrocities and to discourage future occurrences.[10] Criminal law is useful for creating and enforcing prohibitions, and it therefore provides an appropriate liability regime for genocide, slavery, massacres, systematic rape, and other such outrages. But while autonomous weapon systems are capable of committing serious violations of international humanitarian law with tragic consequences, they are too useful to be criminalized. Not only do they offer a seductive combination of distance, accuracy, and lethality, this uniquely effective weaponry may prove to be more "humane" than human beings on the battlefield. Given their inherent value and their attendant risk, what is needed is a legal regime that regulates, rather than prohibits, the use of autonomous weapon systems. Enter tort law.

Oddly, there is no well-developed field of international tort law. Many domestic legal subjects have an international corollary: there is civil rights law and international human rights law, intellectual property law and international intellectual property law, contracts and bilateral trade treaties. But tort law—the legal regime governing those noncontractual civil wrongs for which an individual can seek redress—does not have an obvious international doppelgänger.[11] Environmental lawyers have long been trying to create international tort liability for transnational environmental damage, but their efforts have borne little fruit.[12] Article 75 of the Rome Statute of the

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Judgment, ¶¶ 437, 439 (Int'l Crim. Trib. for the Former Yugoslavia Nov. 16, 1998), http://www.icty.org/x/cases/mucic/tjug/en/981116_judg_en.pdf [https://perma.cc/C5AX-3ZXB].

10 While many attribute this development to the Nuremberg trials, *see, e.g.*, Edoardo Greppi, *The Evolution of Individual Criminal Responsibility Under International Law*, 81 INT'L REV. RED CROSS 531, 536-37 (1999) ("It was only after the Second World War that a movement started up within the international community which clearly began to shape a deeper consciousness of the need to prosecute serious violations of the laws of war, with regard both to the traditional responsibility of States and to the personal responsibility of individuals." (footnotes omitted)), individual criminal liability for violations of the law of war significantly predates Nuremberg, *see infra* subsection I.B.1.

11 *See, e.g.*, Declaration of Kenneth Howard Anderson Jr. at 46, *In re* "Agent Orange" Prod. Liab. Litig., 373 F. Supp. 2d 7 (E.D.N.Y. 2004) (N. 04-400) ("Although international law in narrow circumstances does provide for individual criminal liability, it does not generally provide for civil liability—not even for *individuals, let alone for corporations*."). States, however, may seek compensation from other states for cross-border harms under the law of state responsibility for internationally wrongful acts. *See, e.g.*, Corfu Channel (U.K. v. Alb.), Merits, 1949 I.C.J. Rep. 4, 22 (Apr. 9) (affirming "every State's obligation not to knowingly allow its territory to be used for acts contrary to the rights of other States"); Articles on Prevention of Transboundary Harm from Hazardous Activities, 56 U.N. GAOR Supp. No. 10, at 370, U.N. Doc. A/56/10 (2001), *reprinted in* [2001] 2(2) Y.B. Int'l L. Comm'n 148, U.N. Doc. A/56/10.

12 *See, e.g.*, Noah Sachs, *Beyond the Liability Wall: Strengthening Tort Remedies in International Environmental Law*, 55 UCLA L. REV. 837, 837 (2008) ("Despite decades of effort, the international

International Criminal Court (ICC) provides that the "Court may make an order directly against a convicted person specifying appropriate reparations to, or in respect of, victims."[13] While this marks the first time in the history of international law that individual victims may seek remedies before an international tribunal,[14] the ICC appears unwilling to endorse employing Article 75 to justify tort-like compensation.[15] The U.S. Alien Tort Statute (ATS) is unusual domestic legislation in that it recognizes and creates federal subject matter jurisdiction for the prosecution of individuals for international torts.[16] Scholars have proposed augmenting the ATS to create enterprise or group liability for international torts,[17] but the possibility of tort liability in international law (as opposed to U.S. jurisprudence) remains underexplored.[18]

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community has stumbled in attempts to craft tort remedies for victims of transboundary environmental damage. More than a dozen civil liability treaties have been negotiated that create causes of action and prescribe liability rules, but few have entered into force, and most remain unadopted orphans in international environmental law.").

13 Rome Statute of the International Criminal Court art. 75(2), July 17, 1998, 2187 U.N.T.S. 90.

14 *See* David Donat-Cattin, *Article 75: Reparations to Victims* (noting that all prior regimes had obligated only states to make reparations towards individual victims), *in* COMMENTARY ON THE ROME STATUTE OF THE INTERNATIONAL CRIMINAL COURT 965, 966 (Otto Triffterer ed., 1999).

15 The Trial Chamber issued its first decision discussing reparations in 2012, which the Appeals Chamber amended in March 2015. Prosecutor v. Dyilo, ICC-01/04-01/06, Decision Establishing the Principles and Procedures to be Applied to Reparations (Aug. 7, 2012), https://www.icc-cpi.int/iccdocs/doc/doc1447971.pdf [https://perma.cc/K5BL-G7Z6], *aff'd*, Judgment on the appeals against Decision Establishing the Principles and Procedures to be Applied to Reparations (Mar. 3, 2015), https://www.icc-cpi.int/iccdocs/doc/doc1919024.pdf [https://perma.cc/65TK-7ZF6]. Each opinion provided only for collective remedies, suggesting that the ICC may be more interested in using reparations to promote reconciliation than to provide compensation. *See* LUKE MOFFETT, JUSTICE FOR VICTIMS BEFORE THE INTERNATIONAL CRIMINAL COURT 158 (2014).

16 28 U.S.C. § 1350 (2012) ("The district courts shall have original jurisdiction of any civil action by an alien for a tort only, committed in violation of the law of nations or a treaty of the United States."). However, the international torts for which plaintiffs may sue are limited, *see* Sosa v. Alvarez-Marchain, 542 U.S. 692, 725 (2004), and the Supreme Court has recently held that this statute presumably does not confer jurisdiction over torts that occurred outside the United States unless the claims "touch and concern the territory of the United States" with "sufficient force," Kiobel v. Royal Dutch Shell Petrol., 133 S. Ct. 1659, 1669 (2013) (Kennedy, J., concurring). Moreover, while the ATS provides federal subject matter jurisdiction, plaintiffs suing under the ATS still must independently satisfy personal jurisdiction requirements. *See* Daimler v. Bauman, 134 S. Ct. 746 (2014) (dismissing suit under ATS for lack of personal jurisdiction over foreign defendants).

17 *See, e.g.*, Nilay Vora, *Federal Common Law and Alien Tort Statute Litigation: Why Federal Common Law Can (and Should) Provide Aiding and Abetting Liability*, 50 HARV. INT'L L.J. 195 (2009).

18 *See, e.g.*, Robert Alford, *Apportioning Responsibility Among Joint Tortfeasors for International Law Violations*, OPINIO JURIS (Sept. 1, 2010, 9:25 AM), http://opiniojuris.org/2010/09/ 01/apportioning-responsibility-among-joint-tortfeasors-for-international-law-violations [https://perma .cc/P9JK-ZEXH] (discussing the lack of scholarship on the nexus between international law and domestic torts).

Maya Steinitz, however, has recently undertaken the challenge of arguing for the creation of a permanent International Court of Civil Justice. *See* Maya Steinitz, *The Case for an International Court of Civil Justice*, 67 STAN. L. REV. ONLINE 75 (2014) (previewing a forthcoming book of the same title).

While the reasons for the dearth of scholarship on international tort liability are unclear, two facts are apparent. As evidenced by the varied and extensive ATS litigation in the United States, there is a strong desire to hold entities accountable for actions that fall short of incurring criminal liability. And yet, given the relatively undeveloped nature of the legal structures, states apparently have little interest in creating effective international tort liability regimes. Considering the lack of international tort law, it is not surprising that no one has yet evaluated whether it might be useful in addressing the autonomous weapon systems accountability gap.[19]

However, this accountability gap is precisely the kind of problem tort law is designed to solve.[20] Pressures similar to those that fostered the transformation of domestic tort law over a hundred years ago—the need to create a liability regime for the "stranger cases" resulting from the Industrial Revolution's significant, unintended, machine-caused injuries—are at play again, now in the international sphere.[21] As opposed to criminal law, which focuses on absolute prohibitions, tort law offers a means of regulating valuable but inherently dangerous activities and compensating injurious wrongs.

As is often the case with new technology, autonomous weapon systems expose a gap in the existing legal order. They highlight that, while there is an established (if not necessarily practically effective) means of holding individuals accountable for war crimes, the institutional processes of holding states accountable for their "war torts" are relatively undeveloped. For a variety of reasons, autonomous weapon systems provide an ideal test case for the creation of a new liability regime for war torts; if such a regime proves to be a useful counterpart to international criminal law, states might consider the benefits of further expanding war torts liability.[22]

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19 To the extent those writing on autonomous weapon systems ever discuss tort law, they focus on practical obstacles to enforcement under domestic (usually American) tort law. *See generally* HUMAN RIGHTS WATCH & INT'L HUMAN RIGHTS CLINIC AT HARVARD LAW SCH., MIND THE GAP: THE LACK OF ACCOUNTABILITY FOR KILLER ROBOTS 26-36 (2015), https://www.hrw.org/sites/default/files/reports/arms0415_ForUpload_0.pdf [https://perma.cc/ZZ8R-V7FG] [hereinafter MIND THE GAP]; Benjamin Kastan, *Autonomous Weapons Systems: A Coming Legal "Singularity"?*, 2013 J.L. TECH. & POL'Y 45.

20 *Cf.* Madeline Elish & Tim Hwang, *Praise the Machine! Punish the Human! The Contradictory History of Accountability in Automated Aviation* (Data & Soc'y Research Inst., Working Paper No. 1, 2015), http://www.datasociety.net/pubs/ia/Elish-Hwang_Accountability AutomatedAviation.pdf [https://perma.cc/987C-TPSQ] (discussing how accidents caused by highly automated technologies were integrated relatively seamlessly into existing product liability and tort law regimes).

21 *See, e.g.*, LAWRENCE M. FRIEDMAN, A HISTORY OF AMERICAN LAW 300 (2d ed. 1985); G. EDWARD WHITE, TORT LAW IN AMERICA: AN INTELLECTUAL HISTORY 16 (1980).

22 Michael Reisman proposed a general obligation for states to compensate for unintended injuries to civilians nearly twenty years ago, regardless of whether or not there was a violation of the law of war. *See* W. Michael Reisman, *The Lessons of Qana*, 22 YALE J. INT'L L. 381, 397 (1997); *see also* Yael Ronen, *Avoid or Compensate? Liability for Incidental Injury to Civilians Inflicted During Armed Conflict*, 42 VAND. J. TRANSNAT'L L. 181 (2009) (arguing that states should be held strictly liable

Part I reviews the rise of individual criminal responsibility and discusses how it has largely obscured the role of the law of state responsibility for serious violations of international humanitarian law. Part II describes how, because of their propensity for unpredictable action, autonomous weapon systems 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. Part III proposes that how "war torts"—serious violations of international humanitarian law that give rise to state responsibility—are necessary to balance and complement "war crimes" and considers how autonomous weapon systems may provide an ideal test case for a war torts liability regime.

I. INTERNATIONAL ACCOUNTABILITY IN ARMED CONFLICT

A "war crime" is commonly understood as any serious violation of international humanitarian law, in either an international or non-international armed conflict.[23] This definition encompasses violations of *jus ad bellum* rules,[24] such as the initiation of an aggressive war; violations of customary *jus in bello* rules,[25] which might include intentionally targeting civilians or using weapons indiscriminately; or violations of specific treaty obligations or prohibitions, like mistreating prisoners of war or using chemical weapons.[26]

The legal perpetrators and legal victims of the earliest "war crimes" were states, not individuals.[27] While there are some notable exceptions—the 1305 English trial of Scottish hero Sir William Wallace (of *Braveheart* fame) for waging indiscriminate war and the 1474 Austrian trial of Peter von Hagenbach for

for injuries incurred by civilians in armed conflict). Autonomous weapon systems may create the opportunity and incentive for states to put this idea into practice. *See infra* Section III.B.

23 *ICRC Rule 156*, *supra* note 8 (defining "war crimes" as "[g]rave breaches of the Geneva Conventions"); Rome Statute, *supra* note 13, art. 8(2)(b) & (c) (defining war crimes as "[o]ther serious violations of the laws and customs applicable in international armed conflict," and "[o]ther serious violations of the laws and customs applicable in armed conflicts not of an international character"). The International Committee of the Red Cross observes that violations of the law of war tend to be considered serious, and therefore war crimes, "if they endanger protected persons or objects or if they breach important values." *See ICRC Rule 156*, *supra* note 8 (providing examples).

24 *Jus ad bellum* is the law governing the commencement of hostilities.

25 *Jus in bello* is the law governing the conduct of hostilities.

26 War crimes often coexist with crimes against humanity, which tend to be widespread or systematic practices that target civilian populations and might include massacres, human experimentation, or slavery. *Cf.* Greppi, *supra* note 10, at 549 ("If war crimes and crimes against humanity are now two autonomous, self-sustained categories, it cannot be denied that they are often closely linked in modern conflicts, especially in connection with crimes against the civilian population."). Crimes against the peace, in contrast, tend to be associated with instigating wars of aggression in contravention of the U.N. Charter. U.N. Charter art 2, ¶4; *see also id.* arts. 33, 39, 51.

27 BETH VAN SCHAACK & RON C. SLYE, INTERNATIONAL CRIMINAL LAW 18-19 (2009).

atrocities committed by troops under his command—by and large individuals were not considered criminally liable under international law. Instead, responsible states were liable to other states for reparations and other tort-like remedies.

For the past seventy years, however, international criminal law promoters have been working to create enforceable individual liability for war crimes. They have been successful insofar as the concept of "war crimes" is now intertwined with individual criminal liability: indeed, many now include the requirement of individual liability in their definition of war crime.[28] Meanwhile, at least with regard to serious violations of international humanitarian law, the relevance of state responsibility has been largely obscured.

A. *State Responsibility in Armed Conflicts*

International law originally developed to clarify the rights and obligations of states with regard to other states. The law of state responsibility is one of international law's core legal regimes, on par with the law of treaties or the sources of international legal obligations.[29]

A state responsible for a violation of a legal obligation must "make full reparation for the injury caused by the internationally wrongful act"[30] regardless of the source of the legal obligation, the entity to which it is owed, or the nature or seriousness of the resulting harm. International obligations encompass both treaty and nontreaty obligations: violations of bilateral agreements may seem similar to breaches of contract, while violations of customary or constitutive treaty obligations are more akin to torts or crimes.[31] Tthe law of state responsibility does not distinguish between potential wronged parties: A state may now owe an international legal obligation to

28 *See supra* note 8.

29 After roughly fifty years of work, in 2001 the International Law Commission published draft articles on the law of state responsibility, and commentaries to these articles. G.A. Res. 56/83, annex, Responsibility of States for Internationally Wrongful Acts (Jan. 28, 2002) [hereinafter Draft Articles]; Draft Articles on Responsibility of States for Internationally Wrongful Acts, with commentaries, Int'l Law Comm'n, Rep. on the Work of Its Fifty-Third Session, U.N. Doc. A/56/10 (2001), *reprinted in* [2001] 2 Y.B. Int'l L. Comm'n 26, U.N. Doc. A/CN.4/SER.A/2001/Add.1 (Part 2) [hereinafter Draft Articles Commentaries]. At present, there is no impetus to formalize these articles in a treaty, but they are regularly cited and relied upon by states, tribunals, and civil society as describing the relevant customary rules.

30 Draft Articles, *supra* note 29, art. 31(1); *see also* Factory at Chorzów (Ger. v. Pol.), Claim for Indemnity, 1928 P.C.I.J. (ser. A) No. 17, at 29 (Sept. 13) ("[I]t is a principle of international law, and even a general conception of law, that any breach of an engagement involves an obligation to make reparation."). An "internationally wrongful act" is "an action or omission" that is both "attributable to the State under international law" and "constitutes a breach of an international obligation of the State." Draft Articles, *supra* note 29, art. 2.

31 *Id.* at 55.

individuals, another state, or the international community as a whole. Finally, there is no distinction "between 'civil' and 'criminal' responsibility as is the case in internal legal systems."[32]

States incur numerous positive and negative international humanitarian law obligations, both in peacetime and while engaging in armed conflict.[33] In the absence of an authoritative law enforcer, states are charged with enforcing these obligations: states must prevent, prosecute, and punish violations committed by their nationals or occurring on their territory, and states may even have some duties to ensure that *other* states comply with the Geneva Conventions.

To minimize international humanitarian law violations, states must conduct legal reviews of new weaponry to ensure all fielded weapons are capable of being lawfully used. The obligation to conduct legal reviews, binding on all states under customary law,[34] has also been codified in Additional Protocol I to the 1949 Geneva Conventions.[35] States must also train members of their armed forces in international humanitarian law and disseminate the 1949 Geneva Conventions "as widely as possible."[36]

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32 *See id.* at 111 ("[T]he present articles do not recognize the existence of any distinction between State 'crimes' and 'delicts.'").

33 Common Article 1 to the 1949 Geneva Conventions states, "The High Contracting Parties undertake to respect and to ensure respect for the present Convention in all circumstances." Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field art. 1, Aug. 12, 1949, 6 U.S.T. 3114, 75 U.N.T.S. 31 [hereinafter First Geneva Convention]; Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea art. 1, Aug. 12, 1949, 6 U.S.T. 3217, 75 U.N.T.S. 85 [hereinafter Second Geneva Convention]; Geneva Convention Relative to the Treatment of Prisoners of War art. 1, Aug. 12, 1949, 6 U.S.T. 3316, 75 U.N.T.S. 135 [hereinafter Third Geneva Convention]; Geneva Convention Relative to the Protection of Civilian Persons in Time of War art. 1, Aug. 12, 1949, 6 U.S.T. 3516, 75 U.N.T.S. 287 [hereinafter Fourth Geneva Convention]; *see also* INT'L COMMITTEE RED CROSS CUSTOMARY INT'L HUMANITARIAN L. DATABASE, https://www.icrc.org/customary-ihl/eng/docs/home [https://perma.cc/Q8GU-T2SM] (last visited Apr. 15, 2016) (describing various specific rules).

34 Customary international law prohibits the use of weapons that are by nature indiscriminate or those that cause superfluous injury and suffering. As a result, it can be presumed that states are required to conduct reviews to avoid fielding unlawful weapons. *See* Kathleen Lewand et al., *A Guide to the Legal Review of New Weapons, Means and Methods of Warfare: Measures to Implement Article 36 of Additional Protocol I of 1977*, 88 INT'L REV. RED CROSS 931, 933 (2006) [hereinafter *ICRC Guide to Legal Review*] ("The faithful and responsible application of its international law obligations would require a State to ensure that the new weapons, means and methods of warfare it develops or acquires will not violate these obligations.").

35 Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I) art. 36, June 8, 1977, 1125 U.N.T.S. 3 [hereinafter First Additional Protocol].

36 First Geneva Convention, *supra* note 33, art. 47; Second Geneva Convention, *supra* note 33, art. 48; Third Geneva Convention, *supra* note 33, art. 127; Fourth Geneva Convention, *supra* note 33, art. 144. The obligation to disseminate is reiterated in the two 1977 Additional Protocols. First Additional Protocol, *supra* note 35, art. 83; Protocol Additional (II) to the Geneva Conventions of 12 August 1949,

Additionally, states have a duty to investigate and, if appropriate, prosecute war crimes allegedly committed by their nationals, by their armed forces, or by anyone in their territory or anywhere else over which they exercise jurisdiction. The Geneva Conventions require state parties to search for individuals alleged to have committed grave breaches and either try or extradite them,[37] and similar obligations are found in a number of other international humanitarian law treaties.[38] In keeping with these international obligations, many states provide for the investigation and prosecution of war crimes through national legislation.[39] For these and other reasons, the International Committee of the Red Cross has recognized states' duty to prosecute war crimes as customary international law.[40]

It has long been established in treaty law and international customary law that states are responsible for war crimes committed by members of their armed forces, and this legal requirement has been repeatedly upheld in case law.[41] States party to Additional Protocol I are also responsible for their agents' actions committed in excess of their delegated authority or contrary to instructions.[42] In certain circumstances, states may also be responsible for war crimes committed by nonstate actors. This includes actions of individuals

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and Relating to the Protection of Victims of Non-International Armed Conflicts art. 19, June 8, 1977, 1125 U.N.T.S. 609; *see also Rule 142. Instruction in International Humanitarian Law within Armed Forces*, INT'L COMMITTEE RED CROSS CUSTOMARY INT'L HUMANITARIAN L. DATABASE, https://www.icrc.org/customary-ihl/eng/docs/v1_rul_rule142 [https://perma.cc/T579-V9TT] (last visited Apr. 15, 2016) ("States and parties to the conflict must provide instruction in international humanitarian law to their armed forces.").

37 First Geneva Convention, *supra* note 33, art. 49; Second Geneva Convention, *supra* note 33, art. 50; Third Geneva Convention, *supra* note 33, art. 129; Fourth Geneva Convention, *supra* note 33, art. 146. The ICRC claims that this is a customary law obligation, as the obligation to investigate and punish war crimes is mentioned in numerous military manuals, national legislation, and official statements. *See Rule 158. Prosecution of War Crimes*, INT'L COMMITTEE RED CROSS CUSTOMARY INT'L HUMANITARIAN L. DATABASE, https://www.icrc.org/customary-ihl/eng/docs/v1_rul_rule158 [https://perma.cc/EMJ5-CJBJ] (last visited Apr. 15, 2016).

38 *See, e.g.*, Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction art. VII(1), Jan. 13, 1993, S. Treaty Doc. No. 103-21, 1974 U.N.T.S. 317 [hereinafter Chemical Weapons Convention]; Rome Statute, *supra* note 13, pmbl.

39 *See, e.g.*, War Crimes Act of 1996, 18 U.S.C. § 2441 (2012).

40 *Rule 158. Prosecution of War Crimes*, INT'L COMMITTEE RED CROSS CUSTOMARY INT'L HUMANITARIAN L. DATABASE, https://www.icrc.org/customary-ihl/eng/docs/v1_cha_chapter44_rule158 [https://perma.cc/V389-H745] (last visited Apr. 15, 2016).

41 *See Rule 149. Responsibility for Violations of International Humanitarian Law*, INT'L COMMITTEE RED CROSS CUSTOMARY INT'L DATABASE, https://www.icrc.org/customary-ihl/eng/docs/v1_cha_chapter42_rule149 [https://perma.cc/2P3B-7VEP] (last visited Apr. 15, 2016) [hereinafter *ICRC Rule 149*] (citing sources).

42 *See* First Additional Protocol, *supra* note 35, art. 91 ("A Party . . . shall be responsible for all acts committed by persons forming part of its armed forces."); *see also* Draft Articles Commentaries, *supra* note 29, at 46. The United States, which is not party to the First Additional Protocol, maintains that a state is not responsible for "private" acts of its armed forces under customary law, unless it can be shown that there was inadequate supervision or training. *See ICRC Rule 149*, *supra* note 41.

or entities empowered to exercise governmental authority, actions of individuals or entities who act under a state's direction or control, and actions of private individuals or entities which the state acknowledges and adopts as its own.[43]

Despite being a foundational concept in international law, state responsibility for serious violations of international humanitarian law is at risk of being eclipsed by the rise of individual criminal liability.

B. *The Rise of Individual Criminal Liability*

Notwithstanding the ongoing existence of state responsibility for serious violations of international humanitarian law, the past seventy years have witnessed the dramatic rise of individual liability for war crimes. This once nonexistent legal concept is now "the unchallenged cornerstone of the entire edifice of international criminal law."[44]

1. Historic Foundations

Despite the adage about love and war, there is a longstanding desire to hold individuals accountable for their actions in armed conflicts. As early as 1386, domestic laws limited what individual actions were permissible.[45] U.S. Secretary of War William Marcy and U.S. Major General Winfield Scott built "a general principle of individual criminal liability for violations of the law of war" in late 1847.[46] The 1863 Lieber Code—one of the first and most internationally influential codifications of the law of war—prohibited various activities, including "wanton violence committed against persons in the invaded country, all destruction of property . . . , all robbery, all pillage or sacking [and] all rape, wounding, maiming or killing of such inhabitants."[47]

The first treaty codification of individual criminal liability can be found in the work of 1874 Brussels Conference on the Rules of Military Warfare. Attended by fifteen countries, this Conference produced a Draft International Convention on the Laws and Customs of War, section III of which provided:

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43 Draft Articles, *supra* note 29, arts. 5, 8, 11.

44 Christian Tomuschat, *The Legacy of Nuremberg*, 4 J. INT'L CRIM. JUST. 830, 840 (2006).

45 Greppi, *supra* note 10, at 531 (discussing limitations in English, Hungarian, and Swedish laws).

46 JOHN FABIAN WITT, LINCOLN'S CODE: THE LAWS OF WAR IN AMERICAN HISTORY 130 (2012).

47 FRANCIS LIEBER, U.S. WAR DEP'T, INSTRUCTIONS FOR THE GOVERNMENT OF ARMIES OF THE UNITED STATES IN THE FIELD art. 44 (1898) [hereinafter LIEBER CODE]; *see also id.* art. 47 (endorsing punishment for crimes "punishable by all penal codes," such as arson, murder, assault, and rape, "if committed by an American soldier in a hostile country against its inhabitants"). These humanitarian rules, however, were often swallowed by the military necessity exception, *see id.* arts. 14-16, 38, which has been characterized as "[t]he master principle that animated the code" and "a robust license to destroy." WITT, *supra* note 46, at 234.

> The laws and customs of war forbid not only unnecessary cruelty and acts of barbarism committed against the enemy; they demand also, on the part of the appropriate authorities, the immediate punishment of these persons who are guilty of these acts, if they were not caused by absolute necessity.[48]

The 1919 Versailles Peace Treaty similarly attempted to establish individual criminal responsibility.[49] Articles 227 and 228 asserted the Allied and Associated Powers' right to establish military tribunals to try and punish the former German Emperor and other "persons accused of having committed acts in violation of the laws and customs of war."[50] However, by the time the Versailles Treaty entered into force, the Kaiser had relocated to the Netherlands, which refused to extradite him for trial.[51] Nor were the Allies successful in prosecuting other individuals under Article 228.[52]

As it marked the first time individuals were held liable for violating international humanitarian law, Nuremberg is commonly regarded as the fount of individual criminal responsibility. The Charter of the International Military Tribunal at Nuremberg explicitly recognized individual criminal liability for crimes against peace, war crimes, and crimes against humanity.[53] The Nuremberg trials created an important judicial precedent of holding individuals accountable for actions in violation of international humanitarian law, and shortly thereafter the U.N. General Assembly recognized the "Nuremberg Principles" as preexisting customary international law deserving of formal codification.[54] The first of these Principles, codified in 1950 by the International Law Commission, states that "any person who commits an act which constitutes a crime under international law is responsible therefor and liable to punishment."[55]

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48 ACTES DE LA CONFÉRENCE DE BRUXELLES DE 1874: SUR LE PROJET D'UNE CONVENTION INTERNATIONALE CONCERNANT LA GUERRE: PROTOCOLES DES SCÉANCES PLÉNIÈRES, PROTOCOLES DE LA COMMISSION DÉLEGUÉE PAR LA CONFÉRENCE, ANNEXES 4 (Paris, Librairie des publications législatives 1874). This Draft Convention was signed by fifteen states, but it was never ratified.

49 *See* Simeon E. Baldwin, *The Proposed Trial of the Former Kaiser*, 29 YALE L.J. 75 (1919) (discussing the novelty of individual liability in international law).

50 Treaty of Peace with Germany (Treaty of Versailles) arts. 227-28, June 28, 1919, 225 Parry's T.S. 189 [hereinafter Versailles Peace Treaty].

51 VAN SCHAACK & SLYE, *supra* note 27, at 24.

52 *Id.* at 24-25.

53 Charter of the International Military Tribunal art. 6, Aug. 8, 1945, 59 Stat. 1546, 82 U.N.T.S. 284.

54 G.A. Res. 95 (I), Affirmation of the Principles of International Law recognized by the Charter of the Nuremberg Tribunal (Dec. 11, 1946).

55 Principles of International Law Recognized in the Charter of the Nürnberg Tribunal and in the Judgment of the Tribunal, Int'l L. Comm'n, Rep. on the Work of Its Second Session, U.N. Doc. A/CN.4/L.2 (1950), *reprinted in* [1950] 2 Y.B. Int'l L. Comm'n 181, U.N. Doc. A/CN.4/22.

Since Nuremberg, states and international organizations have codified specific war crimes and created obligations for domestic enforcement,[56] tried individuals in domestic courts,[57] and established a variety of international and hybrid criminal tribunals.[58] These efforts culminated with the Rome Statute establishing the ICC, which entered into force on July 1, 2002.[59] Unlike other tribunals, which are temporary institutions with retrospective jurisdiction,[60] the ICC is a permanent court with prospective jurisdiction.[61] The ICC is meant to operate in conjunction with national courts: it can exercise jurisdiction only if states are unwilling or unable to carry out criminal proceedings against alleged perpetrators.[62]

For roughly seventy years, international criminal law has been developing a theory of individual liability for war crimes and creating law, institutions, and enforcement mechanisms to give this theory teeth. While these enforcement mechanisms are far from perfect—the ICC in particular is often the subject of mockery and complaint—they are significantly more robust than at any other time in human history.

2. The Performative Function of Criminal Law

In 1865, during the American Civil War, Confederate Captain Henry Wirz was accused of mistreating and killing Union prisoners of war in violation of the laws and customs of war.[63] In his defense, Wirz maintained that he was simply working with what he had:

> I do not think that I ought to be held responsible for the shortness of rations, for the overcrowded state of the prison, (which was of itself a prolific source of fearful mortality), for the inadequate supply of clothing, want of shelter,

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56 *See, e.g.*, First Geneva Convention, *supra* note 33, art. 46 (obligating parties to "ensure the detailed execution of" this Geneva Convention); Convention on the Prevention and Punishment of the Crime of Genocide art. V, Dec. 9, 1948, 102 Stat. 3045, 78 U.N.T.S. 277 (mandating that parties to the treaty to "undertake to enact" domestic legislation effectuating the Genocide Convention).

57 *See, e.g.*, CA 40/61 Att'y Gen. of the Gov't of Isr. v. Eichmann 16 PD 2033 (1962) (Isr.) (prosecuting a Nazi war criminal in Israeli domestic courts).

58 These include the International Criminal Tribunal for the former Yugoslavia (est. 1993), the International Criminal Tribunal for Rwanda (est. 1994), and the hybrid courts in East Timor (est. 2002), Sierra Leone (est. 2002), and Cambodia (est. 2003).

59 Rome Statute, *supra* note 13.

60 For example, the International Criminal Tribunal for the Former Yugoslavia was established to prosecute atrocities committed in the former Yugoslavia after 1991. S.C. Res. 827 (May 25, 1993).

61 Rome Statute, *supra* note 13, art. 17.

62 *Id.*

63 JOHN MCELROY, ANDERSONVILLE: A STORY OF REBEL MILITARY PRISONS, FIFTEEN MONTHS A GUEST OF THE SO-CALLED SOUTHERN CONFEDERACY; A PRIVATE SOLDIER'S EXPERIENCE IN RICHMOND, ANDERSONVILLE, SAVANNAH, MILLEN, BLACKSHEAR AND FLORENCE 639-44 (1879).

> etc., etc . . . . [I] was only the medium, or, I may better say, the tool in the hands of my superiors.[64]

After his conviction, Captain Wirz was sentenced to death by hanging.[65] Standing on the gallows, he allegedly remarked to the officer in charge, "I know what orders are, Major. I am being hanged for obeying them."[66]

Why create individual criminal liability for serious violations of international humanitarian law, especially for persons acting on behalf of a state or armed group? Often, members of a military are only following their superiors' orders—indeed, in some cases subordinates can be severely (even fatally) punished by their superiors should they disobey. As evidenced by Captain Wirz's experience, the creation of individual criminal liability for certain violations of international humanitarian law often results in soldiers being caught between a rock and a hard place: they are damned under international law if they do follow orders and participate in the commission of illegal acts, and they are damned by their superiors if they don't.

One possible reason for the recent rise of international criminal law is that it serves a performative function that other forms of liability do not. Tort and criminal law were originally understood to be two branches of the single legal subject of wrongs, and both aim to reinforce social norms and to deter future unlawful activity through sanctions.[67] But whereas tort law is also concerned with compensating individual victims, criminal law is more focused with retribution and expressive justice.[68] Many agree with Blackstone that crimes demand punishment, whereas torts usually require only recompense, in part because crimes "strike at the very being of society; which cannot possibly subsist, where actions of this sort are suffered to escape with impunity."[69]

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64 Letter from Henry Wirz, Captain, Confederate Army, to James H. Wilson, Major General, Union Army (May 7, 1865), *reproduced in* MCELROY, *supra* note 63, at 639, 640.

65 MCELROY, *supra* note 63, at 644.

66 PAUL J. SPRINGER & GLENN ROBINS, TRANSFORMING CIVIL WAR PRISONS: LINCOLN, LIEBER, AND THE POLITICS OF CAPTIVITY 80 (2014).

67 1 JOHN AUSTIN, LECTURES ON JURISPRUDENCE, OR, THE PHILOSOPHY OF POSITIVE LAW 517 (Robert Campbell ed., 3d ed. 1869) ("*All* wrongs [are] in their *remote* consequences *generally* mischievous . . . .").

68 *See, e.g.*, John C. Coffee, Jr., *Does "Unlawful" Mean "Criminal"?: Reflections on the Disappearing Tort/Crime Distinction in American Law*, 71 B.U. L. REV. 193, 194 (1991) ("Far more than tort law, the criminal law is a system for public communication of values."); Kenneth W. Simons, *The Crime/Tort Distinction: Legal Doctrine and Normative Perspectives*, 17 WIDENER L.J. 719, 719-25 (2008) (discussing structural and normative distinctions between criminal and tort law); *id.* at 721 ("[N]ormally, compensation is the remedy, whatever the nature of the tort or wrong."); *cf.* Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1124-27 (1972) (discussing, in the context of rape and thievery, how criminal sanctions are used to prevent the conversion of property rules into liability rules).

69 4 WILLIAM BLACKSTONE, COMMENTARIES *5. *But see* AUSTIN, *supra* note 67, at 196 ("*All* offences affect the community, and *all* offences affect individuals.").

The need for expressive, post hoc justice is particularly acute in the context of international humanitarian law, especially as the possibility of enforcement through reciprocity and reprisals has diminished.[70] As has been observed in a variety of ways, war is hell.[71] And yet, even in war, there is a sense that certain things are not done, that certain lines cannot be crossed.[72] Historically, states enforced these norms through reciprocity and reprisals. Reciprocity is the idea that one side need comply with the laws of war only if the other side does; reprisals are proportional and responsive violations of the law of war intended to force the other party to a conflict to resume compliance with international law.[73] For example, if state *A* tortures prisoners of war (POWs), state *B* could respond in kind, both in reciprocity and as a reprisal. The Lieber Code acknowledged the importance of reciprocal action: "The law of war can no more wholly dispense with retaliation than can the law of nations, of which it is a branch."[74] Similarly, early law of war treaties often explicitly conditioned their requirements on reciprocal observance.[75]

Today, however, reprisal against innocents, civilians, noncombatants, and wounded or captured soldiers has been outlawed,[76] and modern international humanitarian law treaties have largely dispensed with the reciprocity requirement (and for good reason!).[77] Like human rights treaties, they now obligate state parties' compliance without regard to how other states act[78]: If state *A* tortures POWs, state *B* is not free to do so.

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70 This account implies that international criminal liability arose to fill a gap left by the decline of reciprocity as a means of enforcement and deterrence; others have suggested that burgeoning international criminal law actually displaced reciprocity and now undermines it. *See* Kenneth Anderson, *The Rise of International Criminal Law: Intended and Unintended Consequences*, 20 EUR. J. INT'L L. 331, 340-43 (2009) [hereinafter Anderson, *Rise of International Criminal Law*].

71 *See, e.g.*, E. E. CUMMINGS, *plato told*, *in* SELECTED POEMS BY E. E. CUMMINGS 145, 145 (Richard S. Kennedy ed. 1944).

72 Granted, those lines were often drawn in ways that now seem quite disturbing. *See, e.g.*, JEAN-JACQUES FRÉSARD, INT'L COMM. OF THE RED CROSS, THE ROOTS OF BEHAVIOUR IN WAR: A SURVEY OF THE LITERATURE 22 (2004), https://www.icrc.org/eng/assets/files/other/icrc_002_0854.pdf [https://perma.cc/5XP6-HWVS] ("Religions themselves are the first to specify, more or less explicitly, that the injunction [not to kill] concerns above all *our people*. The others, the 'unbelievers,' infidels and apostates, may be run through by the swords of men when they are not simply delivered up to the sword of God.").

73 *See* Anderson, *Rise of International Criminal Law*, *supra* note 70, at 340-43 (discussing different theories of reciprocity); Sean Watts, *Reciprocity and the Law of War*, 50 HARV. INT'L L.J. 365, 382-86 (2009) (comparing and contrasting reciprocity and reprisals).

74 LIEBER CODE, *supra* note 47, art. 27; *see also id.* arts. 61-62 (emphasizing the propriety of reciprocation in the context of quartering troops).

75 Watts, *supra* note 73, at 367.

76 Anderson, *Rise of International Criminal Law*, *supra* note 70, at 340.

77 *But see* Watts, *supra* note 73, at 417-30 (arguing that, although the principle of reciprocity has softened and altered, it is still fundamental to the operation of international humanitarian law).

78 *Cf.* Lea Brilmayer, *From 'Contract' to 'Pledge': The Structure of International Human Rights Agreements*, 77 BRIT. Y.B. INT'L L. 163 (2006).

Reciprocity and reprisals were effective, if draconian, deterrent and enforcement mechanisms.[79] In the wake of their decline, there is a greater need to entrench norms of conduct in armed conflict and to create disincentives to violate them. Criminal law is well suited to this task: unlike tort liability, which sometimes seems to merely ascribe a price to or "license" certain actions, criminal law has a morally expressive element. Crimes can be justly punished because they are blameworthy actions; torts and breaches of contract are (relatively) morally neutral.

In addition to providing an incentive to adhere to the norms of armed conflict, punishment of war criminals also restores dignity to victims. Violations of individual rights "conveys a message that the victim's rights are not sufficiently important to refrain from violating them in pursuit of another goal,"[80] and punishment of a violation rights the scales by "send[ing] the message that the lives and rights of victims have value."[81] Developing accountability mechanisms and providing remedies to victims motivated the U.N. General Assembly to adopt the Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law.[82]

The creation of criminal liability for war crimes implied the development of international *individual* criminal liability.[83] As Michael Walzer famously observed, "If there are recognizable war crimes, there must be recognizable criminals."[84] While a state may be responsible for war crimes, it cannot stand as a criminal defendant.[85] A state does not have the mens rea required for

79 *See, e.g.*, Watts, *supra* note 73.

80 DINAH SHELTON, REMEDIES IN INTERNATIONAL HUMAN RIGHTS LAW 21 (3d ed. 2015).

81 MIND THE GAP, *supra* note 19, at 14.

82 G.A. Res. 60/147, pmbl. (Mar. 21, 2006) [hereinafter Basic Principles].

83 In domestic law, entities like corporations may be held criminally liable. *See* V.S. Khanna, *Corporate Criminal Liability: What Purpose Does It Serve?*, 109 HARV. L. REV. 1477 (1996) (noting the rise in corporate criminal liability in the 1980s and 1990s). This poses a theoretical puzzle: How is it possible to determine the mens rea of a corporation? Different justifications have been floated, but many question whether it is ever appropriate to hold a corporation criminally liable. *See, e.g.*, *id.* at 1532-34 (concluding that a modified form of corporate civil liability would be practically and normatively preferable to corporate criminal liability).

84 WALZER, *supra* note 1, at 287.

85 Certain members of the International Law Commission attempted, and failed, to establish "state crimes"—crimes for which the state would be the direct subject of criminal liability. This concept was eventually abandoned. Rebecca J. Hamilton, *State-Enabled Crimes*, 41 YALE J. INT'L L. (forthcoming 2016) (manuscript at 12), http://papers.ssrn.com/sol3/papers.cfm?abstract _id=2647425 [https://perma.cc/SL4Z-XMC8]. *But see* NINA H. B. JØRGENSEN, THE RESPONSIBILITY OF STATES FOR INTERNATIONAL CRIMES 208-33 (2000) (arguing that the concept of "state crimes" has never fully disappeared). *See generally* INTERNATIONAL CRIMES OF STATE: A CRITICAL ANALYSIS OF THE ILC'S DRAFT ARTICLE 19 ON STATE RESPONSIBILITY (Joseph H. H. Weiler, Antonio Cassese & Marina Spinedi eds., 1989) (providing an overview of the state crimes debate).

criminal liability, nor can it be punished with traditional criminal sanctions, like imprisonment or capital punishment. The Confederate States of America could not be hung for failure to comply with international humanitarian law; Captain Wirz could.[86]

C. *The Unnecessary Displacement of State Responsibility*

Ever since Nuremberg, and with the aim of eliminating (or at least stigmatizing and minimizing) war crimes, international criminal law proponents have been working to create and strengthen an international legal regime that holds individuals accountable for war crimes they commit or could have prevented. While the development of international criminal law is laudable, the tendency of some to treat individual criminal accountability as the sole remedy to violations of international humanitarian law is a mistake.[87] Although certain war crimes may be committed by individuals, wars "are fought between political communities and by groups."[88] Focusing on individual criminal liability tends to obscure the fact that states remain legally responsible for serious violations of international humanitarian law.[89]

The law of state responsibility is rarely discussed or enforced with regard to serious violations of international humanitarian law, even though most such violations would be more appropriately attributed to the state than to individuals.[90] This is hardly accidental: rather, "[t]he history of the Draft

86 *See* Draft Articles Commentaries, *supra* note 29, at 111 (noting the obsolescence of the concept of "international crimes of state"). *But see* JØRGENSEN, *supra* note 85, at 167-207 (arguing that states should be held criminally responsible under a criminal organization model or a corporate crime model and sanctioned with declaratory judgments and punitive damages).

87 *See* Anderson, *Rise of International Criminal Law*, *supra* note 70, at 346 ("[T]he attention focused by international criminal law on individual criminal liability has the unintended consequence of reducing attention to the rest of the laws of war—the corpus of the laws of war *not* devoted to liability at all, let alone criminal liability for individuals.").

88 *Id.* at 346.

89 *See, e.g.*, JØRGENSEN, *supra* note 85, at 27 ("[I]ndividual criminal responsibility under international law for acts of state became well established while state criminal responsibility, although a key issue, was increasingly viewed as an unworkable concept, and consequently took a back seat."); Laurel E. Fletcher, *A Wolf in Sheep's Clothing: Transitional Justice and the Effacement of State Accountability for International Crimes*, 39 FORDHAM INT'L L.J. 447, 447 (2016) (observing that "[t]he rise of international criminal law is celebrated as an achievement of the international rule of law, yet its advance effectively may come at the expense of holding States accountable for their role in mass violence"); Hamilton, *supra* note 85 (arguing that international criminal law inappropriately bifurcates state and individual responsibility for war crimes); André Nollkaemper, *Introduction* to SYSTEM CRIMINALITY IN INTERNATIONAL LAW 1, 5 (Harmen van der Wilt & André Nollkaemper eds., 2009) (discussing how "[t]he emphasis on individual responsibility obscures a basic truth about war crimes," namely, that they are often fostered by the controlling collective entity).

90 *See* Anderson, *Rise of International Criminal Law*, *supra* note 70, at 347 ("The whole body of law [of war] covers many matters which are not, on their surface, very usefully made a matter of individual criminal liability.").

Articles [of State Responsibility] illustrates how States jealously policed the boundaries of international criminal accountability. They curtailed acknowledgement that States may commit acts categorized as international crimes with the formal legal opprobrium that comes with criminal responsibility."[91] This differing level of commitment to ensuring accountability for individuals and states is reflected by the differing institutional enforcement mechanisms:

> While [international criminal law] is salient in the public imagination, with a list of shiny new institutions that have facilitated its rise to prominence, the law of State responsibility has been developing with comparatively little fanfare. The International Court of Justice (ICJ) and regional human rights courts have jurisdiction over the law of State responsibility for international crimes. But these mechanisms face significant limitations, both legal and political, when it comes to the adjudication of the State's role . . . .[92]

There is no need for international criminal law to eclipse the law of state responsibility. Not only can the two legal regimes symbiotically coexist,[93] but a better understanding of their respective strengths would allow them to augment and support each other. Consider Captain Wirz's trial for POW camp conditions. If he had truly been doing the best with what he had, it was unjust to brand him a war criminal—doing so actually detracts from the moral legitimacy of international criminal law. Instead, the Confederate States should have been held responsible and required to make reparations. If, however, Captain Wirz took a sadistic glee in torturing and killing Union prisoners, it was appropriate to hold him personally responsible for war crimes. Nor are these two possibilities mutually exclusive: Captain Wirz could be charged and punished for his war crimes, and the Confederate States could be held responsible both for camp conditions and to the extent the States enabled his crimes.[94]

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[91] Fletcher, *supra* note 89, at 475.

[92] Hamilton, *supra* note 85, at 17; *see also* Fletcher, *supra* note 89, at 460 ("[W]e have a fully articulated system of international criminal law, while there is no parallel system to enforce State responsibility for the same violations.").

[93] In the Geneva Conventions, state responsibility is recognized as existing in conjunction with individual criminal responsibility. *See* First Geneva Convention, *supra* note 33, art. 51; Second Geneva Convention, *supra* note 33, art. 52; Third Geneva Convention, *supra* note 33, art. 131; Fourth Geneva Convention, *supra* note 33, art. 148.

[94] *Cf.* Hamilton, *supra* note 85 (arguing for the recognition of "state-enabled crimes"—crimes that could not have occurred without the state playing an integral role).

The rise of individual criminal responsibility has had the unfortunate side effect of eclipsing the role of the law of state responsibility for serious violations of international humanitarian law. Institutions for holding individuals accountable for war crimes have flowered, while institutional approaches to holding states accountable for their internationally wrongful acts in armed conflicts have stagnated. Although some have expressed concern at this apparent tradeoff,[95] up until now it has not been obviously problematic. Because they may take unpredictable action, however, autonomous weapon systems break the causal chain necessary for individual criminal liability and thereby highlight the relative lack of institutional means of holding states responsible for serious violations of international humanitarian law.

II. THE ACCOUNTABILITY GAP

Science fiction writers have long hypothesized that autonomous weapon systems may destroy human values, human independence, or even all of humanity—for the purposes of this Article, I am merely concerned with the threat they pose to international criminal law. Autonomous weapon systems challenge a presumption that undergirds all of international criminal law: that serious violations of international humanitarian law will not occur absent willful human action. In situations where no one acts intentionally or recklessly, under current law no one—not the deployer, commander, programmer, developer, manufacturer, or the weapon system itself—can (or should) be held criminally liable for the deadly consequences of an autonomous weapon systems' unanticipated actions.

A. *Introducing Autonomous Weapon Systems*

Autonomous weapon systems "have been described as the third revolution in warfare, after gunpowder and nuclear arms."[96] A former U.S. Major General states that "[f]ull lethal autonomy is no mere next step in military strategy: It will be the crossing of a moral Rubicon."[97] The conglomerate nongovernmental organization Campaign to Stop Killer Robots was formed

95 *See, e.g.*, *id*.

96 Stuart Russell, *Take a Stand on AI Weapons*, 521 NATURE 415, 415 (2015).

97 Robert H. Latiff & Patrick J. McCloskey, *With Drone Warfare, America Approaches the Robo-Rubicon*, WALL ST. J. (Mar. 14, 2013, 7:37 PM), http://www.wsj.com/news/articles/SB10001424127887324128504578346333246145590 [https://perma.cc/C67E-SKNP].

recently for the sole purpose of promoting a ban on such weaponry.[98] But what are autonomous weapon systems, and what makes them so terrifying?

1. The Killer Robots Are Here

An "autonomous weapon system" is "a weapon system that, based on conclusions derived from gathered information and preprogrammed constraints, is capable of independently selecting and engaging targets."[99] Unlike the semi-autonomous drones in use today, which may have some autonomous functions but are essentially remotely piloted bombers, autonomous weapon systems can operate without a human "in" or "on" the loop.[100] Autonomous weapon systems should also be distinguished from automated weapons, like rudimentary landmines or trip-wire sentry guns. In contrast to these purely reactive systems, autonomous weapon systems gather and process data from their environment to reach independent conclusions about how to act.[101]

Autonomous weapon systems are far from fictional or futuristic: several countries are already fielding weapon systems with varying levels of autonomy and lethality.[102] For example, the U.S. Navy's Aegis control system, operated in conjunction with U.S. Phalanx Close In Weapons Systems (CIWS), provides a last-ditch defense against anti-ship missiles and aircraft.[103] Aegis has four modes, the last of which presumes that all human operators are incapacitated and independently identifies and engages incoming threats.[104] The navies of at least thirty states are currently using Aegis/CIWS and similar systems.[105] The South Korean SGR-A1 is a stationary, armed robot used to monitor the demilitarized zone. Allegedly, it has an operating mode under which it can select and engage targets with no

98 *See About Us*, CAMPAIGN TO STOP KILLER ROBOTS, https://www.stopkillerrobots.org/about-us/ [https://perma.cc/CNJ8-ZRX3] (last visited Apr. 16, 2016) ("[L]aunched in London in April 2013, the Campaign . . . work[s] to preemptively ban fully autonomous weapons.").

99 Crootof, *Killer Robots*, *supra* note 4, at 1842.

100 *See id.* at 1855-63 (distinguishing between autonomous and semi-autonomous weapon systems).

101 *See id.* at 1855-56 (distinguishing between autonomous and automated weapon systems and discussing the difficulty and usefulness of drawing a line in the sand between them).

102 *See, e.g.*, *id.* at 1868-72 (describing existing autonomous weapon systems).

103 John Pike, *MK 15 Phalanx Close-In Weapons System (CIWS)*, FED'N AM. SCIENTISTS, http://www.fas.org/man/dod-101/sys/ship/weaps/mk-15.htm [https://perma.cc/QW9Y-MXMV] (last updated Jan. 9, 2003).

104 *See* Marchant et al., *supra* note 6, at 287 (describing this "casualty" setting of the Aegis, according to which the system "does what it thinks is necessary to save the ship").

105 Paul Scharre & Michael C. Horowitz, An Introduction to Autonomy in Weapon Systems 12 (Feb. 13, 2015) (unpublished working paper), http://www.cnas.org/sites/default/files/publications-pdf/Ethical%20Autonomy%20Working%20Paper_021015_v02.pdf [https://perma.cc/P422-K2XW].

human oversight (although it does not appear to be used in that mode).[106] The Israeli Harpy Loitering Weapon is an airborne weapon designed to identify and destroy enemy radar emitters.[107] Unlike most fire-and-forget missiles, "[t]he person launching the Harpy does not known [sic] which particular radars are to be engaged, only that radars that meet the Harpy's programmed parameters will be engaged."[108] Instead, it independently selects and attempts to destroy targets. Russia and China are both employing PMK-2 encapsulated torpedo mines, "a type of sea mine that, when activated by a passing ship, instead of exploding, open [sic] a capsule which then releases a torpedo that engages a target."[109] For practical and strategic reasons, the vast majority of autonomous weapon systems in use today are being employed with human supervision, but they are nonetheless capable of independently selecting and engaging targets.[110]

Both advocates and critics of a ban on autonomous weapon systems often assume that such weaponry does not yet exist.[111] If these writers are discussing what they term "fully" autonomous weapon systems—usually defined as weapon systems with human-level cognitive capabilities or ones that are not capable of being controlled by a human operator—their assessment is correct. Artificial intelligence has not advanced to the point that robots have human-level cognition, and militaries have not fielded weapons that are incapable of being controlled (nor are they ever likely to do so). But while these distinctions are important in designing regulations, they are irrelevant to the question of whether a weapon system is autonomous. If a weapon has the capability to

106 *Samsung Techwin SGR-A1 Sentry Guard Robot*, GLOBALSECURITY.ORG, http://www.globalsecurity.org/military/world/rok/sgr-a1.htm [https://perma.cc/9PJ8-D885] (last updated Nov. 7, 2011).

107 *Harpy Loitering Weapon*, ISR. AEROSPACE INDUSTRIES, www.iai.co.il/2013/36663-45984-EN/Groups.aspx [https://perma.cc/YK3G-YB5B] (last visited Apr. 15, 2016).

108 Paul Scharre, *Autonomy, "Killer Robots," and Human Control in the Use of Force—Part I*, JUST SECURITY (July 9, 2014, 11:17 AM), http://justsecurity.org/12708/autonomy-killer-robots-human-control-force-part [https://perma.cc/EE2E-J57B].

109 *Id.*

110 *See* Werner J.A. Dahm, *Killer Drones Are Science Fiction*, WALL ST. J. (Feb. 15, 2012), http://www.wsj.com/articles/SB10001424052970204883304577221590015475180 [https://perma.cc/3X2P-XGZQ] ("[I]t's not technology that has held us back from fully autonomous military strikes—from a purely technical perspective, it has been possible for some time to conduct them.").

111 *See, e.g.*, HUMAN RIGHTS WATCH & INT'L HUMAN RIGHTS CLINIC, HARVARD LAW SCH., LOSING HUMANITY: THE CASE AGAINST KILLER ROBOTS 46 (2012), http://www.hrw.org/sites/default/files/reports/arms1112ForUpload_0_0.pdf [https://perma.cc/YUQ8-WKYH] ("Although fully autonomous weapons do not exist yet, technology is rapidly moving in that direction."); Michael N. Schmitt & Jeffrey S. Thurnher, *"Out of the Loop": Autonomous Weapon Systems and the Law of Armed Conflict*, 4 HARV. NAT'L SECURITY J. 231, 234 (2013) ("[A]n outright ban is premature since no such weapons have even left the drawing board.").

independently select and engage targets, whether it does so is a question of how it is used, not whether autonomous weapon systems exist.[112]

2. . . . And More Are Coming

Classically, militaries have had little use for unpredictable weapons or ones that could not be controlled,[113] doomsday device arguments notwithstanding.[114] In fact, many attribute the success of bans on chemical and biological weapons to their indiscriminate nature—not because indiscriminate weapons are unlawful, but rather because they endanger one's own troops and therefore are a less preferable option.[115] Similarly, some have argued that military codes, rules of engagement, and even international humanitarian law developed as commanders attempted to better control the most autonomous of weapons—human beings.[116] Because of the military's interest in foreseeable results, one may credibly suggest that states will have little incentive to develop, let alone deploy, potentially unpredictable autonomous weapon systems.[117] For example, the South Korean Super aEgis II, a gun-toting stationary robot, was originally designed to fire

112 *See* Crootof, *Killer Robots*, *supra* note 4, at 1861-62 (distinguishing between autonomous capability and autonomous use).

113 Indiscriminate weapons are those which cannot be directed at a military objective or those whose effects cannot be controlled. There is a customary international law prohibition on the fielding of indiscriminate weapons, *see Rule 71. Weapons That Are by Nature Indiscriminate*, INT'L COMMITTEE RED CROSS CUSTOMARY INT'L HUMANITARIAN L. DATABASE, https://www.icrc.org/customary-ihl/eng/docs/v1_cha_chapter20_rule71 [https://perma.cc/H4KG-BFMG] (last visited Apr. 15, 2016), which serves both a humanitarian and practical purpose.

114 A "doomsday device" is any technology that could destroy all life on a planet or the planet itself; its usefulness depends largely on its capability to deter war. Much of the Cold War military strategy depended on this risk of mutually assured destruction, and many classics of science fiction are grounded on this concept. *See, e.g.*, MORDECAI ROSHWALD, LEVEL 7 (1959); KURT VONNEGUT, CAT'S CRADLE (1963); DR. STRANGELOVE OR: HOW I LEARNED TO STOP WORRYING AND LOVE THE BOMB (Columbia Pictures 1964).

115 *See, e.g.*, Mark J. Osiel, *Obeying Orders: Atrocity, Military Discipline, and the Law of War*, 86 CALIF. L. REV. 939, 992 n.199 (1998) ("According to 'realists,' the international community bans weapon systems only after discovering them to be largely ineffective or obsolete . . . ."). The United States, for example, unilaterally renounced its biological weapons research after concluding they were of limited military effectiveness. Bonnie Docherty, *The Time is Now: A Historical Argument for a Cluster Munitions Convention*, 20 HARV. HUM. RTS. J. 53, 60 (2007).

116 *See generally* Eyal Benvenisti & Amichai Cohen, *War is Governance: Explaining the Logic of the Laws of War from a Principle–Agent Perspective*, 112 MICH. L. REV. 1363 (2014).

117 *See* ARTICLE 36, KEY AREAS FOR DEBATE ON AUTONOMOUS WEAPON SYSTEMS 2 (2014) http://www.article36.org/wp-content/uploads/2014/05/A36-CCW-May-2014.pdf [https://perma.cc/3MLN-WCEY] [hereinafter ARTICLE 36 BRIEFING PAPER] ("No state is likely to argue in favour of the release of [autonomous weapon systems] without any form of human control whatsoever . . . ."); *see also* DEP'T OF DEF. DIRECTIVE, *supra* note 4, at 2, 3 (requiring that autonomous weapon systems are "designed to allow commanders and operators to exercise appropriate levels of human judgment over the use of force" and suggesting that only "[h]uman-supervised" autonomous weapon systems may be employed).

autonomously.[118] The design was technologically feasible, but in response to customer requests, the manufacturer added two levels of human oversight.[119]

Despite the possibility of unpredictable action, autonomous weapon systems promise a seductive combination of distance, accuracy, and lethality—in part because they are capable of acting independently.[120] Increased distance between soldiers and targets reduces risk to troops,[121] but historically this benefit came at the cost of accuracy,[122] which in turn demanded an increase in lethal force.[123] Archers and bombardiers are safer than foot soldiers and ground troops, but a foot soldier's sword or firearm is more accurate than an arrow or bomb. To accomplish similar combat objectives at greater distances, early militaries increased the number of archers; later ones increased the number of bombs dropped in a given attack and their destructive power, with devastating effects for civilians. Only recently has weapons technology advanced to a point that distant weapons may also be extremely accurate.[124] Precision-guided munitions presented the prospect of relatively risk-free warfare, and remotely operated drones extended this possibility to today's asymmetric conflicts. Improved accuracy has reduced the need for lethality,[125] which has had a beneficial side effect for civilians. As weapon systems become more accurate and require less lethal force for effectiveness,[126] what is considered a "proportionate" level of

118 Simon Parkin, *Killer Robots: The Soldiers That Never Sleep*, BBC (July 16, 2015), http://www.bbc.com/future/story/20150715-killer-robots-the-soldiers-that-never-sleep [https://perma.cc/Q9A6-WLJ5].

119 *Id*.

120 *See* Oren Gross, *The New Way of War: Is There a Duty to Use Drones?*, 67 FLA. L. REV. 1, 30 (2015) (describing these as the "three main considerations" in the context of weapons development).

121 *See id*. at 30-33 (discussing the inverse relationship between proximity of the victim and the trauma of the kill).

122 *See id*. at 34 ("An inverse relationship exists between distance and accuracy."); *cf.* Michael N. Schmitt, *War, Technology, and the Law of Armed Conflict*, 82 INT'L L. STUD. 137, 146 (2006) ("Accuracy is the ability of a weapon to strike a specified location, known as the aimpoint. Precision, by contrast, involves identifying targets in a timely fashion and striking them accurately.").

123 *See* Gross, *supra* note 120, at 34.

124 *See id*. at 41 ("The shift to precision weapons has its origins in the Korean War and, even more so, in the experience of the Vietnam war . . . ." (citations omitted)).

125 *See id*. at 39 (explaining the tradeoff between accuracy and lethality in that "making each [inaccurate] projectile more lethal improved the chances that even if the target were not hit directly it would destroyed").

126 *See id*. at 48 ("[G]reater overall accuracy meant that smaller, less-lethal munitions could be used. Greater precision and smaller armaments, in turn, brought a potential reduction in collateral damage."); Michael C. Horowitz & Paul Scharre, *Do Killer Robots Save Lives?*, POLITICO (Nov. 19, 2014), http://www.politico.com/magazine/story/2014/11/killer-robots-save-lives-113010.html#.VZ6QAflVhBc [https://perma.cc/ZG92-SVYK] (discussing the role of precision-guided munitions in reducing civilian casualties).

collateral damage has narrowed dramatically.[127] In World War II, for example, Great Britain and the United States targeted civilian population centers as part of their overarching strategic plan;[128] today, any civilian death associated with a drone strike raises the question of whether the strike was unlawful, prompting some to question whether states are now obligated to use the most precise weapons in their arsenals.[129] Autonomous weapon systems promise an appealing next-generation combination of distance, accuracy, and lethality—but at the cost of some unpredictability.

Additional financial, strategic, political, and moral incentives encourage state investment in autonomous weapon systems.[130] In certain situations—when superhuman reaction time is necessary, in harsh environments, or on effectively suicidal missions—autonomous weapon systems are uniquely effective.[131] They tackle dull, dirty, and dangerous tasks without complaint[132] and reduce the number of human soldiers exposed to physically and psychologically hazardous environments.[133] They cut personnel costs, both because they will substitute for human soldiers and because a single supervisor can monitor multiple systems.[134] Autonomous weapon systems are less subject to jamming or takeover than their remotely-operated, semi-autonomous equivalents, and they are faster learners and more likely to follow

127 The customary *jus in bello* proportionality requirement prohibits any attack in which injury to civilians and civilian objects would be excessive in relation to the anticipated military advantage. *See* First Additional Protocol, *supra* note 35, art. 51(5)(b) (codifying the customary law).

128 Matthew Lippman, *Aerial Attacks on Civilians and the Humanitarian Law of War: Technology and Terror from World War I to Afghanistan*, 33 CAL. W. INT'L L.J. 1, 15-16 & n.143 (2002).

129 *See, e.g.*, Anderson, *The Rise of International Criminal Law*, *supra* note 70, at 344; Gross, *supra* note 120, at 60; Christopher B. Puckett, *In This Era of "Smart Weapons," Is a State Under an International Legal Obligation to Use Precision-Guided Technology in Armed Conflict?*, 18 EMORY INT'L L. REV. 645 (2004).

130 *See* Crootof, *Killer Robots*, *supra* note 4, at 1865-68 (discussing additional incentives favoring the development and deployment of autonomous weapon systems).

131 An official at the Defense Advanced Research Projects Agency has observed that human beings are becoming "the weakest link in defense systems." P. W. Singer, *Robots at War: The New Battlefield*, WILSON Q., Winter 2009, at 30, 37; *see also* Crootof, *Killer Robots*, *supra* note 4, at 1891 (observing that autonomous weapon systems are both "highly effective in certain circumstances" and that "many of the objectives accomplished by autonomous weapon systems could not be similarly achieved by other means").

132 Dean Irvine, *Doing Military's Dangerous, Dull and Dirty Work*, CNN (Feb. 16, 2012, 2:23 AM), http://www.cnn.com/2012/02/15/business/singapore-airshow-drones/ [http://perma.cc/R9G6-D8C9].

133 This is both a moral and political benefit. As a Navy chief petty officer noted on the loss of his unit's PackBot, "[W]hen a robot dies, you don't have to write a letter to its mother." Singer, *supra* note 131, at 31.

134 *See* U.S. DEP'T OF DEF., UNMANNED SYSTEMS INTEGRATED ROADMAP FY 2013–2038, at 25 (2013), http://archive.defense.gov/pubs/DOD-USRM-2013.pdf [https://perma.cc/GK36-25TV] [hereinafter DOD ROADMAP] ("[S]trides in autonomy . . . have reduced the number of personnel required, but much more work needs to occur.").

orders than their human counterparts.[135] Because their evaluations of a situation will not be affected by human emotions (like anger or fear), human frailties (like fatigue or boredom), or human prejudices (like racism or scenario fulfillment), autonomous weapon systems may be more humane than human soldiers.[136]

Meanwhile, many of the concerns raised about autonomous weapon systems—that they might destabilize the security environment by encouraging an arms race or by making it easier to use force, or that they may increase risk to civilians by undermining important customary humanitarian protections[137]—are deeply unsettling, but far less immediate and concrete. As a result, while states acknowledge the risks this new weaponry might eventually pose to the international order, they are unlikely to negotiate or implement an effective ban.[138] With few exceptions, states express interest in continued discussions of regulation[139]—while

135 As Paul Scharre points out, following orders to the letter is precisely the "quality that makes [robotic systems] both reliable and maddening [as, u]nlike humans, autonomous systems lack the ability to step outside their instructions and employ 'common sense,' adapting to the situation at hand." SCHARRE, *supra* note 5, at 6. Readers of Isaac Asimov have long been familiar with this conundrum. *See, e.g.*, ISAAC ASIMOV, *Runaround*, *in* I, ROBOT 25 (1950).

136 RONALD C. ARKIN, GOVERNING LETHAL BEHAVIOR IN AUTONOMOUS ROBOTS 29-30 (2009).

137 For a discussion of how the increased deployment of autonomous weapon systems might make war politically easier and thereby affect the balance of the U.S. war power, see Rebecca Crootof, *War, Responsibility, and Killer Robots*, 40 N.C. J. INT'L L. 909 (2015).

138 *See, e.g.*, KENNETH ANDERSON & MATTHEW WAXMAN, HOOVER INST., LAW AND ETHICS FOR AUTONOMOUS WEAPON SYSTEMS: WHY A BAN WON'T WORK AND HOW THE LAWS OF WAR CAN (2013), http://www.hoover.org/sites/default/files/uploads/documents/Anderson-Waxman_LawAndEthics_r2_FINAL.pdf [https://perma.cc/J682-YJ9W]; Crootof, *Killer Robots*, *supra* note 4, at 1891-93 (arguing that only one of eight traits associated with successful bans holds with respect to the enactment of a ban of autonomous weapon systems).

139 The few states that have explicitly called for a ban on "fully" autonomous weapon systems—Algeria, Bolivia, Chile, Costa Rica, Cuba, Ecuador, Egypt, Ghana, the Holy See, Mexico, Nicaragua, Pakistan, the state of Palestine, and Zimbabwe—are hardly military or technological powerhouses; the Holy See doesn't even have armed forces. CAMPAIGN TO STOP KILLER ROBOTS, COUNTRY VIEW ON KILLER ROBOTS (2016), http://www.stopkillerrobots.org/wp-content/uploads/2016/04/CountryViews_14Apr2016.pdf [https://perma.cc/48G4-CWEY]. China and the United States have refrained from taking firm stances, but they are generally in favor of continued international discussions. *See, e.g.*, Michael W. Meier, U.S. Dep't of State, 2014 Meeting of High Contracting Parties to the Convention on Certain Conventional Weapons, Geneva (Nov. 13, 2014), https://geneva.usmission.gov/2014/11/13/u-s-statement-at-the-meeting-of-high-contracting-parties-to-the-convention-on-certain-conventional-weapons-ccw/ [http://perma.cc/S2J6-9WYX] ("[The United States] see[s] value in the constructive and open discussions [it] ha[s] already had . . . in recent years."); Wu Haitao, Ambassador Extraordinary and Plenipotentiary for Disarmament Affairs and Deputy Permanent Representative of China to the United Nations Office at Geneva and Other International Orgs. in Switz., Statement at the 2014 Meeting of the High Contracting Parties to the Convention on Certain Conventional Weapons, Geneva (Nov. 13, 2014), http://www.unog.ch/80256EDD006B8954/(httpAssets)/CD0B8EF0EF22A565C1257D97003D639F/$file/China_MSP_GS.pdf [https://perma.cc/WTE6-E4XG] ("China supports further discussions on the issue . . . to carry out in-depth study on relevant aspects of the issue . . . ."). Russia, in contrast, has expressed "severe doubts" about the usefulness of continuing an international discussion on autonomous weapon systems. *See* CAMPAIGN TO STOP KILLER ROBOTS, REPORT ON ACTIVITIES: CONVENTION ON CONVENTIONAL WEAPONS ANNUAL MEETING OF HIGH CONTRACTING PARTIES, 3-4 (2014), http://www.stopkillerrobots.org/wp-content/uploads/2013/03/

they continue to pour money into developing increasingly autonomous weapon systems.[140]

3. Inherent Unpredictability and Inevitable Accidents

Autonomous weapon systems are uniquely effective at accomplishing certain military objectives, but they also are uniquely unpredictable. While the actions of autonomous weapon systems may be largely foreseeable and safe in most scenarios, it is impossible to guarantee that they will always perform as expected.[141] Quite the contrary; according to "normal accident" theory, over a long enough time horizon, accidents are inevitable in complex and tightly coupled systems.[142] Given their inherent unpredictability and their destructive capacity, autonomous weapon systems will eventually be involved in an accident that constitutes a serious violation of international humanitarian law.

First, the sheer complexity of an autonomous weapon system's program may make it impossible for human beings to predict how it will act with complete accuracy—or even reconstruct why it acted a certain way after the fact.[143] 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.[144] This issue will be exacerbated to the extent autonomous

KRC_ReportCCW2014_22Dec2014.pdf [https://perma.cc/2AP6-HFHH] [hereinafter CSKR REPORT] (discussing Russia's doubts, which noted the "further we go into discussions . . . the greater the expectations will be from the international community in terms of results."). South Korea has suggested that there be no restrictions on weapon systems used for peaceful purposes—which it would likely apply to its robotic monitoring of the De-Militarized Zone. Ahn Youngjip, Permanent Mission of S. Kor. to the United Nations, Meeting of Experts on Lethal Autonomous Weapons Systems, Convention on Certain Conventional Weapons (May 13, 2014), http://www.unog.ch/80256EDD006B8954/(httpAssets)/15FD27B028D31769C1257CD8003E25CB/$file/ROK+LAWS+2014.pdf [https://perma.cc/975Z-ZAE6]. Israel has suggested that autonomous weapon systems could eventually better comply with international humanitarian law than human soldiers. CSKR REPORT, *supra*, at 20. Finally, the United Kingdom has explicitly opposed a ban. Owen Bowcott, *UK Opposes International Ban on Developing 'Killer Robots,'* THE GUARDIAN (Apr. 13, 2015, 4:34 PM), http://www.theguardian.com/politics/2015/apr/13/uk-opposes-international-ban-on-developing-killer-robots [https://perma.cc/B7FX-ZLDL].

140 *See, e.g.*, DOD ROADMAP, *supra* note 134, at 67 (identifying increasing autonomy in weapon systems as a "high priority"); *see also* Jack Browne, *UAV Markets Robust Despite Declining Spending*, DEF. ELECTRONICS (Feb. 15, 2012), http://defenseelectronicsmag.com/electronic-countermeasures/uav-markets-robust-despite-declining-spending [https://perma.cc/3L24-Z5BQ] (discussing the stability in defense funding for unmanned aerial vehicles, despite cuts in most other markets).

141 SCHARRE, *supra* note 5, at 17.

142 *Id.* at 25.

143 Marchant et al., *supra* note 6, at 284.

144 SCHARRE, *supra* note 5, at 15.

weapon systems operate in complex and unpredictable environments,[145] as all scenarios cannot be anticipated (let alone tested).[146]

Second, autonomous weapon systems are subject to various kinds of malfunction and corruption. The more complex the systems' program, the more opportunity there is for a "bug"—a programming error that causes an unanticipated or unintended result.[147] System failures may result from unexpected interactions between different elements of the system.[148] The human-to-system interface introduces its own set of problems that are less prevalent with human-to-human communication.[149] For example, in 2009, Air France Flight 447 crashed, resulting in the deaths of all 228 individuals on board.[150] The crash was particularly tragic, as it could have been avoided.[151] It should have been relatively easy to recover from the plane's aerodynamic stall, but every time the human pilot took appropriate steps to reduce the stall, the alarm system—which was silent while the stall exceeded its parameters—went off, implying that he was taking the wrong action and panicking him.[152]

As evidenced by the reactor meltdowns at Three Mile Island and Fukushima and the *Apollo 13*, *Challenger*, and *Columbia* accidents, normal accidents occur even in well-regulated, safety-conscious industries.[153] Such incidents are even more likely in armed conflicts, where individuals are operating with incomplete information, there is an accelerated pace of interaction, and an enemy is actively attempting to sabotage the endeavor.[154]

As noted above, notwithstanding their capability for unanticipated action and their high damage potential, autonomous weapon systems are increasingly being integrated into states' armed forces. While states will attempt to limit the risk that these systems will act in unforeseeable ways, it

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145 *Id.* at 11.

146 *Id.* at 14.

147 *Id.* at 13 ("[I]n systems with millions of lines of code, some errors are inevitable.").

148 *Id.* (observing that "[v]erifying all possible combinations of the internal workings of the system becomes increasingly difficult as the system's complexity increases"). The 2010 flash crash—during which the U.S. stock market lost trillions of dollars in roughly a half-hour due in part to interactions between algorithmic trading orders—exemplifies this problem.

149 M.C. Elish, Moral Crumple Zones: Cautionary Tales in Human-Robot Interaction (Mar. 20, 2016) (unpublished manuscript) (on file with author) (discussing situations where miscommunications in human-to-system interfaces resulted in unanticipated and preventable accidents).

150 *Id.*

151 *Id.*

152 *Id.*

153 SCHARRE, *supra* note 5, at 25-30 (discussing these examples).

154 *Id.* at 34. Additionally, there is a risk that autonomous weapon systems will be hacked, spoofed, or otherwise "tricked" into performing certain actions. *Id.* at 15. While this last point may result in an autonomous weapon system acting in an unpredictable manner from the deployer's perspective, this is a different kind of unpredictably problem.

will be impossible to accurately predict how a weapon system will act in all possible situations—creating a new accountability gap.

B. *No Individual Criminal Liability*

Autonomous weapon systems will inevitably commit a serious violation of international humanitarian law without any human being acting intentionally or recklessly. Absent such willful human action, no one can—or should—be held criminally liable.

1. The Willful Action Requirement

Under international law and most domestic legal regimes, war crimes must be committed "willfully."[155] Depending on the type of violation, a prosecutor must demonstrate that the accused acted with the intent to commit the violation or acted recklessly.[156] In its Commentary on the Additional Protocols, the ICRC states that acting willfully includes acting with "wrongful intent" or "recklessness," which it describes as "the attitude of an agent who, without being certain of a particular result, accepts the possibility of it happening."[157] The ICRC distinguishes this from "ordinary negligence or lack of foresight," which occurs "when a man acts without having his mind on the act or its consequences (although failing to take necessary precautions, particularly failing to seek precise information, constitutes culpable negligence punishable at least by disciplinary sanctions)."[158]

Some treaties specify the required mental element for particular war crimes. Article 130 of the Third Geneva Convention of 1949 includes in its list of grave breaches the "wilful killing [of prisoners of war], torture or

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155 *See, e.g.*, Rome Statute, *supra* note 13, art. 30(1) ("[A] person shall be criminally responsible and liable for punishment . . . only if the material elements are committed with intent and knowledge."); *see also* Prosecutor v. Blaškić, Case No. IT-95-14-T, Trial Chamber Judgment, ¶ 152 (Int'l Crim. Trib. for the Former Yugoslavia Mar. 3, 2000), http://www.icty.org/x/cases/blaskic/tjug/en/bla-tj000303e.pdf [https://perma.cc/4FG6-WZRE] ("[T]he *mens rea* constituting all the [grave breaches of the Geneva Conventions] includes both guilty intent and recklessness which may be likened to serious criminal negligence.").

156 There is already an inherent moral tension in holding an individual who acted with direct intent and one who acted recklessly equally culpable. Jens David Ohlin, *The Combatant's Stance: Autonomous Weapons on the Battlefield*, 92 INT'L L. STUD. 1, 24-27 (2016). Ohlin suggests that this tension might be alleviated by introducing a graduated scheme of criminal offenses; while this would solve the intentional/recklessness problem, there are additional reasons to be wary of importing negligence into criminal law. *See infra* subsection II.B.4.

157 ICRC COMMENTARY, *supra* note 9, at 994; *see also* Prosecutor v. Delalić, Case No. IT-96-21-T, Trial Chamber Judgment, ¶¶ 437, 439 (Int'l Crim. Trib. for the Former Yugoslavia Nov. 16, 1998), http://www.icty.org/x/cases/mucic/tjug/en/981116_judg_en.pdf [https://perma.cc/C5AX-3ZXB].

158 ICRC COMMENTARY, *supra* note 9, at 994 (citations omitted).

inhuman treatment, including biological experiments" and "wilfully depriving a prisoner of war of the rights of fair and regular trial prescribed in [the] Convention."[159] Article 85(3) of the First Additional Protocol of 1977 similarly criminalizes certain actions, such as launching indiscriminate attacks against civilians, provided that they are committed willfully.[160] Where the requisite mental element is not codified, international courts and tribunals have often imputed a mental element based on the nature of the violation. In such circumstances, individuals have been held criminally liable only if they acted intentionally or recklessly.[161]

Article 30 of the Rome Statute extends the willful standard to all serious violations of international humanitarian law: "Unless otherwise provided, a person shall be criminally responsible and liable for punishment for a crime within the jurisdiction of the Court only if the material elements are committed *with intent and knowledge*."[162] Intent to commit an action requires evidence that the accused "means to engage in the conduct";[163] intent to produce a consequence requires evidence that the accused "means to cause that consequence or is aware that it will occur in the ordinary course of events."[164] "Knowledge," meanwhile, entails "awareness that a circumstance exists or a consequence will occur in the ordinary course of events."[165]

2. No Direct Individual Liability

Under international criminal law, individuals are responsible for war crimes they commit or are directly involved in committing, which might include planning or ordering the criminal act. Given the willfulness requirement, no one can currently be held directly liable for the independent and sometimes unpredictable actions of an autonomous weapon system.

Certainly, an individual who intentionally programmed an autonomous weapon system to commit a serious violation of international humanitarian law could be prosecuted for a war crime, as could one who recklessly deployed an autonomous weapon system incapable of discriminating between lawful

159 Third Geneva Convention, *supra* note 33, art. 130.

160 First Additional Protocol, *supra* note 35, art. 85(3).

161 CASSESE, *supra* note 8, at 76; *see also* KNUT DÖRMANN, ELEMENTS OF WAR CRIMES UNDER THE ROME STATUTE OF THE INTERNATIONAL CRIMINAL COURT: SOURCES AND COMMENTARY 43 (2003) ("It may be concluded from the cases rendered by the ad hoc Tribunals that the notion 'wilfull' includes 'intent' and recklessness', but excludes ordinary negligence.").

162 Rome Statute, *supra* note 13, art. 30(1) (emphasis added).

163 *Id.* art. 30(2)(a).

164 *Id.* art. 30(2)(b).

165 *Id.* art. 30(3).

and unlawful targets in an urban area.[166] A commander who ordered that an autonomous weapon system be used inappropriately would also be directly liable for its actions, and a commander who became aware that an autonomous weapon system had been used or was about to be used to commit a war crime but who took no action to prevent or punish the violation would be indirectly criminally liable.[167] Those are the easy cases.

This Article focuses instead on the hard case: whether anyone might be held accountable in the more complicated situation where no individual acts intentionally or recklessly, but an autonomous weapon system nonetheless takes action that constitutes a serious violation of international humanitarian law.

At present, there is little sense in attempting to hold autonomous weapon systems themselves liable. Artificial intelligence has not advanced to a point where a robotic system could be said to act intentionally or recklessly. If a violation of international humanitarian law is not a war crime absent some willful action, autonomous weapon systems are currently incapable of committing war crimes.[168] Additionally, traditional justifications for individual liability in criminal law—deterrence, retribution, restoration, incapacitation, and rehabilitation—do not map well from human beings to robots.[169]

Some analogize autonomous weapon systems to more conventional weapons, others to human soldiers. Either way, if no person acts willfully, no person can be held directly criminally liable. If an autonomous weapon system is merely another weapon in a state's arsenal, its deployer will be liable only if she intended or foresaw the reasonable likelihood of civilian harm and nonetheless used the weapon system. If instead it is analogized to a soldier going rogue, the deployer could be held directly liable only for actions that resulted in serious violations if she ordered or otherwise directly contributed to the execution of that unlawful action. Similarly, regardless of the analogy, the commanding officer and the weapon system's programmers, designers, or manufacturers could be held directly responsible only to the extent they

166 Jeffrey S. Thurnher, *Examining Autonomous Weapon Systems from a Law of Armed Conflict Perspective*, *in* NEW TECHNOLOGIES AND THE LAW OF ARMED CONFLICT 213, 225 (Hitoshi Nasu & Robert McLaughlin eds., 2014).

167 Schmitt & Thurnher, *supra* note 111, at 277.

168 Additionally, international criminal tribunals' jurisdiction is generally limited to "natural persons," which would prevent bringing suit against a weapon system. MIND THE GAP, *supra* note 19, at 19. Presumably, however, should autonomous weapon systems eventually have human-like cognitive capabilities such that they could act intentionally and punishment might serve as a form of deterrence, tribunals' jurisdiction could be expanded to include entities with artificial intelligence.

169 *But see* GABRIEL HALLEVY, WHEN ROBOTS KILL: ARTIFICIAL INTELLIGENCE UNDER CRIMINAL LAW (2013) (arguing that robots can be held criminally liable and punished, much like human beings and corporations).

willfully contributed to the crime's commission.[170] Assuming no one intended the violation or acted recklessly, no one can be held directly liable.[171]

3. No Indirect Individual Liability

In certain circumstances, military commanders and civilian superiors may be held indirectly criminally liable for a subordinate's crime. The customary doctrine of "superior responsibility" or "command responsibility" has been codified differently in different international agreements, but it is generally understood that a superior may be liable if she exercises effective control over a subordinate, knows of or has reason to know of the subordinate's actual or intended criminal acts, and fails to take necessary and reasonable measures to prevent or punish them.[172]

This doctrine grew from the desire to address a particular kind of guilt: the failure to act to prevent a war crime or the failure to deter others from acting similarly by punishing those who do commit war crimes. Given this purpose, the main elements of this indirect form of liability—a subordinate who commits a criminal and chargeable offense, effective control, actual or constructive knowledge, and failure to act—are sensible. If there was no underlying crime, there was nothing to prevent. If a superior does not exercise effective control over another or does not know or have reason to know of that person's potential unlawful conduct, she could not have prevented that individual from acting. Finally, if the superior could have averted or discouraged unlawful actions, either by preventing or punishing the subordinate, and chooses not to, she implicitly condones and thus perhaps even surreptitiously encourages others to act similarly.

Because the doctrine of indirect liability is premised on an individual's omissions or failure to fulfill a duty, it has an unusual mental element, in that

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170 For a more in-depth analysis of obstacles to direct criminal liability for developers, see Tim McFarland & Tim McCormack, *Mind the Gap: Can Developers of Autonomous Weapons Systems Be Liable for War Crimes?*, 90 INT'L L. STUD. 361 (2014).

171 *Mind the Gap* suggests an additional practical problem: even if operators, programmers, and manufacturers could be held directly liable for the subsequent actions of an autonomous weapon system, it would be difficult to determine which one was responsible for the orders that resulted in the violation. And, of course, each entity would attempt to shift blame to the others. MIND THE GAP, *supra* note 19, at 20. But courts regularly deal with such questions of fact in criminal and tort law; this is hardly an insurmountable obstacle to prosecution were a direct liability regime to be created.

172 *See, e.g.*, Statute of the Special Court for Sierra Leone art. 6(3), Jan. 16, 2002, 2178 U.N.T.S. 145; Rome Statute, *supra* note 13, art. 28; Statute of the International Criminal Tribunal for Rwanda art. 6(3), Nov. 8, 1994, 33 I.L.M. 1598; Updated Statute of the International Criminal Tribunal for the Former Yugoslavia art. 7(3), May 25, 1993, 32 I.L.M. 1192; First Additional Protocol, *supra* note 35, arts. 86-87; *see also* Prosecutor v. Delalić, Case No. IT-96-21-T, Trial Chamber Judgment, ¶ 346 (Int'l Crim. Trib. for the Former Yugoslavia Nov. 16, 1998), http://www.icty.org/x/cases/mucic/tjug/en/981116_judg_en.pdf [https://perma.cc/C5AX-3ZXB] (applying the doctrine of command responsibility). For a summary of the development of this customary rule, see CASSESE, *supra* note 8, at 182-87.

a showing of something less than intentional or reckless action may be sufficient to establish guilt.[173] In one extreme situation, a commander was held strictly liable for his subordinates' actions,[174] but this approach has since been rejected.[175] Today, tribunals tend to apply something akin to a gross or culpable negligence standard when evaluating if superiors are indirectly liable for their subordinates' crimes.[176]

This doctrine was never meant to create a fully independent source of liability; it rests on the assumption that there can only be indirect liability for failure to prevent or punish a criminal action for which someone else is directly liable. As a result, the elements currently required for indirect liability do not map well onto a situation where no human being acts intentionally or recklessly.

First, superiors are responsible for a failure to prevent or punish only those actions that constitute chargeable criminal offenses (regardless of whether the subordinate is charged).[177] But as autonomous weapon systems do not act willfully, they cannot be charged with a war crime.[178] They are incapable of committing a chargeable offense.

Second, it is not clear what would constitute "effective control" over autonomous weapon systems. When a commander gives a subordinate an order, the commander remains responsible for taking necessary precautions against that subordinate committing an unlawful act; he oversees the subordinate and can punish any violation the subordinate commits. This de facto control is necessary for indirect liability: de jure control alone is insufficient if the commander cannot prevent and punish a subordinate's criminal acts.[179] But it is impossible to punish an autonomous weapon system and difficult to prevent its unforeseeable actions. Even if a commander is monitoring the system in real time (which defeats an aim of developing

173 *See* Alberto Gargani, *Negligence* ("[T]he negligent failure to supervise expands the mental element beyond intent and recklessness . . . ."), *in* THE OXFORD COMPANION TO INTERNATIONAL CRIMINAL JUSTICE 433, 433-34 (Antonio Casssese ed. 2009).

174 *See In re* Yamashita, 327 U.S. 1 (1946) (holding that, although there was no direct evidence linking Yamashita to his subordinates' crimes, he failed in his duty to control, prevent, or punish his subordinates' actions).

175 *See* Beatrice I. Bonafé, *Command Responsibility* ("As the ad hoc tribunals have repeatedly underscored, command responsibility is not a form of strict liability."), *in* OXFORD COMPANION, *supra* note 173, at 270, 271.

176 *See* CASSESE, *supra* note 8, at 53 ("Gross negligence is clearly required by the customary rules on superiors' responsibility . . . ."); *id*. at 76. *But see* Bonafé, *supra* note 175, at 271 ("[N]egligence is not a basis of liability in the context of command responsibility.").

177 GUÉNAËL METTRAUX, THE LAW OF COMMAND RESPONSIBILITY 131-34 (2009).

178 MIND THE GAP, *supra* note 19, at 21-22.

179 Prosecutor v. Zejnil Delalić, Case No. IT-96-21-A, Appeals Chamber Judgment, ¶ 197 (Int'l Crim. Trib. for the Former Yugoslavia Feb. 20, 2001), http://www.icty.org/x/cases/mucic/acjug/en/cel-aj010220.pdf [https://perma.cc/7PQW-WYDZ].

weapons autonomy in the first place), she will be unable to call off an unlawful attack in situations where the system employs faster-than-human reaction times in response to surprising environmental conditions. Accordingly, some have concluded that because commanders could never exercise effective control over autonomous weapon systems, their usage creates a legal loophole, allowing commanders to authorize uses of force without having to take responsibility for them.[180]

Third, the hard case presumes that commanders do not have actual knowledge of the autonomous weapon system's actions. If the weapon system is operating under human oversight, the commander might gain such knowledge of the impending violation in real time. If she has such knowledge and does not act to prevent the action, the commander could be presumed to be willfully and directly contributing to the crime—but this is one version of the easy case.[181] In the hard case, oversight will not necessarily provide the supervisor with sufficient information, time, or means to call off an unlawful action.

The question then would be whether the commander had "reason to know of" the likely violation. The International Criminal Tribunal for the Former Yugoslavia has held that this standard is met only if commanders receive information that puts them "on notice of the risk" that is "sufficiently alarming to justify further inquiry."[182] Thus, at least as the law currently stands, "[c]ommanders cannot be held liable for negligently failing to find out

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180 MIND THE GAP, *supra* note 19, at 24; Peter Asaro, *On Banning Autonomous Weapon Systems: Human Rights, Automation, and the Dehumanization of Lethal Decision-Making*, 94 INT'L REV. RED CROSS 687, 701 (2012); Heather M. Roff, *Killing in War: Responsibility, Liability, and Lethal Autonomous Robots*, *in* ROUTLEDGE HANDBOOK OF ETHICS AND WAR 352, 357-58 (Fritz Allhof, Nicholas G. Evans & Adam Henschke eds., 2013).

Alternatively, some have suggested that the accountability problem might be solved by requiring that all weapons be "meaningfully controlled": presumably, if every weapon is meaningfully controlled by a human being, there will always be someone accountable for its actions. *See, e.g.*, MIND THE GAP, *supra* note 19. But even if states reach consensus on what "meaningful human control" actually entails, *see* Rebecca Crootof, *The Meaning of "Meaningful Human Control*," 30 TEMP. INT'L & COMP. L.J. (forthcoming 2016), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2705560 [https://perma.cc/L7DN-U7LE] (discussing the lack of consensus as to what this principle requires), such a principle will not solve the mens rea issue. A human operator might make an informed decision, based on sufficient information, training, and a well-tested weapon—and an autonomous weapon system might nonetheless act in a way that results in a serious violation of international humanitarian law. At that point, it will be possible to identify which person or people were in putative control of the system—but as they cannot be held criminally liable absent willful action, there will still be an accountability gap. *Cf.* CSKR REPORT, *supra* note 139, at 17 (quoting India as questioning whether "meaningful human control" is "adequate to establish [a] relationship between autonomy and accountability").

181 *See supra* text accompanying notes 167–170.

182 Prosecutor v. Strugar, Case No. IT-01-42-A, Appeals Chamber Judgment, ¶¶ 297-98 (Int'l Crim. Trib. for the Former Yugoslavia July 17, 2008), http://www.icty.org/x/cases/strugar/acjug/en/080717.pdf [https://perma.cc/8F4R-6JJF].

information without having received some alarming information."[183] Aside from its innate capacity for unpredictable action, however, it is unclear what would constitute sufficiently alarming information to constitute notice of a risk for autonomous weapon systems:

> [W]ould knowledge of past unlawful acts committed by one robot provide notice of risk only for that particular robot, or for all robots of its make, model, and/or programming? Would knowledge of one type of past unlawful act . . . trigger notice of the risk of other types of unlawful acts . . . ? Would fully autonomous weapons be predictable enough to provide commanders with the requisite notice of potential risk? Would liability depend on a particular commander's individual understanding of the complexities of programming and autonomy?[184]

The fact that an autonomous weapon system has the capacity for independent and thus unpredictable action alone should not be sufficient to put commanders on notice; if that were all that were required, commanders could be presumed to be eternally on notice that human soldiers might commit an unlawful act, and there would be no need for this separate element. An autonomous weapon system might act predictably the vast majority of the time—it is impossible to predict when a normal accident may occur.

In short, it is either difficult or impossible to apply many of the required elements for indirect liability—an inferior who commits a criminal and chargeable offense, effective control, actual or constructive knowledge—to situations where no human being acts willfully but an autonomous weapon system's action nonetheless has tragic and disastrous consequences.[185]

4. The Problems with Criminalizing Negligence

Perhaps the most commonly proposed solution to the accountability gap is the idea that the doctrine of indirect responsibility can be modified to create liability for the actions of autonomous weapon systems.[186] One of the most creative of these is Geoffrey Corn's offshoot, termed "procurement

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183 MIND THE GAP, *supra* note 19, at 22.

184 *Id.* at 23.

185 *Mind the Gap* also notes that prosecutions based on indirect responsibility are difficult, as they often require state cooperation and the provision of internal military evidence. *Id.* at 21. Rather than being unique to situations involving autonomous weapon systems, this is an issue with all foreign and international prosecutions based on superior responsibility.

186 *See, e.g.*, Christof Heyns, *Report of the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions*, ¶ 81, U.N. Doc. A/HRC/23/47 (Apr. 9, 2013) [hereinafter Heyns Report] ("[A]mendments to the rules regarding command responsibility may be needed to cover the use of [autonomous weapon systems].").

responsibility," under which the military or civilian officials who procure certain weapons will be held responsible for the actions of those weapons.[187]

When boiled down to the essentials, however, all of these suggestions are really about creating a criminal negligence standard.[188] As noted above, because no one can be held directly liable for the actions of an autonomous weapon system under existing law, no one can be held indirectly liable.[189] Instead, the doctrine of superior responsibility would need to be substantially reworked to create liability for the actions of autonomous weapon systems.[190] Building off of the original doctrine and replacing the subordinate with an autonomous weapon system, this new doctrine might be expressed as: "An individual may be liable if she exercises effective control over an autonomous weapon system, knows or had reason to know of its propensity to violate international humanitarian law, and fails to take necessary and reasonable measures to prevent those unlawful actions."[191] In other words, an individual may be liable if she negligently deploys an autonomous weapon system and it violates international humanitarian law.[192]

Expanding the mental element for a war crime to include negligence is not entirely unprecedented. In 1921, the Leipzig Supreme Court found a captain guilty of causing "death through culpable negligence" after he passed on what he incorrectly believed was a superior's order to kill all enemy

187 Geoffrey S. Corn, Autonomous Weapon Systems: Managing the Inevitability of "Taking the Man Out of the Loop" 21 (unpublished manuscript), https://www.law.upenn.edu/live/files/3894-corn-understanding-the-loop-regulating-the-next [https://perma.cc/9KMQ-2VGQ].

188 This is not surprising, given that, in deciding indirect liability cases, courts often apply a mens rea standard akin to gross negligence. *See supra* note 176. Similarly, although he does not use the word, Corn's proposed "procurement responsibility" would apply a criminal negligence standard: "[T]hese officials . . . will be accountable for objectively foreseeable failures of the weapon review and compliance validation process." Corn, *supra* note 187, at 23.

189 *See supra* subsection II.B.3.

190 *See* Marco Sassòli, *Autonomous Weapons and International Humanitarian Law: Advantages, Open Technical Questions and Legal Issues to be Clarified*, 90 INT'L L. STUD. 308, 324 (2014) (arguing that holding a commander responsible for the actions of an autonomous weapon system would be more akin to direct responsibility than command responsibility).

191 *See* Heyns Report, *supra* note 186, ¶ 78 (suggesting that, "[s]ince a commander can be held accountable for an autonomous human subordinate, holding a commander accountable for an autonomous robot subordinate may appear analogous," and noting that this will work only if military commanders are "in a position to understand the complex programming of [autonomous weapon systems] sufficiently well to warrant criminal liability").

192 It is important to distinguish between recklessness and negligence. A reckless individual acts knowing that she risks the consequences; a negligent individual does not take sufficient precautions against a risk that a reasonable man would have foreseen. CASSESE, *supra* note 8, at 76.

There are also varying levels of negligence. "Gross" or "culpable" negligence exists when an actor is aware of a risk associated with his actions but "believes that the harmful consequences of his conduct will not occur, thanks to the measures he has taken, or is about to take." Gargani, *supra* note 173, at 433. "Simple," "inadvertent," or "mere" negligence "exists when an actor is not aware of the risk that failure to comply with accepted standards of conduct may bring about harmful effects . . . ." *Id.*

wounded.[193] (Today, however, that same captain would likely be found guilty of acting with intention; killing wounded soldiers is a war crime, and following a superior's orders is not a defense.) Many states criminalize negligent conduct resulting in human harm,[194] and a few even allow for the domestic prosecution of war crimes committed negligently.[195]

However, there is good reason to be uncomfortable with importing negligence—and the attendant tort-based reasoning—into criminal law.[196] In distinguishing between tort and criminal law, John Coffee has emphasized that "[c]haracteristically, tort law prices, while criminal law prohibits."[197] Where society wants to prohibit a certain behavior, tort law is problematic, as "there cannot be an 'optimal' rate of crime that is to be attained by pricing the subject behavior."[198] The negligence standard—which attempts to determine which precautions an actor should take before the marginal costs to the actor of taking the precautions equal the marginal benefits to the victim in terms of reduced expected losses—thus fits awkwardly into criminal law—which is intended to eliminate (or at least minimize) certain activities.[199]

This problem grows tenfold when applying a negligence standard to evaluating individual liability for war crimes.[200] Unsurprisingly, in a zone where the killing of other human beings is sanctioned, lethal accidents

193 CASSESE, *supra* note 8, at 54 n.30; *see also German General Free, Major Gets Two Years: Crusius Convicted at Leipsic of Slaying Prisoners, but Stenger Is Acquitted*, N.Y. TIMES, July 7, 1921, at 2.

194 *See, e.g.*, U.S. Uniform Code of Military Justice, 10 U.S.C. §§ 918–19 (2012) (criminalizing reckless and culpable negligent acts that result in an unlawful death); MANUAL FOR COURTS-MARTIAL UNITED STATES ¶ 85(c) (rev. ed. 2012) (imposing criminal liability on an individual whose conduct results in another's death if the individual "is under a duty to use due care" and "exhibits a lack of that degree of care of the safety of others which a reasonably careful person would have exercised under the same or similar circumstances").

195 *See Practice Relating to Rule 156. Definition of War Crimes*, INT'L COMMITTEE RED CROSS CUSTOMARY INT'L HUMANITARIAN L. DATABASE, https://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule156 [https://perma.cc/JYF5-S35B] (last visited Apr. 15, 2016) (noting that Azerbaijan and the Netherlands provide that war crimes may be committed negligently).

196 The problems associated with eroding the line between crimes and torts are not unique to war crimes or to the international legal order: criminal law scholars across the world are concerned about overcriminalizaion. *See, e.g.*, Lorena Bachmaier Winter, Carlos Gómez-Jara Díez & Albert Ruda-González, *Blurred Borders in Spanish Tort and Crime* ("The dominant development in substantive criminal law has been the disappearance of any clearly definable line between civil and criminal law. This blurring of the border between tort and crime results not only in injustice, but ultimately weakens the efficacy of criminal law as an instrument of social control."), *in* COMPARING TORT AND CRIME: LEARNING FROM ACROSS AND WITHIN LEGAL SYSTEMS 223, 223 (Matthew Dyson ed., 2015); *see also* Coffee, *supra* note 68.

197 Coffee, *supra* note 68, at 194; *see also* Guido Calabresi, *The Decision for Accidents: An Approach to Non-Fault Allocation of Costs*, 78 HARV. L. REV. 713 (1965).

198 Coffee, *supra* note 68, at 194.

199 Calabresi, *supra* note 197, at 718-19; Coffee, *supra* note 68, at 194-95 & n.5.

200 Because it often employs a negligence-like standard, the doctrine of command responsibility is one of the more controversial aspects of international criminal law.

happen. As evidenced by the proportionality requirement,[201] which essentially endorses a non-excessive amount of unintended civilian death, armed conflict is intended to be a dangerous activity. If an individual could be held criminally liable for negligent actions in war and if her commander would be indirectly liable for negligence, every commander would be a war criminal.[202]

Some might think this would be a positive development; if combatants and commanders are criminally liable for lethal results of negligent actions, they may be deterred from careless action[203]—or even from engaging in warfare at all. But instead of bringing an end to all war, overcriminalization will undermine all of international criminal law. Prosecutions of criminal negligence will either appear to be driven more by politics than wrongdoing or will not be brought at all. In short, if everyone is a criminal, no one is.[204]

Even if criminal negligence liability were formally limited to situations involving autonomous weapon systems, there is still a slippery slope problem—it is hard to justify prosecuting someone for criminal negligence because they deployed one kind of weapon, and not if they happened to use a different one that nonetheless resulted in equally disastrous consequences. Eventually, the negligent use of all types of weapons would be prosecuted.

Importing negligence into criminal law would also undermine the legal regime's moral legitimacy, as it would be morally unjust to hold anyone criminally liable for the independent and unpredictable actions of autonomous weapon systems. Robert Sparrow was one of the first to advance this argument.[205] He concluded that, because no one can ethically be assigned liability for the actions of autonomous systems, such systems should not be developed or used.[206] Others have expanded on Sparrow's reasoning to argue that autonomous weapon systems threaten the structure of just war theory,[207]

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201 *See* First Additional Protocol, *supra* note 35, art. 51(5)(b).

202 *Cf.* John Fabian Witt, *Form and Substance in the Law of Counterinsurgency Damages*, 41 LOY. L.A. L. REV. 1455, 1471-75 (2008) (describing the various events undergirding the hundreds of Foreign Claims Act (10 U.S.C. § 2734 (2012)) claims in Iraq and Afghanistan from January 2005 through June 2006, including "checkpoint shootings, motor vehicle accidents, accidental weapon discharges" and "warning shots gone awry").

203 *Cf.* United States v. Kick, 7 M.J. 82, 84 (C.N.A. 1979) (suggesting that "[t]here is a special need in the military to make the killing of another as a result of simple negligence a criminal act" because "[t]he danger to others from careless acts is so great").

204 It may well be that "stigma is a scarce resource." Coffee, *supra* note 68, at 238.

205 *See* Robert Sparrow, *Killer Robots*, 24 J. APPLIED PHIL. 62 (2007).

206 *Id.* at 66.

207 Roff, *supra* note 180, at 353 (arguing that, because autonomous weapon systems will never be "truly autonomous in the philosophical sense of the word," they are not moral agents and therefore threaten a cornerstone of just war theory: the moral equality of soldiers and the liability for killing).

that they are inherently unlawful[208] or that they should be banned altogether.[209] These writers are partially correct. It would be morally inappropriate to hold individuals criminally liable for the actions of an autonomous weapon system, at least in the hard case where no one acted willfully. But that does not mean this new weaponry is inherently unlawful or must be banned;[210] instead, it suggests that we should consider alternative sources of accountability.

It has taken nearly seventy years of effort to construct the current international criminal legal regime, and it is still capable of being derailed. Expanding the mens rea requirement for a war crime to include negligence threatens to destabilize an already shaky regime. If international criminal law's practical and moral legitimacy is undermined, the humanitarian protections it was designed to preserve will lose one of their few enforcement mechanisms.

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Ever since the 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,"[211] international criminal law proponents have sought to create and strengthen an international legal regime to hold individuals accountable for war crimes they commit or could have prevented.

With the advent of autonomous weapon systems, however, it is now possible that serious violations of international humanitarian law may in fact be committed by "abstract entities" without any human being acting willfully, resulting in an accountability gap where no one—not the deployer,

208 *See* Mary Ellen O'Connell, *Banning Autonomous Killing: The Legal and Ethical Requirement That Humans Make Near-Time Lethal Decisions* ("[Autonomous weapon systems] would conflict with the historical, legal, and moral understanding that killing should be based on a good-faith understanding of real necessity and carried out by someone who may be held accountable for a wrong decision."), *in* THE AMERICAN WAY OF BOMBING: CHANGING ETHICAL AND LEGAL NORMS, FROM FLYING FORTRESSES TO DRONES 224, 236 (Matthew Evangelista & Henry Shue eds., 2014).

209 MIND THE GAP, *supra* note 19; *see also* Kathleen Lawand, *Fully Autonomous Weapons Systems*, INT'L COMM. RED CROSS (Nov. 25, 2013), http://www.icrc.org/eng/resources/documents/statement/2013/09-03-autonomous-weapons.htm [https://perma.cc/5MRN-99GK] ("If responsibility cannot be determined as required by [international humanitarian law], is it legal or ethical to deploy such systems?").

210 Crootof, *Killer Robots*, *supra* note 4, at 1881 ("Whether a weapon is per se unlawful is not, and has never been, based on whether an individual can be held accountable for violations following from its use.").

211 Judgement (Oct. 1, 1946), *in* 1 THE TRIAL OF THE MAJOR WAR CRIMINALS BEFORE THE INTERNATIONAL MILITARY TRIBUNAL NUREMBERG, 14 NOVEMBER 1945–1 OCTOBER 1946, at 171, 223 (1947).

commander, programmer, developer, manufacturer, or the weapon system itself—can be held criminally liable.

III. INTRODUCING "WAR TORTS"

"War crimes" are widely recognized as serious violations of international humanitarian law that give rise to individual criminal liability. This Article proposes explicitly identifying "war torts" as serious violations of international humanitarian law that give rise to state responsibility. These categories are not mutually exclusive; the same action may simultaneously be a war crime and a war tort, just as an action in domestic law may be both a crime and a tort.

Rather than outlining a comprehensive international tort liability regime akin to what has developed in international criminal law, this Part considers factors relevant to developing a pilot war torts regime focused on ensuring accountability for the actions of autonomous weapon systems. First, however, it is worth discussing why there is a need to recognize war torts.

A. *Why "War Torts"?*

As noted above, the law of state responsibility does not distinguish between treaty breaches, torts, or crimes; everything is encompassed in the term "internationally wrongful act,"[212] and serious violations of international humanitarian law are merely one subset of possible internationally wrongful acts. Yet, with the rise of international criminal law, the language of violations in the context of international humanitarian law has shifted. Everything—the civilian deaths associated with drone strikes to the downing of Malaysian flight MH17—is now popularly termed a "war crime."[213]

Certainly, it is easier, and more viscerally powerful, to forego the jargon of "internationally wrongful acts" or "serious violation of international humanitarian law" in favor of "war crimes." But, as George Carlin has noted, "We do think in language. And so the quality of our thoughts and ideas can only be as good as the quality of our language."[214] Calling all serious violations of international humanitarian law "war crimes" contributes to the erasure of the role of state responsibility, implying that there cannot be a serious violation without a morally culpable perpetrator. We need a separate term, a different name, for violations where there is fault, regardless of whether or not there is also guilt.

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212 Draft Articles, *supra* note 29, art. 2; *see also* Draft Articles Commentaries, *supra* note 29, at 55, 111.

213 *See, e.g.*, Heller, *supra* note 3 (arguing against framing the downing of flight MH17 as a war crime).

214 *George Carlin: Doin' It Again* (HBO television broadcast Mar. 23, 1990).

The various theories of tort law share a common assumption: that tort liability is grounded in a different kind of culpability than criminal law. While criminal law and tort law serve some of the same purposes—deterring undesirable actions through sanctions, holding those responsible for harm accountable, ingraining norms of conduct—the two legal regimes govern fundamentally different kinds of wrongs.

Criminal law links legal culpability to moral culpability. As William Blackstone observed, "[A]s a vicious will without a vicious act is no civil crime, so, on the other hand, an unwarrantable act without a vicious will is no crime at all."[215] Absent moral culpability, justifications for punishment ring hollow.[216] Accordingly, some states refuse to create strict liability crimes entirely, on the grounds that it is incompatible with the *nulla poena sine culpa* principle—that there be no punishment without guilt.

In contrast, the economic analysis of tort law dispenses with questions of moral culpability entirely. It describes tort law as the product of efficiency and optimal deterrence, a method of cost allocation for accidents.[217] Under this theory, tort law is an ex post attempt to determine a hypothetical ex ante contract (that the injurer would have made with the injuree), a reason to have liability rather than property rules.[218] At the same time, tort law is largely forward-looking, insofar as it is intended to influence rational actors' future behavior.

A second theory of tort law—the corrective justice theory—views tort as creating remedies for harms resulting from breaches of interpersonal duties.[219] There is a duty not to injure others in certain, legally defined ways; if an injury occurs, there is a duty to repair.[220] This understanding of tort law is backwards-looking and circumstance-specific. While it is grounded in justice, it is a compensatory, "corrective" justice, concerned far less with questions of moral culpability than the retributive justice of criminal law.[221]

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215 BLACKSTONE, *supra* note 69, at *21.

216 Relatedly, the few strict liability crimes that do exist—like traffic violations—carry relatively low levels of social stigma.

217 Jules Coleman, Scott Hershovitz & Gabriel Mendlow, *Theories of the Common Law of Torts*, STAN. ENCYCLOPEDIA PHIL., http://plato.stanford.edu/entries/tort-theories/ [https://perma.cc/6YC7-J5XB] (last updated Dec. 17, 2015) (explaining that optimal deterrence theory views the goal of tort law as "minimiz[ing] the sum of the costs of accidents and the costs of avoiding them").

218 *See, e.g.*, Calabresi & Melamed, *supra* note 68.

219 Theories of the Common Law of Torts, *supra* note 217.

220 *See id.* ("[A]n individual has a duty to repair the wrongful losses that his conduct causes.").

221 *See id.* ("Many theorists believe that a principle of retributive justice—say, that the blameworthy deserve to suffer—does a good job of interpreting and justifying criminal law. Yet most theorists think that such a principle does a rather poor job of interpreting and justifying tort law (except, perhaps, for the part of tort law concerned with punitive damages).").

Finally, John Goldberg and Benjamin Zipursky have championed responsibility-based theories as a third theoretical option (as opposed to a subset of corrective justice theory).[222] Under their civil recourse theory, tort liability "is a concrete, institutionalized, and practical form of moral responsibility for having wrongfully injured someone."[223] But even under this theory, which is self-consciously grounded in morality, injurious wrongs may overlap with—but are to be distinguished from—"blameworthy" wrongs.[224]

In short, criminal law generally is concerned with moral wrongs, guilt, and prohibiting certain actions; tort law focuses on injurious wrongs, fault, and regulation of valuable but sometimes dangerous activities. Focusing only on morally blameworthy harms risks marginalizing unintended but injurious harms: thus, the development of a "war crimes" regime necessitates recognizing a corresponding "war torts" regime.

A war torts regime would serve many beneficial purposes. It would clarify the applicability of the law of state responsibility in armed conflict—specifically, the duty to make full reparations for injuries caused by internationally wrongful acts[225]—by delineating what violations are sufficiently serious to require reparation.[226] Public recognition of state fault and states' acceptance of responsibility would also entrench norms of lawful behavior. Looking forward, a war torts regime would hopefully deter states from employing means and methods of warfare that result in serious violations of international humanitarian law.

Finally, and perhaps most importantly, a war torts regime would help ensure that victims of states' internationally wrongful actions could receive compensation for their injuries, which would not occur in the war crimes context. The fact that civilians are expected to shoulder the economic—to say nothing of the emotional—costs of the proportionality analysis is deeply troubling. As Michael Reisman has noted,

> The euphemism "collateral damage" means death and injury of noncombatants and destruction of their property. That term of art may insulate the party that has caused this damage from international *criminal* responsibility and, perhaps, moral self-doubt. It should not absolve it from a

222 *See* John C.P. Goldberg & Benjamin C. Zipursky, *Tort Law and Responsibility* (distinguishing responsibility theory from corrective justice theory), *in* PHILOSOPHICAL FOUNDATIONS OF THE LAW OF TORTS 17, 25-26 (John Oberdiek ed. 2014).

223 *Id.* at 36.

224 *See id.* at 29 ("Tort law's definitions of wrongdoing depart to some degree from full-blooded moral wrongs.").

225 Draft Articles, *supra* note 29, art. 31.

226 While the "serious" standard is admittedly vague, state practice would give it meaning, much as the "serious" standard for war crimes has been clarified through state practice, treaty negotiations, and international dialogue.

> civil obligation to compensate, directly and promptly, the victims or their survivors, regardless of whether the actions of the damage-feasor violated the laws of war or merely caused "collateral damage."[227]

Nearly every system of law is grounded on the idea that harms must be compensated; a war torts regime would introduce an additional check on the use of military force[228] and create a means by which states might alleviate at least the economic costs of their actions.[229]

Not only do autonomous weapon systems highlight the need for war torts, they also may provide the ideal test case for developing a war torts regime.

B. *Accountability for Autonomous Weapon Systems*

In the absence of the term "war torts," when faced with new scenarios, we are asking the wrong questions. Many pieces of current scholarship on the accountability gap are grounded on some variant of the inquiry, "Who can be held accountable when an autonomous weapon system commits a war crime?" Instead, we should be asking, "What is an appropriate liability regime for autonomous weapon systems?"

The answer is, of course, it depends. When an autonomous weapon system is used recklessly or with the intention of committing a war crime, international criminal law is appropriate. But both with regard to some war crimes and in the hard case where no individual acts willfully, states should be held accountable for their war torts.

1. Holding States Responsible

Both entities and individuals may be liable for torts in domestic law, suggesting two possibilities for war tort liability: individual liability and state responsibility.

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227 Reisman, *supra* note 22, at 397.

228 Upping the financial costs of military action might address the concern that, by reducing the human costs of war, autonomous weapon systems and other advanced military technologies make it "easier" for technologically-advanced states to use military force. *See* Crootof, *War, Responsibility, and Killer Robots*, *supra* note 137.

229 Many states already voluntarily assume this responsibility in the context of armed conflicts, *see infra* subsection III.B.1, and some have argued that it should extend to all extraterritorial actions. For example, following a 1998 incident wherein a U.S. training flight in Italy severed a cable-car line and caused the death of twenty people, former marine and Senator Charles Robb called for the United States to compensate the victim's families: "While compensation cannot replace the lost children, husbands and wives, it can demonstrate that we accept complete responsibility for their deaths . . . . While it may never be clear exactly which individual act caused the accident, it is clear that ultimate responsibility lies with the United States." Letter from Charles S. Robb, U.S. Senator, to United States Senate (Mar. 10, 1999) (cited in Michael Reisman, *The Incident at Cavalese and Strategic Compensation*, 94 AM. J. INT'L L. 505, 509-10 (2000)).

Although individual liability for international torts is recognized in some domestic law,[230] similar individual tort liability does not exist in the international sphere. This is likely due to the fact that, until recently, only states were recognized as legal actors in the international order.[231] As evidenced by international criminal law, however, it is now possible to construct a new legal regime grounded on individual liability. That being acknowledged, it seems both more likely and normatively preferable to hold states, rather than individuals, accountable for the actions of autonomous weapon systems.[232]

At the practical level, not only is the state in the best position to ensure that autonomous weapon systems are designed and employed in compliance with international humanitarian law, states will also have pockets deep enough to adequately compensate victims of their actions.[233] Also, given that states are responsible for developing, purchasing, and integrating increasingly autonomous weapon systems in their military forces, state responsibility may operate as a more effective deterrent to overuse than individual liability.[234]

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230 *See, e.g.*, Alien Tort Statute, 28 U.S.C. § 1350 (2012) (granting federal jurisdiction over torts committed by individuals and entities in violation of international law).

231 Indeed, international criminal law was revolutionary in large part because it held individuals accountable on a stage where once only states were recognized legal actors. Now, "transnational norm entrepreneurs" are increasingly involved in treaty negotiations, *see* Harold Hongju Koh, Address, *The 1998 Frankel Lecture: Bringing International Law Home*, 35 HOUS. L. REV. 623, 656-63 (1998) (discussing the role of nonstate actors with regard to the Mine Ban Treaty), and "both intra-state and non-state actors are playing an increasingly influential role in the creation of customary international law," Rebecca Crootof, *Change Without Consent: How Customary International Law Modifies Treaties*, 41 YALE J. INT'L L. (forthcoming 2016) (manuscript at 12), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2657693 [https://perma.cc/N5SW-K7FK]. Similarly, international human rights law and international investment law now accord rights to individuals, and allow individuals to enforce these rights directly against states. *See, e.g.*, North American Free Trade Agreement ch. 11, Dec. 17, 1992, 107 Stat. 2057, 32 I.L.M. 289; International Covenant on Civil and Political Rights, Dec. 19, 1966, S. EXEC. DOC. No. E., 95-2 (1978), 999 U.N.T.S. 172.

232 Given the accountability gap, scholars are increasingly looking to the law of state responsibility for guidance. *See, e.g.*, ANDERSON & WAXMAN, *supra* note 138, at 17 (arguing that upholding the abstract principles of individual accountability is not worth forgoing the potential concrete benefits of increasingly autonomous weapon systems); Daniel N. Hammond, Comment, *Autonomous Weapons and the Problem of State Accountability*, 15 CHI. J. INT'L L. 652, 668-71 (2015) (emphasizing state responsibility for the actions of autonomous weapon systems); Heyns Report, *supra* note 186, ¶ 81 ("In general, a stronger emphasis on State as opposed to individual responsibility may be called for . . . .").

233 *See* Hammond, *supra* note 232, at 669 (explaining that under a system of state liability, states would internalize the costs of crimes committed by their weapons).

234 *Cf.* Nollkaemper, *supra* note 89, at 4 ("If the goal is termination of the crimes and prevention of their recurrence, individual responsibility is unlikely to do the job."); *see also* Calabresi, *supra* note 197, at 718 ("[O]ne of the functions of accident law is to reduce the cost of accidents, by reducing those activities that are accident prone."); Steven Shavell, *Strict Liability Versus Negligence*, 9 J. LEGAL STUD. 1, 3 (1980).

As a matter of doctrine, holding states accountable for the actions of their autonomous weapon systems requires only clarifying the applicability of existing law (rather than creating a new liability regime out of whole cloth). States are already responsible for all serious violations of international humanitarian law "attributable to the State under international law."[235] Regardless of whether an autonomous weapon system is analogized to more conventional weaponry or a soldier, its actions should simply be attributed to the state fielding it.[236] Once the actions of an autonomous weapon system are attributable to a state, that state is then "under an obligation to make full reparation for the injury caused by the internationally wrongful act."[237] Such reparation might "take the form of restitution, compensation and satisfaction, either singly or in combination."[238] If a serious violation results in injurious damage and it is impossible to restore the situation to its pre-violation state, the state should pay compensation.[239]

In practice, states often refuse to take responsibility for actions akin to war torts. Consider the downing of Iran Air Flight 655. Not only was this incident notable as one of the most deadly in aviation history—290 passengers and crew members, including 66 children, died—it also involved an autonomous weapon system, albeit one operated in a semiautonomous mode.[240] In 1988, as the Iran–Iraq War was ending, the *USS Vincennes* was patrolling in the Strait of Hormuz.[241] The *Vincennes* was outfitted with the then-brand-new Aegis Combat System.[242] On July 3, after taking fire from gunboats, the *Vincennes* pursued them into Iranian territorial waters. While

235 Draft Articles, *supra* note 29, art. 2(a).

236 The question of attribution becomes more complicated where a nonstate actor is deploying the autonomous weapon system (or if the weapon system is itself best analogized to a nonstate actor). Ultimately, the confusion here is largely a product of the evolving and uncertain state of the law of state responsibility for the actions of nonstate actors, rather than due to the autonomous nature of a weapon system. *Cf.* EMILY CHERTOFF, LARA DOMÍNGUEZ, ZAK MANFREDI & PETER TZENG, YALE LAW SCH. CTR. FOR GLOB. LEGAL CHALLENGES, STATE RESPONSIBILITY FOR NON-STATE ACTORS 18-29 (2015), https://www.law.yale.edu/system/files/yls_glc_state_responsibility_for_nsas_that_detain_2015.pdf [https://perma.cc/NVR3-N2RQ].

237 Draft Articles, *supra* note 29, art. 31.

238 *Id.* art. 34. Restitution requires "re-establish[ing] the situation which existed before the wrongful act was committed." *Id.* art. 35. Monetary compensation is required to the extent damage is not made good by restitution. *Id.* art. 36. Satisfaction—which may entail acknowledging the breach, expressing regret, or a formal apology—is required to the extent the damage cannot be made good by restitution or compensation. *Id.* art. 37. Interest on sums may be necessary to ensure full reparation. *Id.* art. 38. The 2005 Basic Principles expand this list to include rehabilitation and guarantees of nonrepetition. Basic Principles, *supra* note 82, ¶ 18; *see also* Draft Articles, *supra* note 29, art. 30(b) (imposing an obligation on a state responsible for an internationally wrongful act to offer guarantees of non-repetition).

239 ICRC COMMENTARY, *supra* note 9, at 1056.

240 Singer, *Robots at War*, *supra* note 131, at 40.

241 *Id.*

242 *Id.*

there, the Aegis system mislabeled a passenger jet as an F-14 Tomcat. Despite hard data that suggested the plane was not a threat, the crew nonetheless authorized the Aegis to fire, resulting in the deaths of all 290 individuals on board.[243] In 1991, Iran brought suit in the International Court of Justice, claiming that the United States had violated numerous treaty obligations and Article 2(4) of the U.N. Charter.[244] Iran demanded declaratory relief, an order that the United States cease all unlawful conduct, and reparation for damages.[245] The United States contested the International Court of Justice's jurisdiction under treaty and customary law, but in 1996 it agreed to settle for a $61.8 million compensation payout to the victims' families.[246] The United States never admitted fault, and no one on board the ship or within the Navy was ever publicly punished.[247]

It may be, however, that states' reluctance to admit fault is linked less to an unwillingness to accept responsibility than to a disinclination to accept moral blame. The United States actually offered to compensate the families of the victims shortly after the tragedy,[248] and it was willing to pay millions of dollars to settle Iran's claim; it was not willing to publicly acknowledge fault for the downing of the passenger flight in response to accusations of having committed a "criminal act," an "atrocity," and a "massacre."[249] Similarly, Article 231 of the Treaty of Versailles—which stated that Germany accepted the responsibility for the losses and damages of World War I—was known as the "War Guilt Clause," and viewed by Germans as a national humiliation.[250] Many have even suggested it was an important factor in Hitler's subsequent rise to power.[251] Had it been clear that the article was

243 *Id.*

244 *See generally* Memorial submitted by the Islamic Republic of Iran, Aerial Incident of 3 July 1988 (Iran v. U.S.), 1990 I.C.J. Pleadings 519 (July 24, 1990).

245 *Id.* at 261.

246 Settlement Agreement, Aerial Incident of 3 July 1988 (Iran v. U.S.), http://www.icj-cij.org/docket/files/79/11131.pdf [https://perma.cc/LE2W-Y8A6].

247 *Cf.* Opinion, *Blaming the Vincennes' Victims*, N.Y. TIMES (Aug. 23, 1988), http://www.nytimes.com/1988/08/23/opinion/blaming-the-vincennes-victims.html[https://perma.cc/32D9-P988].

248 *See* Statement by Assistant to the President for Press Relations Fitzwater on United States Policy Regarding the Accidental Attack on an Iranian Jetliner over the Persian Gulf, 2 PUB. PAPERS 934-35 (July 11, 1988).

249 Fox Butterfield, *Iran Falls Short in Drive at U.N. to Condemn U.S. in Airbus Case*, N.Y. TIMES (July 15, 1988), http://www.nytimes.com/1988/07/15/world/iran-falls-short-in-drive-at-un-to-condemn-us-in-airbus-case.html [https://perma.cc/NS6H-45PP].

250 *See* Versailles Peace Treaty, *supra* note 50, art. 231; HAJO HOLBORN, A HISTORY OF MODERN GERMANY: 1840-1945, at 576-77 (1964).

251 *See, e.g.*, ELAZAR BARKAN, THE GUILT OF NATIONS: RESTITUTION AND NEGOTIATING HISTORICAL INJUSTICES, at xxiii (2000).

assigning tort-like responsibility rather than criminal-like guilt, it would hardly have carried the same sting.[252]

States might actually welcome a clear distinction between war torts and war crimes and the attendant ability to accept responsibility for injurious wrongs without accepting blame for criminal acts. Indeed, many states—particularly the political and military powerhouses that are currently employing autonomous weapon systems—already voluntarily compensate victims of their actions in armed conflicts with *ex gratia* payments.[253] The United States, for example, passed domestic legislation in 1918 requiring it to pay for damages caused by its foreign forces,[254] which it expanded into the Foreign Claims Act in 1942.[255] U.S. claims commissioners often find ways to circumvent certain liability exclusions, presumably because they believe that making an award is in the best interests of the United States.[256] And many states are party to Status of Forces Agreements (SOFAs), which often provide a means by which civilians may pursue tort remedies. For example, in 1953, the United States ratified the North Atlantic Treaty Organization's Status of Forces Agreement, which established a jurisdictional regime allowing injured citizens in a host state to pursue civil damages for tortious acts of foreign forces.[257] Twenty-six states are party to the NATO SOFA, and an additional twenty-two non-NATO states have signed the NATO Partnership for Peace Program, under which they incur the same obligations.[258] The NATO SOFA thereby provides a means for satisfying the "general principle of law . . . that those who cause injury to others compensate them."[259] These practices suggest that states might be willing to commit to a more formal agreement codifying their responsibility for war torts, or at least those war torts committed by autonomous weapon systems.

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252 Robert C. Binkley & A.C. Mahr, *A New Interpretation of the "Responsibility" Clause in the Versailles Treaty*, 24 CURRENT HIST. 398, 398 (1926) (describing the article as "an assumption of liability to pay damages than an admission of war guilt," much like "a man who undertakes to pay all the cost of a motor accident than to the plea of guilty entered by an accused criminal").

253 Paul von Zielbauer, *Confusion and Discord in U.S. Compensation to Civilian Victims of War*, N.Y. TIMES (Apr. 12, 2007), http://www.nytimes.com/2007/04/12/world/americas/12iht-abuse.1.5246758.html [https://perma.cc/2SZJ-HYLU] (noting that, between 2001 and the spring of 2007, the United States paid approximately $32 million to civilians injured or the families of civilians killed in Afghanistan and Iraq); *see also* Witt, *supra* note 202 (discussing the role of damages payments in U.S. military strategy).

254 An Act to Give Indemnity for Damages Caused by American Forces Abroad, Pub. L. No. 65-133, 40 Stat. 532 (1918), *repealed by* Act of Apr. 22, 1943, ch. 67 § 5, 57 Stat. 66 (1943).

255 Foreign Claims Act, ch. 645, 55 Stat. 880 (1942) (current version at 10 U.S.C. § 2734 (2012)).

256 Witt, *supra* note 202, at 1479.

257 Agreement Between the Parties to the North Atlantic Treaty Organization Regarding the Status of Their Forces, June 19, 1951, 4 U.S.T. 1792, 199 U.N.T.S. 67.

258 *Signatures of Partnership for Peace Framework Document*, N. ATLANTIC TREATY ORG. http://www.nato.int/cps/en/natohq/topics_82584.htm [https://perma.cc/7L76-XPGT] (last updated Jan. 10, 2012).

259 Reisman, *supra* note 229, at 514.

2. The Argument for Strict Liability

While strict liability may not be appropriate for all war torts, states should be held strictly liable for the actions of the autonomous weapon systems they field.[260]

Tort law ostensibly has two levels of liability for apportioning responsibility for unintended accidents: strict liability and negligence liability.[261] Under strict liability, an actor is held responsible for any injury caused by her behavior; under negligence liability, an actor is held responsible to the extent her failure to exercise reasonable care resulted in an injury. Strict liability is relatively easily determined; evaluations of negligence require complicated evaluations of facts, duties, and harm. As a result, selecting between these two regimes has significant implications for who bears the brunt of unintended mishaps: "Under strict liability, the costs of faultless accidents fall on injurers; under negligence, they fall on victims."[262]

In domestic tort law, strict liability is often employed in situations where it is too difficult to prove that a specific defendant failed to exercise due care or, even if there was a failure, that the failure caused the injurious harm. As weapon systems have become more complex, the causal chain of accountability for unintended consequences of their use has become more attenuated.[263] A person using a sword intends to harm the person he cuts; regardless of whether the victim is a wounded solider or civilian child, the wielder is acting intentionally. Similarly, when a bomber drops an arsenal indiscriminately in a civilian area, the bombardier is acting recklessly. As temporal and geographic distances between the decision to use lethal force and the consequences of that action increase, however, the causal chain of accountability is weakened. Up until now, however, it has at least been

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260 To the extent a victim is responsible for his or her injury, a state should be able to employ the contributory negligence defense, but the burden of proof should rest on the state to demonstrate that the victim knowingly assumed an unreasonable risk.

261 The dividing line between strict and negligence liability is less sharp than it first appears. There are many forms of negligence that operate like strict liability in practice: the doctrine of res ipsa loquitur presumes negligence from the resulting injury absent evidence of how the defendant behaved, and negligence per se presumes negligence from a statutory violation. *See* Kenneth S. Abraham, *Strict Liability in Negligence*, 61 DEPAUL L. REV. 271 (2012) (discussing three examples of what he terms "strict liability in negligence": the objective standard, the perfect-compliance rule, and the thin-skull rule); *id.* at 283 n.35 (listing "res ipsa loquitur, respondeat superior, liability for breach of a nondelegable duty, and joint and several liability for a single, theoretically divisible but practically indivisible harm" as "exhibit[ing] some feature of strict liability").

262 Jules L. Coleman, *The Structure of Tort Law*, 97 YALE L.J. 1233, 1235 (1988) (reviewing WILLIAM LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW (1987), and STEVEN SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW (1987)).

263 Playing off of von Clausewitz, this has been described as the "fog of technology." Duncan Hollis, *The Fog of Technology and International Law*, OPINIO JURIS (May 15, 2015, 8:59 AM), http://opiniojuris.org/2015/05/15/the-fog-of-technology-and-international-law/ [https://perma.cc/668F-9JLU].

plausible to argue that an individual's decision to use lethal force was a proximate cause of that decision's consequences.

Because of their capacity for independent and unpredictable action,[264] autonomous weapon systems break that chain. It will be nearly impossible to prove that an individual failed to exercise due care (either in the manufacturing, programming, or use of an autonomous weapon systems) or that the injuries caused by an autonomous weapon system were due to such a failure. In accordance with the reasoning in many products liability cases,[265] a strict liability regime is most appropriate to address the difficulty with tracing the causal chain of injuries caused by autonomous weapon systems.

Additionally, strict liability is usually applied to lawful but inherently dangerous activities, such as possession of an animal with dangerous propensities or engagement in abnormally dangerous activities.[266] Strict liability is more appropriate in such cases; under a negligence regime, the responsible party could escape liability by conforming to the legal standard of care, even if there was no reason to engage in the activity in the first place.[267] Meanwhile, strict liability incentivizes those engaging in an inherently dangerous activity to consider both the level of care and the level of activity.[268]

Not only are the independent actions of autonomous weapon systems not fully predictable, they are also inherently dangerous. Autonomous weapon systems are designed and intended to kill human beings and wreak destruction; their capacity for independent action means they may sometimes kill the wrong human beings or destroy the wrong object. The use of autonomous weapon systems in armed conflict is therefore "ultra-hazardous"—it involves a risk of serious harm that cannot be eliminated, even if utmost care is exercised.[269] Given that the risk of harm can be minimized

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264 *See supra* subsection II.A.3.

265 *Cf.* Escola v. Coca Cola Bottling Co., 150 P.2d 436, 440-41 (Cal. 1944) (Traynor, J., concurring) ("[P]ublic policy demands that responsibility be fixed wherever it will most effectively reduce the hazards to life and health inherent in defective products that reach the market. It is evident that the manufacturer can anticipate some hazards and guard against the recurrence of others, as the public cannot."); *se also* Council Directive 85/374/EEC of 25 July 1985 On the Approximation of the Laws, Regulations and Administrative Provisions of the Member States Concerning Liability for Defective Products, 1985 O.J. (L 210) 29, 29 ("[L]iability without fault on the part of the producer is the sole means of adequately solving the problem, peculiar to our age of increasing technicality, of a fair apportionment of the risks inherent in modern technological production . . . .").

266 RESTATEMENT (SECOND) OF TORTS §§ 509, 520 (AM. LAW INST. 1977).

267 RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 178 (7th ed. 2007).

268 Calabresi, *supra* note 197, at 718; Shavell, *supra* note 234, at 3, 7, 11-12, 18-19.

269 Rylands v. Fletcher [1868] LRE & I. App. 3 (HL); *see also* Langan v. Valicopters, 567 P.2d 218, 221 (Wash. 1977) (describing the six factors used to determine whether an activity is abnormally dangerous, at least five of which apply to the use of autonomous weapon systems in armed conflicts); RESTATEMENT (SECOND) OF TORTS § 520 (AM. LAW INST. 1977) (same).

only by the entity responsible for the activity, it is appropriate for that party to bear the full brunt of the consequences of such use.

In addition to the inevitability of autonomous weapon systems being involved in a normal accident,[270] they are also at risk of hacking, spoofing, and other such risks.[271] A strict liability regime would give added impetus to states to limit hacking opportunities—either through increasing security measures or by minimizing the deployment of such weaponry.[272]

In short, there are a number of arguments for regulating the actions of autonomous weapon systems through strict liability. Due to their capacity for unpredictable action and the corresponding difficulty of establishing who did not exercise due care in the design, manufacture, and use of an autonomous weapon system, it will be nearly impossible to establish legal fault under a negligence standard.[273] In contrast, a strict liability regime places the costs of employing an autonomous weapon system squarely on the state (subject to a contributory negligence defense) and is easier to enforce; both of these will result in greater payouts to victims. This will encourage states to take care both in how they use autonomous weapon systems (ranging from increasing security measures to only using them in environments where there is little risk to unlawful targets) and in how often they use autonomous weapon systems. Ideally, strict liability will ultimately deter excessive usage of autonomous weapon systems and thereby reduce the overall number of tragic accidents.

3. Forms and Forums

Given the varied sources of international legal obligations, it is difficult to predict how a war torts regime might evolve. Soft law may develop from states' domestic laws and policies, international non-binding resolutions or declarations, or industry practice. New customary international law may materialize as state practice solidifies into *opinio juris sive necessitatis*.[274] States might conclude a treaty codifying norms or creating new ones.[275] Judicial

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270 *See supra* subsection II.A.3.

271 SCHARRE, *supra* note 5, at 15.

272 *Cf.* Shavell, *supra* note 234, at 3. Similarly, U.S. lawmakers are currently discussing to what extent an automobile's vulnerability to cyberattacks constitutes a safety defect, which would make manufacturers strictly liable for accidents resulting from hacks. Mike Spector, *Is a Hacked Vehicle Also Defective?*, WALL ST. J. (Aug. 24, 2015, 7:02 PM), http://www.wsj.com/articles/is-a-hacked-vehicle-also-defective-1440457334 [https://perma.cc/US99-RQ29].

273 Rather, holding a state strictly liable is akin to joint enterprise liability, insofar as the state can be conceived as a stand-in representing the designers, manufacturers, programmers, and deployers of autonomous weapon systems.

274 Statute of the International Court of Justice art. 38(1)(b), June 26, 1945, 59 Stat. 1055, 33 U.N.T.S. 993 (including "international custom" as one of the primary sources of international law).

275 *Id.* art. 38(1)(a) (including "conventions" as one of the primary sources of international law).

opinions and academic writings may elucidate confusing concepts.[276] Nor is it obvious, as a normative matter, what is the best form for new regulations regarding new technology. Treaties are clear statements of international legal obligations, but they are relatively inflexible; customary international law and soft law are responsive to state interests and new technological developments, but they are relatively weak: it can be difficult to identify when a new customary law norm is established, and soft law sources are not legally binding.

An ideal international legal regime for the regulation of autonomous weapon systems would exploit the differing strengths of the different sources of international law. Accordingly, I have suggested elsewhere that states negotiate a broad framework convention that can be augmented and expanded by specialized additional protocols, soft and interstitial law, and domestic law.[277] One of these additional protocols could outline an integrated international and domestic liability regime for autonomous weapon systems. At the very least, it should reiterate and clarify the relevance of the law of state responsibility. It could also clarify common definitions, describe overarching regulatory aims, and require member states to pass legislation creating domestic liability for both war crimes and war torts (which may entail waiving sovereign immunity).

Ambitiously, a treaty might establish an independent tribunal for autonomous weapon systems' war torts, much like the ICC or other specialized criminal tribunals.[278] Theoretically, the International Court of Justice could also serve as a forum for such suits, but its jurisdiction limitations will reduce its usefulness. The Court has jurisdiction only in contentious cases on the basis of state consent: states may agree to bring a specific issue before the Court by submitting a compromis,[279] or states may accept the Court's jurisdiction as generally compulsory.[280] Many powerful states have refused to accept or have withdrawn from the Court's compulsory jurisdiction,[281] and a state allegedly responsible for an autonomous weapon system's internationally wrongful act would have little incentive to submit a compromis. States employing autonomous weapon systems might be more

276 *Id.* art. 38(1)(d) (noting that judicial decisions and academic commentary provide a "subsidiary means for the determination of the rules of law").

277 Crootof, *Killer Robots*, *supra* note 4, at 1897-99.

278 *Cf.* Steintz, *supra* note 18 (proposing an "International Court of Civil Justice").

279 Statute of the International Court of Justice art. 36(1), June 26, 1945, 59 Stat. 1055, 33 U.N.T.S. 993.

280 *Id.* art. 36(2).

281 Only 72 of the 193 U.N. member states are subject to the ICJ's compulsory jurisdiction. *Declarations Recognizing the Jurisdiction of the Court as Compulsory*, INT'L CT. JUST., http://www.icj-cij.org/jurisdiction/?p1=5&p2=1&p3=3 [https://perma.cc/Y3YF-9TZ5] (last updated Apr. 15, 2016). Notably, four members of the Security Council—China, France, Russia, and the United States—do not currently accept compulsory jurisdiction.

willing to submit to the limited jurisdiction of a specialized tribunal, however, as it will not open the possibility of other kinds of suits.

A carefully tailored independent tribunal would also help alleviate the plaintiff problem. Tort suits are usually initiated by the injured party, which seemingly ensures that only important wrongs are litigated. However, there are significant drawbacks to limiting war torts plaintiffs to either states or individuals. There are myriad political reasons a state might decide against bringing an otherwise strong war tort suit against another state, and individuals often do not have the resources or wherewithal to bring suits against states themselves. But tort law is not the only legal regime where accountability for wrongs is sometimes foregone; prosecutorial discretion serves a similar aim in criminal law. To the extent war torts are wrongful acts that affect the international legal order, it would be appropriate to charge independent prosecutorial-like actors—call them "International Representative Plaintiffs"—with bringing war tort suits against states on behalf of harmed individuals. These International Representative Plaintiffs could have the independent power to determine when a suit should be brought, and states and individuals could also petition them to consider specific cases.

An integrated international and domestic liability regime would be a familiar extension of the way international and domestic liability regimes currently interact to create more effective enforcement mechanisms. Treaties often require states to pass national legislation implementing the treaty's provisions without mandating the specifics of how that is to be done. For example, the 1949 Geneva Conventions oblige state parties to search for and try or extradite persons alleged to have committed or alleged to have ordered the commission of war crimes,[282] and the Chemical Weapons Convention requires state parties to, "in accordance with [their] constitutional process, adopt the necessary measures to implement its obligations under this Convention" and proceeds to detail certain crucial requirements.[283]

However, the international community need not collectively organize to create tort liability for the actions of autonomous weapon systems. One nation-state could do so singlehandedly, simply by passing domestic legislation with universal jurisdiction. In fact, depending on the alleged tort violation, it is possible that the Alien Tort Statute could already be used to prosecute individuals for war torts caused by autonomous weapon systems.[284] However,

282 First Geneva Convention, *supra* note 36, art. 49; Second Geneva Convention, *supra* note 36, art. 50; Third Geneva Convention, *supra* note 36, art. 129; Fourth Geneva Convention, *supra* note 36, art. 146.

283 Chemical Weapons Convention, *supra* note 38, art. VII.

284 The U.S. Supreme Court has held that the ATS provides jurisdiction only for violations of customary international law that either were recognized as such at the time the statute was adopted in

because of the political problems associated with attempting to hold foreign states accountable for international law violations in domestic courts[285] and the foreign policy conflicts legislation like the ATS engenders,[286] it would be far preferable to have an overarching international war torts regime than a domestic one.

4. The Time Is Now

When liability for war torts is created is less important than whether it is created—but timing may affect what is possible. States can await the inevitable tragic accident before constructing a responsive tort liability regime, but it would be far preferable if they took proactive action.

Timing is always an issue in attempting to regulate new technology.[287] It is of particular importance in the international legal order, however, as the lack of a single authoritative lawmaker renders international law prone to reactive lawmaking.

There is much to be said for reactive lawmaking when attempting to regulate a poorly understood new technology. First, it allows for a great deal of flexibility; instead of preemptively making rules or regulatory standards that will quickly become outdated, legal developments will track technological ones. Second, it avoids inadvertently constraining beneficial innovation through overbroad rules. If autonomous weapon systems are eventually better able to comply with the law of armed conflict than human soldiers, for example, it would be unfortunate to ban them at this early stage of development. Finally, and perhaps most influentially, reactive lawmaking

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1789, or, if based on current international law, are "defined with a specificity comparable to the features of the 18th century paradigms." Sosa v. Alvarez-Machain, 542 U.S. 692, 725 (2004). Federal courts have found torture; cruel, inhuman or degrading treatment; genocide; war crimes; crimes against humanity; summary execution; prolonged arbitrary detention; and forced disappearance actionable under the ATS. *See* Pamela J. Stephens, *Spinning* Sosa*: Federal Common Law, the Alien Tort Statute, and Judicial Restraint*, 25 B.U. INT'L L.J. 1, 5 (2007). If the actions of autonomous weapon systems result in such violations, the ATS may allow for prosecutions in U.S. courts if the statute's other jurisdictional requirements are satisfied. *See supra* note 16 (detailing other jurisdictional limitations).

285 *See, e.g.*, Adam S. Chilton & Christopher A. Whytock, Judging in Global Context: Domestic Courts, International Relations, and Foreign Sovereign Immunity 5-6 (Nov. 6, 2015) (unpublished manuscript) (on file with author).

286 The ATS problematically pits the judicial branch against the executive. *See, e.g.*, Curtis A. Bradley & Jack L. Goldsmith, *Judicial Foreign Policy We Cannot Afford*, WASH. POST, (Apr. 19, 2009), http://www.washingtonpost.com/wp-dyn/content/article/2009/04/17/AR2009041702859.html [https://perma.cc/V96M-9F93].

287 *See, e.g.*, Gary E. Marchant, *The Growing Gap Between Emerging Technologies and the Law*, *in* THE GROWING GAP BETWEEN EMERGING TECHNOLOGIES AND LEGAL-ETHICAL OVERSIGHT: THE PACING PROBLEM 19 (Gary E. Marchant, Braden R. Allenby & Joseph R. Herkert eds., 2011); Lyria Bennett Moses, *Recurring Dilemmas: The Law's Race to Keep up with Technological Change*, 2007 U. ILL. J.L. TECH. & POL'Y 239.

has the benefit of inertia. It appears costless, as states need not invest time in treaty negotiations or norm-building conversations. Indeed, some suggested proactive regulations of new technology have proven to be utterly superfluous.[288] When an autonomous weapon system inevitably takes action that results in a serious violation of international humanitarian law, the responsible state will advocate for the most politically advantageous solution, the international community will respond, and international law will evolve.

But the evolutionary approach to lawmaking has a major drawback: it foregoes a precious opportunity to use law responsibly to channel the development of this new kind of weaponry.[289] Technology and law have long been dancing, and they regularly trade the lead—this is a situation where law should seize it.[290] International law—even treaty law—is not set in stone; instead, it is constantly evolving in response to state action and interests.[291] Left unregulated, states might employ increasingly autonomous weapon systems in ways that undermine hard-won humanitarian protections.[292] The stakes here are too high to leave to the vagaries of responsive state practice.

Not only may acting now make it possible to create tort liability for the actions of autonomous weapon systems, it is a precipitous time for legal intervention. States—particularly those states fielding increasingly autonomous weapon systems—are participating in international conversations on the subject and expressing an interest in developing regulations.[293]

5. A Useful Test Case

Why would states create a liability regime for an autonomous weapon system's war torts? Consider the failure to create tort remedies for

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288 *See* Colin B. Picker, *A View from 40,000 Feet: International Law and the Invisible Hand of Technology*, 23 CARDOZO L. REV. 149, 186-87 (2001) (providing the example of proposals for weather modification treaties in the 1960s and 1970s that have proven to be superfluous today, because "weather modification has proven to be considerably more complicated than originally believed").

289 Additionally, reactive lawmaking is often reactive and overbroad, the product of the perceived need to avoid similar future tragedies rather than the considered evaluation of the most appropriate legal regime.

290 *See* Timothy Coughlin, *The Future of Robotic Weaponry and the Law of Armed Conflict: Irreconcilable Differences*?, 17 U.C. LONDON JURIS. REV. 67, 67 (2011) ("Answering to different masters, technological development and legal structures are in a constant state of ebb and flow, with each pushing the contours of the other in a choreographed exchange of concessions and compromises.").

291 Crootof, *supra* note 231 (discussing various means of treaty modification, including formal amendment, supersession, adaptive interpretation, and modification by subsequently-developed customary international law).

292 *See* Crootof, *Killer Robots*, *supra* note 4, at 1894-96. For a discussion of how the delayed creation of international regulations can have significant and irreversible real world effects, see Picker, *supra* note 288, at 186 (discussing how the delay in the international law of ocean management has contributed to overfishing, pollution, and other irreversible harms).

293 *See supra* note 138.

environmental damage, notwithstanding decades of effort from activists and civil society[294]: While the issues with transboundary pollution are clear and obvious, states remain reluctant to accept direct liability or to create tort liability for private actors.[295] Given the likelihood of accidents in armed conflicts and the high stakes associated with the use of lethal force, why would states have any interest in creating a new liability regime?

In environmental law, the alternative to tort liability is no liability.[296] At first glance, it appears that is the case here: if no one can be held directly or indirectly liable under existing law, there appears to be little incentive for states to create a new liability regime. However, an autonomous weapon system will eventually and inevitably act in a way that results in significant death or destruction with no one acting willfully. When that occurs, there will be widespread outcry to hold some person or entity accountable. Absent a regime or theory of tort liability for such actions, it is likely that criminal law will be read to create ex post liability for a "crime" that calls out for punishment, much as occurred at Nuremberg. The alternative to tort liability will not be no liability—instead, it will likely be expanded criminal liability. And not only is this morally questionable, it threatens to undermine the legitimacy of all of international criminal law.[297]

Not only do states have a vested interest in creating a tort liability regime, the unpredictability and inherently dangerous nature of autonomous weapon systems justify treating responsibility for this weapons technology differently. Unlike other weapons, autonomous weapon systems are capable of acting independently, breaking the causal chain between an individual's decision to deploy them and the target of these weapons' ultimate use of lethal force. And, unlike other robots, autonomous weapon systems are intended to kill people—they just are not supposed to kill the wrong people. The combination of these two factors strongly favor imposing strict liability. In contrast, when a non-autonomous or nonlethal weapon system malfunctions and causes a serious violation of international humanitarian law, a negligence standard may be more appropriate. It is therefore possible to draw a line in the sand and create a limited strict liability tort regime governing the actions of autonomous weapon systems. Indeed, it may prove a useful test case: if it is a successful counterpart to international criminal law, states may consider the utility of further expanding state liability for war torts.

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294 Sachs, *supra* note 12, at 838.

295 *See id.* at 838-39 ("Effective tort liability rules, it seems are the Yeti of international environmental law—pursued for years, sometimes spotted in rough outlines, but remarkably elusive in practice.").

296 *Id.* at 839-40.

297 *See supra* subsection II.B.4.

This Article's proposal naturally raises the question of whether states should be responsible and provide compensation for all war torts—not just those committed by autonomous weapon systems. Furthermore, why shouldn't state responsibility extend to encompass all unanticipated harm to civilians resulting from actions attributable to a state?[298] Addressing these questions and outlining a comprehensive international war torts regime akin to what has developed in international criminal law is beyond the scope of this Article. I look forward to exploring these and related issues in future work.

CONCLUSION

The conversation on accountability for the actions of autonomous weapon systems has been trapped in the language of "war crimes." International criminal law is useful in assigning individual liability in situations where a human being employs autonomous weapon systems recklessly or with the intention of committing a war crime. However, it is toothless in situations where no individual acts willfully.

This is not a failure of international criminal law; this is a feature, not a bug. Criminal law aims to prohibit certain actions altogether, through stigmatization and punishment, and individual criminal liability allows for the evaluation of whether someone is guilty of a moral wrong. This framework is not appropriate when attempting to regulate the use of a valuable but sometimes unpredictable and dangerous weapon. Instead, an international tort liability regime is the best solution to the autonomous weapon system accountability gap.[299]

At present, "[w]hether civilian casualties [in armed conflicts] are merely tragic accidents or war crimes depends on *mens rea*, and the intentions of those who order attacks and carry them out."[300] International criminal law exists to hold individuals accountable for war crimes; a complementary legal regime is necessary to hold states accountable for their war torts.

298 *See* Scott T. Paul, *The Duty to Make Amends to the Victims of Armed Conflict*, 22 TUL. J. INT'L L. & COMP. L. 87 (2013); Riesman, *supra* note 22; Ronen, *supra* note 22.

299 *Cf.* Calabresi, *supra* note 197, at 716 ("Our society is not committed to preserving life at any cost. In its broadest sense, this rather unpleasant notion should be obvious. Wars are fought. The University of Mississippi is integrated.").

300 Peter Asaro, *Ethical Issues Raised by Autonomous Weapon Systems*, *in* INT'L COMM. OF THE RED CROSS, AUTONOMOUS WEAPON SYSTEMS: TECHNICAL, MILITARY, LEGAL AND HUMANITARIAN ASPECTS 49, 51 (2014), http://reliefweb.int/sites/reliefweb.int/files/resources/4221-002-autonomous-weapons-systems-full-report%20%281%29.pdf [https://perma.cc/2Y44-3J9X].