ACCOUNTABILITY AND AUTONOMOUS WEAPONS: MUCH ADO ABOUT NOTHING?

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INTRODUCTION

One of the hottest topics of emerging technologies of war is autonomous weapons. Within the field, legal and ethical questions are as prominent as the technical ones, and two camps seem to have emerged. The first seeks to ban autonomous weapons entirely,[1] and the second recognizes their inevitability and seeks to regulate them.[2]

A leader of the first group (demanding a total ban) has been Human Rights Watch (HRW). In a major paper, entitled *Losing Humanity: The Case Against Killer Robots*, HRW - aided by Harvard Law School's International Human Rights Clinic (IHRC) – attempted to establish that fully autonomous weapons "would not be consistent with international humanitarian law and would increase the risk of death or injury to civilians during armed conflict."[3] Accordingly, the report concluded, a "preemptive prohibition on their development and use is needed."[4]

However, that effort was rather thoroughly deconstructed by Professor Michael Schmitt in a rebuttal entitled, "Autonomous Weapon Systems and International Humanitarian Law: A Reply to the Critics."[5] Schmitt found that a "principal flaw

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[1] *See e.g.*, Campaign to Stop Killer Robots, http://www.stopkillerrobots.org/ (last visited Mar. 4, 2016).

[2] Michael Schmitt, *Regulating Autonomous Weapons Might be Smarter Than Banning Them*, JUST SECURITY (Aug.t 10, 2015, 9:00 AM), https://www.justsecurity.org/25333/regulating-autonomous-weapons-smarter-banning/.

[3] HUMAN RIGHTS WATCH, LOSING HUMANITY: THE CASE AGAINST KILLER ROBOTS, Nov. 2012, at 1, http://www.hrw.org/sites/default/files/reports/arms1112ForUpload_0_0.pdf [hereinafter LOSING HUMANITY]. The paper defines "fully autonomous" weapons as referring to "to both out-of-the-loop weapons and those that allow a human on the loop, but that are effectively out-of-the-loop weapons because the supervision is so limited." Additionally, the report defines "out-of-the-loop weapons" as being "[r]obots that are capable of selecting targets and delivering force without any human input or interaction."

[4] *Id.*

[5] Michael N. Schmitt, *Autonomous Weapon Systems and International Humanitarian Law: A Reply to the Critics*, HARVARD NATIONAL SECURITY JOURNAL FEATURES (Feb. 5, 2013, 2:07 pm),

in the analysis is a blurring of the distinction between international humanitarian law's prohibitions on weapons *per se* and those on the unlawful use of otherwise lawful weapons."[6] He went on to convincingly conclude that "that autonomous weapon systems are not unlawful *per se*,"[7] adding that:

> Their autonomy has no direct bearing on the probability they would cause unnecessary suffering or superfluous injury, does not preclude them from being directed at combatants and military objectives, and need not result in their having effects that an attacker cannot control. Individual systems could be developed that would violate these norms, but autonomous weapon systems are not prohibited on this basis *as a category*.[8]

While it may be that the HRW/IHRC's report was (and is) popular among anti-autonomous non-governmental organization (NGO) weapons groups,[9] it evidently did not make much headway with nation-states because as of 2015 as "many as forty nations are currently developing military robotics."[10] Still, the Future of Life Institute gained considerable publicity recently[11] when it distributed an "open letter" signed by many artificial intelligence developers (and others) which called for a "ban on offensive autonomous weapons beyond meaningful human control."[12]

Apparently undeterred, HRW/IHRC renewed its effort with a new paper released in April of 2015 entitled, *Mind the Gap: The Lack of Accountability for Killer Robots*.[13] This report replays many themes from the previous effort – and

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http://harvardnsj.org/2013/02/autonomous-weapon-systems-and-international-humanitarian-law-a-reply-to-the-critics/.

[6] *Id.*, at

[7] *Id.*, at 35.

[8] *Id.*

[9] *See e.g.*, Campaign to Stop Killer Robots, http://www.stopkillerrobots.org/ (last visited Oct. 16, 2015).

[10] Steven Groves, *The U.S. Should Oppose the U.N.'s Attempt to Ban Autonomous Weapons*, Issue Brief No. 2996, The Heritage Foundation, Mar. 2015, *available at* http://thf_media.s3.amazonaws.com/2015/pdf/BG2996.pdf.

[11] *See e.g.*, Daniel Victor, *Elon Musk and Stephen Hawking Among Hundreds to Urge Ban on Military Robots*, NEW YORK TIMES, Jul. 27, 2015, http://www.nytimes.com/2015/07/28/technology/elon-musk-and-stephen-hawking-among-hundreds-to-urge-ban-on-military-robots.html.

[12] *Autonomous Weapons: an Open Letter from AI & Robotics Researchers*, Future of Life Institute, Jul. 28, 2015, http://futureoflife.org/AI/open_letter_autonomous_weapons (last visited Mar. 4, 2016). Besides the issue as to what phrase "offensive" autonomous weapons would encompass, it is also not explained as to why non-offensive autonomous weapons "beyond meaningful human control" would not likewise be objectionable.

[13] HUMAN RIGHTS WATCH, MIND THE GAP: THE LACK OF ACCOUNTABILITY FOR KILLER ROBOTS, Apr. 2015, https://www.hrw.org/sites/default/files/reports/arms0415_ForUpload_0.pdf [hereinafter MIND THE GAP].

comes up with the same outright ban recommendation - but alters its tact towards that end somewhat. This time it seems that autonomous weapons should be banned because, they claim, "neither criminal law nor civil law guarantees adequate accountability for individuals directly or indirectly involved in the use of fully autonomous systems." [14]

This purpose of this essay is to briefly examine *Mind the Gap* to see how it relates to legal actualities as to accountability. It will conclude that it deviates from it in material ways, and finds that this new tact is even more egregiously flawed than HRW/IHRC's original approach. In point of fact, although no one can "guarantee" accountability, there are sufficient legal tools to do so when appropriate; autonomous weapons are not somehow exempted from legal regimes applicable to other weapons or the law of war more generally. This essay will contend – as others have – that it is better to develop norms to control these systems than to attempt to ban them outright.

THE THRESHOLD QUESTION: IS PERSONAL ACCOUNTABILITY AN ESSENTIAL ELEMENT OF THE LEGALITY OF A WEAPON?

In presenting its contentions HRW/IHRC seems to confuse the issue of *personal* accountability with the legality of a weapons system itself. In fact, international law has no such requirement, and *Mind the Gap* identifies none. Article 36 of Protocol 1 of the Geneva Conventions does call upon parties to "determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law."[15] The Protocol goes to focus weapons' legality on whether it can be "directed at a specific military objective," and prohibits those which are "of a nature to strike military objectives and civilians or civilian objects without distinction."[16]

For its part, the U.S.(which is not a party to Protocol 1) does not recognize Article 36 as part of customary international law, but conducts such reviews as matter of long standing policy.[17] These reviews follow standard international law

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[14] *Id.* at 1.

[15] Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts [hereinafter Protocol 1), art. 36, June 8, 1977, 1125 U.N.T.S. 3,
available at: http://www.refworld.org/docid/3ae6b36b4.html.

[16] Protocol 1, art. 51. The International Committee of the Red Cross considers these prohibitions to be part of customary international law,

[17] U.S. DEPARTMENT OF DEFENSE, LAW OF WAR MANUAL, ¶19.20.1.2 (June 2015), [hereinafter DOD MANUAL] *available at*
http://www.defense.gov/Portals/1/Documents/pubs/Law-of-War-Manual-June-2015.pdf.

in that they ask the following questions:

- whether the weapon's intended use is calculated to cause superfluous injury;
- whether the weapon is inherently indiscriminate; and
- whether the weapon falls within a class of weapons that has been specifically prohibited.[18]

There are other possible prohibitions on weapon – such as a specific treaty – but *none* conditions legality on the ability to assign blame to a specific individual. One of the world's foremost weapons' law authorities, Professor William Boothby unequivocally dismisses the suggestion that *individual* accountability an essential element of the legality of a weapon. He says:

> The lawfulness of an autonomous weapon system under current international law does not, in my view, turn on the ability or otherwise to fix any identifiable individual with liability in the event of an unsatisfactory attack. Sometimes it will be possible to assign responsibility to an identifiable individual, sometimes it will not.[19]

This plainly reflects not only *lex lata*, but the practical realities of war. Yet *Mind the Gap* wrongly conflates the imperative under international law to investigate and prosecute "grave breaches" with the separate issue of the legality of a particular weapon.[20] Many if not most inarguably lawful weapons might still be used in an unlawful manner, but that does not lead to calls for bans. The focus should be on the *way* the system is used. To be clear, the International Committee of the Red Cross (ICRC) makes the point plainly that "a weapon that *can be used with precision* can also be abusively used against the civilian population. In this case, *it is not the weapon which is prohibited*, but the method or the way in which it is used."[21]

DOES PERSONAL ACCOUNTABILITY REALLY DETER?

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[18] *Id.*

[19] Email from Air Commodore William Boothby, RAF (Ret.), Associate Fellow at the Geneva Centre for Security Policy to the author (Oct. 11, 2015 5:26 PM) (on file with the author). Air Cdre Boothby is the author of WEAPONS AND THE LAW OF ARMED CONFLICT (2009).

[20] MIND THE GAP, at 15-17.

[21] *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 (64) INT'L REV. OF THE RED CROSS 937 (DEC. 2006) *available at* https://www.icrc.org/eng/assets/files/other/irrc_864_icrc_geneva.pdf. (emphasis added).

Mind the Gap seeks to support its thesis that individual liability is essential as a matter of international law to a weapon's legality by lecturing the reader with its interpretation of the "Purposes of Criminal Responsibility."[22] That rendition is mainly a rather basic recitation of the standard criminal justice themes of deterrence and retribution, as well as what HRW/IHRC calls "compensatory justice."[23]

However, in the context of international criminal tribunals (ICT) convened to judge atrocities and other grievous offenses against human rights, the utility of personal accountability for the purpose of deterrence is debatable. Terminating conflicts and rebuilding societies after them is a complex task, and efforts to impose individual liability in the name of deterrence against future acts may actually prove to be counterproductive. As two scholars put it, there are "reasons to be wary of the deterrence promise of ICTs", adding that "it is dangerously naïve to ignore the possibility that ICTs might not only lack any significant deterrence benefits, but might actually exacerbate conflicts in weak states."[24]

Furthermore, some experts question whether the psychology of war criminals – and particularly that of the most egregious among them - is such that they are even amenable to deterrence under *any* circumstances. Consider:

> Many argue that war crimes tribunals offer no deterrent to potential criminals whatsoever. People with strong convictions against a certain religious or ethnic group will likely not feel any less hatred for that group just because a possible tribunal looms in the future. Both Hitler and Pol Pot believed they would be revered by future generations for the extreme measures they took to change the makeup of their societies. These leaders were inspired by their visions of the future and it is unlikely the prospect of a war crimes tribunal would have swayed either dictator.[25]

In their report, HRW/IHRC never really accounts for the markedly diminished status of deterrence not only in the U.S.,[26] but in the international community generally (irrespective of any connection with autonomous weapons). In fact, that community has largely rejected the most coercive of all deterrents – the death

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[22] MIND THE GAP, at 15-17.

[23] *Id.*.

[24] Julian Ku and Jide Nzelibe, *Do International Criminal Tribunals Deter or Exacerbate Humanitarian Atrocities?* 84 WASH. UNIV. L. REV. 777, 833 (2006).

[25] Chris McMorran (updated by Heidi Burgess), International War Crimes Tribunals, The Beyond Intractability Project, The Conflict Information Consortium, University of Colorado (2003), *available at* http://www.beyondintractability.org/essay/int-war-crime-tribunals.

[26] U.S. Dep't of Justice, National Institute of Justice, *Five Things About Deterrence*, July 2014, *available at* https://www.ncjrs.gov/pdffiles1/nij/247350.pdf (last visited Oct. 20, 2015).

penalty – in international tribunals.[27]

More broadly, even the long-accepted principle of belligerent reprisal – something explicitly aimed at deterring a belligerent from continuing to violate international law – has been eviscerated by Protocol 1's restrictions on reprisals, even against objects.[28] This is despite the fact that, as Professor Michael Newton argues, "[r]easonable reprisals grounded on an empirical assessment of their deterrent value or framed as appropriate punishment for prior acts of terror may be the most morally acceptable and humane strategy for serving a strategic imperative of civilized society."[29]

To the extent that HRW/IHRC is underpinning their call for a ban on autonomous weapons based on the supposed indispensability of personal deterrence, that case has yet to be made. Given the political reality that individual criminal accountability does not always serve the strategic need for societal reconciliation, as well as the fact the international community has progressively deconstructed the tools of traditional deterrence, it is unclear that there is *any* significant contemporary norm to support HRW/IHRC suppositions as to deterrence, *qua* deterrence, and the propriety of their proposed ban on autonomous weapons.

WHY DOES HRW/IHRC THINK ACCOUNTABILITY CANNOT BE ACHIEVED?

Perhaps the most puzzling part of *Mind the Gap* is their central thesis: that there is not – and could not be – accountability for illicit use of autonomous weapons. Inexplicably, they believe it is necessary to make the rather obvious observation that "robots are not men" and go on to conclude in what we must assume is a serious syllogism, that "fully autonomous weapons could not have the mental state to make these wrongful actions crimes."[30] This, of course, is irrelevant as international law has never sought to impose criminal liability on weapons themselves.[31]

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[27] *See generally*, William Schabas, THE ABOLITION OF THE DEATH PENALTY IN INTERNATIONAL LAW (2002).

[28] Protocol I Additional to the Geneva Conventions of 12 Aug. 1949 (Relating to the Protection of Victims of International Armed Conflicts), art. 20, Dec. 12, 1977.

[29] Michael A. Newton, *Reconsidering Reprisals*, 20 DUKE J. OF COMP. & INT'L L.361 (2010), *available at:* http://scholarship.law.duke.edu/djcil/vol20/iss3/3.

[30] MIND THE GAP, at 15-17.

[31] Interestingly, in her book LIABILITY FOR CRIMES INVOLVING ARTIFICIAL INTELLIGENCE SYSTEMS (2015) Gabriel Hallevy argues that current criminal law – much developed from criminal liability of corporations – could cause "odd consequences, such as the imposition of criminal liability on machines." Whatever resonance this may have in domestic law, or even international law outside of the law of war, it does not apply to the lawfulness of weapons.

As Professor Michael Schmitt points out, contentions about accountability have "muddled" the debate about autonomous weapons. As he observes, it is not difficult to map out how it would be allocated:

> Clearly, any commander who decides to launch AWS [autonomous weapons system] into a particular environment is, as with any other weapon systems, accountable under international criminal law for that decision. Nor will developers escape accountability if they design systems, autonomous or not, meant to conduct operations that are not IHL [international humanitarian law] compliant. And States can be held accountable under the laws of State responsibility should their armed forces use AWS in an unlawful manner.[32]

Likewise, Armin Krishnan, concludes in his book, *KILLER ROBOTS: LEGALITY AND ETHICALITY OF AUTONOMOUS WEAPONS*, that the "legal problems with regard to accountability might be far smaller than some critics of military robots believe."[33] He sensibly points out that if "the robot does not operate within the boundaries of its specified parameters it is the manufacture's fault." Similarly, he says that if the robot is "used in circumstances that make its use illegal, then it is the commander's fault."[34]

But *Mind the Gap* assumes that a "gap could arise because fully autonomous weapons by definition would have capacity to act autonomously and therefore could launch independently and unforeseeably and indiscriminate attack against civilians…"[35] Here's the question: what system of justice in the civilized world attempts to impose criminal liability on anyone when a machine does something that was truly unforeseeable? If HRW/IHRC really wants to impose criminal liability for unforeseeable events, then their issue is not with autonomous weapons, it is with the fundamental precepts of criminal law in rule of law countries.[36]

Rather, a commander must have a reasonable understanding of the autonomous weapon system and how it will work before deploying it in a particular situation. In addition, as Peter Margulies has said, commanders should exercise what he calls

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[32] Michael N. Schmitt, *Regulating Autonomous Weapons Might be Smarter Than Banning Them*, JUST SECURITY (Aug. 10, 2015 9:00 AM), https://www.justsecurity.org/25333/regulating-autonomous-weapons-smarter-banning/ (citations omitted).

[33] Armin Krishnan, KILLER ROBOTS: LEGALITY AND ETHICALITY OF AUTONOMOUS WEAPONS 105 (2009).

[34] *Id.*

[35] MIND THE GAP, at 19.

[36] In the United States for example, due process forbids vicarious criminal liability for acts which are not reasonably foreseeable. *See e.g.*, United States v. Pinkerton, 328 U.S. 640 (1946).

"dynamic diligence," which is a regime which "will require frequent, periodic assessment and, where necessary, adjustment of [autonomous] weapons' systems inputs, outputs, and interface with human service members."[37] This approach, Margulies contends, is a practical version of what "meaningful human control would look like if that phrase were deployed to permit autonomy while preserving checks on autonomy's excesses."[38]

What degree of knowledge a commander must have about the workings of an autonomous weapons' system in order to be considered reasonable? As it happens, the experts who convened to study the application of the law of war to a related technology – cyber – made a number of relevant observations

> Commanders or other superiors in the chain of command cannot be expected to have a deep knowledge of cyber operations; to some extent, they are entitled to rely on the knowledge and understanding of their subordinates. Nevertheless, the fact that cyber operations may be technically complicated does not alone relieve commanders or other superiors of the responsibility for exercising control over subordinates. Of course, willful or negligent failure to acquire an understanding of such operations is never a justification for lack of knowledge. As a matter of law, commanders and other superiors are assumed to have the same degree of understanding as a 'reasonable' commander at a comparable level of command in a similar operational context. In all cases, the knowledge must be sufficient to allow them to fulfill their legal duty to act reasonably to identify, prevent, or stop the commission of cyber war crimes.[39]

There is utterly no reason not to apply this same reasoning to autonomous weapons. This means that in order for designers, commanders, operators and others involved with autonomous weapons to avoid liability, the devices – like any weapon - must be designed and tested so that their expected actions against life and property could be reasonably anticipated. This is nothing new to law of war practitioners. For example, the interpretation of the ICRC of Article 36 of the Additional Protocol[40] clearly indicates that testing is part of the required review

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[37] Peter Margulies, *Making Autonomous Weapons Accountable: Command Responsibility for Computer-Guided Lethal Force in Armed Conflict, in* RESEARCH HANDBOOK ON REMOTE WARFARE (Jens David Ohlin ed., forthcoming 2016), at 19, *draft available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2734900 (last visited Mar. 3, 2016).

[38] *Id.*, at 26.

[39] THE TALLINN MANUAL ON INTERNATIONAL LAW APPLICABLE TO CYBER WARFARE 94 (Michael N. Schmitt ed., 2013) [hereinafter TALLINN MANUAL].

[40] *See* note 15, *supra*.

process for weapons of every sort.[41]

The U.S. is quite demanding in this regard in order to ensure that weapons are built and used in the proper manner:

> [DoD] policy establishes *rigorous standards* for system design, testing of hardware and software, and *training* of personnel on the proper use of autonomous and semi-autonomous systems. Among other things, the policy requires that military commanders use autonomous and semi-autonomous weapon systems in a manner consistent with their *design, testing, certification, operator training, and doctrine*.[42]

All of this points to the fact that nations that adhere to the law are going to do "rigorous" testing and examination of autonomous weapons so that they do have a reasonable understanding of how they work, and the foreseeable consequences of their use. Absent such 'due diligence', those who use those weapons are liable for the consequences if they perform inconsistent with the law of war.

In truth, it is not complicated to find command accountability for directing the use of *any* weapon without a reasonable belief that doing so would comply with the law of war. Commanders are, after all, expected to take "all necessary and reasonable measures in their power" to prevent war crimes,[43] and that implicitly requires a reasonable understanding of the foreseeable consequences - something that can be achieved via testing and other processes. In other words, HWR/IHRC's belief that there can be no accountability because, in their view, autonomous weapons can act "unforeseeably" is obviously wrong because deploying a weapon that is expected to launch attacks "unforeseeably" is itself a punishable breach of the responsibilities of commanders, operators, and the nations they represent.

This is not to say that weapons do not go awry from time to time, but that is not now, nor ever has been, a crime *provided* reasonable steps have been taken to avoid such an unintended result. It is a fact of war that weapons do not always operate as intended.[44] But holding someone criminally accountable when a weapon produces

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[41] *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 (64) INT'L REV. OF THE RED CROSS 951-952, *available at* https://www.icrc.org/eng/resources/documents/publication/p0902.htm.

[42] DOD MANUAL, ¶6.5.9.4 (citing U.S. DEP'T OF DEFENSE DIRECTIVE 3000.09, *Autonomy in Weapons Systems* (Nov. 21, 2012)) (emphasis added).

[43] Int'l Comm. of the Red Cross, Customary International Humanitarian Law Database, ch. 43, r. 153, https://www.icrc.org/customary-ihl/eng/docs/v1_cha_chapter43_rule153 (last visited Mar. 4, 2016).

[44] Ulrike Dauer, *German City Evacuated After Unexploded World War II Bomb Is Found*,

consequences that were unforeseeable despite a rigorous regime of testing that indicated that the device would perform in compliance with the law is simply unjust.

HRW/IHRC also apparently thinks that "criminal liability would likely apply only in situations where the humans specifically intended to use the robots to violate the law." That is just not how criminal law works. For example, under U,S.'s Uniform Code of Military Justice (Code)[45] – which in this respect is much like the criminal law of civilian jurisdictions around the globe – the death of another human being can be criminalized in a number of ways.

To illustrate: under Article 118 of the Code criminal liability can be found where the accused kills under circumstances where he engages in "an act which is inherently dangerous to another and evinces a wanton disregard of human life."[46] This is but one way a member of the armed forces could be punished for loosing a lethal autonomous weapon without verifying that its operational parameters would comply with the law of war.

Article 119 (manslaughter) criminalizes behavior wherein the accused "who, without an intent to kill or inflict great bodily harm" nevertheless "unlawfully kills a human being…by culpable negligence."[47] Thus, involuntary manslaughter may be established by "a negligent act or omission which, when viewed in the light of human experience, might foreseeably result in the death of another, *even though death would not necessarily be a natural and probable consequence of the act or omission*."[48] Is it really difficult to see how criminal liability could be imposed on

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WALL ST. J., (May 27, 2015, 12:25 p.m. ET), http://www.wsj.com/articles/german-city-evacuated-after-unexploded-world-war-ii-bomb-is-found-1432743938.

[45] Codified in the, 10 U.S.C. § 801, *et seq*., *available at* https://www.law.cornell.edu/uscode/text/10/subtitle-A/part-II/chapter-47.

[46] 10 U.S.C. § 918, *available at* https://www.law.cornell.edu/uscode/text/10/918.

[47] 10 U.S.C. § 919, *available at* https://www.law.cornell.edu/uscode/text/10/919.

[48] Culpable negligence is explained as follow:

> Culpable negligence is a degree of carelessness greater than simple negligence. It is a negligent act or omission accompanied by a culpable disregard for the foreseeable consequences to others of that act or omission. Thus, the basis of a charge of involuntary manslaughter may be a negligent act or omission which, when viewed in the light of human experience, might foreseeably result in the death of another, even though death would not necessarily be a natural and probable consequence of the act or omission. Acts which may amount to culpable negligence include negligently conducting target practice so that the bullets go in the direction of an inhabited house within range; pointing a pistol in jest at another and pulling the trigger, believing, but without taking reasonable precautions to ascertain, that it would not be dangerous; and carelessly leaving poisons or dangerous drugs where they may endanger life.

anyone involved in the culpably negligent use of an autonomous weapon?[49]

Additionally, in a provision somewhat unique to U.S. military law, criminal liability can also be imposed upon an accused who causes death merely through *simple* negligence - even in the absence of any intent to kill or injure.[50] "Simple" negligence is defined as follows:

> Simple negligence is the absence of due care, that is, an act or omission of a person who is under a duty to use due care which 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. Simple negligence is a lesser degree of carelessness than culpable negligence.[51]

As an example of the extent to which criminal liability can be extended, an accused was convicted of negligent homicide merely because he lent "his car to a drunken driver who kills himself in an automobile accident "[52] Consequently, there can be no dispute that a military member who employs (or allows others to employ) an autonomous weapon without being reasonably sure it could and would be used in a way that complies with the law of war *can* be held accountable. In *United States v. Kick*,[53] the all-civilian Court of Military Appeals, explained why, in the military setting, it was necessary to criminalize behavior which breached the relatively low standard of simple negligence.

> There is a special need in the military to make the killing of another as a result of simple negligence a criminal act. This is

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MANUAL FOR COURTS-MARTIAL, UNITED STATES pt.IV, ¶ 44c (2) 9a) (1) (2012) [hereinafter MCM], *available* at http://armypubs.army.mil/epubs/pdf/mcm.pdf.

[49] I disagree with Rebecca Crootof who argues:

> Autonomous weapon systems may commit a serious violation of international humanitarian law without anyone acting intentionally or recklessly. Absent such willful action, no one can--or should--be held criminally liable.

Rebecca Crootof, *War Torts*, Feb. 2, 2016, Social Studies Research Network, *available at* file:///C:/Users/cjd29/Downloads/SSRN-id2657680.pdf. Among other things, as this article illustrates, U.S. military law has long provided for criminal liability for simple negligence, a markedly lower standard of culpability than recklessness.

[50] MCM, *supra* note 48, at pt. IV, ¶85 c (1).

[51] *Id*. at pt. IV, ¶85 c (2).

[52] United States v. Jose L. Martinez, 42 M.J. 327, 329-330 (1995). *See also* Charles Dunlap, Jr., *When Does an Unsafe Act Become a Crime?*, TORCH MAGAZINE, Apr. 2001, at 14.

[53] United States v. Kick, 7 M.J. 82 (C.M.A. 1979).

> because of the extensive use, handling and operation in the course of official duties of such dangerous instruments as weapons, explosives, aircraft, vehicles, and the like. The danger to others form careless acts is so great that society demands protection.[54]

This illustrates how existing US military law anticipates and recognizes the dangerous potentialities of weaponry, and imposes accountability even where there is the total absence of the "intentiality" HRW/IHRC wrongly thinks must be present to impose criminal liability.[55] Indeed, this is just a sampling of the myriad of ways that - contrary to what *Mind the Gap* implies - *any* competent prosecutor could successfully pursue accountably when a fully autonomous weapon is employed.

CIVIL ACCOUNTABILITY

HRW/IHRC section on civil accountability suffers from a number of conceptual and technical defects. In it is claimed that individual civil damages by victims of an illicit use of an autonomous weapon could not "fill the gap" they perceive to exist in the criminal law. Their discussion mainly centers on the complexity of U.S. tort liability litigation generally, rather than anything to do with weapons' law or the law of war.

Ironically, in the civil arena, Nevada has passed legislation imposing not just criminal liability in 'driverless' car situations, but also civil liability.[56] And while in theory driverless cars may not be technically 'fully' autonomous, as a *practical* matter, they increasingly are so, *de facto*, because a driver's capability to intervene atrophies over time to the point of ineffectiveness.[57] Be that as it may, the issue in Nevada seems to be not, as *Mind-the-Gap argument* might suppose, too little potential liability, but too much.[58]

It is a mistake to underestimate the energy and creativeness of the American plaintiff's bar. The recent *Arab Bank* case demonstrates that litigants are increasingly figuring out ways to successfully obtain civil judgments for

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[54] *Id*, at 84.

[55] MIND THE GAP, at 18 ("independent intentionality…must accompany the commission of criminal acts to establish criminal liability").

[56] *See generally*, Kyle Colonna, *Autonomous Cars and Tort Liability*, 4(4) J. OF L., TECH & THE INTERNET 81 (2012), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2325879&download=yes.

[57] See Frank Douma and Sarah Aue Palodichuk, *Criminal Liability Issues Created by Autonomous Vehicles* 52 SANTA CLARA L. REV. 1157, 1162 (2012).

[58] Colonna, *supra* note 56

international atrocities and other crimes.[59] There is, however, a dark side to civil litigation is such cases. One scholar wrote in the *Georgetown Public Policy Review* recently that such civil litigation may benefit individuals, but "the overall effect can be damaging to relationships with key regional partners and weaken the United States' capacity to investigate terror financing."[60]

In any event, even if there were an absence of civil liability in the case of a harm caused during an international armed conflict, that is a broader issue than autonomous weapons or, for that matter, any weapon. In fact, internationally speaking, civil liability for even mass torts is extremely problematic.[61] The absence of civil liability of the sort HRW/IHRC seems to think is needed is hardly a reason to ban autonomous weapons.

More specifically as to the law of war, there is virtually no empirical evidence – and *Mind the Gap* offers none - that civil liability plays any significant role in the shaping of belligerent behavior in the conduct of armed conflict, especially with respect to deterrence. As U.S. District Court Judge Jose A. Cabranes wrote recently in Foreign Affairs, "few evildoers are deterred by the distant threat of monetary damages in civil litigation."[62]

Of course, it is basic international law that a state which is "responsible for an internationally wrongful act is under an obligation to make full reparation for the injury caused by that act" – and that this principle can apply to law of war violations.[63] The adjudication of such claims is not, however, necessarily bound by the civil law procedures that HRW/IHRC supposes would hamstring such resolutions. Indeed, state parties can settle the claims by whatever procedure they deem appropriate and find mutually acceptable.

That said, it is profoundly misleading to suggest that international law

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[59] Stephanie Clifford, *Arab Bank Reaches Settlement in Suit Accusing It of Financing Terrorism*, N.Y. TIMES, Aug. 14, 2015, http://www.nytimes.com/2015/08/15/nyregion/arab-bank-reaches-settlement-in-suit-accusing-it-of-financing-terrorism.html?_r=0 (last visited Oct. 21, 2015).

[60] Michael DeLuca, *Using the Courts to Combat Terrorism: Arab Bank and Beyond*, GEO, PUB, POL'Y REV., Jun. 1, 2015, http://gppreview.com/2015/06/01/using-the-courts-to-combat-terrorism-arab-bank-and-beyond/ (last visited Oct. 21, 2015)

[61] *See generally*, Maya Steinitz, *The Case for an International Court of Civil Justice*, 67 STAN. L. REV. ONLINE 75 (2014), *available at* http://www.stanfordlawreview.org/sites/default/files/online/articles/67_Stan_L_Rev_Online_75_Steinitz.pdf.

[62] Jose A. Cabranes, *Withholding Judgment: Why U.S. Courts Shouldn't Make Foreign Policy*, FOREIGN AFFAIRS, Sept/Oct 2015 125,

[63] DOD MANUAL, ¶18.16.

calls for the individual compensation for war crimes. The *DoD Manual* correctly points out that:

> The responsibility of States for violations of the law of war committed by their agents is owed to other States. The fact that such responsibility is owed to other States reflects the predominately inter-State nature of international obligations. *Customary international law and the 1949 Geneva Conventions do not provide a private right for individuals to claim compensation* directly from a State; rather, such claims are made by other States.[64]

The point is that international relations, not to mention the legitimacy of the law of war, has never depended upon the ability of courts to provide individual compensation, even in the absence of criminal liability. In short, the presence or absence of civil liability is not – and should not be - a necessary condition as to the legitimacy of autonomous weapons.

CONCLUSION

It is certainly legitimate – and desirable – to raise questions about autonomous weapons. There are very clearly real complexities associated with the emergence of these devices and their potential uses in warfare.[65] However, the notion that there is something intrinsic about them that bars accountability is simply untrue. Manufacturing faux "legal" issues does not advance the dialogue; indeed, as Professor Schmitt suggests, they "muddle" the issues.[66]

It appears that autonomous weapons' opponents are grasping at almost any theory to justify a total ban on the technology. Historically, such an approach has proven problematic because as at best, such bans are put in place based on a technological understanding at a specific moment in time. It is quite possible that technology could evolve over time to the point where the ban may actually operate to bar the development or deployment of systems that could operate to save lives of combatants and civilians alike. This is why I have advocated that focus ought to be place not on a particular technology, but rather on strict adherence to the law of war as to its *use*.[67]

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[64] *Id.*, at ¶18.16.4

[65] The Center for New American Security has established the "Ethical Autonomy Porject" to examine these issues, http://www.cnas.org/ethicalautonomy (last visited Mar. 4, 2016).

[66] Schmitt, *supra*, note 32.

[67] Charles J. Dunlap, Jr., *To Ban New Weapons or Regulate Their Use?* JUST SECURITY (Apr. 3, 2015, 12:24 PM), http://justsecurity.org/21766/guest-post-ban-weapons-regulate-use/ . *See also*,

The fact of the matter is that these weapons are here to stay. As one former Army officer recognizes:

> The technology is already here, and advances in AI [artificial intelligence] in general will create an environment where the continuous development of defensive capabilities will be mandatory. We can't *un*invent deep learning, image recognition algorithms, and supercomputers — despite the FLI's sincere but misguided attempt to stop advancements in autonomous weapon system development.[68]

Among some NGOs and others in the international community there seems to be an instinctive hostility to any technological advance in warfighting, despite the paucity of evidence that increased lethality of weapons necessarily causes more civilians to die violently. In fact, Ian Morris has argued persuasively that in the long run "wars make us safer and richer," because they force the societal organization and sophistication that ultimately functions to suppress human violence.[69]

It is worth noting that the march of time toward a safer society that Morris examines parallels the increasing technological nature of weaponry. Moreover, Martin Van Creveld points out that even with respect to a weapon with such horrific potential as a nuclear bomb, the existence of these lethal instruments has resulted in the disappearance of the most deadly form of conflict: major interstate war.[70] High-tech is not necessarily to be feared as inextricably endangering civilians.

That being the case, rather than searching for reasons to ban sophisticated

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Charles J. Dunlap, Jr., *A Better Way to Protect Civilians and Combatants than Weapons Bans: Strict Adherence to the Core Principles of the Law of War*, INTERCROSS (Dec. 1, 2015), http://intercrossblog.icrc.org/blog/guest-post-a-better-way-to-protect-civilians-and-combatants-than-weapons-bans-strict-adherence-to-the-core-principles-of-the-law-of-war#sthash.LQWgtzWJ.dpbs= .

[68] Sam Wallace, *The proposed ban on offensive autonomous weapons is unrealistic and dangerous*, KURZWEIL ACCELERATING INTELLIGENCE (Aug. 5, 2015), http://www.kurzweilai.net/the-proposed-ban-on-offensive-autonomous-weapons-is-unrealistic-and-dangerous

[69] Ian Morris, *In the long run, wars make us safer and richer*, WASH. POST, Apr. 25, 2014, *available at* https://www.washingtonpost.com/opinions/in-the-long-run-wars-make-us-safer-and-richer/2014/04/25/a4207660-c965-11e3-a75e-463587891b57_story.html (last visited Mar. 4, 2016).

[70] Martin van Creveld, *These nuclear weapons are preventing a war*, THE TELEGRAPH, (May 26, 2002, 12:01AM BST), http://www.telegraph.co.uk/comment/personal-view/3577065/These-nuclear-weapons-are-preventing-a-war.html.

weapons, we ought to work to find sensible regulations for them, ever conscious of the grim reality that even in the modern era, some of the worst atrocities have been carried out using not some piece of high-tech weaponry, but the most primitive of implements.[71] It equally true that in the main, the militaries – such as those of the U.S. and its allies - that have actually tried to suppress man's inhumanity to man, have come to rely to a great degree upon high-tech weaponry to apply force as precisely as possible in order to spar civilians..

As John Stuart Mill observes, "as long as justice and injustice have not terminated their ever-renewing fight for ascendancy in the affairs of mankind, human beings must be willing, when need is, to do battle for the one against the other."[72] We ought not be working to ban the law-abiding nations from seeking to have robots, rather than their young people serving in uniform, doing some of that fighting for justice for us.

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[71] *See e.g*., Jean Hatzfeld, MACHETE SEASON: THE KILLERS IN RWANDA SPEAK (2206).

[72] John Stuart Mill, PRINCIPLES OF POLITICAL ECONOMY (1848), http://www.goodreads.com/quotes/679-war-is-an-ugly-thing-but-not-the-ugliest-of (last visited Mar. 4, 2016).