

REVIEW ESSAY

POST-HUMAN HUMANITARIAN LAW: THE LAW OF WAR IN THE AGE OF ROBOTIC WEAPONS

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REVIEWING:

P.W. SINGER, *WIRED FOR WAR: THE ROBOTICS REVOLUTION AND
CONFLICT IN THE 21ST CENTURY* (Penguin Press 2009)

RONALD ARKIN, *GOVERNING LETHAL BEHAVIOR IN AUTONOMOUS
ROBOTS* (Chapman & Hall 2009)

WILLIAM H. BOOTHBY, *WEAPONS AND THE LAW OF ARMED CONFLICT*
(Oxford University Press 2009)

ARMIN KRISHNAN, *KILLER ROBOTS: THE LEGALITY AND ETHICALITY OF
AUTONOMOUS WEAPONS* (Ashgate Press 2009)

Introduction

Over the past two years, as the use of “warbots” (also called robotic weapons, drones, unmanned combat vehicles [UCVs], or unmanned aerial vehicles [UAVs]) has increased and become visible in combat zones including Iraq, Pakistan, and Afghanistan, a scholarly literature has emerged analyzing the legal implications of these weapons.¹ The regulation

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¹ The United States has been the foremost user of the existing generation of robotic

of these weapons—once a topic for obscure academic theses²—has become a topic of mainstream media attention.³ This essay will review four books that track these developments. P.W. Singer's book *Wired for War: The Robotics Revolution and Conflict in the 21st Century*⁴ has been the most popular and influential of these four works. Singer's book limits explicit discussion of International Humanitarian Law (IHL) issues to a single short chapter, but this gap can be filled by the three other recent academic works described in this essay, all of which explore weapons law. The application of IHL to robotic weapons is discussed generally in William H. Boothby's *Weapons and the Law of Armed Conflict*⁵ and in more detail in Armin Krishnan's *Killer Robots: Legality and Ethicality of Autonomous Weapons*⁶ and Ronald Arkin's *Governing Lethal Behavior in Autonomous Robots*.⁷

Taken together, the four books highlight the tension between autonomy and accountability in robotic warfare, tracking fundamental changes taking place in the field of IHL. This Review Essay argues that

weapons. The position of the US is that IHL is not the only relevant body of law in this context, but that drone strikes with a non-state actor can be justified independently under the law of self-defense. See Harold Hongju Koh, Legal Adviser, U.S. Dep't of State, The Obama Administration and International Law, Address Before the Annual Meeting of the American Society of International Law (Mar. 25, 2010), *available at* <http://www.state.gov/s/l/releases/remarks/139119.htm>.

² Earlier works on this topic have been largely confined to specialty journals and unpublished theses. *See, e.g.*, John J. Klein, *The Problematic Nexus: Where Unmanned Combat Air Vehicles and the Law of Armed Conflict Meet*, AIR & SPACE POWER J.—CHRONICLES ONLINE J. (2003); Erin A. McDaniel, *Robot Wars: Legal and Ethical Dilemmas of Using Unmanned Robotic Systems in 21st Century Warfare and Beyond* (Dec. 12, 2008) (M.M.A.S. Thesis, U.S. Army Command and General Staff College).

³ *See, e.g.*, John Barry & Evan Thomas, *Military: The UAV Revolution — Up in the Sky, An Unblinking Eye*, NEWSWEEK, June 9, 2008; *US Warned on Deadly Drone Attacks*, BBC NEWS, Oct. 28, 2009, <http://news.bbc.co.uk/2/hi/8329412.stm>; PETER BERGEN & KATHERINE TIEDEMANN, NEW AMERICA FOUNDATION, THE YEAR OF THE DRONE, (2010), <http://counterterrorism.newamerica.net/sites/newamerica.net/files/policydocs/bergentiedemann2.pdf>; Jane Mayer, *The Predator War*, NEW YORKER, Oct. 26, 2009, http://www.newyorker.com/reporting/2009/10/26/091026fa_fact_mayer?printable=true.

⁴ P.W. SINGER, *WIRED FOR WAR: THE ROBOTICS REVOLUTION AND CONFLICT IN THE 21ST CENTURY* (2009) [hereinafter SINGER].

⁵ WILLIAM H. BOOTHBY, *WEAPONS AND THE LAW OF ARMED CONFLICT* (2009) [hereinafter BOOTHBY].

⁶ ARMIN KRISHNAN, *KILLER ROBOTS: LEGALITY AND ETHICALITY OF AUTONOMOUS WEAPONS* (2009) [hereinafter KRISHNAN].

⁷ RONALD ARKIN, *GOVERNING LETHAL BEHAVIOR IN AUTONOMOUS ROBOTS* (2009) [hereinafter ARKIN].

from the point of view of IHL, the concern is not the introduction of robots into the battlefield, but the gradual removal of humans. In this way the issue of weapon autonomy marks a paradigmatic shift from the so-called “humanization” of IHL.⁸ “Humanization” already reflects two senses of “humanity” distinguished by Henri Meyrowitz: (1) humanity understood as the “defining characteristic of the human race” (*menschheit*), and (2) humanity understood as “a feeling of compassion towards other human beings” (*menschlichkeit*).⁹ Indeed, humanitarian law has increasingly connected humane treatment and human rights, such that *menschheit* is safeguarded through *menschlichkeit*.¹⁰ If the role of human combatants recedes, will the respect for humanity be less in either sense? In a “post-human” context of war, where robots take over combat functions, will the connection between these two notions of humanity persist in our overall conception of IHL?

I. Wired for War

In *Wired for War*, P.W. Singer describes how robotic weapons have been developed, anticipated, or reflected in the realms of popular culture, ethics, science fiction, technology, futurism, military strategy, economics, politics, and law. Unlike his earlier book *Corporate Warriors*,¹¹ an academic study of private military companies, *Wired for War* is an accessible, interview-based work. But in keeping with his previous work, Singer pursues the theme of a “breakdown of the traditional model of who was supposed to be at war,” but manages to give a balanced treatment of controversial developments. He manages to avoid raising alarm at the mere fact of professional soldiers being supplanted by proxies (robots or contractors), though he acknowledges popular anxieties of “losing control.” While owing his enthusiasm for the topic to fictional precursors, Singer is measured and careful in describing the terrain of robotics as it actually exists, drawing on sources from industry, the military, academia, and politics. In the journey from science fiction space operas to the facts on the ground, the reader is reminded, for example, that the very real presence of warbots on the battlefield does not promise the excitement of Hollywood versions (e.g., *Star*

⁸ Theodor Meron, *The Humanization of Humanitarian Law*, 94 AM. J. INT’L. L. 239 (2000).

⁹ RENE PROVOST, INTERNATIONAL HUMAN RIGHTS AND HUMANITARIAN LAW 5–6 (2002) (citing Henri Meyrowitz, *R’eflexions sur le fondement du droit de la guerre*, in STUDIES AND ESSAYS ON INTERNATIONAL HUMANITARIAN LAW AND RED CROSS PRINCIPLES IN HONOUR OF JEAN PICTET 419, 426–31 (Christophe Swinarski ed., 1984).

¹⁰ *Id.*

¹¹ P.W. SINGER, CORPORATE WARRIORS: THE RISE OF THE PRIVATIZED MILITARY INDUSTRY (2003).

Wars, the *Terminator*, or *Iron Man*). Instead, they are more often relegated to work that is dull and repetitive, true to the etymology of both the terms “drone” and “robot.”¹² Yet the most recent phase of robotic warfare has added the dimension of lethality, placing robotic technology squarely in the category of weapons (means and methods of warfare) and raising the possibility that IHL provides an appropriate framework to regulate it.

In the first half of the book, Singer walks us through the science, production, economics, and politics of this technology, and we become aware of the state of its development, current capabilities, and potential uses. Throughout these encounters, Singer and his informants freely speculate on advantages and drawbacks of the technology. Can they work? Can they be controlled? If they improve the efficiency of killing, is it a good thing? What if they make killing enemy targets more reliable, while saving civilian lives? Would the advantage to technologically superior forces be considered a violation of honorable combat, a notion that predates IHL? Will the technological benefits extend to other kinds of humanitarian activity, such as increasing the protection of civilians by robots sweeping an area for landmines or performing defensive functions?

In the second half of the book, the panoply of voices gives way to Singer’s own, and the questions begin to gather around a steady theme: the increasing “autonomy” of robots, or what Singer calls “taking humans out of the loop.”¹³ Automation of warfare does not yet mean complete “autonomy” of robotics (this distinction will be discussed in detail *infra*), but rather that life and death decisions will be made on the battlefield without direct input from humans. What is referred to as “autonomy” is not artificial intelligence capable of supplanting human responsibility; instead it is an increase in time and distance between human actions and their results. In particular, there is an assumption that agency or responsibility should be distributed as though robots are combatants rather than weapons. Singer sometimes confuses the matter by taking an overly anthropomorphic view of autonomy, treating warbots as the most irregular of “combatants.” Rather than being artificial persons, such as states or corporations, they more clearly belong to the category of weapons whose use is considered an extension of human action, as “means and methods” of combat. Just as a

¹² SINGER, *supra* note 4, at 66–67 (citing R.U.R. (ROSSUM’S UNIVERSAL ROBOTS) (1921)). In the play, Karel Čapek coined the word “robot,” which derived from the Czech “robota” meaning “work a peasant owed a landowner” or, more generally, “drudgery.”

¹³ *Id.* at 123; *see generally id.*, ch. 6.

knife extends the reach and lethality of a hand, sophisticated weapons like warbots can be considered extensions of human action, and the primary difference is the increase in time and distance intervening between the action and result.¹⁴ Technology has already distanced soldiers spatially and temporally from the killing they cause, increasing asymmetrical safety between belligerents.

Singer is right to focus on the controversy surrounding the autonomy of robots, but he fails to pursue all of the ways increasing autonomy might trouble the application of IHL to weapons systems. On one hand, the protection of one's own soldiers is always a goal for any military, and the perception or even the reality of "safe distance" from fighting can make war more palatable to the public. Yet from the point of view of warriors' codes, the removal of one set of combatants from a battlefield will seem less than honorable. From the point of view of the international lawyer, the concern is not asymmetry of protection, but rather that one side might be shielded from legal consequences. For a series of partially coherent reasons, the "human element" is seen as "indispensable": for providing judgment, restraint, and ultimately responsibility for decisions. The first two of these reasons suggest that there is a risk of violating IHL when autonomous robots are employed. Singer rightly identifies the principles of discrimination and proportionality (connected to the prohibition of unnecessary suffering) as key considerations. More to the point, to increase autonomy and remove the human element implies two risks: (1) the loss of judgment and restraint, could lead to an increased number of indiscriminate attacks; and (2) attenuating legal accountability in combat endangers the normative framework of IHL. Even if robots are extremely accurate in their targeting, there remains the policy concern that IHL will become inapplicable or unenforceable.

Many of the controversies seem to require legal clarification, and these are becoming relevant as the reality of Predator drones makes headlines daily. The question of precision — targeting the right kill and avoiding the wrong kill — is at the center of the controversy over these weapons. If the UAVs are successful it is because Predators can hover above a target for hours before and after a strike, and the more precise targeting means effective

¹⁴ MARSHALL McLUHAN, *UNDERSTANDING MEDIA: THE EXTENSIONS OF MAN* 152 (1964) (noting that technology in general is a prosthetic extension of the human body: "The tool extends the fist, the nails, the teeth, the arm."). This is true of weapons in particular, though agency is obscured with the loss of proximity.

killing of combatants and lower collateral damage. A second set of issues involves the interplay between legal and technological development. Singer's conclusion is that technological development is insensitive to legal norms and weapons manufacturers are not thinking about legal regulation. This is in spite of the formal requirements under IHL that militaries must review weapons for compliance. More careful study would reveal whether this can be generalized. Given the claims about precision in targeting, it seems just as plausible that the demand for increased conformity with proportionality and discrimination norms might actually promote research and development in these technologies.

The limits of Singer's book are neither with his research nor his conclusions, but with the inherent difficulties of pinning down such dynamic concerns in the form of a book. Most of his insights will be relevant for the foreseeable future, but readers of this work can be commended to a new generation of web logs and portal sites tracking these developments based on fresh research and further interviewing.¹⁵ And while legal frameworks will develop at a glacial pace in comparison to technological developments and strategic applications, lawyers should already be anticipating the effect of these technologies on IHL. The books discussed below take up legal questions more explicitly: (1) describing the state of current weapons law (and recognizing the gaps therein), and (2) developing novel frameworks applicable to the next generation of increasingly "autonomous" warbots.

II. Autonomy and Accountability

Autonomy must be described both in technological and legal terms. A machine needs at least some minimal autonomy to be called a robot. In his book *Killer Robots*, Armin Krishnan defines a "robot" as a machine that is programmable and can sense and manipulate its environment, and "autonomy" as the relative capability of such a machine for unsupervised operation. The less human supervision is needed, the greater the autonomy of the machine. Krishnan reassures us that at present, there are no robotic weapons that deserve the designation "autonomous." He notes that "[o]ffensive robotic weapons such as Predator or cruise missiles . . . are currently tele-operated or programmed to attack a certain area/target, but . . . have the potential of becoming completely autonomous relatively

¹⁵ An example of up-to-date and interview-based reporting on these issues is the work of Kenneth Anderson, which can be found at *Opinio Juris* (www.opiniojuris.org) and *The Volokh Conspiracy* (www.volokh.com).

soon.”¹⁶ There remains a crucial difference between remote platform systems (which exist) and autonomous robots (which do not yet exist). Krishnan offers a continuum between (a) robotic, (b) unmanned, and (c) autonomous weapons. A robotic weapon is defined as: “A computerized weapon equipped with sensors, which may be tele-operated or autonomous. For example, smart munitions and cruise missiles are ‘robotic,’ as they have sensors that guide them to their target. . . .”¹⁷ An unmanned system is defined as: “a robotic sensor or weapons platform, which is reusable and thus not destroyed through its use. An unmanned aerial vehicle (UAV) would count as an unmanned system, but a cruise missile would not.”¹⁸ An autonomous weapon can be defined as “a computerized weapon that does not require any human input for carrying out its core mission,” which would include the ability to “independently identify targets and to trigger itself.”¹⁹

In legal terms, autonomy feeds into the applicability of the core concepts of weapons law. While a full-length doctrinal treatment of warbots has yet to appear, William Boothby’s book *Weapons Law* is a handy general guide to the relevant principles in IHL. Boothby defines “weapon” as an “offensive capability,” “means” as the kinds of weapons themselves, and “methods” as the manner in which they are deployed.²⁰ He notes as a historical matter that the introduction of novel weapons such escalation of weapon capabilities fists, stones to nuclear and robotic weapons, has always been greeted with suspicion:

The earliest warriors, accustomed to conduct[ing] hostilities by using each must have regarded the first appearance of more advanced technologies as violating the laws of war.²¹

Warbots fit this pattern, but as with many weapons in the past, novelty cannot be equated with illegality. Increasingly it is no longer the weapon itself that is focused upon, but the method of its deployment. While

¹⁶ KRISHNAN, *supra* note 6, at 1–2. Krishnan reassures us: “Killer robots in the sense of lethal autonomous military robots do not exist. The military robots that do exist are largely remote-controlled machines, which in rare cases carry weapons.”

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ BOOTHBY, *supra* note 5, at 4.

²¹ *Id.* at 1.

in the recent humanitarian phase, the chivalrous ideal of “the right of Belligerent Parties to choose methods or means of warfare” like duelists agreeing upon “pistols at dawn” is no longer unlimited,²² similarly, IHL is no longer focused on the banning of entire classes of weapons. Instead, limitations are placed on the manner of a weapon’s use.

The use of any weapon is subject to the general rules and principles of customary and treaty law of international armed conflict (in particular the principle of distinction and the prohibition of unnecessary suffering), as well as to any other treaty law applicable for contracting parties. Boothby only addresses “Unmanned Combat Vehicles” in three pages,²³ but these are sufficient to grasp the application of weapons law to existing unmanned systems and can be extended to newer versions of robotic systems. The key issues concerning the deployment of unmanned systems are:

- (i) distinction (between combatants and non-combatants and between military objectives and civilian objects);
- (ii) the prohibition on causing unnecessary suffering to combatants;
- (iii) proportionality

These principles apply to all weapons and were repeated by the International Court of Justice in its 1996 Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons.²⁴ It is also worth noting that A parallel set of principles have been held applicable by the United States in its analysis of its current drone program, even though that analysis for both military and civilian operators, lies outside armed conflict.²⁵

²² See Protocol Additional to the Geneva Conventions of 12 Aug. 1949, and Relating to the Protection of Victims of International Armed Conflict, art. 35(1), June 8, 1977, 1125 U.N.T.S. 3 (“In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited.”).

²³ BOOTHBY, *supra* note 5 at 230–33.

²⁴ Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, ¶¶ 78, 88 (July 8).

²⁵ For the U.S. government’s defense of the use of these weapons under IHL and the law of self-defense, See Koh, *supra* note 1. US government, to judge by its actions and Koh’s speech, probably does not agree in all ways with the framework of legal analysis here. on the other hand, he stressed that any such use would still have to follow universal principles of discrimination and proportionality, so that in practical terms the standard would not be less in targeting than in an armed conflict. See also Statement Ken Anderson, U.S. House of Representatives Committee on Oversight and Government Reform, Subcommittee on

Formally, IHL would require at a first phase the analysis of whether a weapon is of a prohibited nature, and then look specifically at its use according to a separate analysis. Art. 36 of Additional Protocol I to the Geneva Conventions (AP I), which advocates a preventive approach by requiring contracting parties to determine whether the study, development or acquisition of a new weapon would be contrary to the provisions of Additional Protocol I.

The practical reality of IHL reverses the formal logic that targeting analysis (use) should be preceded by the determination of legality of a weapon (nature). There is no account of when and where the United States, for example, has ever analyzed whether its drone program is IHL-compliant before putting these weapons into the field. This is because the practicality of prohibition is dependent on a “use” in a particular situation. It is precisely because the structure of modern IHL is anthropocentric—because it places human action at the center of concern—that an enquiry in weapons law as to conduct will precede an analysis of the nature of the weapons. Instead of prohibiting weapons “of a nature,” it prohibits the *conduct of employing weapons* “of a nature.”²⁶ Though it might seem logical to

National Security and Foreign Affairs, 2010. (“Such self-defense operations are not governed by the full panoply of treaty laws that attach to armed conflict [but] they must adhere to the customary standards of necessity, distinction, and proportionality.”)

²⁶ See PROGRAM ON HUMANITARIAN POLICY AND CONFLICT RESEARCH, HPCR MANUAL ON INTERNATIONAL LAW APPLICABLE TO AIR AND MISSILE WARFARE 8 (2009), available at <http://ihlresearch.org/amw/HPCR%20Manual.pdf>. The HPCR MANUAL provides:

Weapons used in air and missile warfare must comply with:

- (a) The basic principle of distinction between civilians and combatants and between civilian objects and military objectives.

Consequently, it is prohibited to conduct air or missile combat operations which employ weapons that (i) cannot be directed at a specific lawful target and therefore are of a nature to strike lawful targets and civilians or civilian objects without distinction; or (ii) the effects of which cannot be limited as required by the law of international armed conflict and *which therefore are of a nature* to strike lawful targets and civilians or civilian objects without distinction;

- (b) The prohibition of unnecessary suffering or superfluous injury.

Consequently, it is prohibited to conduct air or missile combat operations

begin with the nature of a weapon, and find various uses of it that are prohibited, this is not suggested in the current phase of IHL. Instead, the finding of conduct violating the principles of discrimination, proportionality, or the prohibition on unnecessary suffering or superfluous injury will lead in some instances to conclusions about the nature of the weapons. There is no automatic prohibition on robotic weapons. One must first find instances where these weapons cannot be properly targeted or cause excessive injury to see how intrinsic these characteristics are to the technology itself. Indeed is no automatic prohibition on robotic weapons. One must find instances in which their use would be indiscriminate, disproportional, or cause excessive injury, rather than focusing on whether certain characteristics are intrinsic to the weapons themselves. As the development of unmanned weapons accelerates, it may be time to reverse the order of conduct-nature analysis once again. In the meantime, it is not IHL, but treaty based regimes that would ensure that their very use is put into question: the most reliable way to outlaw the use of specific weapons, or at least ensure their review, is for states to pursue a multilateral convention banning or stigmatizing weapons of that kind.

III. Rules and Tools for a “Post-Human” Era

Given the speed of technological change, anticipating the advent of autonomous weapons might not be a bad idea, and interventions might be sought in the engineering of norms as well as technology. The greatest obstacles to automated weapons on the battlefield are likely to be legal and ethical concerns. Forward-thinking scholars have taken up the challenges resulting from the interplay of law and technology. Both rules and weapons can be re-tooled to accommodate the other. Two authors have taken up this challenge from opposite vantage points: Armin Krishnan explores the creation of a legal regime to respond to the technology; Ronald Arkin discusses the creation of technology that incorporates the legal rules.

Krishnan turns away from the current state of IHL, which gives weak guidance and insufficient constraints on these weapons, to outline possible parameters for future arms control agreements that would limit the use of autonomous weapons. If we were to develop treaties, we must define

which employ weapons that are calculated, *or of a nature*, to cause unnecessary suffering or superfluous injury to combatants.

Id., § C(5).

autonomous weapons under international law and agree on permissible roles and functions for these weapons. First the scope of the treaty would rely upon an agreement on a definition of a robotic or “autonomous” weapon. After arriving at a definition that is both precise enough to exclude irrelevant technologies while capacious enough to include future developments, the real challenge will be the content of regulation. When should the armed forces be allowed to use them? For example, states might bind themselves to use autonomous weapons only for defensive functions, such as guarding military facilities and no-fly zones.

Another approach to arms control agreements has been to limit the number of weapons, a step that states might take to prevent letting loose too many uncontrolled or poorly monitored weapons in the world. An analogy could be made to the continued development of nuclear weapons even as there has been effective international pressure keeping their use in check since the end of the World War II. It is unclear, however, whether such an analogy represents a model for effective deterrence. On the one hand, nuclear weapons have not been used, but on the other, stockpiles have continued to develop despite the supposed limitations.

A third approach, not mentioned by Krishnan, would be to use autonomous weapons only for difficult humanitarian missions not involving the use of force, such as the clearing of land mines.

Such agreements would only work if states could agree upon definitions and classifications, and if these definitions keep pace with changes in technology. At the moment, the present generation of drones has not inspired a significant movement towards an outright ban (as in case of landmines). Nor do we see states adopting subtler schemes for limitations of numbers, or monitoring and compliance schemes.

Finally, what if we were to not re-tool the rules, but to re-route the rules through the technology itself? Perhaps the most ambitious well as most optimistic contribution to this literature is Ronald Arkin’s *Governing Lethal Behavior in Autonomous Robots*, which actually celebrates the possibility of “post-human” warfare guided by programmed ethics. Arkin is optimistic about the compatibility of autonomous weapons with international law and the conventions of war for non-proliferation. He believes that robots can be created to not only to conform to international law, but to actually “outperform” human soldiers in their capacity to for the “ethical” (rule-

based) use of lethal force. He puts forth a positive agenda for designing autonomous systems programmed with “artificial conscience” based in part on the rules of IHL and weapons law.²⁷ Arkin’s utopianism remains a step ahead of the futurism of the other authors reviewed above. But questions remain. In the event of failure, should IHL follow the designer or the unit used to deploy the weapons? Arkin avoids any implication that whatever ethical imperatives are programmed, a weapon whose use or misuse cannot be attributed to any human agent is dangerous from the outset. This brings us back to Singer’s intuition that putting humans at a distance from the battlefield endangers compliance with the governing rule system and the applicability of the rule system itself.

Conclusion: A Post-Script to the Humanization of IHL?

At the broadest level, as each of these books suggests, it seems that the introduction of sophisticated robotic weapons into combat introduces sufficiently profound changes in the conduct of armed conflict to pose a challenge to existing IHL. There are at least two ways to view the paradigmatic challenges to the discourse pulling IHL further away from “humanization” and toward a post-human re-conceptualization. The first is predictable — the law will expand to incorporate that which arguably was previously outside its reach. The second is more unsettling — the de-centering of “humanity” as the focus of IHL discourse.

The first suggestion would be to look beyond the weapon to find the human agent responsible. Here the question of applicability of IHL must be revisited in each instance. For instances in which human agency becomes so attenuated as to seem to disappear from view, attribution must be identified under a complex variable in which deployment must be traced and programming stands in for command. This extension of law is already at work and may reach civilian computer technicians thousands of miles away from the battlefield. With modern technologies such as long-range missiles and unmanned missile-bearing planes, the focus on a well-articulated weapons law is useful to IHL, which has always struggled to keep pace with technological innovations in the means and methods of combat. Optimistically, technological advances can support humanitarian standards.

²⁷ ARKIN, *supra* note 7. Arkin provides examples that illustrate autonomous systems’ potential to internalize respect for the ethical use of force (including relevant laws of war), and is just as pessimistic when he examines why soldiers in battle fail regarding ethical decisions.

Just as IHL must equipoise between humanitarian ethos and effective killing, the weapons that are created during the humanization of IHL will inevitably be described both in terms of their life-saving and life-ending capacities.

One can imagine a sharpening of humanity as an object of protection rather than as the initiator of armed conflict. A second, more deconstructive view is that robots reveal the inhumanity already present in the law of war. IHL clings to humanity in the first sense to inculcate the latter. According to one of Singer's sources, "To me, the robot is our answer to the suicide bomber."²⁸ The analogy between a robot and a suicide bomber is a chilling portent of post-human warfare. What does the robot have in common with the suicide bomber? Both are at the extremities of war: present in combat, lethal, and neither is entitled to the protections of IHL. In short, they are objects of war not contemplated by humanitarian law, and place discourse of "humanity" in question. They are post-humanitarian concerns, and perhaps, in a range of ways, "post-human." It is possible that in the near future, in light of the presence of robotic weapons making decisions on the battlefield, and suicide bombers converting bodies into means and methods, the notion of "humanity" itself will require rethinking in its connection to IHL.

²⁸ SINGER, *supra* note 4, at 60.