The New Way of War: Is There A Duty to Use Drones?

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INTRODUCTION

Drones, also referred to as unmanned aerial vehicles (UAVs), have become the poster child for America’s continuing fight against terrorism under President Barack Obama, filling the role that torture had occupied during the George W. Bush Administration: as a morally, legally, and politically controversial issue that drives a wedge between the United

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1. The U.S. military prefers to refer to drones as remotely piloted vehicles (RPVs) or unmanned aerial vehicles (UAVs), emphasizing the fact that they are controlled by human operators. Ulrike Franke, Commentary, On “Drones and US Strategy: Costs and Benefits,” 43 Parameters 119, 119 (2013). In fact, by some accounts, the military needs about thirty people to operate a Predator or Reaper drone, and another eighty people to analyze the incoming information. Kate Brannen, U.S. Options Limited by Lack of Drones Over Syria, Foreign Pol’y (Oct. 7, 2014), http://www.foreignpolicy.com/articles/2014/10/08/us_options_limited_by_lack_of_drones_over_syria. That article notes that this personnel burden has constrained the U.S. military’s use of drones in Syria. Id.
States and much of the rest of the world. While the United States has relied increasingly on drones to carry out an ever-greater portion of its military operations overseas, including targeted killing of individuals suspected of terrorist activities, many of America’s allies regard drone attacks as a manifestation of the United States’ unilateralism, arrogance, and disregard for international law. The use of drones is not only fraught with difficulties in the international sphere, but is also saddled with severe constitutional and legal challenges under U.S. law.

The United States has been conducting drone programs with increasing frequency since the mid-2000s. One program, run by the military, operates armed drones in Afghanistan and has similarly deployed drones in Iraq and Libya, targeting those fighting against U.S.


5. See David W. Opderbeck, Drone Courts, 44 RUTGERS L.J. 413, 418–19, 456–57 (2014) (noting the “thorny” legal and constitutional issues associated with the use of drones); Michael McAuliff & Ryan Grim, Obama Rebuffs Democrats on Drone Kill Memos, Asserts Executive Secrecy Prerogative, HUFFINGTON POST (Mar. 13, 2013, 5:38 PM), http://www.huffingtonpost.com/2013/03/13/drones-obama-reb_bf_2869156.html; Geert-Jan Alexander Knoops, Legal, Political and Ethical Dimensions of Drone Warfare Under International Law: A Preliminary Survey, 12 INT’L CRIM. L. REV. 697, 701 (2012) (presenting the argument that the War Powers Resolution may not limit the President’s power to conduct drone attacks as these are “limited operations” and if the “war on terror” does not necessarily trigger the laws of war then this leaves Congress powerless to control the use of drones by the President).

6. Jane Mayer, The Predator War, NEW YORKER (Oct. 26, 2009), http://www.newyorker.com/reporting/2009/10/26/091026fa_fact_mayer; see also Ryan J. Vogel, Drone Warfare and the Law of Armed Conflict, 39 DENY. J. INT’L L. & POL’Y 101, 104–05 (2010) (“In 2001, the Predator UAV fleet numbered only ten and was typically relegated to reconnaissance missions, when used at all. By 2007, Predators numbered more than 180, with plans to nearly double that number over the next few years.” (footnote omitted)).
and NATO troops in those countries. Recently, the United States deployed drones in airstrikes against forces of the Islamic State in Iraq and Syria. The second, much more controversial program is a covert operation run by the Central Intelligence Agency (CIA), which is aimed at targeting and killing al-Qaeda and Taliban commanders who are mostly based in Pakistan’s northwestern region and who use their Pakistani bases to stage attacks against NATO forces in Afghanistan, as well as to plan attacks against “soft” targets in Europe and the United States. This covert CIA program has targeted top al-Qaeda leaders, al-Qaeda’s external operations network, and Taliban leaders and fighters.
The Obama “[A]dministration has enthusiastically embraced the CIA’s drone program, an ambitious and historically unusual war campaign by American spies,”\textsuperscript{13} and Leon Panetta, the former director of the CIA, famously proclaimed that drones were “the only game in town in terms of confronting and trying to disrupt the al-Qaeda leadership.”\textsuperscript{14} However, the Obama Administration has continued to refuse to discuss key aspects of its drone program and much of the information about the number of drone strikes or casualties from these strikes remains unknown.\textsuperscript{15} While the United States launched a total of ten attacks in the territory of Pakistan from 2004 to 2007,\textsuperscript{16} in 2008—the last year of the Bush Administration—the number of such attacks rose to thirty-six.\textsuperscript{17} In 2009, the first year of the Obama Administration, the number of drone attacks in Pakistan jumped up to fifty-four.\textsuperscript{18} From 2010 to 2013, the Obama Administration launched 122, 73, 48, and 27 drone attacks per year, respectively.\textsuperscript{19} By the time the Norwegian Nobel combat zones” and that there is “no denying that the CIA program is achieving its central goal” (killing al-Qaeda and Taliban targets).


15. Ofek, supra note 9, at 36 (explaining that while the Obama Administration “has refused to talk about the program’s key aspects,” what we do know is taken from press reports, mainly the “National Journal reports and a widely cited article by Jane Mayer in The New Yorker”); see also Julian E. Barnes, U.S. Rethinks Secrecy on Drone Program, WALL ST. J. (May 17, 2012, 7:25 PM), http://online.wsj.com/news/articles/SB10001424052702303879604807410481496895786 (reporting that the Obama Administration is considering “policy changes that would lift a tattered veil of secrecy” from its controversial campaign of drone strikes) (emphasis added)); Van Raemdonck, supra note 2, at 3; cf. Greg Miller et al., Documents Reveal NSA’s Extensive Involvement in Targeted Killing Program, WASH. POST (Oct. 16, 2013), http://www.washingtonpost.com/world/national-security/documents-reveal-nsas-extensive-involvement-in-targeted-killingprogram2013/10/16/29775278-3674-11e3-8a0e-4e2c808311fc_story.html (“[D]ocuments provided to The Washington Post by former NSA contractor Edward Snowden confirm [Hassan Ghul’s] demise in October 2012 and reveal the agency’s extensive involvement in the targeted killing program that has served as a centerpiece of President Obama’s counterterrorism strategy.”).


17. \textit{Id.}

18. \textit{Id.} (noting fifty-two drone strikes by President Obama and two drone strikes by President Bush).

19. \textit{Id.}
Committee decided to award President Obama the Nobel Peace Prize in October 2009, after merely ten months in office, he had already authorized more drone attacks in Pakistan than President Bush authorized “during the entirety” of his presidency. The increase in drone attacks has also led to a dramatic rise in the number of casualties stemming from those attacks: approximately 51 casualties among militants were reported in 2006 and 2007. The number of militant casualties went up to 223 in 2008. In the years from 2009 to 2013, the numbers of militant casualties were 387, 788, 420, 268, and 145 per year, respectively.

In addition, a third drone program has come to light with reports that...
even after the departure of American troops from Iraq in December 2011, the State Department has been operating a “small fleet of [unarmed] surveillance drones” to help protect the U.S. Embassy and Consulates, as well as American personnel in that country.\footnote{Eric Schmitt & Michael S. Schmidt, U.S. Drones Patrolling Its Skies Provoke Outrage in Iraq, N.Y. TIMES (Jan. 29, 2012), http://www.nytimes.com/2012/01/30/world/middleeast/iraq-is-angered-by-us-drones-patrolling-its-skies.html (internal quotation marks omitted). The Schmitt and Schmidt article was characterized by President Obama as “a little overwritten.” Mark Landler, Civilian Deaths Due to Drones Are Not Many, Obama Says, N.Y. TIMES (Jan. 30, 2012), http://www.nytimes.com/2012/01/31/world/middleeast/civilian-deaths-due-to-drones-are-few-obama-says.html (internal quotation marks omitted).} According to reports, the State Department may be considering plans to expand the program to additional “high-threat” countries.\footnote{Schmitt & Schmidt, supra note 25.} There are also growing concerns about the use of drones domestically, either by law enforcement agencies\footnote{See, e.g., Matthew L. Wald, Domestic Drones Stir Imaginations, and Concerns, N.Y. TIMES (Mar. 17, 2013), http://www.nytimes.com/2013/03/18/business/domestic-drones-on-patrol.html (noting the “rapidly expanding” market for private domestic drone use and the controversy stemming from that expanding market); see, e.g., Glenn Greenwald, The Growing Menace of Domestic Drones, SALON (Dec. 12, 2011, 11:58 AM), http://www.salon.com/2011/12/12/the_growing_menace_of_domestic_drones/ (detailing use of a Predator B drone by local police in North Dakota to apprehend suspects); Adam Klasfeld, FBI Drones Flew Since 2006, Audit Says, COURTHOUSE NEWS SERVICE (Sept. 26, 2013, 10:38 AM), http://www.courthousenews.com/2013/09/26/61530.htm (discussing the FBI’s use of drones for domestic surveillance).} or by private commercial entities.\footnote{See, e.g., Don Reisinger, Amazon Urges US to Let Its Drones Take Flight, CNET (Dec. 9, 2014, 6:40 AM), http://www.cnet.com/news/amazon-warns-us-to-let-its-drones-take-flight-or-else/.} 

than fifty UAVs on hand. By early 2010, it had more than 7000. Indeed, so many drones fly at any given time over parts of Pakistan that “command-and-control issues” have emerged. Since 2009, the U.S. Air Force has trained more drone “pilots” than fighter or bomber pilots. And since 2011, the Air Force has “trained more drone pilots

31. See Dowd, supra note 30, at 7; Peter W. Singer, How the U.S. Military Can Win the Robotic Revolution, BROOKINGS (May 17, 2010) [hereinafter Singer, How the U.S. Military Can Win], http://www.brookings.edu/research/articles/2010/05/17-robots-singer (“When the U.S. military went into Iraq in 2003, it used only a handful of unmanned systems in the air, none of them armed.”).


33. Mayer, supra note 6 (“At any given moment, a former White House counterterrorism official says, the C.I.A. has multiple drones flying over Pakistan, scouting for targets. According to the official, ‘there are so many drones’ in the air that arguments have erupted over which remote operators can claim which targets, provoking ‘command-and-control issues.’”).

34. Chris Jenks, Law from Above: Unmanned Aerial Systems, Use of Force, and the Law of Armed Conflict, 85 N.D. L. REV. 649, 650 (2009); see also James Dao, Drone Pilots Are Found to Get Stress Disorders Much As Those in Combat Do, N.Y. TIMES (Feb. 22, 2013), http://www.nytimes.com/2013/02/23/us/drone-pilots-found-to-get-stress-disorders-much-as-those-in-combat-do.html (“Since 2008, the number of pilots of remotely piloted aircraft . . . has grown fourfold, to nearly 1,300. The Air Force is now training more pilots for its drones than for its fighter jets and bombers combined. And by 2015, it expects to have more drone pilots than bomber pilots, although fighter pilots will remain a larger group. Those figures do not include drones operated by the C.I.A. in counterterrorism operations over Pakistan, Yemen and other countries.”). The Air Force has integrated and accepted drone operators into its legions of pilots. Jim Michaels, Drones Change ‘Top Gun’ Culture of Air Force, USA TODAY (Dec. 1, 2012, 9:00 AM), http://www.usatoday.com/story/news/world/2012/11/30/drone-wars/1737991/ (noting that drone pilots are “100% accepted and integrated,” and that they receive nicknames or call signs, wear flight suits in the Air Force Weapons school like other pilots, and that the Air Force “pins more wings on new drone pilots than fighter and bomber pilots” (internal quotation marks omitted)). However, the creation of a controversial new medal that would honor drone pilots and cyber warriors has been canceled. Amanda Terkel, Distinguished Warfare Medal Honoring Drone Pilots Canceled by Chuck Hagel, HUFFINGTON POST (Apr. 15, 2013, 3:23 PM), http://www.huffingtonpost.com/2013/04/15/distinguished-warfare-medal_n_3086660.html (explaining that the Defense Secretary canceled the new medal after it was approved by former Defense Secretary Leon Panetta as a result of congressional outrage that “it would outrank some battlefield medals like the Purple Heart”). It is also contested in the blogosphere whether drone operators can really be called “pilots.” Brent Owens, Drone Pilots or Drone Operators?, iFLYBLOG (Nov. 20, 2013), http://iflyblog.com/2013/11/20/drone-pilots-drone-operators/. Further nomenclature issues exist about calling drones “drones”—or instead, remotely piloted aircrafts (RPAs). Elijah Solomon Hurwitz, Drone Pilots: “Overpaid, Underworked, and Bored,” MOTHER JONES (June 18, 2013, 6:30 AM), http://www.motherjones.com/politics/2013/06/drone-pilots-reaper-photo-essay (“‘Drone’ conjures images of brainless bots on autopilot, an implication not appreciated by the three-person crew (pilot, sensor operator, intelligence analyst) typically tasked with operating the military’s high-tech workhorses.”).
than fighter and bomber pilots combined.”35 But even that may not be sufficient. Recent reports indicate that the Air Force is not keeping pace with the increased demand for drone pilots and is facing a “crisis” in the Force’s ability to fulfill its critical missions.36

Covert drone attacks orchestrated by the CIA around the world, including in areas that lie outside recognized war zones,37 raise a range of difficult questions that have been, and continue to be, heavily discussed by scholars, policy makers, and the general media.38 They raise jus ad bellum issues such as the legal authority, if any, for the United States to exercise force inside the territory of another state, e.g., Pakistan, which is an ally of the United States that lies outside the zone of military operations.39 Did Pakistan give its consent to such attacks?40 Is such consent even necessary if the United States is exercising its inherent right of self-defense?41 Does the law of armed conflict apply to drone attacks in Pakistan, and if so, what is the nature of the relevant

37. See Peter W. Singer, Do Drones Undermine Democracy?, N.Y. TIMES (Jan. 21, 2012) [hereinafter Singer, Do Drones Undermine Democracy?], http://www.nytimes.com/2012/01/22/opinion/sunday/do-drones-undermine-democracy.html (arguing that CIA drone strikes “outside of declared war zones are setting a troubling precedent”).
38. See, e.g., Afsheen John Radsan & Richard Murphy, The Evolution of Law and Policy for CIA Targeted Killing, 9 J. NAT’S SECURITY L. & POL’Y 439, 442–43 (2012) (discussing the positions of critics who decry the CIA drone program as “illegal” and noting the legal and policy implications of the CIA’s drone program); Singer, Do Drones Undermine Democracy?, supra note 37 (setting forth a critique of CIA drone strikes that blur “the civilian and military roles in war and circumvent[] the Constitution’s mandate for authorizing it”).
39. See O’Connell, supra note 14, at 276–85 (discussing jus ad bellum issues vis-à-vis drone attacks in Pakistan and concluding that “[t]he strongest conclusion to draw under the jus ad bellum is that there is no legal right to resort to drone attacks in Pakistan”).
40. See id. at 282 (“The US has put itself in a vulnerable position. Without express, public consent of the kind the US received from Afghanistan and Iraq, Pakistan is in a position to claim the US is acting unlawfully . . . .” (emphasis added)); Office of the High Comm’r for Human Rights, Statement of the Special Rapporteur Following Meetings in Pakistan (Mar. 14, 2013), http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=13146 (noting the statement of the Special Rapporteur that “[a]s a matter of international law the US drone campaign in Pakistan is . . . being conducted without the consent of the elected representatives of the people, or the legitimate Government of the State. It involves the use of force on the territory of another State without its consent and is therefore a violation of Pakistan’s sovereignty”).
“armed conflict?”

Drone attacks also raise significant jus in bello questions, such as the legality of targeted killing in general, and of “signature strikes” in particular. Does the United States have a duty to try to capture the targets of its drone strikes prior to using lethal force against them? What is the status of CIA personnel who operate drones? Last, but not least, drone attacks raise complex legal questions under the Constitution and laws of the United States: May the President...
order the killing of an American citizen abroad? 48 May he do so when the target is on U.S. soil? 49 Do drone strikes constitute impermissible “assassinations”? 50 What sort of supervisory mechanisms are, and ought to be, in place before a drone attack is authorized? 51 What systems ought to exist in order to ensure effective and impartial investigations into drone attacks ex post? 52 What criteria are used in order to


49. Letter from Eric Holder, U.S. Attorney Gen., Office of the Attorney Gen., to Rand Paul, Senator, U.S. Senate (Mar. 4, 2013), available at http://big.assets.huffingtonpost.com/BrennanHolderResponse.pdf. U.S. Attorney General Eric Holder noted that: “It is possible, I suppose, to imagine an extraordinary circumstance in which it would be necessary and appropriate under the Constitution and applicable laws of the United States for the President to authorize the military to use lethal force within the territory of the United States.” Id. However, he described the question as “entirely hypothetical” and that the U.S. government “has not carried out drone strikes in the United States and has no intention of doing so.” Id.; see also Swanson, supra note 48 (finding that while 33% of those polled indicated that it would be legal—in extraordinary circumstances—for the President to target a U.S. citizen inside the United States using a drone strike, 47% answered that such an attack could never be legal).

50. See McDonnell, Sow What You Reap?, supra note 24, at 261–63 (characterizing targeted killings as assassinations); Van Raemdonck, supra note 2, at 3 (providing that “targeted assassinations of suspect terrorists in Afghanistan and Pakistan” through UAVs are among “controversial” U.S. counterterrorism practices).

51. Many have noted the lack of congressional oversight over drones. See, e.g., Eric Black, Investigative Reporter Seymour Hersh Describes “Executive Assassination Ring,” MINNPOST (Mar. 11, 2009), http://www.minnpost.com/ericblackblog/2009/03/11/7310/ (reporting journalist Seymour Hersh’s comments calling the Joint Special Operations Command (JSOC) an “executive assassination ring,” over which “Congress has no oversight” (internal quotation marks omitted)). Some have suggested re-coordination of the executive branch authorities. Michal Zenko, Policy Innovation Memorandum No. 31, Transferring CIA Drone Strikes to the Pentagon, COUNCIL ON FOREIGN REL. (Apr. 2013), http://www.cfr.org/drones/transferring-cia-drone-strikes-pentagon/p30434 (“To take a meaningful first step toward greater transparency, President Barack Obama should sign a directive that consolidates lead executive authority for planning and conducting nonbattlefield targeted killings under DOD.”). Others have pointed to a new role for “drone courts.” See, e.g., Garrett Epps, Why a Secret Court Won’t Solve the Drone-Strike Problem, ATLANTIC (Feb. 16, 2013, 9:54 AM), http://www.theatlantic.com/politics/archive/2013/02/why-a-secret-court-wont-solve-the-drone-strike-problem/273246/.

52. See HCJ 769/02 Pub. Comm. Against Torture in Isr. v. Gov’t of Isr. 62(1) PD 507, ¶ 54 [2006] (Isr.) (advocating for “ex post examination” subject to judicial review when targeted killings cause civilian deaths), available at http://www.haguejusticeportal.net/Docs/NLP/Israel/Targetted_Killings_Supreme_Court_13-12-2006.pdf; Statement by Ben Emmerson, supra note
determine who may be put on the “kill list”? How do we ensure accountability in the absence of transparency? Is Congressional approval required under the Declaration of War Clause when military operations are going to be conducted mainly by drones with no “boots on the ground”? In other words, does such a military engagement constitute a “war” in the constitutional sense?


55. A memorandum prepared by the Office of the Legal Counsel of the Department of Justice (OLC) setting out the President’s authority to use military force in Libya, in 2011, argued that not every military engagement, however limited, that the President initiates falls within the Declaration of War Clause of the Constitution. Authority to Use Military Force in Libya, 35 Op. O.L.C. 1, 8 (2011), available at http://www.justice.gov/sites/default/files/olc/opinions/2011/04/31/authority-military-use-in-libya.pdf; see also Harold Hongju Koh, Legal Adviser, U.S. Dep’t of State, Statement Regarding Use of Force in Libya (Mar. 26, 2011), available at http://go.usa.gov/QUdF. Rather, the “nature, scope, and duration” of the engagement ought to be evaluated. Authority to Use Military Force in Libya, 35 Op. O.L.C. 1, 8 (2011) (internal quotation marks omitted). In the context of the intervention in Libya, the OLC concluded that the use of military force would not amount to “war” in the constitutional sense and thus would not require prior congressional approval pursuant to the Declaration of War Clause. Id. at 12–13. In particular, the opinion emphasized the limited nature of the mission, as well as the fact that the use of force would be limited to air strikes and that no ground troops were going to be deployed. Id. at 13. The anticipated military operation would be “time-limited, well-defined, discrete and aimed at preventing an imminent humanitarian catastrophe,” and the air strikes “limited in their nature, duration, and scope.” Koh, supra. Pointing to “historical gloss” placed on the Constitution by two hundred years of practice, the OLC opined that “war” in the constitutional sense mostly refers to “prolonged and substantial military engagements, typically involving exposure of U.S. military personnel to significant risk over a substantial period.” Authority to Use Military Force in Libya, 35 Op. O.L.C. 1, 7–8 (2011) (internal quotation marks omitted); cf. Curtis A. Bradley & Trevor W. Morrison, Presidential Power, Historical Practice, and Legal Constraint, 113 COLUM. L. REV. 1097, 1099–1100, 1147–48 (2013) (“[D]espite a low likelihood of judicial involvement in the issue, the Obama Administration offered public legal justifications, based heavily on arguments from historical practice, for the Libya operation.” (emphasis added)). See generally Curtis A. Bradley & Trevor
These vexing questions have been the subject of much heated debate. However, relatively little attention has been given to the use of drones by the army to carry out attacks in battlefield zones such as Afghanistan, Iraq, and Libya. Professor David Cole, himself a vocal opponent of the current policy of using drones, readily concedes that “drone strikes against enemy fighters in Afghanistan...are not inherently illegal... Nor is it wrong or unlawful to deploy a drone where there is no other way to halt an imminent attack.”

Similarly, Professor Philip Alston, who served as the U.N. Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions, acknowledged in his Study on Targeted Killings that “a missile fired from a drone is no different from any other commonly used weapon, including a gun fired by a soldier or a helicopter or gunship that fires missiles. The critical legal question is the same for each weapon: whether its specific use complies with [International Humanitarian Law].”

Drones may therefore be deployed in the “battlespace” as long as their actual use comports with the law of armed conflict (LOAC). As such, the

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58. Michael N. Schmitt, War, Technology and the Law of Armed Conflict, 82 INT’L L. STUD. 137, 149 (2006) (“Range, the ability to locate and fix distant enemies, and penetrable enemy defenses, have made battlefields four dimensional (land, sea, air, space, and cyberspace) and spatially unlimited. War is no longer necessarily linear, i.e., fought along fixed lines of troops... Battlespaces have been replaced by ‘battlespaces.’” (footnote omitted)). Some have differentiated the idea of a territorially-contained battlefield and a “global battlefield.” Laurie R. Blank, After “Top Gun”: How Drone Strikes Impact the Law of War, 33 U. PA. J. INT’L L. 675, 711–12 (2012) [hereinafter Blank, After “Top Gun”] (“[A]fter the September 11th attacks, President George W. Bush laid the foundation for the notion of the whole world as a battlefield when he pronounced that ‘our war on terror will be much broader than the battlefields and beachheads of the past. This war will be fought wherever terrorists hide, or run, or plan.’” (quoting Radio Address of the President to the Nation, WHITE HOUSE, http://georgewbush-whitehouse.archives.gov/news/releases/2001/09/20010929.html (last visited Dec. 28, 2014)); Michael N. Schmitt & Jeffrey S. Thurnher, “Out of the Loop”: Autonomous Weapon Systems and the Law of Armed Conflict, 4 HARV. NAT’L SEC. J. 231, 246 (2013) (“Not all battlespaces contain civilians or civilian objects. When they do not, a system devoid of an ability to distinguish protected persons and objects from lawful military targets can be used without endangering the former.”); Vogel, supra note 6, at 109. There has been a linguistic shift from the term “battleground” to “battlespace,” which “recognizes the current reality of forces operating in a multidimensional battleground against complex opponents.” John P. Sullivan & Adam Elkus, Police Operational Art for a Five-Dimensional Operational Space, SMALL WARS J. 1 (July 23, 2009, 6:06 PM), http://smallwarsjournal.com/blog/journal/docs-temp/274-sullivan.pdf.
discussion has, to date, focused on whether states have the legal right to deploy drones and to use them in order to carry out military operations in combat areas.

But must they be so used? In his 2013 State of the Union address, President Obama declared that he had imposed “prudent limits on the use of drones,” because “we will not be safer if people abroad believe we strike within their countries without regard for the consequence.” 59 But what if not using drones amounts to conducting military strikes without regard for the consequence? Consider a scenario in which a military commander engages in the planning of an operation against the enemy in a densely populated urban area. Unfortunately, such an operation may result in collateral damage—loss of civilian life, injury to civilians, or damage to civilian objects. 60 Yet, despite such harms, the attack may still be carried out lawfully under the law of armed conflict since LOAC merely aims at minimizing civilian casualties, not eliminating them altogether. But, if the commander is to attempt to minimize such casualties, must not she employ the most precise of weapons in her arsenal? Should not she deploy the most discriminating means of warfare at her disposal, allowing her to distinguish combatants from civilians, attacking the former while sparing the latter? And if, in fact, drones offer the twin promises of greater precision and reduced lethality, ought not the commander to deploy them rather than call for alternative methods of air support or bombardment or introduce “boots on the ground”? Does international law impose a legal duty on states that possess the relevant advanced technology to use that technology in battlespace? 61 If so, what are the contours of such legal duty, and what


60. Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Conflicts (Protocol I), art. 51, § 5(b), June 8, 1977, 1125 U.N.T.S. 3 [hereinafter AP I], available at https://treaties.un.org/doc/Publication/UNTS/Volume%201125/Volume-1125-I-17512-English.pdf (describing indiscriminate acts as anything that “may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated”); id. art. 57, § 2(a)(iii) (stating that militaries should “[r]efrain from deciding to launch any attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated”); Rome Statute of the International Criminal Court art. 8, § 2(b)(iv), July 17, 1998, 2187 U.N.T.S. 90 [hereinafter Rome Statute] (prohibiting “[i]ntentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated”).

61. As of 2012, seventy-six countries have acquired UAV systems. U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-12-536, NONPROLIFERATION: AGENCIES COULD IMPROVE
is its temporal and substantive scope? And if not, should such a duty exist? These are the questions with which this Article grapples.

Part I of this Article briefly describes the newest battlespace occupants. Robotic systems have been taking active part in combat. They now inhabit the air, the land, and the sea. They carry out missions ranging from surveillance and bomb disposal to “destroy and disable.” Part II examines the relevant principles of LOAC. It argues that drones are not, per se, unlawful under LOAC. Rather, the critical question is the same for drones as for other types of weapons, i.e., whether the specific use of the weapon complies with LOAC. In this context, the weapon must be deployed in accordance with LOAC’s fundamental principles of humanity, proportionality, distinction, taking precautions, and military necessity. Even if a specific type of weapon is not unlawful per se (or has not been specifically prohibited by particular treaties), it may not be used improperly, e.g., in a manner that would run afoul of these principles. Part III applies the principles of LOAC to drones. First, it analyzes the general trajectories of the development of new weapons throughout human history, which has involved trading off between three main considerations, namely distance, accuracy, and lethality. Second, it examines the rise of precision-guided munitions as an attempt to balance these three considerations, increasing military efficiency while minimizing harm to civilians and civilian objects. Part IV discusses the ability of drones to combine both remote exercise of force and high accuracy to reduce lethality. Part IV also closely examines both the promised benefits that the use of drones may bring to battlespace and the challenges to their deployment. Part V returns to the question of whether states and their military commanders have an obligation to use drones in the context of an armed conflict. It argues that although there are no treaties that deal specifically with the use of drones in armed conflict and no customary norms obligating the use of drones, such a duty may be derived from the cardinal principles of the law of armed conflict. It suggests that such an interpretation is merited if we accept that drones offer the possibility of a more humane war by combining remote and accurate use of force to reduce lethality among both friendly forces and innocent civilians. Part V concludes by setting out further challenges that ought to receive careful attention in developing and elaborating on the obligation to use drones in the battlefield.

One clarification is necessary before proceeding. Most of the (heated) debate regarding the use of drones to date has revolved around

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Information Sharing and End-Use Monitoring on Unmanned Aerial Vehicle Exports 9–10 (2012), available at http://dronewarsuk.files.wordpress.com/2012/09/us-gao_-_noproliferation-of-uavs.pdf. Over fifty countries have been developing UAV systems, with the United States and Israel being the global leaders in both manufacturing and exporting such systems on both the tactical and strategic level. Id. at 13.
the covert operations of the CIA in countries such as Pakistan, Yemen, and Somalia although numerically more drone attacks have been carried out by the military in active combat zones such as Afghanistan, Libya, and Iraq.\textsuperscript{62} However, this Article focuses exclusively on the current and future deployment of drones by the armed forces that operate under the law of armed conflict in active combat zones.

I. BATTLESPACE’S NEW INHABITANTS

Robotic systems are ubiquitous. They are used on manufacturing floors, in warehouses, and throughout the various stages of industrial processes.\textsuperscript{63} They clean our homes and our clothes.\textsuperscript{64} They are in classrooms, hospitals,\textsuperscript{66} and nursing homes.\textsuperscript{67} They fulfill a myriad of


socially assistive and entertainment functions. They drive on roads and fields and on the surface of Mars. Bill Gates has estimated that the robotics industry “is developing in much the same way that the computer business did 30 years ago.”

Robotic systems also play many roles in the modern battlespace. They are used in reconnaissance, surveillance, and communication over the last few years.


missions,71 and in explosive hazard identification and explosive ordnance disposal operations.72 They also carry out hazardous-materials and chemical, biological, radiological, nuclear, and explosive materials detection assignments.73 They are used in checkpoints and for “route clearance.”74 They assist in search and rescue operations.75 They function as sentries.76 They can also take active part in combat.77

The advent of unmanned aircraft began with vehicles such as the Kettering Bug during World War I and “evolved through the first-generation cruise missiles during World War II and the decade following.”78 Over the past few decades, the U.S. use of UAV platforms and operations has grown significantly.79 The U.S. UAV fleet has grown from less than fifty to 6800 units as of 2009.80 The current aerial drone landscape includes a variety of UAVs used for military and civilian purposes.81 The DOD currently has “five [types of] UAVs in large numbers: the Air Force’s Predator, Reaper, and Global Hawk, and

71. See Blank, Targeted Strikes, supra note 44, at 676 (providing that the surveillance and reconnaissance capabilities of drones make them the “workhorse of modern intelligence gathering and targeting determinations”).
72. See, e.g., Gary E. Marchant et al., International Governance of Autonomous Military Robots, 12 COLUM. SCI. & TECH. L. REV. 272, 288 (2011) (“[M]any explosive devices in Iraq and Afghanistan that might otherwise have killed and maimed soldiers have been identified, and eliminated, by robots.” (emphasis added)).
77. Id. (noting “battle-tested” iRobot product); see infra text accompanying note 101.
78. See BILL YENNE, ATTACK OF THE DRONES: A HISTORY OF UNMANNED AERIAL COMBAT 15 (2004). The earliest UAVs were “small, flimsy, piston-engine, pilotless airplanes.” Id.
79. Dowd, supra note 30, at 7 (“In the past decade, the US drone fleet has swelled from 50 planes to 7,500 . . . .”); Unmanned Aerial Warfare: Flight of the Drones, supra note 30 (“Since 2005 there has been a 1,200% increase in combat air patrols by UAVs. . . . There are now more hours flown by America’s [unmanned aerial systems] that by its manned strike aircraft . . . .”).
the Army’s Hunter and Shadow.82 Aerial drones have a broad size-spectrum: from hummingbird-sized helicopter-like devices to large solar-powered fixed-wing aircraft.83 Two recent developments on both ends of the size spectrum are of note. The first is the Black Hornet, a four-inch-by-one-inch, half-ounce, camera-equipped drone that the British Army has used in Afghanistan.84 At the other end, in September 2013, Boeing flew the first unmanned F-16 Fighting Falcon,85 suggesting that a fighter pilot in the cockpit may soon become truly optional. Drones also have varying purposes, depending on their type.86 For example, the military uses the MQ-1B Predator for “medium-altitude, long endurance missions” because of its dual intelligence-gathering and munitions capabilities.87 The MQ-9 Reaper takes on a “hunter/killer role” with a secondary intelligence purpose.88 Drones rely

82. JEREMIAH GERTLER, CONG. RESEARCH SERV., R42136, U.S. UNMANNED AERIAL SYSTEMS, at S (2012). This list is not exhaustive, nor does it attempt to classify different types of UAVs, “e.g. operational v. developmental, single mission v. multi mission, long range v. short range.” Id. at 31. A sixth type of UAV was revealed in California in October 2014 with the landing in of the X-37B, a military space plane that spent 675 days in orbit. The U.S. Air Force’s precise purpose for the X-37B is classified. See Olivia Solon, Top-Secret Military Space Drone Lands After Two Years in Orbit, MIRROR (Oct. 20, 2014), http://www.mirror.co.uk/news/technology-science/technology/top-secret-military-space-drone-lands-4467730.


87. Id. (internal quotation marks omitted).

88. Id. (internal quotation marks omitted) (referencing its role in carrying out the “kill chain (find, fix, track, target, execute, and assess) against high value, fleeting, and time sensitive targets” (internal quotation marks omitted)). “The MQ-9 can [also] employ four laser-guided Hellfire missiles.” Id.
on global positioning system (GPS), long-range data links, lightweight materials, and visual sensors for navigation, stabilization, and focusing on targets—all features that their remotely controlled pilots can utilize in attacks.89 Aerial drone capabilities have also recently been combined with the capability to land at sea on aircraft carriers. In July 2013, Northrop Grumman’s X-47B Unmanned Combat Air System (UCAS)—a strike-fighter-sized machine—made the first unmanned autonomous aircraft landing on the U.S.S. George H.W. Bush.90 In addition to performing autonomous carrier-based launches and recoveries, it is also designed to carry out autonomous air refueling.91 Using GPS data to anticipate the carrier’s movement, the X-47B is able to refine its own flight path twenty times per second—forty times faster than the best human pilot.92 Furthermore, it does so without any real-time human control.93 The X-47B may well be the swallow that foretells an era of permanent, carrier-based fleets of unmanned aircraft.94 The use of aerial drones is also not limited to international battlespaces or armed conflicts; the Federal Aviation Administration (FAA) has recently approved their limited use in U.S. airspace.95


93. Spencer Ackerman, *Navy’s Historic Drone Launch from an Aircraft Carrier Has an Asterisk*, WIRED (May 14, 2013, 3:54 PM), http://www.wired.com/2013/05/drone-carrier/ (providing that the X-47B’s flight plan is pre-programmed, “a matter of an algorithm”).


Aerial robots are not alone on the frontlines. A myriad of military robotic systems populate the land and the sea. At the time of writing, the company iRobot had delivered more than 4500 PackBots to defense forces worldwide. Its manufacturer describes the twenty-four pound PackBot as a “tactical mobile robot that performs multiple missions while keeping warfighters and first responders out of harm’s way.” The tele-operated PackBot is a platform that has eight separate payload bays and hookups allowing the operators to plug-in extendable arms, mine detectors, power packs, and cameras, as well as weapons systems. Its manufacturer, iRobot, boasts a 95% out-of-the-box reliability rate. The U.S. military has extensively used the PackBot in Iraq and Afghanistan. The PackBot’s “modular digital architecture accommodates a wide variety of interchangeable payloads that enable a wide variety of missions.” Similar to iRobot, robot developer QinetiQ also emphasizes the role of its unmanned robotic system in, first and foremost, helping warfighters and first responders “stay out of harm’s way.” Like iRobot, QinetiQ offers an extensive line of unmanned systems such as the TALON, the Modular Advanced Armed Robotic System (MAARS), and the Dragon Runner. The payloads of the various systems that companies manufacture also include weapons. For instance, the Special Weapons Observation Reconnaissance Detection System (SWORDS) TALON—the “first armed robot

97. Id.
100. Id. at 29.
104. Id.
105. See, e.g., MAARS, QINETIQ, https://www.qinetiq-na.com/products/unmanned-systems/maars/ (last visited Dec. 28, 2014) (showing the MAARS sporting a machine gun and noting that MAARS “can also carry either a direct or indirect fire weapon system” (emphasis added)).
designed to roam the battlefield”—can carry assault rifles, machines guns, and grenade and rocket launchers and it has “nasty” accuracy.\textsuperscript{106} The Multi-Function Agile Remote-Controlled Robot (MARCbot), which resembles a toy truck mounted with a camera, is used to scout out where the enemy might be and “drive under cars and search for hidden explosives.”\textsuperscript{107} Whereas the MARCbot goes under things, the Sand Flea—a ten-pound robot fitted with a camera that resembles a laptop on wheels—is designed to go over them.\textsuperscript{108} The Sand Flea can jump twenty-four to thirty feet in the air and land on its wheels.\textsuperscript{109} Remotely operated, it can be launched to jump over walls into compounds or suspected enclosed areas (or, indeed, into windows and openings on the second floor of buildings) and send back pictures of whatever is going on inside before hopping off again to its next destination.\textsuperscript{110} This robot answers a perennial problem facing soldiers on patrol: “saddled with 100-pound loads [soldiers] either must scale the walls or kick down the doors to search the compounds, putting soldiers at risk from booby traps or utter exhaustion. Without access to an overhead unmanned air system, the units are also left vulnerable to an ambush.”\textsuperscript{111} The Sand Flea joins a range of other robotic systems designed to enable soldiers to extend their range of vision beyond the direct line of sight and beyond obstacles, including systems such as the Recon Scout XT—a 1.2-pound robot colloquially known as the “throwbot”—that can be thrown manually as far as its human thrower can manage and upon landing, (on wheels) can be driven off remotely.\textsuperscript{112}

The proliferation of drones is not limited to above-land environments; it now includes drones that skim above and that glide beneath the surface of water. Water-surface drones fit within a class of

\textsuperscript{106} SINGER, WIRED FOR WAR, \textit{supra} note 99 at 29–31 (internal quotation marks omitted).
\textsuperscript{107} P.W. Singer, \textit{Military Robots and the Laws of War}, \textit{New Atlantis}, Winter 2009, at 25, 36. Famously, the MARCbot was also “the first ground robot to draw blood” in Iraq. \textit{Id.} at 36. One unit jury-rigged a Claymore antipersonnel mine on their units. SINGER, WIRED FOR WAR, \textit{supra} note 99, at 32. If they suspected an ambush, they would send the robot ahead. \textit{Id.} If an insurgent was seen, the Claymore would be detonated. \textit{Id.}
\textsuperscript{111} \textit{Id.}
unmanned surface vehicles (USVs) or autonomous surface vehicles (ASVs).\footnote{113} The United States began focusing increasingly on USVs in the 1990s and developed the “SAIC/Navtec Owl and Owl II programmes,” which “investigate[] the role of small (3m) USVs in surveillance and harbor protection operations.”\footnote{114} The United States has also developed the “Spartan USV programme,” which focuses on the adaptation of larger, rigid inflatable boats (RIBs) to produce semi-autonomous, multi-role USVs.\footnote{115} In 2013, the U.S. Navy awarded four development contracts “to develop designs to compete for the Unmanned Carrier Launch Airborne Surveillance and Strike (UCLASS) Air Vehicle.”\footnote{116} The Coast Guard has petitioned for rapidly deployable Unmanned Port Security Vessels (UPSVs) that map environments and infrastructure where it would be unsafe for humans.\footnote{117} The United States Navy has tested “launch[ing] six Spike missiles from an unmanned surface vessel precision engagement module (USV PEM)” in an effort to respond to possible swarms of small attack crafts.\footnote{118}

A new cadre of remotely operated underwater vehicles (ROVs) or unmanned underwater vehicles (UUVs) is being designed that are capable of doing, underwater, “what the Air Force has been doing in the sky: prowl stealthily for long periods of time, and gather the kind of data that could turn the tide in war.”\footnote{119} ROVs and UUVs are not new,

\begin{itemize}
\item \footnote{114} INST. OF ENG’G & TECH., ADVANCES IN UNMANNED MARINE VEHICLES 313 (G.N. Roberts & R. Rutton eds., 2006).
\item \footnote{115} Id.
\item \footnote{117} Harbor Drones Will Help Coast Guard Collect Data in Marine Disasters, HUFF POST TECH, (Oct. 16, 2013, 11:22 PM), http://www.huffingtonpost.com/2013/10/16/harbor-drones_n_4112153.html (explaining that water drones are “a cross between the sleek, aerial drones . . . and the remote control boats that young boys race in park ponds”).
\item \footnote{118} No Hands on Deck—Arming Unmanned Surface Vessels, NAVAL-TECH. (Nov. 23, 2012), http://www.naval-technology.com/features/featurehands-on-deck-armed-unmanned-surface-vessels/.
but the wave of varieties and cheaper, smaller alternatives has ballooned.120 The U.S. Navy calls its underwater drone—with the potential to ride “a roller-coaster-like path for up to five years”—the “glider.”121 A fleet of gliders could “swarm an enemy coastline” en masse.122 These winged and propellerless drones look like miniature Tomahawk missiles.123 In 2009, the Navy contracted for up to one hundred and fifty “Littoral Battlespace-Sensing gliders”—part of the Tactically Exploited Reconnaissance Node (TERN) to be delivered by 2014—and has more recently contracted for “continued research efforts” on Slocum Gliders.124 The U.S. Navy has also demonstrated an “all-electric, fuel cell-powered,” UAV called “eXperimental Fuel Cell Unmanned Aerial System” (XFC UAS), which can be fired from a “submarine’s torpedo tube using a Sea Robin launch vehicle system” and “is designed to fit within an empty Tomahawk launch canister.”125 Once at the surface, the XFC launches vertically from the Sea Robin into the air, while streaming live video.126 The U.S. Defense Advanced Research Projects Agency (DARPA)—“tasked with expanding technology and science for use in defense projects”—has also announced “plans to develop an unmanned, submersible ‘mothership’ to transport and deploy aerial and underwater drones.”127 This project integrates new and existing UUV technologies into the Hydra UUV, which will be used as a platform to deploy UAVs and UUVs from underwater.128 Robots such as RHex by Boston Dynamics combine this


121. Thompson, supra note 119 (describing how the glider gathers “energy from the ocean’s thermocline, a pair of layers of warm water near the surface and chillier water below” and explaining how the glider changes its density through a process of hydraulic buoyancy). The information that the glider gathers about water temperature, salinity, clarity, currents, etc. could be readily converted into useful military data and may be critical for calibrating sonar. Id. In a recent exercise, Navy Captain Walt Luthiger noted that gliders have “helped everyone in that very difficult job of finding submarines that don’t want to be found.” Id. (internal quotation marks omitted).

122. Id.


124. Thompson, supra note 119 (internal quotations marks omitted).


126. Id.


128. Id.
UUU technology with on-land capabilities and are capable of swimming and driving, as well as pulling themselves up onto ledges several times their own height. However, the underwater environment is not without difficulties that do not exist on land or in the air.

Whether in the air, on land, or under the sea, drones are now at the forefront of the new American way of war. The strategy underlying the old way of war was one of destruction and annihilation rather than of attrition and exhaustion; the goal was to eliminate the enemy’s forces on the battlefield. This meant, among other things, amassing forces on the battlefield to crush the enemy. This strategy also led, all too frequently, to great harm to civilians. By contrast, in the “new” American way of war, U.S. forces are “expected to bring military power to bear against an enemy quickly, decisively, and with minimal risk of heavy casualties” to both American combatants and to enemy civilians. This new way of war gives primacy to agility and precision over massive force and to effects-based operations leading to the destruction of specific targets—with the intention of forcing the enemy

129. Evan Ackerman, IROS 2013: Aqua Hexapod Gets New Amphibious ‘Ninja Legs,’ IEEE SPECTRUM (Dec. 9, 2013, 4:39 PM), http://spectrum.ieee.org/automaton/robotics/robotics-hardware/iros-2013-rhex-ninja-legs (explaining RHex’s unique ability to travel in land or water using the same appendages); Rob Bricken, Meet RHex, the Robot that Can Get to You No Matter Where You Run, ROBOTS (July 25, 2013, 4:30 PM), http://io9.com/meet-rhex-the-robot-that-can-get-to-you-no-matter-where-he-can-915110961 (“RHex can . . . traverse most terrains, hurl himself over gaps around a couple of feet, and pull himself up onto ledges several times his own height, which has been enough to get him nicknamed “the parkour robot.””).

130. See, e.g., Connors, supra note 120 (describing the perils of barracudas who want a “quick bite” (internal quotation marks omitted)).

131. RUSSELL F. WEIGLEY, THE AMERICAN WAY OF WAR, at xxii (1973) (“In the history of American strategy, the direction taken by the American conception of war made most American strategists, through most of the time span of American history, strategists of annihilation. . . . [T]he strategy of annihilation became characteristically the American way in war.”).

132. This also meant heavy casualties to American forces: approximately 405,000 dead American soldiers in World War II, 36,500 in the Korean War, and 58,200 in the Vietnam War. ANNE LELAND & MARI-JANA “M-J” OBOROCHEANU, CONG. RESEARCH SERV., RL32492, AMERICAN WAR AND MILITARY OPERATIONS CASUALTIES 2–3 (2010).

133. See PAUL G. GILLESPIE, WEAPONS OF CHOICE: THE DEVELOPMENT OF PRECISION GUIDED MUNITIONS 156 (2006) (noting that “under the old American way of war, generals regularly made war on civilians,” and giving the examples of “William T. Sherman in Georgia and Curtis LeMay in Japan”).

134. GILLESPIE, supra note 133, at 148; Michael Ignatieff, The New American Way of War, N.Y. REV. BOOKS (July 20, 2000), http://www.nybooks.com/articles/archives/2000/jul/20/the-new-american-way-of-war/ (explaining that the reduction of risk to American personnel and the concomitant reduction of collateral damage to the nation’s enemies were consequences of the political development of American military affairs).
to abandon key interests—over total destruction of the enemy. This new way of war revolves around technology. Its components include precision-guided weapons, computers, and information networks. Operation Desert Storm and Operation Allied Force (NATO’s aerial intervention in Kosovo in 1999) led many to adopt a vision for the future of warfare—known as Revolution in Military Affairs (RMA)—which was inexorably linked to technological advancements, the first and foremost being the computerization of battlespace. Imagining continuing wars against clearly identifiable, professional armies, RMA was supposed to capitalize on America’s technological advantages such as fighter planes and aerial dominance, reconnaissance and surveillance satellites, communications networks, computerized systems, and precision weapons and munitions. But where the realities of asymmetric warfare have, to a large extent, undermined the usefulness of technology and RMA thinking, drones have emerged as an answer to those very challenges.

II. THE FUNDAMENTAL PRINCIPLES OF THE LAW OF ARMED CONFLICT

LOAC regulates, among other things, the means and methods of warfare—the weapons used and the tactics employed. The overarching


137. See THOMAS X. HAMMES, THE SLING AND THE STONE: ON WAR IN THE 21ST CENTURY 6–7 (2006) (noting the DOD’s preference for technology over people); Ignatieff, supra note 134 (providing that RMA represented the “use of computers and knowledge management systems to improve battlefield command and control; the development of precision-guided conventional weapons; and the deployment of stealth systems, new types of armor, and unmanned platforms, which reduced risk for American combatants”); MICHAEL J. MAZARR ET AL., THE MILITARY TECHNICAL REVOLUTION 26 (1993) (“The trend in warfare over at least the last 200 years has been dominated by the increasing destructiveness of warfare and weapons. Greater lethality was achieved through the application of overwhelming firepower. . . . The advent of precision weapons represents a break in this trend as it allows greater degrees of lethality to be achieved without corresponding increases in destructiveness . . . .”).

principle that pertains to weapons systems is the prohibition of superfluous injury or unnecessary suffering.\footnote{39} Weapons that cannot be directed at specific military objectives and that by their very nature violate the principle of distinction\footnote{40} are also unlawful per se.\footnote{41} Furthermore, even if a specific type of weapon is not unlawful per se or is not specifically prohibited by particular treaties,\footnote{42} governments may not use it improperly—in a manner that would result in unnecessary suffering or in the targeting of civilian population.\footnote{43} Such use is also unlawful under the relevant rules of LOAC. It is in light of these principles that the Protocol Additional to the Geneva Conventions of 12 August 1949 (AP I) imposes a positive obligation on each “High Contracting Party” to determine whether the employment of a new weapon will be prohibited under international law.\footnote{44} That obligation is imposed as part of any “study, development, acquisition or adoption of a new weapon.”\footnote{45}

Judged in light of the above-mentioned tests, drones are obviously not unlawful per se. Indeed, as noted below, drones have the potential to be a more discriminating weapon than the alternatives. Nor is there


\footnote{40. See infra note 157–63 and accompanying text.}

\footnote{41. See AP I, supra note 60, art. 51, § 4(b).}


\footnote{43. AP I, supra note 60, art. 35, § 2.}

\footnote{44. Id. art. 36.}

\footnote{45. Id.; see, e.g., U.S. DEP’T OF DEF., DIRECTIVE 5000.01, THE DEFENSE ACQUISITION SYSTEM 7 (2003), available at http://www.dtic.mil/whs/directives/corres/pdf/500001p.pdf (requiring a LOAC compliance review to be conducted for every new weapon and weapon system acquired by the U.S. Department of Defense).}
anything unique about the armaments and munitions carried and used by drones and their pilots. Thus, Alston, who served as the U.N. Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions, acknowledged in his Study on Targeted Killings that, “a missile fired from a drone is no different from any other commonly used weapon, including a gun fired by a soldier or a helicopter or gunship that fires missiles.”146 Thus, the critical question is the same for drones as for other types of weapons—whether the specific use of the weapon complies with LOAC’s fundamental principles of humanity, proportionality, distinction, taking precautions, and military necessity.147

Notwithstanding the popular adage that all is fair in love and war, article 35(1) of AP I sets out the contrary basic premise of LOAC: “In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited.”148 LOAC reflects a compromise between the demands of military necessity and humanitarian considerations that are aimed at “alleviating as much as possible the calamities of war.”149 LOAC allows the economic and efficient use of force while also minimizing the suffering caused by armed conflict.150 The equilibrium that LOAC reaches between the competing principles of military necessity and humanity is reflected in several “cardinal principles”151 that are “intransgressible”152 and which form “red threads weaving through the whole tissue” of LOAC.153

The principle of military necessity is a principle of controlled

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146. Alston, supra note 57, ¶ 79.
147. Id.
148. AP I, supra note 60, art. 35, § 1; see also Hague Regulations IV, supra note 139, art. 23.
151. Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, ¶ 78 (July 8).
152. Id. ¶ 79.
153. Dinstein, supra note 149, ¶ 19.
violence.\(^{154}\) While not defined in treaty law, military necessity is generally accepted as authorizing the use of force so long as it is not forbidden by international law and is necessary and indeed indispensable for securing the submission of the enemy as soon as possible.\(^{155}\) Violence may be lawful, but not all violence is permissible. Only force necessary to attain definite military objectives and advantages is lawful under LOAC.\(^{156}\)

The principle of distinction is a rule of customary international law\(^{157}\) and is codified in article 48 of AP I, which provides that, “[i]n order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.”\(^{158}\) Violations of the principle of distinction are considered a grave breach of AP I\(^{159}\) and a war crime.\(^{160}\) Aimed at protecting the civilian population, the principle of distinction does not only prohibit combatants from directly targeting civilians,\(^{161}\) it also requires combatants to distinguish themselves from civilians, “so that, unlike civilians, they may be seen to be combatants and the lawful targets of opposing combatants.”\(^{162}\) Thus, for example,

\(^{154}\) See, e.g., id. ¶ 8 (providing that military necessity must be divorced from “wanton acts” and caprice of soldiers, and instead must “be leveraged to the attainment of some discernible military advantage as a direct result”).


\(^{156}\) AP I, supra note 60, art. 52, § 2.


\(^{159}\) AP I, supra note 60, art. 85, § 3 (providing that making the civilian population the object of attack and launching “an indiscriminate attack affecting the civilian population . . . in the knowledge that such attack will cause excessive loss of life, injury to civilians or damage to civilian objects” constitute grave breaches of the Protocol).

\(^{160}\) Rome Statute, supra note 60, art. 8, § 2(b)(i)–(ii).

\(^{161}\) AP I, supra note 60, art. 85, § 3(a).

\(^{162}\) GARY D. SOLIS, THE LAW OF ARMED CONFLICT 251 (2010); see Dinstein, supra note 149, ¶ 218 (“The basic rule [of distinction] has two parts. One is its protective aspect, granting an exemption from attack to civilians and civilian objects. But no less important is the corresponding exposure to attack of combatants and military objectives.”).
order to enjoy the status of lawful combatant, one must, among other things, wear a fixed, distinctive emblem that is recognizable at a distance (such as a uniform) and carry arms openly.\footnote{Dinstein, supra note 149, \textit{\textsuperscript{\textsection} 102–05.}

The principle of unnecessary suffering prohibits parties to an armed conflict from causing unnecessary suffering to combatants.\footnote{AP I, supra note 60, art. 35, § 2; Hague Regulations IV, supra note 139, art. 23(e); Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, 257 (July 8).} In this context, “unnecessary suffering” is considered to be “a harm greater than that unavoidable to achieve legitimate military objectives.”\footnote{Legality of the Threat or Use of Nuclear Weapons, 1996 I.C.J. \textit{\textsection} 78.} The magnitude of the harm caused by a particular weapon is not, in and of itself, determinative of the legality or illegality of that weapon.\footnote{See Dinstein, supra note 149, at 9 (“General revulsion in the face of a particular conduct during hostilities (even if it transcends fluctuations of public opinion) \textit{does not create} an independent criterion regulating weaponry . . . .” (emphasis added) (internal quotation marks omitted)).} Thus, for example, incendiary weapons, such as napalm or white phosphorous, are considered lawful weapons.\footnote{INT’L COMM. OF THE RED CROSS, supra note 158, at 287.} Rather, the question is one of proportionality between the suffering caused and the military advantage gained.

Proportionality, in the context of \textit{jus in bello}, means that military attacks that are anticipated to result in “incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated,” must be cancelled or suspended.\footnote{AP I, supra note 60, art. 51, § 5(b); see also id. art. 57, § 2(a)(iii).} Proportionality does not constitute a total prohibition on civilian deaths.\footnote{Solis, supra note 162, at 274.} Rather, it clearly recognizes that some civilian casualties are unavoidable and applies to them the doctrine of double effect: when we seek a goal that is morally justified in and of itself, then it is also morally justified to achieve the goal even if this may lead to undesirable consequences, on the condition that the undesirable consequences are unavoidable and unintentional, and that an effort was made to minimize their negative effects.\footnote{See Laurie R. Blank, \textit{A New Twist on an Old Story: Lawfare and the Mixing of Proportionality}, 43 CASE W. RES. J. INT’L L. 707, 715 (2011); R. George Wright, \textit{Noncombatant Immunity: A Case Study in the Relation Between International Law and Morality}, 67 NOTRE DAME L. REV. 335, 341–42 (1991) (discussing the doctrine of double effect).}

Finally, article 57 of AP I mandates that those who plan or decide upon an attack “[t]ake all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to
minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects.”\textsuperscript{171} This principle of avoidance (also known as “taking precautions”) means that it is not enough not to intend to kill civilians while attacking legitimate targets. Indeed, a deliberate, affirmative effort has to be made not to harm them. This may mean, for example, that certain targets ought to be attacked only during certain hours (e.g., at night, when no civilians may be around),\textsuperscript{172} that some attacks may need to be conducted from a certain angle,\textsuperscript{173} and that advance warnings to the civilian population must be issued by the attacker prior to the strike.\textsuperscript{174}

III. DISTANCE, ACCURACY, AND LETHALITY

In order to apply the fundamental principles of LOAC to drones, we need to evaluate and understand the use of drones and drone technology in the more general context of weapons development, which, throughout human history, has involved compromises between three main considerations—distance, accuracy, and lethality. Drones, this Article suggests, offer the possibility of recalibrating the equilibrium among these three considerations by increasing military efficiency while minimizing harm to civilians and civilian objects. As such, they are arguably in line with the principles of LOAC and, indeed, offer the promise of more “humane” wars.\textsuperscript{175}

The story of advancements in weapons technology has been about enabling the exercise of ever-greater lethal force from increasing distances.\textsuperscript{176} It is a human instinct to fight from a distance.\textsuperscript{177} Increased physical and mechanical separation from the enemy reduces a soldier’s fear of being killed and, perhaps even more significantly, his reluctance to kill others.\textsuperscript{178} It is easier to kill another human being using a spear
than a knife. It is easier still to use a bow rather than a spear. It is easier yet to shoot indirectly at the enemy from a great distance than to target her with direct fire. And it may be easiest of all to kill by dropping bombs from high altitude. However, an inverse relationship exists between distance and accuracy. Projectiles have not proven the most efficient way to kill the enemy. No matter how trained their operator, once released, projectiles—arrows, cannon balls, bullets, missiles, and bombs—are subject to factors that are beyond the operator’s control. Weather conditions and the laws of physics participate in shaping the trajectory of the projectile. Moreover, the time that is needed for the projectile to traverse the distance between its origin and its target may allow the target to parry the attack by changing his position or taking cover.

In order to compensate for the inherent inefficiency of projectile-based weapons, their lethality has been continuously increased. Both the quantity and the quality of projectile weapons had to be augmented. If a single weapon could not guarantee a sufficient probability of hitting the target, deploying a large number of weapons (and a large number of soldiers operating them) against the same target would improve the odds. Making each projectile more lethal would similarly improve the chances that, even if the target were not hit with precision, it would be destroyed.

Increased lethality, both with regard to the number of bombs dropped on a target and the size of those bombs, was a hallmark of the old American way of war. The air campaign during the Vietnam War still saw the use of the euphemistic “strategic bombing” and of massive bombs like the 15,000-pound BLU-82 “Daisy Cutter,” both of which compensated for a lack of pinpoint accuracy with greater, broader


179. Brooks, *supra* note 178 (noting that the distance between the drone and operator makes imprecision unavoidable).

180. *See* 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, 649 (2004) (providing that projectile accuracy improves when the user makes adjustments “in response to altitude, range, and poor weather conditions”).

181. *See id.*

182. *See* Gillespie, *supra* note 133, at 37 (“[T]he prosecution of World War II epitomized the previously established *American way of war*, depending upon a strategy of attrition and the efficient employment of technology to defeat the enemy. In a war more total than any before or since, wartime exigencies and the vast resources of the United States combined to produce innovative technologies in unprecedented *quantity* and *scope*.” (emphasis added)).
force.183 The Vietnam War also saw the emergence of a new way of fighting, which recognized the value of precision and accuracy over raw, indiscriminate force.184 It witnessed the first large-scale deployment of precision-guided munitions (PGMs) and the beginning of a shift from gravity-directed “dumb” bombs to “smart” weapons.185 That shift captured worldwide attention during Desert Storm186 (despite relatively little actual use of smart bombs during the operation)187 and was crystalized during Operation Allied Force in 1999.188 PGMs’ promise of a more accurate and potentially less lethal war, at least for “our” combatants and “their” civilians, has been wedded to and used in tandem with drone technology since the mid-2000s.189

A. Distance

The distancing of warriors from their enemies has been a consistent and critical pattern in the development of weapons throughout human history. Weapons such as spears, javelins, and bows allowed forces to engage the enemy from greater horizontal distances than did stones, sticks, clubs, knives, and swords.190 The harnessing of animals such as horses, camels, and elephants for warfare lifted their riders vertically above the battlefield and allowed them to attack the enemy from above.191 Their use also increased significantly the speed of both attack

183. Id. at 99.
184. JAMES E. HICKEY, PRECISION-GUIDED MUNITIONS AND HUMAN SUFFERING IN WAR 76 (2012) (providing that “operationally effective precision-guided munitions” replaced unguided “dumb” bombs during the Vietnam era); see also id. (noting that the Vietnam war, despite its horrors and failures, “serves as a bridging case study between two eras of warfare, and also serves as the progenitor of the style of warfare so prominently displayed in modern American combat operations”).
185. Id.
186. Id. at 111.
187. Id. at 154 (noting that just 8% of munitions used in Operation Desert Storm were precision-guided).
188. See id. at 173 (describing the performance of precision-guided munitions in Kosovo as “near-perfect”).
189. Another trend worth noting with regard to the emergence of weapons systems is the increasing development of non-lethal (also known as “less lethal”) weapons systems. Such weapons strike a different balance between lethality and accuracy—i.e., they compensate for their lower (or in some cases, absence of) lethality, with less precision. In other words, because such weapons are less lethal it seems less critical for them to be quite as discriminatory as more lethal weapons. U.S. DEP’T OF DEF., DIRECTIVE 3000.03E, DOD EXECUTIVE AGENT FOR NON-LETHAL WEAPONS (NLW), AND NLW POLICY 2–3 (2013), available at http://www.dtic.mil/whs/directives/corres/pdf/300003p.pdf.
191. See JARED DIAMOND, THE RISE AND FALL OF THE THIRD CHIMPANZEE 217 (1991) (describing how the domestication of horses revolutionized warfare in a way that no other animal ever rivaled by pulling battle chariots and carrying saddles and stirrups, allowing
and defense while offering greater protection to their riders against conventional attacks mounted by the opposing infantry. 192 For its part, the infantry revolution of the fourteenth century presented two main tactical responses to the mounted cavalry, both of which have similarly depended on engagement from a distance: first, deploying archers using bows, crossbows, longbows, and composite bows (and, later on, firearms) in order to stop the cavalry at a distance, 193 and, second, meeting those cavalrmen who had managed to survive the onslaught of arrows with long pikes defending tightly-packed infantry units. 194

The story of advancements in weapons technology is, to a large extent, the story of enabling the exercise of lethal force from increasing distances and the stretching of the battlespace. 195 Distancing addresses both the soldier’s fear of being killed and her reluctance to kill others. 196 The fear for one’s own life affects one’s judgment and may impair the ability to act effectively in battle. 197 The ways in which distancing affects such fear are complex. Distancing may exacerbate fear of the unseen enemy and instill a sense of helplessness against an incoming
long-range attack. At the same time, distancing offers a sense of impunity and decreased personal risk and some semblance of force protection. Perhaps most significantly, distancing minimizes the trauma that results from what retired Army Lieutenant Colonel Dave Grossman calls the “Wind of Hate.” According to Grossman’s study of killing in war, a critical factor in the incidence of psychiatric casualties among soldiers is not the mere existence of fear of death and injury, but rather the fact that such danger is brought about by and through “close-up, inescapable, interpersonal hatred and aggression.” Soldiers and civilians can withstand ongoing aerial and artillery bombardments, because being psychologically protected by distance allows denial that anyone is personally trying to kill them; the mere threat of close-up aggression by attacking infantry, however, may cause them to flee.

Even more importantly, studies about the actual conduct of soldiers in war have persuasively demonstrated that fear for one’s life is one of the least significant contributing factors to psychiatric trauma among soldiers. Far more critical to understanding soldiers’ conduct on the battlefield is the often-underappreciated fact that a significant number of soldiers choose either not to fire their weapons at all or, when they do discharge their firearms, not to fire directly at an enemy soldier when

198. See, e.g., JOANNA BOURKE, AN INTIMATE HISTORY OF KILLING: FACE-TO-FACE KILLING IN TWENTIETH-CENTURY WARFARE 65, 81 (1999); Daddis, supra note 197, at 23.
199. GROSSMAN, supra note 194, at 75–81.
200. Id. at 80.
201. Id. at 77–80. Grossman explains that “[i]t is not fear of death and injury from disease or accident but rather acts of personal depredation and domination by our fellow human beings that strike terror and loathing in our hearts.” Id. at 76.
202. See id. at 64. In modern wars the number of psychiatric casualties has consistently exceeded the number of combat fatalities. RICHARD A. GABRIEL, NO MORE HEROES: MADNESS AND PSYCHIATRY IN WAR 77 (1987). Gabriel notes that, “[i]n every war in which American soldiers have fought in this century, the chances of becoming a psychiatric casualty . . . were greater than the chances of being killed by enemy fire.” Id. While Gabriel provides that the Vietnam War was an exception, with the chances of being killed in battle and suffering some psychological injury being almost equal, he also finds that if one includes those who suffered Post-Traumatic Stress Disorder, “then once again more soldiers suffered psychiatric collapse than death from enemy fire.” Id. Similar findings apply to the Israeli Defense Forces (IDF): 30% of IDF casualties during the 1973 Yom Kippur War were psychiatric whereas in the (first) Lebanon War of 1982, the number of Israeli psychiatric casualties exceeded the number of dead by more than 150%. Id.

the latter is in their sights. Where some regard such conduct as a sign of panic or cowardice that ought to be overcome by focused training, others suggest that such behavior results from the compulsion not to kill that is internalized in most human beings and which retains a hold even in battle. As military historian S.L.A. Marshall famously argues, based on interviews with World War II veterans,

the average and normally healthy individual . . . has such an inner and usually unrealized resistance toward killing a fellow man that he will not of his own volition take life if it is possible to turn away from that responsibility. . . . At the vital point, he becomes a conscientious objector, unknowing.

On the battlefield, soldiers often choose to fire over the enemy’s head, or not to fire at the enemy at all, thus exercising their “right to miss.” Even if war is a mass act of justified (or excused) killing, for individual soldiers the tension between their inherent strong reluctance to kill another human being and the demands of front-line battle may be overwhelming. A soldier in combat is caught in a tragic Catch-22:
If he overcomes his resistance to killing and kills an enemy soldier in close combat, he will be forever burdened with blood guilt, and if he elects not to kill, then the blood guilt of his fallen comrades and the shame of his profession, nation, and cause lie upon him. He is damned if he does, and damned if he doesn’t.208

Not all killing on the battlefield is equal. “[A] direct relationship [exists] between the empathic and physical proximity of the victim” and the “difficulty and trauma” of killing.209 Modern warfare has seen little hand-to-hand combat,210 or even the “intimate brutality” of killing with a non-projectile weapon such as a spear, bayonet, or knife.211 “Personal kills”—in which a soldier knows with certainty that he is responsible for the killing of a specific individual—take immense psychological toll on the killer and are extremely difficult to perpetrate.212 Instead, most killing is done at greater distances.213 Most soldiers on the battlefields since the early nineteenth century have died as a result of long-range artillery fire, rather than through opposing infantry fire.214 Killing at a distance is an impersonal, indirect, and uncertain affair. Historian Joanna Bourke provides the following account by an American soldier in Vietnam: the “grenade launcher was good because . . . even though people are getting killed by what you’re firing it’s not a direct thing . . . . You didn’t have to put your eye on a particular person and shoot him and kill him.”215 Moreover, engaging the enemy from at least a mid-range offers deniability. Killing from a distance is similar to the

after the death of his close friend Patroklos, which ultimately led Achilles to commit atrocities against the living and the dead alike).

208. GROSSMAN, supra note 194, at 86.
209. Id. at 97.
210. HOLMES, supra note 203, at 377–78; cf. GROSSMAN, supra note 194, at 132 (“Man has a tremendous resistance to killing effectively with his bare hands.”).
211. GROSSMAN, supra note 194, at 120–30. Grossman notes that among these means, “it is psychologically easier to kill with an edged weapon that permits a long stand-off range,” such as a spear, rather than with a weapon that allows for a shorter stand-off range, such as a knife. Id. at 120. Bayonet combat is “extremely rare in military history,” with “one side or the other invariably flee[ing] before the actual crossing of bayonets occurs.” Id. at 122; see also HOLMES, supra note 203, at 378.
212. GROSSMAN, supra note 194, at 114–15, 119 (“Looking in a man’s face, seeing his eyes and his fear, eliminate denial. At this range the interpersonal nature of the killing has shifted. Instead of shooting at a uniform and killing a generalized enemy, now the killer must shoot at a person and kill a specific individual. Most simply cannot or will not do it.”).
213. BOURKE, supra note 198, at 39 (“The bayonet charge, for instance, was not representative of most combatants’ experiences of battle. Even during the First World War, long-distance shelling by artillery killed two-thirds of all soldiers, while less than half a per cent [sic] of wounds were inflicted by the bayonet.”).
214. GROSSMAN, supra note 194, at 28; see, e.g., BOURKE, supra note 198, at 39.
215. BOURKE, supra note 198, at 205.
“conscience round” utilized by firing squads to alleviate the trauma that may be involved in taking another human being’s life. Soldiers often do not know with certainty—indeed do not want to know—whether they killed an enemy. If that is true for front-line infantry, it is all the more so for those who fire missiles, bombs, or artilllery shells. Even in those increasing distances, there is a discernible difference between mid-range, long-range, and maximum-range killings. Killing done at maximum or long range further depersonalizes and dehumanizes the victims of the attack and makes their individual deaths, in some sense, unintended and easier to deal with. Artillery and missile crews, bomber pilots, and naval gunners are similarly insulated by mechanical and physical separation from their targets. The targets are depersonalized: a ship (rather than its sailors), a plane (rather than its pilot). Fighter pilots are much more likely to shoot down an enemy plane today when the engagement is done at extremely high speeds and often is visualized through radar and electronic systems, than were pilots in the significantly slower planes of World War I and World War II, who had the opportunity to look “into the cockpit at another man, a pilot, a flier, one of the ‘brotherhood of the air,’ a man frighteningly like themselves.” Depersonalization of the enemy may also explain why killing from behind—whether by an individual commando or by units of soldiers targeting a fleeing enemy—is easier to carry out.

216. See, e.g., GEOFFREY ABBOTT, WHAT A WAY TO GO 112 (2007) (explaining that firing squads’ “inclusion of a blank round [is] in order to salve the consciences of the squad members”); ROBERT JAY LIFTON & GREG MITCHELL, WHO OWNS DEATH?: CAPITAL PUNISHMENT, THE AMERICAN CONSCIENCE, AND THE END OF EXECUTIONS 89 (2002) (“One member of a firing squad is always given a blank. This is for the conscience of the executioners, so no one knows for sure who fired the live round, . . . noting the need to give the firing squad members a chance to get over any emotional barrier to pulling the trigger. . . . Efficiency in killing diminishes pain, while human emotions that interfere with efficiency can increase the prisoner’s suffering.” (internal quotation marks omitted)).

217. See, e.g., HOLMES, supra note 203, at 376 (“Most of the veterans I interviewed were infantrymen with front-line service, yet fewer than half of them believed that they had actually killed an enemy, and often this belief was based on the thinnest of evidence.”).

218. See Jimmy Carter, Nobel Lecture (Dec. 10, 2002), available at http://www.nobelprize.org/nobel_prizes/peace/laureates/2002/carter-lecture.html (“From a great distance, we launch bombs or missiles with almost total impunity, and never want to know the number or identity of the victims.”).

219. For distinctions between the various ranges of killing, see GROSSMAN, supra note 194, at 107–13.

220. See GRAY, supra note 207, at 178 (“With every foot of distance there is a corresponding decrease in reality. Imagination flags and fails altogether when distances become too great.”).

221. GROSSMAN, supra note 194, at 108.

222. See GWYNNE DYER, WAR 57 (rev. ed. 2004).

223. GROSSMAN, supra note 194, at 31, 58.

224. Id. at 128.
“Looking another human being in the eye, making an independent decision to kill him, and watching as he dies due to your action combine to form one of the most basic, important, primal, and potentially traumatic occurrences of war.” 225 When you cannot see the enemy’s face, killing becomes less difficult. 226 Even snipers, who are able to see and select their individual targets but are removed therefrom by means of the riflescope, are mostly immune to psychiatric trauma. 227 Distancing makes easier both the act of killing and the ability to justify and rationalize it, to others and to oneself. 228 It makes war seem less hellish and more antiseptic. 229 It offers the possibility of killing with impunity, which has become a defining feature of modern warfare and of the anonymous soldiers who do the fighting. 230

However, the trend towards increasing the distance between opposing enemy forces has faced two different challenges. First is the long-standing challenge of accuracy of the weapons used. A second, much more recent challenge derives from the realities of counterinsurgency operations and asymmetric warfare. For the most part, guerillas and insurgents shun open confrontation with their far stronger opponents. Instead, they channel fighting to heavily populated urban areas in order to minimize their own casualties while, at the same time, deliberately exposing civilians to harm. This type of action may well deter the stronger force from attacking otherwise legitimate military targets due to concerns over the proportionality of the response and excessive collateral damage among civilians and civilian targets. 231

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225. Id. at 31. Soldiers on patrols behind enemy lines generally do not suffer psychiatric stress because the most common factor “causing combat stress is not present: they are not obligated to engage in face-to-face aggressive activities against the enemy. Even though these missions are highly dangerous, danger and the fear of death and injury are quite obviously not the predominant cause of psychiatric casualties in battle.” Id. at 60–61.

226. Id. at 128 (“Not having to look at the face of the victim provides a form of psychological distance that . . . assists in . . . subsequent denial and the rationalization and acceptance of having killed a fellow human being.”). This factor also explains why executions are traditionally conducted from behind the victim or when they are blindfolded or hooded. Id.

227. Id. at 108–10.

228. Grossman states that, “[t]he burden of killing is so great that most men try not to admit that they have killed. They deny it to others, and they try to deny it to themselves.” Id. at 91.

229. See Ignatieff, supra note 196, at 215 (“We see war as a surgical scalpel and not a bloodstained sword. In doing so we mis-describe ourselves as we mis-describe the instruments of death.”). The statement “war is hell” is attributed originally to William Tecumseh Sherman. See John Bartlett, Familiar Quotations 705 (14th ed. 1968).

230. See Christopher Coker, The Warrior Ethos 106 (2007) (“For good or ill, weapons have long determined the view we in the West have had of warriors—their skill at using weapons that kill anonymously, from a distance, and their ability to withstand for hours on end high attritional rates of firepower from a largely unseen enemy.”).

231. The use of the euphemism “collateral damage” to refer to unintended civilian casualties is now commonplace. It ought to be noted that the AP I refers to such injury or death
For a military response to be effective, the more powerful military must engage with the enemy on the latter’s own turf, in low-tech battles at close quarters. While distancing through advanced weapons minimizes the twin risks of being killed and of killing, the realities of modern asymmetric warfare have re-raised and strengthened those risks: the overwhelming technological advantage of the strong side is negated. Soldiers often have to resort to house-to-house fighting, which exacerbates the feeling of being alone since “[t]he nature of urban terrain with its walls, compartmentalization, and limited visibility enforces isolation.” 232 From the perspective of the insurgents, such warfare has yet another benefit—it increases the death toll among, and is demoralizing to, their opponents.233

B. Lethality: Responding to Lack of Accuracy

Distance and accuracy are inversely related.234 Once discharged, projectiles—arrows, cannon balls, artillery shells, bullets, missiles, and bombs—are all subject to factors that are beyond the operator’s control. Weather conditions and the laws of physics participate in shaping the trajectory of the projectile. Moreover, the time the projectile takes to cross the distance between the point of origin and its target may allow the target to parry the attack by changing its position or taking cover.235

To address this conundrum, fighting forces have augmented both the quality and the quantity of projectile weapons. Making each projectile more lethal improved the chances that even if the target were not hit directly it would be destroyed.236 Similarly, if a single weapon could not guarantee a sufficient probability of hitting the target, deploying a larger number of weapons against the same target would improve the odds.

of civilians as “incidental” rather than “collateral.” AP I, supra note 60, art. 51, § 5(b). For clarity’s sake, this Article retains the widely used term “collateral damage.”

232. Daddis, supra note 197, at 24. On the contribution of distancing to isolation on the battlefield see Bourke, supra note 198, at 65 (“[L]ong-distance weapons separated soldiers from each other, making the battlefield one of the loneliest places on earth . . . .”).

233. Martin van Creveld, The Changing Face of War 227 (2008) (“[F]or the strong, every soldier, policeman, or civilian killed becomes one more reason to end the struggle. For the weak, it is one more reason to continue until victory is won.”).

234. As Professor Michael Schmitt notes, there is a distinction between accuracy and precision: “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.” Schmitt, supra note 58, at 146 (footnote omitted).

235. See Koplow, supra note 138, at 81 (“Accuracy may be the single most important and most elusive factor in armed conflict. No matter how big, destructive, and deadly a bomb you build, if you cannot deposit it reasonably close to the intended target, it will not do the enemy much harm or you much good.”).

236. Obviously, this bigger-is-better view had to be balanced against other concerns such as mobility and flexibility. See, e.g., Boot, supra note 193, at 1–6 (discussing King Charles VIII of France’s “blitzkrieg” throughout Italy in 1494 using light, mobile artillery).
World War II led the United States to all but abandon precision aerial bombing for two main reasons. First, the adoption of strategic (or area) bombing and “fire bombing,” required little precision. Instead of striving for an elusive greater precision, the Army Air Forces opted to use larger bomber formations and to drop an increased number of bombs in order to increase the probability of hitting the target. Second—and more significant—was the development of the atomic bomb and its deployment against Japan in 1945. In the aftermath of the war, and with the advent of the Cold War, the United States turned its attention almost exclusively to nuclear weapons. Military doctrine developed around the possible use of these ultimate weapons, which did not require much precision or accuracy. Some have argued that in its most narrow version the lesson of World War II was that wars could be won just by using air forces as, after all, two aircraft managed to bring a country to its knees while avoiding the inevitable further American casualties that would have resulted had U.S. troops continued to battle their way to Tokyo. Less myopic versions indicate a continued role for ground troops and naval forces but relegate them to roles supporting the air force. Indeed, military restructuring and downsizing after the war saw the emergence of an independent coequal fourth armed force (the U.S. Air Force) and the redirection of resources to it and to nuclear weapons and platforms.

Similarly, the American use of air power in Vietnam followed this well-established pattern. Massive bombs, such as the 15,000-pound BLU-82 “Daisy Cutter” bomb, compensated for a lack of pinpoint accuracy with their large high-explosive payload. Cluster bombs

237. See Gillespie, supra note 133, at 37–38.
239. See id. at 146.
241. Id. at 169–71.
242. Similar arguments have been made in the aftermath of many other armed conflicts such as Operation Desert Storm and Operation Allied Force. See, e.g., Hickey, supra note 184, at 173–74 (noting the “near-perfect” performance of PGMs in Operation Desert Storm, which performance removed the necessity for ground fighting altogether).
243. Gillespie, supra note 133, at 40 (noting the fundamental changes in the American approach to airpower after World War II). This trend still continues today. Technology makes force reductions and downsizing possible. Schmitt, supra note 58, at 149. See also Lauren Carroll, Lindsay Graham: Army Is Smallest Since 1940, Navy Smallest Since 1915, TAMPA BAY TIMES (Oct. 5, 2014, 5:44 PM), http://ec2-50-17-62-213.compute-1.amazonaws.com/truth-o-meter/statements/2014/oct/05/lindsey-graham/lindsey-graham-army-smallest-1940-navy-smallest-1915/ (According to the Quadrennial Defense Review, Army troops will decrease to 440,000 by 2019 and Navy ships will decrease to 234 by 2019, which are the lowest numbers since 1940 and 1915, respectively).
244. Gillespie, supra note 133, at 99.
dispersed small bomblets over a large area. Finally, aerial bombardment missions brought an increase in the number of aircraft participating in the attack, either as support against surface-to-air defense systems or for the actual attack.

C. Back to Accuracy

The shift to precision weapons has its origins in the Korean War and, even more so, in the experience of the Vietnam War and the realization that nuclear weapons, while the basis for the United States’ deterrence strategy against the Soviet Union, were unusable in any conflict short of a third world war. Any real-world “limited” conflict required the capacity to exercise limited force. With the focus turning back to conventional weapons, the need for greater accuracy became apparent. And with the introduction of television crews into the fighting in Vietnam, the need to limit collateral damage among civilians became as much a pressing political interest as a legal and moral concern for the Johnson and then Nixon Administrations. Moreover, the desire to limit collateral damage among civilians matched military needs—the need to prevent fratricide (“friendly fire”) in the jungles as well as the demonstrated need not merely to identify targets more clearly but to attack them with greater efficiency. In 1972, this latter point was demonstrated during Operation Linebacker and, more famously, with the destruction of the Thanh Hoa Bridge in North Vietnam, which involved twelve F-4 aircraft armed with various types of guided bombs. Previously, the bridge had survived seven years of aerial bombings in which twenty-nine U.S. aircraft were lost in over 700 sorties dropping 12,500 tons of bombs.

245. Id.
246. Id. at 98.
247. Id. at 62.
249. Herbert Y. Schandler, America in Vietnam 169 (2009); see Gillespie, supra note 133, at 65.
252. See Gillespie, supra note 133, at 115–16; Lambeth, supra note 248, at 38–39.
253. Gillespie, supra note 133, at 194 n.63.
Early weapons systems offered limited guidance and their operation was greatly dependent on weather conditions\(^\text{254}\) necessitating daytime attacks under clear skies, as the bombardiers needed to see the target in order to aim their bombs\(^\text{255}\). These limitations made precision systems less desirable as they placed aircrews at great risk of attack by enemy fighters and anti-aircraft fire\(^\text{256}\). In the late 1960s, new “second generation” in-flight guidance systems that offered greater targeting precision were deployed\(^\text{257}\). Electro-optical guided bombs (EOGBs), such as the AGM-62 Walleye and the AGM-65A/B Maverick missiles, transmit images—they initially used TV to provide visual images and later on used infrared imaging—in real time to their launchers through a camera installed in the bomb or missile’s nose\(^\text{258}\). The launching aircraft can designate a specific target as the bomb approaches the ground. Providing much improved accuracy and targeting\(^\text{259}\), EOGBs still had

\(^{254}\) The most poignant reminder of the dependency of bombardiers on the vagaries of weather came on August 9, 1945 when the pilots of Bock’s Car failed to visually sight the city of Kokura due to cloud cover and, with fuel running low, turned to drop Fat Man on their secondary target, Nagasaki. Nicholas D. Kristof, Kokura, Japan: Bypassed by A-Bomb, N.Y. Times (Aug. 7, 1995), http://www.nytimes.com/1995/08/07/world/kokura-japan-bypassed-by-a-bomb.html. That the bombs dropped on Hiroshima and Nagasaki missed their aim points by some 800 and 1500 feet, respectively, made, of course, little practical difference. See Mark Van Rhyn, The Atomic Bomb (6 and 9 August 1945), PBS (Sept. 2007), http://www.pbs.org/thewar/detail_5234.htm.

\(^{255}\) Gillespie, supra note 133, at 26. Some systems depended on the operator or operators maintaining uninterrupted, continuous, visual contact with the bomb during its flight, contact that was extremely hard to maintain under battle conditions. Some depended on means of controlling the bomb or missile, such as a radio command link, that were susceptible to interruption either due to natural causes or due to enemy jamming and interference. See, e.g., Stephen Robert Twigge, The Early Development of Guided Weapons in the United Kingdom, 1940–1960 6–12 (1993).

\(^{256}\) See, e.g., Gillespie, supra note 133, at 26 (noting the “considerable cost” of daytime bombing to aircrews). One major concern with a precision bomb used early in the Vietnam War—the AGM-12 Bullpup—was the need for the delivery aircraft to maintain its heading straight toward the target until impact. Understandably, “this feature did little to endear the weapon to flight crews, who incurred considerable risk approaching well-defended targets head-on, bereft of the option for evasive action.” Id. at 102.

\(^{257}\) Id. at 103, 112.

\(^{258}\) Koplów, supra note 138, at 84. The Maverick entered service with the United States Air Force in 1972. The original models of the Maverick, AGM-65A/B, which used an electro-optical TV guidance system, are no longer in use by the United States military. See Andreas Parsch, Raytheon (Hughes) AGM-65 Maverick, DESIGNATION-SYSTEMS, http://www.designation-systems.net:80/dusrm/m-65.html (last updated Apr. 7, 2005). More advanced models of the missile now use an imaging infrared seeker, laser guidance, or an enhanced electro-optical TV guidance system (using a charge-coupled device seeker which, through digital imaging, offers three times the range of the original TV sensor and is well suited for desert operations). AGM-65 Maverick, U.S. AIR FORCE (Aug. 18, 2003), http://www.af.mil/AboutUs/FactSheets/Display/tabid/224/Article/104577/agm-65-maverick.aspx; see also Koplów, supra note 138, at 84–85.

\(^{259}\) Hickey, supra note 184, at 98.
certain inherent limitations: for the bomb to “lock” on the desired target, the cameras required sharp contrast between the target and its surroundings. 260 Thus, target acquisition was greatly dependent on the weather and, particularly, lighting conditions, and could be made difficult by the enemy’s use of camouflage, smokescreens, or high-contrast decoy targets. 261 It also meant that very symmetrical targets could also fool the system and prevent a lock. 262 Laser-guided bombs and missiles (LGBs), such as the Paveway series, use a laser-seeker to home onto laser beams that a target designator points at the target and which are then reflected off that target. 263 Once detected, the laser seeker and a built-in computer system automatically activate a control augmentation system that guides the bomb to its target. Both EOGB and LGB systems are relatively cheap and offer significantly greater accuracy than traditional gravity (“dumb”) bombs. 264 The measure of a bomb’s accuracy is its circular error probable (CEP), which is defined as the radius of a circle within which half the bombs or missiles fired would be expected to hit. 265 In the fall of 1944, the CEP for a bomb released at a medium altitude by a fighter-bomber in an optimal attack angle of forty-degree dive was about one thousand feet (305 meters). 266 In comparison, LGBs have a CEP of approximately three meters. 267


261. See id. at 30; GILLESPIE, supra note 133, at 105.

262. GILLESPIE, supra note 133, at 192 n.29.

263. See Blackwelder, supra note 260, at 23–24 (describing the target-detecting capabilities of LGBs and the “Paveway” designating system affixed thereto).

264. GILLESPIE, supra note 133, at 113 (referring to the Paveway I LGB as “a precision guided weapon with a price tag palatable enough to use against common, everyday targets”). In addition, LGBs require less training for combat pilots on target accuracy and can be used by virtually every aircraft “compatible with an unmodified general-purpose bomb.” Id. at 114.

265. Blackwelder, supra note 260, at 10 n.22.


However, weather conditions continue to limit the usability of LGBs.\textsuperscript{268} Furthermore, for an LGB to function properly, the target must be continuously “painted” by laser, either by an aircraft or by ground troops, until the moment of impact.\textsuperscript{269} Thus, while allowing the delivery platform a safer distance from which to target the enemy, LGBs still require the presence of friendly aircraft or ground troops in the general zone of operations.\textsuperscript{270} And while the delivery pilot could engage in evasive maneuvers against hostile enemy fire, such actions may well have meant breaking the continuous target tracking, (if the target was tracked from the air by the same aircraft) turning the “smart” bomb into a garden-variety “dumb” one.

The use of “smart” precision bombs by the Coalition forces during Operation Desert Storm, the 1991 campaign against Iraq, captured much of the public attention and signaled the promise of bombing the enemy with relative safety for one’s own soldiers.\textsuperscript{271} The computerization of battlespace turned the business of war into a deadly video game, at least for one party.\textsuperscript{272} The new weapons offered the U.S. armed forces overwhelming military advantages and “full spectrum dominance,”\textsuperscript{273} allowing them to “shock and awe”\textsuperscript{274} their opponents while, at the same

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\textsuperscript{268} While LGBs may be used during either daytime or nighttime attacks, laser beams dissipate when the air is dusty, smoky, or debris-ridden—precisely the conditions that are “common features of a battle environment.” \textit{Koplow, supra} note 138, at 85.

\textsuperscript{269} \textit{Koplow, supra} note 138, at 84; \textit{Rip & Hasik, supra} note 267, at 213; \textit{see also} Tom Harris, \textit{How Smart Bombs Work}, \textit{HowStuffWorks}, \url{http://science.howstuffworks.com/smart-bomb.htm} (last visited Dec. 28, 2014).

\textsuperscript{270} For ground troops tasked with maintaining direct contact with the target while trying to keep a safe distance from it, this presents an increased risk of being discovered and engaged by enemy forces.

\textsuperscript{271} \textit{See} Paul G. Gillespie, Precision Guided Munitions: Constructing a Bomb More Potent Than the A-Bomb 202–05 (June 2002) (unpublished Ph.D. dissertation, Lehigh University), \textit{available at} \url{http://www.dtic.mil/dtic/tr/fulltext/u2/a406542.pdf} (“Because of the vivid video images of the destruction of Iraqi bridges and other structures on the television news, including one particularly memorable scene of a guided bomb going down the ventilation shaft of an office building, the American public very easily accepted laser guided bombs as virtually infallible.”); \textit{Hickey, supra} note 184, at 173 (“The public perception of the near-perfect performance of PGMs in these two case studies only served to enhance the reputation that had first emerged during Operation DESERT STORM.”).

\textsuperscript{272} \textit{Ignatieff, supra} note 196, at 168 (“The bombing of Baghdad was the first war as light show and the aerial bombardment of Iraqi forces was the first battle turned into a video-arcade game. . . . Having been told to prepare for as many as 25,000 casualties, the electorate discovered the intoxicating reality of risk-free warfare.”).

\textsuperscript{273} \textit{See Joint Vision 2020, supra} note 136, at 6–11 (underscoring the importance of information superiority and technological innovation to future U.S. military success).

\textsuperscript{274} \textit{Frederick W. Kagan, Finding the Target} 230 (2006) (explaining that the Department of Defense’s Joint Vision 2010 is “little more than \textit{Shock and Awe} watered down”); \textit{see also} \textit{Joint Vision 2010, supra} note 136.
time, reducing the risks to American soldiers. These weapons provide their launchers the safety of distance while assuring a high degree of accuracy and precision. For example, the United States fired Tomahawk missiles against Iraqi targets from ships in the Red Sea. These systems are almost as accurate as LGBs. Yet despite their obvious advantages, such smart ordnance constituted no more than 8% of the total ordnance dropped during the operation. The use of this relatively small percentage of smart bombs was due to weather and budget constraints. With the Gulf experiencing the worst weather conditions in decades, the ability to use LGBs was severely compromised. This factor, combined with the fact that unguided “dumb” bombs were much cheaper than their smarter relatives, led the U.S. military to make heavy use of the former. However, in order to avoid anti-aircraft fire,


278. HICKEY, supra note 184, at 136.

279. Id. at 141.

280. Some of these systems are significantly more expensive than alternative guided weapons—the most advanced models of the sea-launched TLAM cost approximately $1.5 million per unit. Sam LaGrone, CNO: Navy Will Need More Funds if Syria Standoff Extends into October, USNI NEWS (Sept. 6, 2013, 1:34 PM), http://news.usni.org/2013/09/06/cno-navy-will-need-funds-syria-standoff-extends-october. The approximate price range of a Joint Standoff Weapon air-to-surface missile (JSOW) is about $280,000–$720,000 (depending on the configuration). AGM-154A Joint Standoff Weapon [JSOW], FAS MILITARY ANALYSIS NETWORK, http://fas.org/man/dod-101/sys/smart/agm-154.htm (last updated June 27, 2000, 7:53 PM). Other systems are more akin to the Paveway series—kits that fit onto the existing arsenal of gravity bombs—and, as a result, are cheaper than the standalone systems. Thus, for example, the JDAM kit costs merely $25,000. Bootie Cosgrove-Mather, Weapons Stockpile Meant for Saddam, CBS NEWS (July 16, 2002, 1:55 PM), http://www.cbsnews.com/news/weapons-stockpile-meant-for-saddam/.

281. Other countries that participated in the “Coalition of the Willing” against Iraq lagged substantially behind the United States as far as PGMs were concerned. See GORDON ADAMS & GUY BEN-ARI, TRANSFORMING EUROPEAN MILITARIES 3–5 (2006). Thus, U.S. forces launched the vast majority of guided munitions during the campaign.
aircraft were ordered to fly at high altitudes. While that may not have made a great difference for those platforms using precision-guided munitions, it had a significant impact on the accuracy of unguided munitions.

Eight years later, a “zero-casualty” policy led to the imposition of similar restriction on low altitude flying during NATO’s seventy-eight-day aerial campaign over Kosovo. During that operation, the military was more concerned with a zero-casualty policy of force protection than with power projection when making its decisions. Political and national elites shared (and continue to share) the belief that the American people have no stomach for casualties, leading to strong casualty-averse policies. Indeed, so prominent has force protection become in American policy that some have dubbed it a fetish of American policy makers. Carrying out operations at a minimal altitude of 15,000 feet protected the lives of NATO pilots—the Operation ended with no combat casualties for NATO despite over 38,000 sorties—but reduced the accuracy of unguided munitions and increased the likelihood of collateral damage. In addition, flying at

282. Kaufman, supra note 266, at 37.
283. Id.
286. Gillespie, supra note 133, at 156 (“[I]ntolerance for loss of life has virtually guaranteed that recent and future U.S. military interventions consist principally of precision air strikes.”); Koplow, supra note 138, at 221–22 (noting “the psychic eddy of casualty aversion” both with respect to our own soldiers returning in body bags and a “general social squeamishness about imposing unnecessary casualties upon an enemy state’s civilians, or even upon its soldiers”).
such altitudes also meant that adverse weather conditions were more pronounced.289 At the same time, all-weather guided weapons, which had made their first appearances during the Gulf War, left their first substantial imprint.290 Some of the new weapons systems operated on the basis of a terrain-contour-matching radar that scanned the ground over which the missile was flying and compared the readings to digital maps that had been stored in advance in the missile’s computer; they could adjust the missile’s flight to correct any deviation detected.291 Some systems combined this further with GPS navigation in order to get to the predesignated target.292 For example, the Tomahawk Land Attack Missile (TLAM) uses an inertial navigation system (INS) or GPS to follow a preset course when flying over water.293 Once over land, the missile utilizes a Terrain Contour Matching (TERCOM) system, and upon closing in on the target, the missile’s guidance is enhanced by a Digital Scene Matching Area Correlation (DSMAC).294

IV. THE PROMISE OF DRONES: REDUCING RISKS TO OUR SOLDIERS AND THEIR CIVILIANS

The precision-guided-munitions revolution promised engagement in armed conflicts that were relatively risk-free for U.S. soldiers while also

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291. See Koplow, supra note 138, at 85.


293. Id. at 219, 256–57. The INS is used as a backup for the GPS system. See id. at 219. While it is less accurate than GPS (INS has been referred to as a “get you in the ballpark” system), INS has the advantage that, unlike GPS, it does not depend on receiving externally communicated signals and, therefore, cannot be jammed or otherwise become ineffective when the signal is “lost.” See id.

294. Id. at 164, 219. The TERCOM system uses a digital map based on terrain elevation data that is loaded onto the missile. Id. at 164, 166. During flight, the missile automatically compares the stored data with radar data that is collected as the missile flies over land. Id. at 164. Comparing the two sets of data, the missile corrects its course. Id. DSMAC compares actual images of the target as “seen” by the missile with digitized images that have been preloaded into the missile’s mission control system. Id.
potentially resulting in fewer military and, importantly, civilian casualties for the enemy due to improved precision. PGMs changed the relationship between distance, accuracy, and lethality. Distance was no longer necessarily gained at the expense of accuracy. In turn, greater 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.

Yet, PGMs are not without their limitations. First, there is the matter of cost. Not only is the initial price tag of PGMs relatively high, but there is also the cost of training the aircrews in using the smart munitions as well as that of fitting the various aircrafts with the requisite support equipment needed for the use of such advanced weapons systems. Second, there exists a certain trade-off between weather and the dynamism of the target. GPS-based PGMs, such as the Tomahawk missile, can be used in practically all weather conditions. Yet their usefulness is limited when the target of the attack is dynamic rather than stationary. Other PGMs, such as LGBs, have a greater capacity to adjust to the movements of the target but may not be used in certain weather conditions. Third, to be accurate, PGMs require accurate intelligence. Smart bombs and “dumb” intelligence can only lead to potentially disastrous—yet nonetheless accurate—strikes on the wrong targets. The available capacities to collect intelligence will, therefore, bear great impact on the ability to use PGMs effectively.

The American wars in Afghanistan and Iraq (in the latter case, once the “mission [was] accomplished”) have highlighted these shortcomings. Rather than facing regular armies, the United States and its allies have found themselves dealing with paramilitary terrorist organizations and insurgents who cannot be easily distinguished from civilians and indeed have been using civilians and civilian locations as cover and shield from attacks and as logistical bases. Insurgents, guerrillas, and terrorists have harnessed asymmetric warfare, turning

295. IGNATIEFF, supra note 196, at 164–65.
296. See Stuart Walters Belt, Missiles over Kosovo: Emergence, Lex Lata, of a Customary Norm Requiring the Use of Precision Munitions in Urban Areas, 47 NAVAL L. REV. 115, 167 (2000) (analyzing arguments that the cost of PGMs are prohibitive).
298. See RIP & HASIK, supra note 267, at 216.
their apparent weakness into strength.301 In this kind of low-tech war of attrition, the technological and military dominance of the United States is practically negated.302 The prolonged wars in Afghanistan and Iraq took a significant financial toll on Coalition forces, first and foremost the United States. Fighting insurgents who move in and out of civilian areas and who disguise themselves as civilians—farmer by day, fighter by night303—requires constant monitoring and continuous real-time intelligence in order to be able to credibly distinguish combatants from civilians, targeting the former while minimizing harm to the latter. And as the United States discovered, much to its chagrin, its intelligence capabilities were woefully lacking.304 The perception of military dominance and disparity in force between the armed forces of the United States and its allies and the insurgents has made both sides to the conflict acutely aware of the impact of body-bag politics.305 At the same time, the realities of asymmetric warfare—battling enemies who shun open confrontation with their far stronger opponents and who, instead, channel fighting to heavily populated urban areas in order to minimize their own casualties while, at the same time, deliberately exposing civilians to harm—challenge the more powerful military to engage with

301. VAN CREVELD, supra note 233, at 269 (“[M]ost guerrillas and terrorists won their struggles precisely because they were weak. It was their weakness that enabled them to hide; even more important, it was their weakness that permitted them to do what they wanted to do and what had to be done.”). Historian Martin van Creveld argues that “from 1945 on, almost all attempts to deal with insurgencies have ended in failure” and that “most guerrillas and terrorists won their struggles precisely because they were weak.” Id. at 268–69; see also HAMMES, supra note 137, at 3–4 (“Not only is 4GW [(fourth-generation warfare)] the only kind of war America has ever lost, we have done so three times: Vietnam, Lebanon, and Somalia. . . . The message is clear . . . only unconventional war works against established powers.”).

302. See VAN CREVELD, supra note 233, at 227–28 (discussing the prolongation of war as a strategic concept for insurgents). This has also been the lesson of the second Lebanon War waged between Israel and Hezbollah, a terrorist organization numbering no more than 4000 men, in the summer of 2006. Id. at 225. During the forty days of the war, the Israeli Defense Forces (IDF) fired 170,000 artillery shells against terrorist targets, twice as many as it had fired during the Yom Kippur War in which Israel had faced three Arab armies consisting of 500,000 men and more than 4,000 tanks. Id. Each precision kill during the war cost the IDF over $2,000,000. Id. at 272. The Israeli Air Force ran out of high-end targets after four days of fighting, and merely 3% of ordnance dropped actually hit any target. Id. at 272–73. Van Creveld concludes that “against a lightly armed enemy . . . the Revolution in Military Affairs proved all but impotent.” Id. at 272.


305. VAN CREVELD, supra note 233, at 227 (“[A] strong army beating down on a much weaker insurgent will necessarily ask itself if its losses were avoidable and feel itself foolish for not having taken the measures necessary to avoid them.”).
the enemy on the latter’s own turf, in low-tech battles in close quarters.

Drones offer a “seductively attractive” response to these challenges. 306 The main attraction of all of the robotic systems described in Part I is the fact that they distance soldiers from harm and contribute significantly to force protection. Force protection—taking “preventive measures” to “mitigate hostile actions against” troops, military resources and facilities, and critical information 307—has played a significant role in U.S. military policy at least since the 1990s’ military engagements in Kosovo and Somalia. 308 The teleoperated drone serves to distance, indeed remove altogether, its operator from the battlefield, offering her maximum protection. 309 Drone pilots are able to fly their aircraft over Afghanistan (and Pakistan) from ground control stations located in Nevada and Langley, Virginia. 310 At the same time, the fact that these aerial vehicles are unmanned means that they do not need to fly at high, risk-free altitudes. That means, in turn, that accuracy need not be significantly compromised.

Most debates about the concept of force protection pertain to the question of whether soldiers must accept greater risks to themselves in order to protect enemy civilians from harm, and if so, to what extent they must do so. 311 Force protection has, in this equation, an inverse

306. David Ignatius, Dazzling New Weapons Require New Rules for War, WASH. POST (Nov. 11, 2010), http://www.washingtonpost.com/wp-dyn/content/article/2010/11/10/AR2010111005500.html; see also Michael W. Lewis & Emily Crawford, Drones and Distinction: How IHL Encouraged the Rise of Drones, 44 GEO. J. INT’L L. 1127, 1152 (2013) (“Because observing these restrictions when fighting an enemy that conducts its operations in close proximity to the civilian population effectively negates much of the firepower advantage enjoyed by state armed forces, regular militaries involved in asymmetric conflicts have reacted to the restrictions in one of two ways. They have either ignored the restrictions imposed by international humanitarian law (IHL) or they have attempted to comply with them by changing their weaponry and tactics to better account for the modern interpretation of distinction.”). See generally Mary Ellen O’Connell, Seductive Drones: Learning from a Decade of Lethal Operations, 21 J. LEGAL ANALYSIS 116 (2011) (discussing the use of drones and precision satellite technology from 2001 to 2010).


308. Record, supra note 287, at 5.

309. See, e.g., Lewis & Crawford, supra note 306, at 1133 (“Today, cruise missiles and UAVs, such as the Predator drone, can strike targets hundreds of miles from their launch point and are often controlled by operators located thousands of miles from the ‘battlefield.’”).

310. Vogel, supra note 6, at 133. To clarify, throughout this Article, references to drone “pilots,” include both the drone’s pilot, who controls the aircraft flight maneuvers, and the drone sensor operator (or “sensor” for short), whose job it is to control the drone’s various input sensors (such as cameras), aim the weapons at the target, and be in charge of the weapons’ terminal guidance once they have been launched.

relationship to protection of innocent civilians. But in the context of drones, force protection and minimizing collateral damage are not mutually exclusive. This is so for several interrelated reasons. First, as noted above, drones can fly at lower altitudes than fighter jets without exposing their operators to any harm. Lower altitude means, almost by definition, greater capacity for accuracy. Second, drones are armed almost exclusively with PGMs such as Hellfire missiles. That means that they enjoy the dual benefits of great accuracy and precision, which allow them to carry smaller weapons, resulting in reduced zones of lethality. Third, drones have the capacity to endure in the air for hours on end and hover over their targets. In aerial attacks carried out by manned aircraft such as fighter jets or helicopters, the pilots are over the target for a very short time. In fact, with some of the advanced weapons that are available, often the pilots are not physically “over” the target at all and do not establish visual contact without the aid of machines. This is not the case with drones. Drones hover over the target, collecting information and real-time intelligence about it. This increases the likelihood of correct identification of the target, which has been significantly augmented with the introduction of ever more advanced high-resolution sensors on board drones.

Significantly, staying with the target for a long duration also allows establishing a “pattern of life analysis.” As noted, in the context of asymmetric warfare it is all too frequently difficult to distinguish combatants from civilians. Indeed, this forms a critical component of the military strategy of urban guerillas, terrorists, and insurgents. The difficulty is especially significant when we consider the problem of...
shifting identities or dual status, known also as the phenomenon of “farmer by day, fighter by night.” The laws of armed conflict make it clear that while civilians may not be targeted directly, they lose this protection from attack when they “directly participate in hostilities.” While the exact contours and content of this concept are subject to much debate, there is little doubt that whatever view one holds as to what constitutes direct participation in hostilities, establishing such participation to justify attacking civilians is easier in theory than in practice.

The capacity of drones to stay with the target closes the gap between theory and practice by allowing precise targeting at the relevant timeframe—while the target is directly participating in hostilities. Furthermore, staying with the target also means that drone pilots can carefully choose the moment of engagement with the target in order to, once again, minimize the potential harm to innocent civilians. The notion of “targets of opportunity,” with its greater propensity for errors, has, similarly, less purchase when drones are concerned. At the same time, drones have a greater ability to successfully engage dynamic targets at the best opportunity—maximizing the probability of critically damaging the target itself while minimizing collateral damage—than either manned aerial aircraft or “fire and forget,” GPS-based precision-guided munitions.

Removed from harm’s way, drone pilots can fly their vehicles and launch attacks relieved of much of the battlefield stress. The distancing of the pilot from the battlefield does not merely reduce, but eliminates altogether, his fear of being killed. The pilot engages the target

318. See, e.g., SOLIS, supra note 162, at 208 (“During the U.S.–Vietnam War, an often-heard phrase regarding the Viet Cong, a Vietnamese civilian group of clandestine fighters, was, ‘Farmer by day, fighter by night.’”).

319. Laurie Blank & Amos Guiora, Teaching an Old Dog New Tricks: Operationalizing the Law of Armed Conflict in New Warfare, 1 HARV. NAT’L SEC. J. 45, 73 (2010) (“Persons who directly participate in hostilities a single time or intermittently are legitimate targets only when they are preparing for, engaged in, or returning from hostilities.”).


322. See supra Section III.A.
without being subject to the heightened negative emotions that soldiers on the battlefield experience.\textsuperscript{323} Indeed, the specter of dispassionate killing from afar has been one of the persistent battle cries against the use of drones.

The image of “cubicle warriors” with a “PlayStation mentality” engaged in a “turkey shoot,”\textsuperscript{324} conducting “push button” killing in faraway lands of images on their screens, losing sight of the humanity of those targets—colloquially referred to by drone pilots as “squirters”\textsuperscript{325}—while spending the evening having dinner with their own families and friends, has been at the forefront of challenges to the new American way of war. Drones, it is argued, make it easier to kill.\textsuperscript{326} However, pattern-of-life analysis and hovering over the target mean that drone operators spend much more time “with” their target compared with fighter pilots, both before the attack and after it has been carried out.\textsuperscript{327} Fighter pilots rarely, if ever, see the actual damage caused by their bombs and missiles; drone pilots often do. It is such “voyeuristic intimacy”\textsuperscript{328} that results unsurprisingly, yet often without acknowledgment, in drone pilots developing PTSD.\textsuperscript{329}

\begin{footnotesize}
\begin{enumerate}
\item See supra note 309 and accompanying text; John Keegan, A History of Warfare 3–4 (1993) ("Warfare is almost as old as man himself, and reaches into the most secret places of the human heart, places where self dissolves rational purpose, where pride reigns, where emotion is paramount, where instinct is king.").
\item Ignatieff, supra note 196, at 161.
\item See Mayer, supra note 6.
\item Blank, After "Top Gun," supra note 58, 688.
\item See, e.g., Matthew Power, Confessions of a Drone Warrior, GQ (Oct. 23, 2013), http://www.gq.com/news-politics/big-issues/201311/drone-uav-pilot-assassination ("[Brandon Bryant, a drone ‘sensor’] watched the targets drink tea with friends, play with their children, have sex with their wives on rooftops, writhing under blankets. There were soccer matches, and weddings too. He once watched a man walk out into a field and take a crap, which glowed white in infrared. . . . After a strike he was tasked with lingering over a site for several haunting hours, conducting surveillance for an ‘after-action report.’").
\item Id.
\end{enumerate}
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Carrying out aerial strikes on the battlefield using drones offers real-time situation awareness and intelligence gathering (and processing). At the same time, the characteristics of drones, as detailed above, also offer a critical possibility of real-time legal review of the operation. Military lawyers can review the images sent in by the drones and assess the attack in terms of the rules of LOAC. Moreover, with operators removed from harm’s way and with the virtually continuous presence of drones in the sky, time is not as much of the essence as it used to be. The lawyers can evaluate the situation coolly, seek further information if need be, revisit the data and cross check it, and consult their manuals, all without losing the possibility of hitting the target either immediately or at some future time. And once the attack has been carried out, drones may offer robust accountability. Their high-powered sensors and cameras can record the scene. If retained and reviewed in a later debriefing, this recording can enable an ex-post review in a manner that is often not possible in ordinary combat operations. In fact, the ability of drones to capture images and record incidents without interruption for a length of time has also been invoked by some human rights activists who sought to harness drones to monitor human rights violations in places such as Syria.332

This results in lower numbers of casualties from collateral damage when drones are used to launch the attack than is the case with alternative means and methods of warfare. Exact figures of civilian casualties in the various drone campaigns conducted by the United States since the mid-2000s are hard to come by because the identity of those killed may be hard to ascertain and their status as combatants or civilians is often a matter of controversy and dispute. However, the figures provided by the three most credible independent sources that follow drone strikes in Pakistan put the estimated numbers of civilian


331. See Hillary B. Farber, Eyes in the Sky: Constitutional and Regulatory Approaches to Domestic Drone Deployment, 64 SYRACUSE L. REV. 1, 12 (2014) (“All drones can be fitted with high-resolution cameras and imaging technologies, the capabilities of which advance year after year.”).


333. Problematic as the data about drone strikes may be, the best information is available with respect to strikes carried out in Pakistan.
deaths at between 5.7% and 25.7% of total deaths caused by the attacks. Furthermore, all three sources also agree that the rate of civilian deaths has seen a significant decline in recent years. According to these sources, in the years 2012–2013, the civilian death ratio in drone attacks in Pakistan was about 2% to 3%. Although these are by no means insignificant rates of civilian deaths, they ought to be put in context. First, under LOAC’s principle of proportionality, the critical question with regard to collateral damage is whether it is “excessive,” not whether it is “extensive.” As Professor Yoram Dinstein notes, the two terms ought not to be confused and are not interchangeable: “[I]njury/damage to non-combatants can be exceedingly extensive without being excessive, simply because the military advantage anticipated is of paramount importance.”

The number of injured or dead civilians is, therefore, insufficient in and of itself to establish that the attacks were disproportionate. Rather, the numbers ought to be evaluated against the military advantage that was reasonably anticipated to result from the attack. Second, one ought also to consider the alternatives. Although estimates of civilian death rates in past wars vary greatly, a conservative estimate is that, “[o]n the average, half of the deaths caused by war happened to civilians . . . . The civilian percentage share of war-related deaths remained at about 50% from century to century.” Whatever the exact


335. E.g., Key Findings, NEW AM., http://securitydata.newamerica.net/drones/pakistan/key-findings (last visited Dec. 28, 2014) (noting that “2% of the drones’ victims were characterized as civilians in news reports” in 2012, and “civilian casualties were at their lowest ever” in 2013).

336. See Geoffrey S. Corn & Gary P. Corn, The Law of Operational Targeting: Viewing the LOAC Through an Operational Lens, 47 TEX. INT’L L.J. 337, 353 (2012) (“The LOAC principle of proportionality prohibits the selection of any means or method of attack anticipated to produce collateral damage or incidental injury that is excessive in relation to the concrete and direct military advantage anticipated.”).

337. SOLIS, supra note 162, at 280 (quoting Yoram Dinstein, Discussion: When Civilian Objects Become Military Objectives, in 78 INT’L L. STUD., LEGAL AND ETHICAL LESSONS OF NATO’S KOSOVO CAMPAIGN 215 (Andru E. Wall ed., 2002)).

figures, there is little doubt that the civilian death ratio in previous wars using means of warfare less discriminating than drones was significantly higher than even the highest estimated civilian death rates resulting from the American drone campaign in Pakistan (and presumably in other countries as well). As Journalist William Saletan pithily put it, drones may well be “the worst form of warfare in the history of the world, except for all the others.”

A final argument in favor of drones as a means of warfare is that they are cost-effective. They come with a significantly lower initial price tag than fighter jets; the costs for drone flight hours are lower than those for fighter jets; and drone pilots require significantly less training than do the pilots who man the cockpits of fighter planes.

To be sure, using drones comes with its own share of pragmatic challenges. As humane as removing soldiers from harm’s way (and reducing civilian casualties) may seem, it is precisely that attribute of drones that lowers the costs of going to and fighting war, making it politically more acceptable to embark on military operations. Wars may become more frequent, and once combat operations have begun there may be fewer incentives to terminate the violence. With few, if any body bags coming back home, a government may find more sustained support for its military adventures. Indeed, the lower cost of war may result in countries (at least those that possess the technology) resorting to force not as a last resort but as a measure to be considered equivalent to nonviolent alternatives such as diplomatic efforts or economic sanctions.

339. Cf. Lewis & Crawford, supra note 306, at 1154–56 (arguing that the American turn to drones was, among other things, the result of pressure due to mounting criticisms of excessive civilian casualties caused by conventional airstrikes and night raids by special forces in Afghanistan and Pakistan and that “what is inarguable is that civilian casualties from drone strikes have declined sharply in the past few years”).


342. But see Paul Kahn, Imagining Warfare, 24 EUR. J. INT’L L. 199, 218–19 (2013) (discussing the “ethos of reciprocity” that underlies traditional war as comprised of reciprocal acts of self-sacrifice, and questioning to what extent the introduction of drones undermines our understanding of the nature of war).
The very promise of greater accuracy and precision offered by drones creates expectations that are both unrealistic and dangerous. Speaking after the conclusion of Operation Allied Force, General Anthony Zinni, commander of U.S. Central Command, stated that precision-guided munitions created “expectations [that] are so great now: zero casualties, perfect execution, completely flawless.” However, such expectations are unrealistic, as mistakes can be, and are, made. Flawed intelligence, information overload, human errors, active defensive countermeasures taken by the potential targets, the “soda straw” effect of targeting (zooming in on the target and losing sight of the larger picture—missing, for example, the fact that civilians have entered the target area), and a whole range of technological malfunctions may result in missing the intended target or hitting the wrong target, causing excessive loss of civilian lives.

Although mistakes are an unfortunate part of the reality of any war, judged against the background promise of accuracy, they seem politically and morally (if not legally) unacceptable. On the one hand, accuracy and precision may encourage mission expansion—carrying out strikes in densely populated civilian areas or areas that are otherwise protected from attack under LOAC—that would not have occurred but for the promise of pinpoint targeting accuracy, thus increasing the...
magnitude of potential mistakes.\textsuperscript{350} On the other hand, adversaries and critics are unlikely to accept that such collateral damage is the result of mistake, arguing that precision technology must necessarily mean that the target was intentionally hit, and that the harm caused was similarly intended.\textsuperscript{351}

Drones, like PGMs more generally, may minimize the frequency of mistakes, but they make every mistake made that much more costly in terms of the ability to continue with effective military operations,\textsuperscript{352} and the impact on the civilian population in the country where the bombing takes place.\textsuperscript{353} Furthermore, the very perception that accuracy and precision mean elimination of collateral damage may, paradoxically, increase the incentive of insurgents and terrorists to use the civilian population as human shields and to actively blur the distinction between themselves and the civilians around them. Indeed, the nature of warfare has seen tactical and strategic paradigm shifts in precisely this direction: weaker forces avoid open clashes and channel fighting to heavily populated urban areas in order to minimize casualties among the insurgents; they also seek to deter the stronger force from attacking otherwise legitimate targets, while deliberately exposing civilians to harm with the hope that, should such harm materialize, it might be used as a propaganda tool against the stronger force.\textsuperscript{354}

Then there is the question of military honor. Honor has long been intertwined with the turn to weapons that create (or increase) distance between soldiers of different armies. In Homer’s \textit{The Iliad}, the Cretan captain Idomeneus answers a man who has come to him asking for a spear to fight by saying that “if it’s spears you want you’ll find not one but twenty . . . . It’s not \textit{my} way, I’d say, to fight at a distance, out of

\textsuperscript{350} See, e.g., Sweeney et al., \textit{supra} note 299 (discussing the NATO bombing of the Chinese Embassy in Belgrade); Thomas Keaney, Collateral Damage in the Gulf War: Experience and Lessons (2002) (unpublished manuscript), \textit{available at} http://www.hks.harvard.edu/cchrp/Use%20of%20Force/June%202002/Keaney_Final.pdf (discussing the bombing of the Al Firdos command and control bunker in Baghdad); \textit{HUMAN RIGHTS WATCH, WHY THEY DIED} 8, 119 (2007), \textit{available at} http://www.hrw.org/sites/default/files/reports/lebanon0907.pdf (discussing the Qana incident during the Second Lebanon War of 2006).

\textsuperscript{351} To illustrate this point, if you kill a civilian it is not because of a mistake but rather because you intended to kill that civilian; if you hit the Chinese Embassy in Belgrade it is not because of a mistake but because you meant to do so. Precision seems to remove the ability to argue mistake.

\textsuperscript{352} See \textit{supra} notes 343–49.


\textsuperscript{354} \textit{VAN CREVELD, supra} note 233, at 226–27.
enemy range.\textsuperscript{355} Similarly, the code of chivalry, which governed the conduct of the knights, rejected the use of long-distance weapons that were mostly used by lower-class infantrymen.\textsuperscript{356} In 1139, the Second Lateran Council forbade, under penalty of anathema, the use (“against Christians and Catholics”), of “that deadly and God-detested art of slingers and archers.”\textsuperscript{357} Colonel G.I.A.D. Draper notes that to the Church, the crossbow and the arrow “were hateful to God. To the knights they were weapons whereby men not of the knightly order could fell a knight. . . . Worse, they were weapons that enabled a man to strike without the risk of being struck.”\textsuperscript{358} For similar reasons, the Corpus Juris Canonici forbade the use of darts and catapults.\textsuperscript{359} “Distancing” weapons raise questions about the honor of soldiers killing from a distance as well as of those killed from a distance by an unseen, “cowardly” enemy, especially when that enemy uses high-tech weapons.\textsuperscript{360} Such weapons have had a significant role to play in ushering in the post-heroic military age, in which material realities of weapons trump heroic will power and the cult of the heroic warrior\textsuperscript{361} and facilitate the instrumentalization of war through technology.\textsuperscript{362} Thus, even if we accept honor as a social and individual measure of worth,\textsuperscript{363} the concerns mentioned above are neither new nor unique to drones.

\begin{itemize}
\item \textsuperscript{355} Homer, The Iliad 350 (Robert Fagles trans., 1990).
\item \textsuperscript{356} Leslie C. Green, Cicero and Clausewitz or Quincy Wright: The Interplay of Law and War, in Essays on the Modern Law of War 41, 54 (2d. ed. 1999).
\item \textsuperscript{357} Matthew Bennett et al., Fighting Techniques of the Medieval World 232 (2007) (internal quotation marks omitted); Stuart Croft, Strategies of Arms Control 24 (1996) (“Crossbows were used by relatively unskilled lower class soldiers, yet were able to pierce the armour of the knights . . . . Thus the crossbow was a weapon with potentially socially revolutionary implications.”).
\item \textsuperscript{358} G.I.A.D. Draper, The Interaction of Christianity and Chivalry in the Historical Development of the Law of War, 5 Int’l Rev. Red Cross 3, 18–19 (1965) (emphasis added); see also Coker, supra note 230, at 105.
\item \textsuperscript{359} Green, supra note 356, at 54.
\item \textsuperscript{360} George Monbiot, With Its Deadly Drones, the US Is Fighting a Coward’s War, Guardian (Jan. 30, 2012, 4:00 PM), http://www.theguardian.com/commentisfree/2012/jan/30/deadly-drones-us-cowards-war.
\item \textsuperscript{361} See Coker, supra note 230, at 113.
\item \textsuperscript{362} Id. at 114 (“In [the United States’] obsession with technology it has instrumentalised war almost entirely.”).
\item \textsuperscript{363} Contrast, for example, the idea of “Death before Dishonor,” which is often associated (albeit informally) with the U.S. Marine Corps, with the following observation set forth by Michael Ignatieff:

\begin{quote}
In a society increasingly distant from the culture of war, the rhetoric politicians use to mobilize their populations in support of military operations becomes unreal and insincere. As commanders-in-chief of their armed forces, Presidents and Prime Ministers are required to use a language saturated with military values: sacrifice, honor, courage. But to leaders and voters who have never gone to war, these phrases have a nostalgic, inauthentic feel and the consensus that the rhetoric creates is bound to be skin-deep . . . .
\end{quote}

\textsuperscript{Ignatieff, supra note 196, at 189.}
V. A DUTY TO USE DRONES?

Imagine the following scenario: A military commander engages in the planning of an operation against the enemy in a densely populated urban area. Unfortunately, such an operation may result in collateral damage—loss of civilian life, injury to civilians, or damage to civilian objects. Despite such harms, the attack may still be carried out lawfully under the law of armed conflict since LOAC merely aims at minimizing civilian casualties, not eliminating them altogether. But, if the commander is to attempt to minimize such casualties, is she not required to employ the most precise weapons in her arsenal? Should she not deploy the most discriminating means of warfare at her disposal, allowing her to distinguish combatants from civilians and to attack the former while sparing the latter? If, in fact, drones offer the promise of both greater precision and reduced lethality, should not the commander deploy them over less discriminatory means? And if that is the case, is there (or should there be) a duty for states to research, develop, procure, and field the appropriate technology and make it available to their armies?

This Part argues that although there are no treaties that deal specifically with the use of drones in armed conflict and no customary norms obligating the use of drones, such a duty may be derived from the cardinal principles of the law of armed conflict. It argues that such an interpretation is merited if we accept that drones offer the possibility of a more humane war by combining remote and accurate use of force and reduced lethality among both friendly forces and innocent civilians. This Part concludes by setting out further challenges that ought to receive careful attention in developing and elaborating on the obligation to use drones on the battlefield.

A. Might Makes Ought?

In light of the successful use of precision-guided munitions during Operation Desert Storm and Operation Allied Force, some writers explored whether a legal duty requiring the use of such weapons had emerged in international law.\[^{364}\] For the most part their conclusion was that such an obligation did not exist de lege lata, i.e., under the existing

norms of international law. While “planners and operators choosing between laser-guided ordnance or ‘dumb’ bombs now more than ever must consider collateral damage,” it remains the case that “there is no legal requirement to use PGMs.” The same can be said about the use of armed drones in the battlefield. Briefly put, to date, there is no treaty that deals specifically with the use of drones in armed conflict, nor can it be seriously argued that customary norms have emerged obligating the use of drones. There is very little relevant state practice on the matter and the practice that does exist is far from being generally consistent, or reflecting “sufficient density, in terms of uniformity, extent and representativeness,” let alone amounting to the level of “extensive and virtually uniform” practice. Further, no opinio juris has emerged with respect to a duty to use drones as a means of warfare. Thus, the truly challenging question is whether an obligation to “use” drones in the battlefield ought to exist, and if so, what the possible contours of such an obligation would be.

Drones offer the specter of aerial attacks that are more accurate and precise against the intended military targets while, at the same time, less lethal to civilians. Of course, to say that a weapon is more precise does not necessarily mean that the attack actually carried out is going to be accurate. For example, as noted above, faulty intelligence can result in an accurate strike on the wrong target. However, such is the case with all means and methods of warfare. At the same time, drones do (at least potentially) offer more significant and robust accuracy and reduced

365. See Belt, supra note 296, at 158–67, 173 (recognizing the emergence of a norm in customary international law on the use of precision weapons in urban settings); Puckett, supra note 180, at 681–82 (“[A] review of the relevant provisions of international agreements shows that there is no textual basis for concluding that the United States should ever be obligated by law to use only precision-guided munitions in a conflict.”).

366. Borch, supra note 364, at 67; see also Solis, supra note 162, at 275 (“Precision-guided munitions are not a LOAC/IHL requirement, but a failure, or inability, to discriminate may be inherently disproportional.”).


371. See, e.g., Blank, After “Top Gun,” supra note 58, at 687 (“The ability to track a target for hours, even days, before launching an attack facilitates accurate targeting and enhances the protection of civilians by giving drone operators the ability to choose the time and place of attack with an eye towards minimizing civilian casualties or damage.”).

372. See supra notes 343–53 and accompanying text.
lethality together with greater accountability. Drones may be “the most humane form of warfare ever.” 373 Their use on the battlefield has the potential to “enhance the protections to which various persons and objects are entitled under international humanitarian law.” 374 This makes the case for their use on the battlefield compelling. But should drones be used instead of traditional, less-precise alternative means and methods of warfare? If drones are the worst form of war, “except for all the others,” 375 should drones be the first choice on the menu of military commanders over all the others?

There are several initial challenges to the imposition of broad legal obligations on states to use drones as their go-to weapon in war. The very precision that characterizes drones may not be required or even desirable in all scenarios. When the targets are enemy forces spread over a large area where no civilians are to be found, pinpoint accuracy is unnecessary under LOAC. Even in urban settings, where collateral damage is a highly relevant consideration (politically, morally, and legally), there may be circumstances in which the use of unguided weapons may be preferable—both from a tactical standpoint and in order to minimize collateral damage—to the use of precision-guided munitions. 376

Even if we could define and accurately capture the circumstances in which the use of drones may be preferable to the alternatives, significant challenges remain. Although drone technology is rapidly proliferating—estimates are that currently between seventy-five and eighty-seven countries possess drone technology, and twenty-six of those have systems that “are already armed or of a model that has been armed in the past” 377—not all states have the requisite technology and


374. Schmitt, supra note 317, at 313; see also Frederik Rosén, Extremely Stealthy and Incredibly Close: Drones, Control and Legal Responsibility, 19 J. CONFLICT & SEC’Y L. 113, 115 (2014) (States may have an obligation to employ drone technology “to exhaust all feasible means of information gathering if any doubt exists as to whether an attack may lead to civilian casualties.”).

375. Saletan, supra note 340.

376. Puckett, supra note 180, at 717–18 (concluding that unguided cannons mounted on helicopters may often be more accurate than Hellfire missiles—for example, when the target is found in a densely populated urban area and when “[c]oncrete dust and dirt from previous explosions in the area make use of the Hellfire difficult [or where] the building has a large amount of glass which, like the dust, will cause a specular reflection instead of the diffuse spot needed to fire a laser weapon”).

capacity to operate drones or the financial resources and capabilities necessary to have available a fleet of unmanned aircraft. In short, drones are not available to all. In these circumstances, imposing an obligation to use drones would result either in preventing some countries from fighting even in self-defense (or at least severely curtailing their options) or, more likely, precluding those countries from adhering to the relevant rules of international law. It is with this challenge in mind that some scholars have considered the possibility of introducing normative relativism or differential rules to the law of armed conflict: imposing different normative obligations on different states based on each nation’s capabilities.

Professor Gabriella Blum notes that the idea of correlating obligations with resources and capabilities, and the concomitant notion of common-but-differentiated responsibilities, is a widely accepted norm in the fields of international trade and environmental law. Yet its possible adoption into the law of armed conflict is controversial. LOAC—premised on notions of sovereign equality, the principle of parity or moral equality of combatants, and the rejection of


379. See, e.g., id. at 1088 (discussing “normative relativism” to confront issues of unequal military capabilities between different states); Gabriella Blum, On a Differential Law of War, 52 Harv. Int’l L. J. 164, 165–66 (2011) (introducing the concept of differential law based on the concept of “Common-but-Differentiated Responsibilities”).

380. E.g., Blum, supra note 379, at 165.

381. Id. at 177–85.

382. U.N. Charter art. 2, para. 1 (“The Organization is based on the principle of the sovereignty equality of all its Members”); see also Blum, supra note 379, at 171 (“The fiction of sovereign equality undoubtedly features in IHL.”).

383. The principle of parity means that LOAC applies to any armed conflict regardless of the legality of its inception. The jus in bello is, therefore, independent from jus ad bellum considerations. Fighting a just war does not give one party privileges vis-à-vis jus in bello. Nor does fighting a war of aggression limit the means and methods of warfare that would otherwise be lawful under international law. In other words, the justness or unlawfulness of one party’s cause does not change—neither expands nor contracts—the scope of the means and methods of warfare that are available to it and to its soldiers. Blank, Targeted Strikes, supra note 44, at 1659 (“The basic principle that the rights and obligations of jus in bello apply regardless of the justness or unjustness of the overall military operation thus remains firmly entrenched. Indeed, if the cause at arms influenced a state’s obligation to abide by the laws [of armed conflict] . . . states would justify all departures from jus in bello with reference to the purported justness of their cause.”); Louise Doswald-Beck, International Humanitarian Law and the Advisory Opinion of the International Court of Justice on the Legality of the Threat or Use of Nuclear Weapons, 316 Int’l Rev. Red Cross 35, 53 (1997) (“For at least two centuries it has
reciprocity as a condition for compliance—has always been applied equally to all belligerent states, as well as to all individuals based on their status as combatants or civilians. Attempts to deviate from this universality and generality in application of LOAC have been branded “double standards” and “lawfare” or, on the other hand, castigated as serving the interests of a few powerful countries at the expense of weaker members of the community of nations. Indeed, it seems unlikely that any changes to the universality of LOAC norms can come about by modifying the norms by treaty or through the more arduous and less certain processes of customary international law (this Article refers to this as the legislative track). Examining, among other things, the imposition of differential obligations pertaining to the use of precision-guided munitions, Blum argues that the adoption of a “differential legislative scheme that . . . apply[s] explicitly different rules to differently situated parties or exempt[s] weaker parties from compliance with certain humanitarian obligations” or imposes “heightened obligations on richer countries” is politically unlikely. If this is true in the context of precision-guided munitions, it is all the more so in the context of drones. The widespread opposition to drones around the world makes any progress towards imposing an explicit legal

been absolute dogma that international humanitarian law applies equally to all parties to a conflict, irrespective of which is acting in self defence; this has been confirmed by very long-standing State practice and universally acknowledged in legal literature.”); Robert D. Sloane, The Cost of Conflation: Preserving the Dualism of Jus ad Bellum and Jus in Bello in the Contemporary Law of War, 34 YALE J. INT’L L. 47, 56 (2009) (“Just war theory is much older than international law. It originated and evolved principally in theological and ethical, not legal, terms.”); MICHAEL WALZER, JUST AND UNJUST WARS 41–47 (1977). But see Michael Walzer, Coda: Can the Good Guys Win?, 24 EUR. J. INT’L L. 433, 440 (2013) (“[T]he ad bellum/in bello distinction is not absolute. Fighting a just war does not give you privileges vis-à-vis jus in bello, but fighting unjustly may in some cases de-privilege you vis-à-vis jus ad bellum.”); Jeff McMahan, On the Moral Equality of Combatants, 14 J. POL. PHIL. 377, 378 (2006) (discussing the moral equality of soldiers who fight in “unjust wars”).

384. One party’s violations of LOAC do not justify reciprocal violations by the other parties to the conflict. This foundational concept should be distinguished from what Professor Paul Kahn calls the ethos of reciprocity by which he refers to war as comprised of reciprocal acts of self-sacrifice. Paul W. Kahn, Imagining Warfare, 24 EUR. J. INT’L L. 199, 218–21 (2013).


386. See, e.g., Cherif Bassiouni, The New Wars and the Crisis of Compliance with the Law of Armed Conflict by Non-State Actors, 98 J. CRIM. L. & CRIMINOLOGY 711, 783 n.292 (2008) (discussing examples of the “application of double standards that reflect non-compliance by one set of combatants and in a perverse way invite or enhance non-compliance by non-state actor groups”); Blum, supra note 379, at 175–76 (“Variously defined, lawfare captures everything from manipulating legal rules to one’s advantage to using courts as an alternative battleground.”).

387. Blum, supra note 379, at 186.
duty to use such aerial platforms by legislative measures highly unlikely. To be sure, there are some voices calling on the United States to take the lead in drafting an international agreement that would regulate the use of drones. 388 However, those who do not wish to ban drones outright seek to strictly limit their use by raising the specter of proliferation of drone technologies among other countries and non-state actors as an incentive for the United States to lead the way. There is, at present, no talk of imposing an affirmative duty to use drones whatever the circumstances. Nor does such conversation seem politically feasible any time soon. 389

A much more realistic path to introducing differential norms into LOAC is the interpretive track—adapting the substantive content of existing norms and rules and linking it to the different circumstances and capabilities of the relevant different states. 390 This may be particularly possible in the context of such LOAC standards as the prohibition on “excessive” harm to civilians or the existing duty to take all “feasible” precautions in the choice of means and methods of attack in order to minimize incidental loss of civilian life. 391 As Blum correctly notes,

the application of the principle of proportionality is highly contingent on interpretation, context, and ultimately, the development of a sub-codex of rules for particular circumstances. These are susceptible to considerations of relative power, capabilities, and resources, all of which potentially affect the application of the standard to differently situated parties. 392

Interpretation of standards such as those related to proportionality or the principle of avoidance allows for considerations of capabilities and

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388. See, e.g., Ratnesar, supra note 340 (“For that reason, Obama should take the lead in establishing an international protocol governing the acceptable use of drones.”).
389. Cf. Schmitt, supra note 378, at 1085 (noting that, in the context of less lethal (sometimes referred to as “non-lethal”) weapons, “we can expect many of these weapons to be targeted for prohibition, regardless of their military necessity or the possibilities they offer for proportionate use”).
390. See id. at 1088 (“As the gap between the military ‘haves’ and ‘have nots’ widens, there will be subtle stressors that encourage an interpretation of the law of armed conflict relative to the state to which it is applied.”).
391. AP I, supra note 60, art. 51, § 4; id. art. 57, § 2; see Blum, supra note 379, at 188–95 (discussing the principles of civilian immunity and proportionality under international law); see also Rosén, supra note 374, at 127–29 (arguing that drone technology removes two of the classic dilemmas that arise in taking precautionary measures to assess targets: the need for urgency that makes precautionary measures infeasible, and the need to protect human personnel against the risks inherent in reconnaissance missions necessary to precaution).
392. Blum, supra note 379, at 192.
resources to enter the equation.\textsuperscript{393} A party to an armed conflict that possesses weapons, munitions, and modes of delivery capable of greater precision in targeting than those possessed by its adversary may thus be subject to a higher level of responsibility both with respect to the enemy’s soldiers and, more significantly for our purposes, to innocent civilians.\textsuperscript{394}

Such differential interpretation may be based on more nuanced understandings of the idea of responsibility. As Professor Michael Walzer suggests, armed conflicts raise instances for both negative and positive responsibilities.\textsuperscript{395} Thus, when insurgents deliberately use civilians as human shields against attacks, they ought to “accept responsibility for [civilian deaths], whether or not the number of likely deaths is proportionate to the expected military advantage.”\textsuperscript{396} At the same time, armies fighting insurgents bear their own responsibilities, including the responsibility to act in positive, affirmative ways in order to minimize collateral damage and mitigate harmful consequences to innocent civilians.\textsuperscript{397} Such responsibility is not merely a moral matter. It is incorporated into LOAC through the complementary principles of proportionality and avoidance.\textsuperscript{398} The principle of proportionality requires, as we have already seen, that military attacks that are anticipated to result in “incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated,” must be cancelled or suspended.\textsuperscript{399}

Proportionality’s emphasis on “excessive” harm clearly means that LOAC recognizes that some civilian casualties are unavoidable in war.\textsuperscript{400} Yet the principle of avoidance (taking precautions) imposes an affirmative duty on military planners to “take all feasible precautions” in the choice of means and methods of attack “with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to

\begin{footnotesize}
\textsuperscript{393} See, e.g., Schmitt, supra note 378, at 1088 (arguing that a disparity in capabilities may create a disparate application of principles of proportionality between the “haves” and “have nots”).

\textsuperscript{394} See id. (arguing that in the abstract “an identical standard is applied to both states,” but that, in practice, “the developed state is held to a higher standard” and “belligerents are held to the standards to which they are capable of reasonably rising”).

\textsuperscript{395} Walzer, supra note 383, at 437.

\textsuperscript{396} Id.

\textsuperscript{397} Id.

\textsuperscript{398} AP I, supra note 60, art. 51, § 5(b); id. art. 57, § 2(a)(iii).

\textsuperscript{399} Id. art. 57 § 2(a)(iii).

\textsuperscript{400} This recognition goes against what Walzer identifies as the modern trend towards “restrictive proportionality” that “permits hardly anything at all in the way of collateral damage and seems almost designed to make it difficult for states and armies to fight.” Walzer, supra note 383, at 438.
\end{footnotesize}
civilians and damage to civilian objects.\textsuperscript{401} This principle of avoidance means, in other words, that it is not enough to not intend to kill civilians while attacking legitimate targets. Rather, a deliberate, affirmative effort has to be made not to harm them.\textsuperscript{402} Military commanders must exercise due care when selecting their targets and matching the weapons and tactics to use against those targets.\textsuperscript{403} Thus, even when the proportionality calculus indicates that the likely collateral damage is not going to be excessive when compared with the anticipated military objective sought by the attack, LOAC imposes a duty on soldiers to take precautions—all feasible precautions—in order to minimize that otherwise proportionate harm to civilians.\textsuperscript{404} Whatever else such a positive obligation may mean,\textsuperscript{405} it “comes first, without regard to proportionality calculations.”\textsuperscript{406}

Notions of moral and legal responsibility can be harnessed to the issue of drones in warfare. If one accepts, as this Article argues above,
that drones offer the possibility of more accurate and precise attack against the intended military targets and, at the same time, of reduced lethality among civilians, then there is a strong case to be made that their use in the battlefield, compared with the alternatives, is in line with the idea of responsibility to take positive measures to reduce the harm to civilians in war. Moreover, this would be the case both from a moral perspective and from the perspective of the laws of armed conflict. In fact, even in the absence of treaties (or customary norms of international law) that deal specifically with drones, the analysis above suggests that we can derive a duty to use drones in the battlefield from the very foundational principles of LOAC.407

B. Scope of Obligation: The Road Ahead

To argue, as this Article does in the previous Section, that LOAC can already be interpreted as imposing a duty to use drones in the battlefield (and, in any event, ought to include such a duty), does not put an end to our inquiry. Rather, if we accept the existence of such an obligation, either de lege lata or as de lege ferenda, we must then attempt to define the substantive scope of such an obligation. Unfortunately, the precise criteria for the imposition of an affirmative duty to use drones may prove extremely difficult to set out and define in advance. The duty to use drones that this Article seeks to identify and defend is a positive, affirmative duty. It is a duty to use a weapon rather than to refrain from doing so. It is (by extension) a duty to study, develop, acquire, or adopt a weapon rather than to refrain from doing so. And it is precisely this essential character of the duty that makes it harder to capture and define.

As already noted, when the targets are enemy forces spread over a large area where no civilians are to be found—in circumstances in which there is no risk of collateral damage—pinpoint accuracy is unnecessary under LOAC.408 Moreover, even in urban settings, where collateral damage is highly likely, there may be circumstances in which the use of unguided weapons may be preferable, both from a tactical standpoint and in order to minimize collateral damage, over the use of precision-guided munitions.409 Indeed, the very distinction between the two scenarios may be difficult to make in the abstract. Such difficulties suggest that the answer ought to be fashioned not through the legislative track (at least not initially) but rather through the interpretive track. Rather than attempting to delineate, in advance, the contours of the

407. See also Schmitt, supra note 378, at 1088 (suggesting that a “move towards a capability-based humanitarian regime may play itself out in an obligation to field weapons that pose the least risk to protected persons and objects”).
408. See supra Section V.A.
409. See supra Section V.A.
obligation to use drones, a better method would be to approach the issue on a case-by-case basis, building experience as we go along and as practice is accumulated. Such a casuistic approach would also mean that, again at least initially, questions about the duty to use drones and the violations of such duty are unlikely to come about in the context of enforcement of international criminal legal norms if only because the scope of the obligation and its substantive contours are uncertain and ill-defined. This is true even if we agree that an identifiable core of obligation does exist. The actual practice of states together with international reports by credible organizations that monitor armed conflicts around the world, as well as the possibility of invoking the duty to use drones as part of a state responsibility challenge, may prove more hospitable venues for the further clarification of the scope of the obligation.

An additional challenge in imposing a duty to use drones concerns the identification of the states that may be subject to such a duty. If, as suggested by Blum in a different yet related context, the obligation is to be correlated and linked to capabilities, we will need to identify those capabilities that are relevant for the purposes of the specific obligation. Should we consider in this context military, financial, or technological capabilities? Responsibilities that are linked to capabilities surely mean, if anything, that countries lacking the above-mentioned capabilities do not bear the same obligation to use drones.

But what should we make of a country that does have the financial and technological capacities to develop, manufacture, and acquire drones, but chooses not to do so? Should the policy reasons underlying that choice be relevant? In other words, does it matter if the country chooses not to develop drone technology because it professes objection to the use of such weapons; because it wishes to keep its military expenditures low; because it does not anticipate being involved in international armed conflicts; or because it wishes to direct its resources in other directions, be they civilian or military? Indeed, would not an imposition of a duty to use drones create incentives to states to divert resources from research, development, production, and procurement of such aerial platforms to other means of warfare, precisely so as not to be subject to such a legal obligation? On the other hand, if we find that an obligation to use drones does exist under the principles of LOAC (or, according to the alternative argument that it ought to exist as a legal norm), how far upstream does the obligation extend? If an obligation to use drones exists, must it not, logically, extend to a duty to develop,

manufacture, or procure such weapons. Moreover, if an obligation to use drones exists, it applies differentially to states based on their own capabilities, and if we accept that such a duty is based on the fact that drones offer a more precise and less lethal way of war, should international law impose a corollary obligation on states that possess drone technology to share the technology with those states that do not? After all, if drones can make war more humane, does not their proliferation—precisely that proliferation of which we are currently warned—hold the promise of maximizing human welfare by spreading the promise to a greater number of conflicts?

What if, the duty to use them notwithstanding, drones cannot actually be used in specific circumstances—perhaps because of countermeasures by the defenders (e.g., jamming of radio signals between the operators and the drone) or due to finite supply of human resources that are needed to fly a great number of drones? Under such circumstances, must the attacking forces abandon (at least temporarily) their plans of attack, awarding the enemy with immunity from attack, or can they turn to alternative means and methods of warfare—e.g., using manned aircraft or unguided bombs?

To a large extent, the issues raised here derive from a basic conundrum. Although the principles of LOAC impose both negative and positive duties on the parties to an armed conflict, as far as the rules that pertain to weapons are concerned, the obligations are, for the most part, structured as negative obligations. The overarching principle that pertains to weapons systems is the prohibition of superfluous injury or unnecessary suffering. It is true that AP I imposes a positive obligation on each High Contracting Party—as part of any “study, development, acquisition or adoption of a new weapon”—to determine whether the employment of a new weapon will be prohibited under international law. However, this obligation is ancillary to the basic prohibition on weapons that cause unnecessary suffering. The duty to use drones that this Article seeks to identify and defend is a positive, affirmative duty. It is a duty to use a weapon rather than to

412. *Id.* at 1088–89 (raising the possible claim that “if a wealthy state has the economic wherewithal to arm its forces with precision weapons, it should be obligated to do so, . . . so long as doing so is otherwise operationally sound”).

413. *See, e.g.*, Brannen, *supra* note 1 (noting the inability of the U.S. to deploy sufficient drones in Syria and Iraq because its capabilities are used up in Afghanistan).

414. *See supra* note 395 and accompanying text.

415. AP I, *supra* note 60, art. 35, § 2; Hague Regulations IV, *supra* note 139, art. 23(e).

416. AP I, *supra* note 60, art. 36; *see, e.g.*, U.S. DEP’T OF DEF., *supra* note 145 (requiring a LOAC compliance review to be conducted for every new weapon and ammunition used by the U.S. military).

417. *See AP I, supra* note 60, art. 35 (“In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited.”); *id.* art. 35, § 2.
refrain from doing so. It is, by extension, a duty to study, develop, acquire, or adopt a weapon rather than to refrain from doing so. It is precisely this essential character of the duty that makes it harder to capture and define ex ante and which would entail a careful development and elaboration on a case-by-case basis.

**CONCLUSION**

Journalist Matthew Power suggests that drones are “too easy a placeholder or avatar for all of our technological anxieties—the creeping sense that screens and cameras have taken some piece of our souls, that we’ve slipped into a dystopia of disconnection.”\(^{418}\) This criticism is not unique to drones. Technology has often provoked opposition. Romanticism,\(^{419}\) religious beliefs, environmental issues, safety considerations, socio-economic and cultural concerns, rejection of human hubris, and even gender have all contributed to versions of technophobia.\(^{420}\) Opposition to technology has always been particularly pronounced when the relevant technology at issue is military in nature.\(^{421}\)

Almost all of human history has witnessed advances in military technology that have made war an increasingly more lethal and more destructive affair. The very destructiveness of new technologies has often been touted as a promise for a more peaceful future. Famously, Alfred Nobel argued (at first) that the destructive force of dynamite

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\(^{418}\) Power, supra note 327.

\(^{419}\) Coker, supra note 230, at 114 (“Many (including myself) fear that scientists may well be on the way to eradicating the last vestiges of the romantic world view from which the warrior myth still continues to draw its popular appeal.”).

\(^{420}\) See generally, e.g., Jacques Ellul, The Technological Society 132 (1964) (discussing the tragedy of a civilization increasingly dominated by technology and technique and the erosion of moral values brought about by technical specialization); Steven E. Jones, Against Technology (2006) (examining the history and ideas of the Luddites and discussing how those ideas have permeated culture and society). But see Daniel H. Wilson, The Terrifying Truth About New Technology, WALL ST. J. (June 11, 2011), http://online.wsj.com/news/articles/SB10001424052702304392704576375473021288898 (“We think we’re afraid of the technology. But we’re really afraid of getting old.”).

\(^{421}\) See, e.g., European Commission, Social Values, Science and Technology 74 (2005), available at http://ec.europa.eu/public_opinion/archives/ebs/ebs_225_report_en.pdf (providing data on perceptions of military technology). The survey discovered that, on the whole, a majority of European Union respondents believed that the development of various surveyed new technologies would have a positive effect on society in the next twenty years. Id. While this finding held true across all areas covered in the survey except nanotechnology, it is noticeable that two areas received a significantly lower show of optimism, namely military and security equipment and nuclear energy (both scored at 52%). Id. at 76. It is also notable that in almost half the countries, (twelve out of twenty-five) those surveyed had an overall negative view about the prospects of military technology. Id. at 180.
would make war unthinkable. 422 Similar arguments have been made with respect to gunpowder, artillery, and more recently, nuclear weapons. 423 This sorry history ought to be considered and reflected upon when developing the argument that drones may offer the possibility of a more accurate and “humane” war. There is much to oppose with regard to the current use of drones for the CIA’s covert operations in countries such as Pakistan and Yemen. Yet we should not close our eyes to the possibilities that drones may offer in places that are, in fact, active combat zones. At the end of the day, drones may well be “the worst form of warfare in the history of the world, except for all the others.” 424 Hyperbolic proclamations that “drones kill civilians” thus miss the point. 425 Ill-guided drone attacks may certainly cause loss of civilian life; so, too, do other means and methods of warfare. It is war that kills civilians (as well as combatants), and for as long as war is with us we may as well recognize that some means and methods of warfare kill fewer civilians than others. Refusing to discuss the right and duty to use more discriminating means and methods would not contribute to lessening collateral damage to civilians. It may, in fact, facilitate it.

422. Ulf Lagerkvist, The Enigma of Ferment 136 (2005). Notably, Alfred Nobel wrote a letter to Baroness Bertha von Suttner, stating: “My factories may make an end of war sooner than your [peace] congresses. The day when two army corps can annihilate each other in one second, all civilized nations, it is to be hoped, will recoil from war and discharge their troops.” Id. (internal quotation marks omitted).


424. Saletan, supra note 340.

425. Schmitt, supra note 378, at 1089 (noting that “[i]n terms of humanitarian principles, opposition to weaponry may not always be a positive stance. After all, much of the weaponry . . . will effectively reduce collateral damage and incidental injury to civilians and civilian objects”).