Lawfulness of and the Case for Combat Drone Against Terrorism

Heeyong D Jang, Yale Law School

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LAWFULNESS OF AND THE CASE FOR COMBAT DRONE AGAINST TERRORISM

ABSTRACT
The proliferation and use of unmanned combat aerial vehicles (UCAVs) since the September 11 attack triggered lively academic debates. The discussion thus far, often tainted by illegitimate ad bellum-in bello conflation, falls short of justifying the lawfulness and effectiveness of combat drones. Combat drones can successfully discharge its obligation under the four-pronged jus in bello test – distinction, proportionality, necessity, and humanity. Furthermore, this state-of-the-art technology helps to achieve five important policy objectives of fighting asymmetric warfare, combating insurgents who disregard the existing law, deterring further acts of terrorism, dodging improvised explosive devices, and avoiding more costly military actions.

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**INTRODUCTION: COMBAT DRONE AGAINST TERRORISM**

The proliferation and widespread usage of unmanned aerial vehicle (UAV)\(^2\) spawned the yet unsettled intellectual debates regarding its lawfulness. Meanwhile, increasing number of countries – more than forty – have access to this novel technology to fulfill various military objectives: surveillance, reconnaissance, and targeted killing. It is the latter, i.e. the use of unmanned combat aerial vehicle (UCAV),\(^3\) that is the most controversial, particularly in the wake of September 11 terrorist attack when the U.S. government began to actively employ them to assassinate suspected terrorists abroad.

President Obama has greatly increased the use of combat drones. In fact, the incumbent “during his first year in office oversaw more drone strikes in Pakistan than occurred during the entire Bush presidency.”\(^4\) According to the Long War Journal, an estimate of 801 militant deaths in Pakistan occurred from U.S. drone strikes in 2010, which is significantly higher than 195 deaths in 2004 to 2007.\(^5\) In fact, drones are evolving into the centerpiece of the U.S. counterinsurgency program. On August 8, 2009, General Stephen Lorenz, the commander of Air Education and Training Command, stated that the U.S. Air Force will train more UAV operators in that year than pilots to fly manned aircraft.\(^6\) Such increasing reliance on UCAVs is likely to continue, but not without apprehension. Critics

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1. For the purpose of this paper and reflecting the general usage, combat drone and UCAV will be used interchangeably. Drone refers to both UAV and UCAV.
2. Unmanned Aerial Vehicle refers to “unmanned aircraft of any size which does not carry a weapon and which does not carry a weapon and which cannot control a weapon... They are operated remotely or fly autonomously based on pre-programmed flight paths or other systems designed to allow them to operate autonomously. UAVs are a category of aircraft, for they use aerodynamic forces to provide vehicle lift and are designed for sustained, level flight.” Commentary on the HPCR Manual on International Law Applicable to Air and Missile Warfare. at 54 (2010), [http://ihlresearch.org/amw/Commentary%20on%20the%20HPCR%20Manual.pdf](http://ihlresearch.org/amw/Commentary%20on%20the%20HPCR%20Manual.pdf).
3. Unmanned Combat Aerial Vehicle refer to “unmanned military aircraft of any size which carries and launches a weapon, or which can use on-board technology to direct such a weapon to a target... [It] may be remotely controlled and piloted.” Id. at 55.
argue that dreadful stories of civilian collateral damage belie the government statement that drones afford greater precision than other weapons. For example, in an attack that targeted Baitullah Mehsud, an infamous leader of a Taliban umbrella group, twelve people in the vicinity also died.\(^7\) Drone-launched missile strike on Aiman al-Zawahiri, Bin Laden’s deputy, killed eighteen bystanders while altogether missing the intended target. People demand for a legal justification of such killings.

Unfortunately, law falls behind technical development. Perhaps the law of armed conflict (LOAC) is the clearest manifestation of such legal vacuum. Hague Regulations and Geneva Conventions are essentially post factum reactive initiatives to ameliorate an earlier misconduct; therefore, these rules often fall short of regulating the use of latest weaponry. Nevertheless, they embody the foundational normative framework applicable to evaluating the lawfulness of drones. The Martens clause inserted in the Hague Regulations highlights “the rule of the principles of the law of nations” as a guiding principle to legally oversee technological development.\(^8\) Indeed, “this law [of war] is not static, but by continual adaptation follows the needs of a changing world.”\(^9\) The dynamism of \textit{jus in bello} reflects the understanding of politically relevant elites in an evolving society.

The proper use of combat drones, in short, is not only lawful, but also necessary for its policy implications in an era of asymmetric warfare. A rigorously supervised unmanned aircraft system (UAS) can satisfy the four-pronged \textit{jus in bello} test – distinction, proportionality, necessity, and humanity. Furthermore, these UCAVs could successfully


\(^8\) “Until a more complete code of the laws of war has been issued, the high contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and the belligerents remain under the protection and the rule of the principles of the law of nations, as they result from the usages established among civilized peoples, from the laws of humanity, and the dictates of the public conscience.” Preamble of Convention Concerning the Laws and Customs of War on Land, Oct. 18, 1907, 36 Stat. 2277. [hereinafter 1907 Hague Convention IV].

\(^9\) \textit{Trial of the Major War Criminals before the International Military Tribunal}, vol. 1 (Nuremberg, 1947), Judgment, at 221.
achieve five important and interrelated policy objectives in light of maintaining the global order against terrorism: 1) safeguard national security in an era of asymmetric warfare; 2) combat insurgents defiant of the law of war; 3) serve as a deterrent against non-state actors residing in ineffective states; 4) protect troops from improvised explosive devices (IEDs); and 5) prevent more costly military actions.

**SCOPE OF APPLICABLE LAW: JUS IN BELLO, NOT JUS AD BELLUM**

Scholars and government officials often conflate *jus ad bellum* and *jus in bello* in their analysis of the legality of drones.\(^\text{10}\) Although it is important to evaluate whether the initiation of a particular military action conforms to the accepted principle of *jus ad bellum*, this question is irrelevant in assessing the lawfulness of a particular weapon. A lawful weapon used in an unlawful war is still lawful under *jus in bello*. Likewise, legitimacy under *jus ad bellum* can neither justify nor mitigate flagrant violation of *jus in bello*: “*In bello* rules and principles apply equally to all combatants, whatever each belligerent’s avowed *ad bellum* rationale for resorting to force.”\(^\text{11}\) The discussion of lawfulness of a weapon, thus, should remain distinct from the law regulating resort to force. Furthermore, the criticism on who may lawfully employ a weapon is not germane to evaluating the lawfulness of drones *per se*; whether the CIA could use combat drones is not only beyond the scope of this paper, but also irrelevant to establishing if drones are lawful. The qualification of the user has no effect on the lawfulness of the weapon itself.

Harold Koh, Legal Advisor of the United States Department of State, justified the use of unmanned drones vis-à-vis targeted killing, saying that “the United States is in an armed

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conflict with al-Qaeda, as well as the Taliban and associated forces, in response to the horrific 9/11 attacks, [and the United States] may use force consistent with its inherent right to self-defense under international law.”

Such unsatisfactory reasoning fails to defend the lawfulness of drones. There are two inherently different questions presented before him. First, can the U.S. be at war with a non-state actor as an act of self-defense? Second, can targeted killing using UCAV conform to the law of armed conflict, i.e. jus in bello? Harold Koh’s response wrongly assumes that a positive answer to the former will vindicate the latter. The right for anticipatory, if not preemptory, self-defense, i.e. jus ad bellum, cannot justify a particular weapon used in the armed conflict. Philip Alston also criticizes such a “robust form of self-defense,” which “reflects an unlawful and disturbing tendency in recent times to permit violations of international humanitarian law (IHL) based on whether the broader cause in which the right to use force [] is just and impermissibly conflates jus ad bellum and jus [i]n bello.”

Conflating jus ad bellum and jus in bello causes two detrimental consequences. First, the belligerent could perceive that no right arises from an illegal act (ex in juria jus non oritur). This notion is inimical to justice and antithetical to LOAC that emerged from eclectic treaties and customary international law. If all soldiers are equally liable in an unlawful war, motivation to respect LOAC plummets.

Even if the war itself is lawful, the use of “dum-dum” bullet or poisonous gas – widely accepted as unlawful weapons either

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13 Debates on international and domestic legal authorizations, i.e. jus ad bellum, such as UN Charter, self-defense, and Authorization for Use of Military Force (AUMF) only relate to whether a state can wage war against a non-state actor. These factors cannot be used to measure the lawfulness of drones.
15 “War victims need as much protection against the belligerent fighting in conformity with the ius ad bellum as against a belligerent who violated ius contra bellum.” Marco Sassoli, Ius ad Bellum and Ius in Bello – The Separation Between the Legality of the Use of Force and Humanitarian Rules to be Respected in Warfare: Crucial or Outdated, in INTERNATIONAL LAW AND ARMED CONFLICT: EXPLORING THE FAULTLINES 241, 245 (Michael N. Schmitt & Jelena Pejic eds., 2007).
under the Hague Regulations or customary international law – is unlawful in all circumstances. In other words, if the state or organization complied with *jus ad bellum*, only the individual perpetrator responsible for violating *jus in bello* is punishable. On the other hand, a righteous soldier, who abided by all LOAC in an unlawful war, is free of liability.

Second, the justness of war could absolve unlawful acts (*bellum Romanum*). However, illegitimate means to achieve a legitimate end is yet unlawful. A country is barred from illicit conducts even if the aggression is necessary and proportional to achieve the goal authorized by the UN Charter. Even the most hawkish critics of drones, as well as other controversies of combating terrorism – warrantless domestic wiretapping and indefinite detention – concede that these contentious schemes are acceptable when there is an overwhelming evidence for nuclear terrorism, i.e. self-defense. Although such an argument might be appealing on the surface, it is fundamentally unsound because *jus in bello* imposes certain limits on the conduct of warfare. Surely, *jus in bello* prohibits dropping of a biological weapon or other unlawful means to prevent nuclear terrorism. A Pentagon official, amidst the 1999 NATO bombing campaign against Yugoslavia, defended the attack on the electricity system, saying: “We are aware this will have an impact on civilians, but we are in the midst of a military operation against Slobodan Milosevic.”

The “noble” objective of ousting Milosevic, or the authority under *jus ad bellum*, is immaterial in justifying a questionable conduct under *jus in bello*. If the conduct violates *in bello* proportionality, the behavior is nonetheless unlawful.

The blurring of *ad bellum-in bello* distinction reached its nadir with the notorious ICJ Advisory Opinion on Legality of the Threat or Use of Nuclear Weapons. This opinion not

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only undermined the effort towards nuclear disarmament, as well as prohibition of weapons that cause unnecessary suffering, but also hinted that \textit{ad bellum} necessity could render \textit{jus in bello} extraneous. The Court concluded:

In view of the present state of international law viewed as a whole, as examined above by the Court, and of the elements of fact at its disposal, the Court is led to observe that it cannot reach a definitive conclusion as to the legality or illegality of the use of nuclear weapons by a State in an extreme circumstance of self-defense, in which its very survival would be at stake.\textsuperscript{17}

This statement suggests that “the self-perceived threatened state [] makes the initial, operational and irrevocable decision that it is in an extreme circumstance of self-defense,” which is in essence an \textit{ad bellum} determination.\textsuperscript{18} Such argument that \textit{ad bellum} necessity could eclipse all \textit{in bello} considerations is a mockery of LOAC.\textsuperscript{19}

There is, in addition, a possible spill-over effect. If a country is entitled to use nuclear weapon – perhaps the most destructive and indiscriminate of all – solely because it is in an extreme circumstance of self-defense, what could justify banning other weapons? Since the Court’s analysis in effect ignores \textit{jus in bello}, “there is no principled reason to limit its logic to particular weapons or methods of warfare. Chemical or biological weapons, too, would be justified to ensure a state’s survival, as would torture, summary execution, terrorism, terrorism, and terrorism.”

\textsuperscript{17} Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, 263 (July 8).
\textsuperscript{19} Judges Higgins noted in his dissent that “the Court necessarily leaves open the possibility that a use of nuclear weapons contrary to humanitarian law might nonetheless be lawful [because it satisfies \textit{jus ad bellum}]. This goes beyond anything that was claimed by the nuclear-weapon States appearing before the Court, who fully accepted that any lawful threat or use of nuclear weapons would have to comply with both the \textit{jus ad bellum} and the \textit{jus in bello}.” \textit{Supra} note 17, at 556 (Separate opinion of Judge Higgins).
denial of quarter, and other *in bello* violations." The opinion is a major pushback against the non-proliferation efforts and other endeavors to guarantee minimal humanity in warfare. This is the abysmal consequence of the *ad bellum-in bello* conflation.

In order to assess the lawfulness of weaponized drones, the discussion should focus strictly on LOAC applicable after the hostility has begun. *Jus in bello*, hence, will refer to relevant conventions and agreements, as well as customary international law on aerial warfare, mirroring the language of Article 31 of 1977 Geneva Protocol I: “[A] High Contracting Party is under an obligation to determine whether… employment [of a new weapon] would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.” In particular, the laws of air and missile warfare in both international and non-international armed conflicts are applicable considering the potential use of combat drones.22

**LAWFULNESS OF COMBAT DRONE**

The technological innovation of drones is clearly lawful and preferable to archaic weapons. When the U.S. began air blitz in World War II against the Axis powers, technological limitation wreaked havoc with the attempt to engage in precision targeting.23 Embryonic state of the equipment combined with high altitude bombing, which was intended to maximize the safety of the aircraft, drastically compromised the accuracy. To a much

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22 “However, 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 IHL.” *Supra* note 14, at par. 79.
23 Not only the U.S. had trouble with precision, Germany had similar issues: “The very first employment of modern missiles in warfare – that of the German V-1s and V-2s in World War II was an epitome of an indiscriminate attack. Since these missiles were technologically incapable of being aimed at a specific military objective, they were pointed in the general direction of a large metropolitan area and… violated the cardinal principle of distinction.” Yoram Dinstein, *The Conduct of Hostilities Under the Law of International Armed Conflict* 128 (Cambridge Univ. Press 2010).
disappointment, precision only slightly improved by the Vietnam War. The introduction of early precision-guided missiles (PGMs) in the late 20\textsuperscript{th} century was a move to the right direction, albeit unsatisfactory to meet the modern standard. The pervasive proofs of high collateral damage – even in the 1999 Kosovo conflict and onwards – are a testament to the need for weapons that can better discharge the obligation under the law of war.\textsuperscript{24}

This section will illustrate how drones can exceptionally meet the \textit{jus in bello} requirements. In fact, hi-tech weapons designed to improve precision and efficiency can be expected to fulfill a higher duty of care, hence susceptible to a more rigorous test of lawfulness. Michael Schmitt refers to this phenomenon as normative relativism: When more information is available, the \textit{in bello} responsibility is higher.\textsuperscript{25} With the advent of modern weapons technology, such as drones, parties have sufficient time to scrutinize the particulars of the target. Failure to exploit such extra opportunity will trigger legal responsibility; therefore, the introduction of combat drones and other PGMs raised the bar of distinction, proportionality, necessity and humanity tests of the past. The Rome Statute of the International Criminal Court (ICC) promulgates violations of \textit{jus in bello} as war crimes. Despite the reluctance of major military superpowers to ratify the statute,\textsuperscript{26} the establishment of ICC is a major step forward to hold violators of \textit{jus in bello} accountable. Article 8 pronounces that the intentional actions to cause indiscriminate, disproportionate, unnecessary, and inhumane injury constitute war crimes, which fall under the jurisdiction of the Court.

\textsuperscript{24} In WWII, only five percent of bombs fell within 1,000 feet of the target if the bomb was launched in excess of 27,500 feet. Likewise, in the Vietnam War, the destruction of the Paul Doumer Bridge in Hanoi required 113 sorties by USAF F-105 fighter-bombers during 1966 and 1967 and the use of 380 tons of bombs. Precision gradually improved with the advent of PGMs. Study shows that in the 1991 Gulf War, as many as eighty-five percent of PGMs reportedly hit within ten feet of their aim point. Nathan A. Canestaro, \textit{Legal and Policy Constraints on the Conduct of Aerial Precision Warfare}, 37 VAND. J. TRANSnat’l L. 431, 445-451 (2004).

\textsuperscript{25} “The result [of technological disparity] is normative relativism – the high tech belligerent is held to higher standards \textit{vis-à-vis} precautions in attack than its opponent.” Michael N. Schmitt, \textit{War Technology and the Law of Armed Conflict}, in 82 INTERNATIONAL LAW STUDIES: THE LAW OF WAR IN THE 21\textsuperscript{ST} CENTURY: WEAPONRY AND THE USE OF FORCE 137, 163 (Anthony M. Helm, ed. 2006).

\textsuperscript{26} The U.S., China, and Russia have not ratified the Rome Statute.
Assessed in light of normative relativism, greater reliance on advanced weapons platforms not only diminish the chance of launching unlawful attacks, but also revolutionize the framework in which the lawfulness is measured. Since the relevant law can be applied more rigorously due to the input of greater information, controversial attacks that were exonerated in the past due to inadequate technology could now be condemned as a war crime.

Without speculating on other potentially illegitimate usage, this paper assumes that combat drones continue to fire only precision-guided weapons. Drones are advanced weapons platforms; hence, the lawfulness of the system also depends on the equipped weapon. That is, the legal status of UCAV upends if an unlawful weapon is employed. The evaluation proceeds with the premise that only variations of PGMs, specifically designed for targeting limited area, are used. If so, UCAVs are lawful and their use must be encouraged insofar as substitutes for old-fashioned weapons to induce better compliance with the LOAC.

**Distinction**

The principle of distinction is a cardinal element of LOAC that transcends technological advancement. Article 51 of Protocol I stipulates that civilians may not be “the object of attack.”

Here, both (i) deliberate attack against civilians, and (ii) indiscriminate attacks, which are not premeditated but indifferent to the injury on civilian population, are prohibited. Non-guided rockets with high-dispersion characteristic are paradigmatic of indiscriminate weapons. Without a doubt, countries must endeavor to shy away from using such out-of-date munitions in situations where aerial bombing is necessary, replacing them with the high-tech, “smart bomb” type armaments that can verify a target with greater

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27 Protocol I art. 51(2) and 51(4); “States must never make civilians the object of attack.” Supra note 17, at 257; See also 1923 Hague Rules of Aerial Warfare art. 22.
precision. Such sophisticated weapons defy physical boundary insofar as distinction is concerned. The contemporary war has no explicit geographical and temporal limits; thus, physical distance of the aggressor is no longer germane and cannot be the subject of criticism.\(^{28}\) The crux of the debate must focus on whether, despite being controlled from Langley, Virginia or elsewhere, drones can meet the distinction test in the battlefield.

The current technological state of UCAV guarantees significantly enhanced ability to distinguish combatants from noncombatants. Two types of combat drones – MQ-1B Predator and MQ-9 Reaper – are widely deployed in targeting missions. According to the U.S. Air Force, some of the more salient features of these cutting-edge aircrafts are the so-called Multi-spectral Targeting System (MTS-B), which integrates an infrared sensor, a color/monochrome TV camera, an image-intensified TV camera, a laser designator and a laser illuminator, to maximize precision.\(^{29}\) Purportedly, the laser-guided AGM-114 Hellfire missiles employed in drones further ensure the accuracy of targeting with minimum collateral damage.\(^{30}\) Although not fail-safe, the drone operators have a visual sight of the target over a prolonged time until the death or destruction is verified, which is far more discriminate than the vast majority of aerial or artillery bombardment, let alone ground soldiers acting hastily in life-threatening situations. According to an article by the Associated Press, citing Colonel Chris Chambliss, commander of the active-duty 432
\(^{28}\) Philip Alston fears that the physical distance could engender a “Playstation” mentality to killing – i.e. haste and injudicious targeting practice based upon unreliable information. See supra note 14, at par. 84. Similarly, critics argue that the use of drone dehumanizes the war and makes the act of killing easier. Such criticisms are speculative at best. Drone operators demur at such ungrounded assertion; in reality, these professionals are frequently traumatized by the experience. See infra note 30. Such psychologically troubling task of killing – however remotely operated – combined with comprehensive rules of engagement, enable further deliberation prior to launching the missile.


The images can be pretty graphic, pretty vivid, and those are the things we try to offset. We know that some folks [drone pilots] have, in some cases, [psychological] problems.”

Despite the side-effect, UCAV is an epitome of cutting-edge aerial weapon that far surpasses conventional arms in meeting the distinction requirement.

The development of the Geneva law on protections for victims of warfare rendered the compliance with LOAC more difficult, particularly through anachronistic means. Low-tech weapons often compromise distinction over fortuity amidst the chaos. Neither do these firearms have the capacity to meticulously distinguish those with privileged status. Indeed, law of war affords special protection to certain groups of people -- for instance, civilian medical and religious personnel, belligerents recognized as *hors de combat*, and journalists are immune from attack, respectively by Article 15, 41, and 79 of the Protocol I. Mortar shelling and high-altitude bombardment, among other haphazard means, are ill-equipped to distinguish these special categories of participants entitled to protection. On the other hand, civilians may become a lawful target. Once civilians directly participate in hostilities (DPH), they abandon their protected status and can be targeted. In the past, such fine distinction was somewhat fettered by the absence of corresponding technology. Drones, unlike outmoded weapons platforms, allow the operator to visually corroborate the target to conclude if the soldier intends to surrender or is incapacitated, or a civilian has converted himself into a DPH. Luck is less of a factor. Advanced weapon systems thus allow for discriminate targeting that is otherwise unattainable.

The detailed live video feed, or outstanding information-gathering capacity, enables the operator to constantly verify the target to confirm utmost accuracy. One of the reasons

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why countries are reluctant to accept the Protocol I is due to its elaborate rules on discrimination: “Some of these provisions [Articles 48-67] caused concern in certain states because of fears that commanders might be subject to accusations of war crimes not based on an understanding of the fact that in war commanders have to take action on the basis of imperfect information.”

Insufficient information is a significant impediment for parties to subscribe to, and abide by, LOAC. Information can never be perfect; however, a clear visual sighting of the enemy can drastically reduce the chance of wrongfully targeting civilians:

UAVs can be a useful asset in complying with the obligation to take feasible precautions in attack. UAVs with on-board sensors will contribute to verification that an intended target is a lawful target. Hence, if available and when their use is feasible, UAVs ought to be employed in order to enhance reliability of collateral damage estimates (especially when this can be done in real-time).

Doubts on the quality of image will ebb with further development of sighting technology. Indeed, the nature of weapon is neither defective nor unlawful, but areas of improvement exist in training experts, as well as formulating a more exacting protocol. Although the process in which the U.S. government selects targets remains yet classified, Michael Scheuer, a former official in charge of the CIA’s Osama bin Laden unit, describes the procedure as “very picky.” Again, shortcomings, if any, in the targeting procedure is unrelated to the

34 Supra note 2 at 135. (citation omitted).
35 “[The dossier with information on targeting suspects] would go to the lawyers, and they would decide.
lawfulness of the weapon. The weapon, on the other hand, is uniquely suited to uphold the principle of distinction.

Such accessibility of information demands higher duty of care to fulfill the distinction requirement. Failure to satisfy the elevated duty of care standard automatically creates liability. The designated UCAV operator responsible for each targeting mission is easy to identify. Compared with locating the source of guns and mortars from chaotic barrage fires, the drone pilot who launched the missile at a particular time is traceable with reasonable effort. If violation of the rules of engagement or indiscriminate targeting occurs, the operator could thus be tracked down and court-martialed. Such higher bar of responsibility will encourage meticulous selection and authentication of lawful targets. For instance, it would be more difficult to defend the U.S. bombing of the Chinese embassy in Belgrade as an accident if the official had a higher duty of care owing to the availability of clear visual information. If so, the official engaged in unlawfully targeting civilians is more likely to be found liable under international law. This is a distinct advantage of utilizing combat drones to ensure conformity with *jus in bello*:

Thus, as a factual matter, those employing precision weapons will have greater difficulty shielding themselves from allegations of indiscriminate attack than those who do not. Similarly, those with advanced intelligence, surveillance and reconnaissance (ISR) will have a much more difficult time convincing others that an attack striking civilians and civilian objects was a case of mistaken

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They were very picky... Very often this caused a missed opportunity. The whole idea that people got shot because someone has a hunch – I only wish that was true. If it were, there would be a lot more bad guys dead.” Tara McKelvey, *A Look Inside Obama’s Predator Drone Killing Machine*, THE DAILY BEAST, Feb. 16, 2011, available at http://www.thedailybeast.com/blogs-and-stories/2011-02-16/obamas-killing-machine-exclusive-report-interview-on-predator-drones/.
identity rather than an indiscriminate act of recklessness (or intent).  

Through increased accountability, UAS supports cautious targeting. Of course, even the most state-of-the-art weapon can violate the principle of distinction when fired blindly; nonetheless, its chance of accidentally targeting a civilian is drastically reduced. Therefore, UCAV used under a carefully proscribed protocol not only complies with, but also acts as a catalyst to uphold the distinction requirement.

**Proportionality**

The right of belligerents to adopt means of injuring the enemy is not unlimited and the principle of proportionality is an essential consideration. *In bello* proportionality prohibits the use of weapons that causes “excessive [civilian collateral damage] in relation to the concrete and direct military advantage anticipated.”  

The definition proposes a balancing test between (i) lawful collateral damage and (ii) expected military gain. The former refers to “reasonable” civilian injury or death, and the latter “need not be confined to the time-frame of the attack or to the locale of its object.”  

Hence, the term proportionality is cognizant of the reality that certain degree of civilian casualty is inevitable in wartime. Reasonable incidental injury accompanying combat drones are acceptable if the target poses sufficient, not necessarily imminent, threat.  

The visual information transmitted from combat drones opens up the possibility of

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37 Protocol I art. 57(2)(1)(iii).
39 “In the context of the law of international armed conflict, harm to civilians and civilian objects that the attacker did not expect is not collateral damage included in proportionality calculations, so long as the lack of expectation of harm was reasonable in the circumstances. The key question with regard to such harm is whether there is compliance with the requirement to take feasible precautions in attack.” *Supra* note 2, at 33. (citation omitted).
conducting systematic cost-benefit analysis to meet the proportionality test. Traditionally, unsteadiness of the surrounding condition, along with imprecision, impaired the accuracy of air bombing: “[T]arget identification may be detrimentally affected by poor visibility as a result of inclement weather, effective air defense systems, failure of electronic devices (sometimes because of enemy jamming), sophisticated camouflage, etc.”

The evolution of drones largely conquered these inadequacies. Unlike other conventional weapons used in air warfare, UCAV allows for ample opportunity to calculate, taking into account real-time changes, the projected civilian injury with much accuracy. MQ-9 Reaper has four sensors that cover six square miles, an area far broader than that affected by precision targeting. Proportionality of airstrikes will commensurate with the quality of information. With adequate internal procedures for targeting, the data transmitted from sensors and cameras will translate into increased precaution. Although the ratio of civilian death per militant killed by UCAV varies by count to count, the number is evidently more proportionate than attacks using kinetic weapons and the vast majority of conventional arms. Drones are already demonstrating its ability to launch attacks that are highly proportionate.

The future state of the technology is much more promising. With increased speed, maneuverability, and precision, UCAVs will boast superior capacity to limit collateral

\[ \text{DINSTEIN, supra note 23, at 118.} \]
\[ \text{“The ISR upon which precision depends offers greater understanding of the target, the likely effect of the strike on the civilian population, and the need for restrike.” Schmitt, supra note 36, at 457.} \]
\[ \text{Pincus, supra note 6.} \]
\[ \text{According to the Jamestown Foundation, a Washington D.C.-based conservative think-tank, the ratio of civilian death per militant killed by UCAV is approximately 1 to 19.21, which is far superior to non-drone U.S. operation in Pakistan with a ratio of 1 to .375, as well as the estimated world armed combat average ratio of 1 to 0.125. Brian G. Williams et al., New Light on the Accuracy of the CIA’s Predator Drone Campaign in Pakistan, 8 TERRORISM MONITOR (NOV. 11, 2010),} \]
\[ \text{http://www.jamestown.org/uploads/media/TM_008_500185.pdf; But, there are limitations and criticisms to this data, such as its assumption that all children under 13 and women were assumed to be civilian. Others have estimated that between 31 and 33 percent of all casualties from drone strikes are civilians. Alexander Mayer, Predators, Taliban, and Civilians, THE LONG WAR JOURNAL, Oct. 21, 2009, available at} \]
damage in the vicinity of the target, unimpaired by human error.\textsuperscript{44} In terms of reconnaissance, the weaponized drones could ensure farthest prudence as a result of improved agility to perform prolonged scouting.\textsuperscript{45} Subsequently gathered information will permit due diligence to ascertain proportionality in every attack; miscalculated orders can be rescinded as soon as more information is available. UAS is not a panacea. Still, the current and future of the innovation is exceptional in its competence to satisfy the proportionality test than the vast majority of conventional arms.

Since combat drones bestow a definite military advantage in terms of time and breadth of available information, they will be held by a higher standard of responsibility. Indeed, greater accountability promotes proportionate targeting. The NATO bombing of Yugoslavia in 1999 was marked by a large-scale air campaign at high altitudes to ensure safety of the pilot at the cost of increased number of civilian casualty. Whether the strategic nature of air bombing in Operation Allied Force was lawful under \textit{jus in bello} is contentious, but the usage of drones would have guaranteed greater compliance with the proportionality test without endangering the safety of NATO pilots. The danger of battlefield hardly ever jeopardizes the remotely positioned operators, since drones do not have a traceable standardized trajectory. Likewise, during the Gulf War in 1991, a bunker used as an air-raid shelter was targeted, causing hundreds of civilian deaths. The bombardment, nonetheless, was then deemed lawful:

\begin{itemize}
  \item \textsuperscript{44}“UAS are evolving into multi-role platforms able to provide both ISR “persistent stare” at targets over a large area and quick reaction strike at targets of opportunity. They can be rapidly and dynamically re-tasked to other areas with a higher priority.”; “Precision Air Drop/Firefighting UAS [] with autonomous airdrop capability that, if required, can recognize a visual target and self-navigate to the target for precision air drop within 25 meters.”; “Precision Acquisition and Weaponized System (PAWS) [currently in research and development stage]: Provide tactical UAV with limited collateral damage weapon.” U.S. DEP’T OF STATE, FY2009-2034 Unmanned Systems Integrated Roadmap 18, 19, 30 (2009), \texttt{http://www.acq.osd.mil/psa/docs/UMSIntegratedRoadmap2009.pdf}.
  \item \textsuperscript{45}“In the future, technology will enable mission endurance to extend from hours to days to weeks so that unmanned systems can conduct long endurance persistent reconnaissance and surveillance in all domains.” \textit{Id.} at 8.
\end{itemize}
The Americans relied on intelligence evidence indicating that the bunker was serving as a command and control center, and denied any knowledge of its concurrent use as an air-raid shelter for civilians. Based on that subjective information, there is scarcely any doubt that the bunker could be considered “a military objective and hence a lawful target.”

Such aerial attack might have satisfied the proportionality test in the past due to lack of information and a lower standard, but the advent of UAS forever changed the paradigm. In retrospect, if the U.S. had obtained a clear intelligence through drone that a significant number of civilians resided in the bunker – not as a deliberate choice to protect the target – the attack could have been disproportionate. The proportionality yardstick for combat drone is set at a higher bar, elevating the applicable standard to a different level. Even so, technology enables drones to fulfill these further demands.

Necessity

Another essential component of *jus in bello* is military necessity: “Aerial bombardment is legitimate only when directed at a military objective, that is to say, an object of which the destruction or injury would constitute a distinct military advantage to the belligerent.” Only military targets, as opposed to civilian or neutral buildings, can

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47 “To the extent that the “civilians” that the Pakistan Taliban live and operate among are considered voluntary human shields, then they are considered to be directly participating in hostilities. As a result, they could be permissibly targeted outright... [hence] not be considered collateral damage.” Jenks, supra note 10, at 669.

48 1923 Hague Rules of Aerial Warfare, art. 24(1); “In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution on military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the
lawfully be targeted for a perceived military gain. It is not an easy task to determine when an object becomes a lawful target, but the belligerent must act in good faith, “evaluat[ing] all available information.”  

For instance, religious sites are not normally considered as a military objective, yet “if the church steeple is used by snipers, the same objects becomes a military objective by use and the evaluation of military advantage is altered.”  

Every inch of space could thus be converted into, or no longer be deemed as, a legitimate military objective during the course of hostility. UCAVs can spot and respond to such subtle and versatile information. It is uniquely suited to cope with changing conditions in the battlefield to assess the in bello necessity.

In bello necessity entails a reciprocal duty, first by the belligerent to ascertain within reason that the target remains a military objective, and, second by the besieged to undertake precautionary measures to display signs on protected targets or areas to avoid bombing. Indeed, to err is human, and, similarly, machines are imperfect. The doctrine of military necessity reflects such practical deficiencies by espousing the reasonableness standard:

In case of doubt as to whether an object which is ordinarily dedicated to civilian purpose is being used for military purposes, it may only be attacked if, based on all the information reasonably available to the commander at the time, there are reasonable grounds to believe that it has become and remains a military objective.  

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51 Supra note 2, at 10.
This so-called Rendulic Rule is the underlying principle of judging *in bello* necessity. The commander is permitted to make a determination on military necessity “based upon the reasonably available information… at the time of his decision.” Therefore, in order to promote caution and, if necessary, charge legal liability, it is the more important to relay as much data as possible *ex ante*. UCAVs are well-equipped to perform such precautionary measures via visual identification until the target is hit. In fact, UCAVs employ “on-board technology to direct [] a weapon to a target” upon visual verification that it remains a military objective. The range of feasible precaution is substantially broader for drones than manned military aircrafts that are susceptible to onsite human error resulting from dearth of information, rushed action, or fatigue. UCAVs could “operate in remote areas, survey and monitor the target area, often in real-time, for the presence of civilians or civilian objects” to weigh whether the object (i) is a military objective and (ii) bestows a distinct military advantage. Live information transmitted from UCAV enables constant assessment of military necessity prior to targeting. Up to date records of suspicious conducts or vehicle movements, along with other subtle information, will be used to assay whether targeting is militarily necessary within a reasonable margin of error. This margin is considerably narrower than other aerial weapons due to the availability of exact visual information. Thus, the exceptional capacity of UCAVs in discharging the necessity requirement of *jus in bello* should be emphasized in the future warfare.

However naïve it is to expect insurgents to abide by the law of war, *jus in bello* urges the attacked to “take the necessary measures to render the special signs referred to sufficiently visible.” There are internationally recognized emblems for cultural property,

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53 *Supra* note 2, at 6.
54 *Id.*, at 54.
55 1923 Hague Rules of Aerial Warfare art. 25; 1907 Hague Convention IV art. 27.
hospital, prisoner-of-war camps, civilian internment camps, and NGOs. Although the need to ensure *in bello* necessity does not dissipate simply because of the failure to display such sign, all parties to the conflict have a proactive duty to ensure that non-military objects are identifiable.\(^5\) If terrorists decide to play by the rules, the belligerent must have adequate means to recognize the sign for neutrality or protected status. On the flipside, even when such signs are nonexistent, reasonable precaution is vital to ascertain the lawfulness of the target. UCAV is uniquely suited to perform the needed task, while enabling the adroit operator to notice deception or perfidy with greater accuracy.\(^7\) High-resolution live video feed is further revolutionizing the standard of compliance to LOAC.

*Environment*

An additional factor that affects the necessity and proportionality debate is the consideration for environmental protection. The rising consensus that the environment is fragile and exhaustible progressively affected the rules regulating the conduct of war. Over time, short-term destruction of forests and long-term ecological effects of radioactive substance were documented. In fact, aftereffects of environmental modification techniques appalled the international community. During the Vietnam War, the U.S. military, overwhelmed by guerrilla tactics and faced with difficulty of conducting surveillance, sprayed large quantities of dioxin-contaminated substances to defoliate the thick Vietnamese jungle. These innocuously-labeled toxic materials, such as Agent Orange and Agent White, victimized approximately 2.5 to 4.8 million people, while infecting approximately 1.4 billion hectares of jungle, nearly 12 percent of the land area of Vietnam. In the aftermath of the ecological disaster, the U.S. and the then U.S.S.R. initiated environmental discussions that

\(^5\) Protocol I art. 66.
\(^7\) *Customary International Humanitarian Law* ch. 11 (ICRC, Jean-Marie Henckaerts and Louise Doswald-Beck eds., 2005).
later culminated into the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (hereinafter the ENMOD Convention). The ENMOD Convention bans “widespread, long-lasting or severe” harm to the environment, hence being mindful of certain degree of damage that inevitably ensues from war.\(^{58}\) Customary international law also prompts the belligerent to pay “due regard to the protection and preservation of the natural environment” and to cause damage to the extent “necessary and proportionate in the pursuit of legitimate military objective.”\(^{59}\) Environmental degradation, at least the most egregious form, is evolving into a key consideration for the necessity and proportionality test.\(^{60}\)

As shown in Vietnam, environmental warfare results when the nature obstructs surveillance or shields guerrilla groups. It is also used to generate such obstacles to hinder enemy movement, as Iraqi forces did in 1991 Persian Gulf War oil spill. The future warfare must highlight precision to eschew collateral damage, including the wildlife, and restrict environmental modification techniques. Extensive bombardment in a large area is the recipe for environmental catastrophe. UCAV is developed to perform precision targeting, eliminating only the intended target. It does not cause “widespread, long-lasting or severe” harm, nor damage beyond the immediate vicinity of the aimed area. Besides, environmental warfare to hunt hidden insurgents can be reconsidered in light of drone’s superb surveillance and reconnaissance capability.

\(^{58}\) ROBERTS & GUELFF, supra note 33, at 407.

\(^{59}\) Supra note 57, at 147; Supra note 16, at 242; See also DINSTEIN supra note 23, ch. 7.

\(^{60}\) This area of jus in bello is yet unsettled and controversial. Yoram Dinsetin points that intentional and direct damage to the environment is beyond the scope of treaty law, which is more advanced than customary international law in the area. DINSTEIN supra note 23, at 216. In contrast, although the U.S. is not a member, the Rome Statute of the International Criminal Court declares that intentionally causing “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” is a war crime. Rome Statute of the International Criminal Court art. 8 2(b)(iv), July 17, 1998, 37 I.L.M. 999.
**Humanity**

The fourth facet of LOAC is the prohibition of weapons that cause “superfluous injury or unnecessary suffering.”\(^{61}\) Humane war is an oxymoron; nonetheless, the LOAC seeks to unearth every bit of decency amidst the bloodshed. As a first step, the doctrine of humanity prohibits weapons that are (i) outright banned by various conventions and customary international law;\(^{62}\) and (ii) utilized to “cause injuries that serve no military purpose.”\(^{63}\) The former deals with weapons that are inherently unlawful and the latter with the conduct that causes a weapon to be unlawful. For the majority of weapons falling outside the scope, no objective equation exists to calculate when the suffering becomes illegitimate. Indeed, somewhere between a regular gunfire and the dropping of a heinous chemical bomb, there is a point in which the conduct of hostility rises to the level of violating the principle of humanity. There are two preliminary questions relevant to start the assessment: “Is a less injurious weapon available?; and is the alternative sufficiently effective in achieving the intended military purpose?”\(^{64}\)

Weapons equipped in combat drones – precision-guided munitions and Hellfire missiles – are designed to eliminate the enemy within a limited radius to further a specific military objective. Lockheed Martin Corporation, the manufacturer of a series of AGM-114 Hellfire missiles, emphasizes that the product offers “precision-strike lethality” intended for a single target with anti-armor capability.\(^{65}\) The multi-purpose warhead is designed for “a highly accurate, low collateral damage, anti-armor and anti-personnel engagement,” which is

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\(^{61}\) Protocol I art. 35(2).

\(^{62}\) Examples include the use of poison, certain projectiles, non-detectable fragments, and blinding laser weapons, amongst conventional weapons. In terms of weapons of mass destruction, chemical and biological weapons are strictly prohibited. See Dinstein, supra note 23, at 67-83.

\(^{63}\) See supra note 2, at 66.

\(^{64}\) Id.

suited for precision targeting, instead of inflicting wide area damage. The relatively small warhead intended to conduct laser-guided precision targeting is therefore particularly suited to further the humanity prong of *jus in bello*. Although reckless use could theoretically render these missiles to be inhumane, their intended purpose is undoubtedly humane. True, there could occasionally be a less injurious alternative to achieve the same military objective. Such occasions, however, do not undermine the lawful nature of the weapon. The topic occupying center-stage should be on how to implement strict rules of engagement to minimize cruelty. As an advanced weapons platform, UCAV, when used with discretion, is sufficiently capable of satisfying the humanity principle.

**The Case for Combat Drone**

The growth of militarily powerful non-state actors engaging in terrorism is a fatal tumor affecting the entire world. In a globalized society, no country is insulated from the threat, which warrants a collective effort to address insurgents incubated in the absence of rule of law. The problem is further amplified by the presence of weapons that can instantaneously inflict mass destruction. The cost of indecisiveness can be catastrophic, but individual human rights and the lives of civilians are also at stake. The Supreme Court of Israel, the highest judicial authority of a country routinely victimized by terrorism, offered a valuable insight when it proclaimed that the act of targeting terrorists is "a necessary means from the military standpoint… [despite the] harm and even death to innocent civilians… [if] made within the framework of law." In addition, Israel maintains the official policy

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67 HCJ 769/02 The Public Committee Against Torture in Israel v. The Government of Israel, par. 61 (December 11, 2005), [http://elyon1.court.gov.il/Files_ENG/02/690/007/A34/02007690.A34.pdf](http://elyon1.court.gov.il/Files_ENG/02/690/007/A34/02007690.A34.pdf)
position that targeted killing operations are granted only if there is no reasonable chance of capturing the suspect,\textsuperscript{68} which reflects the quandary of ineffective states. Since the use of lethal force to curb terrorism is sometimes inevitable, countries must endeavor to use the least damaging weapon without relinquishing efficacy and lawfulness.

UCAVs are not just lawful, but also effective to counter challenges in contemporary war for five reasons. These are not necessarily mutually exclusive, but critical enough to deserve a separate discussion. First, the framework of analysis must reflect unique features of combat drones in light of maintaining public order against the emergence of asymmetric warfare. Second, these insurgents do not abide by the conditions for lawful combatancy. Third, insurmountable force is no longer a deterrent against irrational non-state actors that defy the existing paradigm. Combat drones can supersede or supplement nuclear deterrence. Fourth, beyond the rubric of law, UCAV prevents friendly forces from being exposed to IEDs. Drones, lastly, can substitute for costly alternative of waging a large-scale war against ineffective states where law enforcement techniques are futile and the astronomical level of threat arising from nuclear terrorism. Such complementary features reinforce the need for UAS in preserving world order.

\textit{Asymmetric Warfare}

The dawn of U.S. military hegemony coupled with globalization and technological development introduced a new form of asymmetric war, in which insurgents resort to unconventional army using irregular means, including the attempt to acquire and use weapons of mass destruction (WMD), “transcend[ing] the state’s physical as well as virtual

borders.” The growth of militarily powerful or ambitious non-state actors became more evident since the September 11 attack. These vicious groups are constantly seeking opportune moments to inflict indiscriminate and disproportionate harm against states. Surely, planning effective and lawful countermeasures to protect national security became one of the most exigent priorities for exposed countries. In an era of globalized asymmetric warfare, flexible military tactics customized for non-state actors, or the technological “have-nots,” are indispensable.

Terrorists engaged in an asymmetric warfare aggrandized their influence by taking advantage of the nearby civilian communities, engaging in concealment tactics. Taliban and al-Qaeda members deliberately hide amongst the civilian population, creating diversion to complicate targeting by the opponent. Concealment warfare, without precision targeting accompanied by accurate and persistent surveillance, is prone to high degree of collateral injury. In fact, “concealment tactics used by the adversary in Afghanistan [during Operation Enduring Freedom] resulted in a number of collateral damage incidents.”

Terrorists, either defined as unlawful combatants or civilian DPH, are by their nature hardly distinguishable from civilians. UCAV enables the belligerent to examine vehicle movements and patterns of conduct to ascertain legitimate targets while minimizing civilian casualty.

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69 UROS SVETE, ASYMMETRICAL WARFARE AND MODERN DIGITAL MEDIA, 386 (Ted A. Baarda & Desiree E. Verweij eds., 2009); Other characteristics of asymmetry includes “acting, organizing, and thinking differently than opponents in order to maximize one’s own advantages, exploit an opponent’s weaknesses, attain the initiative, or gain greater freedom of action. It can be political-strategic, military strategic, or a combination of these. It can entail different methods, technologies, values, organizations, time perspectives, or some combination of these. It can be short-term or long-term. It can be deliberate or by default. It can be discrete or pursued in combination with symmetric approaches. It can have both psychological and physical dimensions.” Steven Metz & Douglas V. Johnson II, Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts, Strategic Studies Institute 1, 5-6 (2001), http://www.au.af.mil/au/awc/awcgate/ssi/asymetry.pdf.


Accuracy of the intelligence and immediacy of the reaction are essential to defend national security *vis-à-vis* terrorists. The strength of armed forces is futile without such capacity:

In this environment [i.e. asymmetric warfare], [o]perating inside an opponent’s observe-orient-decide-act (OODA) loop requires: the ability to locate and accurately identify enemy forces quickly and reliably; weapon systems that are immediately available; sufficient command and control assets to monitor and direct fast-paced, changing engagements; and the capacity to conduct reliable battle damage assessment to determine if restrike is needed. Slowing the enemy’s reaction time and blocking or distorting enemy information further enhances the effects of your own operations.\(^72\)

Combat drone is an effective solution against fleeting targets. Against the extremely mobile and furtive terrorist factions, drones perform surveillance, reconnaissance, and target acquisition services over long periods of time with detection capability that defies natural barriers, including smoke, clouds or haze.\(^73\) When a target is sighted, Hellfire missile can, upon corroboration following a rigorous protocol, swiftly respond. Indeed, terrorists on the so-called “hit list” are time-sensitive targets (TSTs) for “pos[ing] (or will soon pose) a danger to friendly forces or they are highly lucrative, fleeting target of opportunity.”\(^74\) Terrorist organizations, unlike the perceptible and concrete Westphalian system of states, are


\(^{73}\) Id. at 9.

\(^{74}\) Citing a source from the CIA, the LA Times reported that a strict procedure, along with constant surveillance through UAV, exists to ensure only militants who pose a threat to the U.S. are targeted. Cloud, *supra* note 71; on TST, See Joint Chiefs of Staff, *Joint Doctrine for Targeting Appendix B*, Joint Publication 3-60, *available at*: [http://www.bits.de/NRANEU/others/jp-doctrine/jp3_60(02).pdf](http://www.bits.de/NRANEU/others/jp-doctrine/jp3_60(02).pdf).
unfettered by territorial limitation; hence, without an immediate and effective response, these groups will quickly vanish and resurface elsewhere. Constant surveillance and speedy targeting by UCAVs are essential to abate the threat of asymmetric warfare.

*Manifest Disregard of the Law by Terrorists*

Missions against concealment warfare are the more complex because terrorists flout the canons of warfare. Not only the line between civilian and terrorist is blurry because of constant switch in roles, but these insurgents also do not follow by the established rules of combat. The inherent purpose of terrorism is to intimidate and injure combatants and noncombatants alike: “[Terrorists]… bent on committing, at a minimum, sabotage and other war-like acts targeting both military and civilian installations and citizens.” Bellicose extremists are not wary of rules governing conduct of war to achieve such a vicious objective. Yet, the world cannot fall back to lawlessness to fight the unlawful. President Obama recognized these two underlying challenges in his Nobel Peace Prize lecture: “And even as we confront a vicious adversary that abides by no rules, I believe that the United States of America must remain a standard bearer in the conduct of war.” Without the aid of advanced technology, it is difficult to triumph over those who know no restraint.

Customary international law of war, as well as the treaty law, stresses seven essentials of lawful combatancy, four of which are “subordination to responsible command, a fixed distinctive emblem, carrying arms openly, and conduct in accordance with LOIAC.” Terrorists are frequent violators – members (i) unilaterally plan or instigate an attack, (ii) wear civilian clothes, (iii) conceal their weapons, and (iv) commit indiscriminate attacks.

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75 Al-Marri v. Pucciarelli, 534 F.3d 213, 261 (4th Cir. 2008).
76 Barack Obama, Remarks by the President at the Acceptance of the Nobel Peace Prize (Dec. 10, 2009).
77 Others include organization, belonging to a Belligerent Party, and lack of duty of allegiance to the Detaining Power. See DINSTEIN, supra note 23, at 43.
There could be occasions in which they will abide by some of these rules, but in the aggregate, the international community cannot have its fingers crossed to hope that, for instance, terrorists will wear a uniform. Wearing uniform to deliberately expose oneself is not the purpose; instead, “the point is… whether (if observed) they [combatants] are likely to be mixed up with civilians.”

Terrorists are virtually indistinguishable because they wear civilian clothing, sometimes deliberately to dissemble. In war against non-state actors, “discerning friend from foe… is elusive [due to the lack of distinguishing uniforms].” Furthermore, these extremists often do not carry arms openly, but suddenly emerge with explosives to perpetrate mass murder. In order to effectively counter such unlawful tactics, advanced weapons system to examine the face, record patterns of conduct, survey the surrounding, and follow suspicious individuals is critical. UCAVs can perform all the required tasks with high precision in a limited time frame.

**Deterrent**

The collapse of the World Trade Center symbolized the ascendance of militant non-state actors in a different global structure. Terrorists, unlike states engaged in a synallagmatic relationship, are undeterred by the constraints in the existing system:

One of the factors that had made the inherited *jus ad bellum* effective was the concentration of weapons in the hands of territorial elites who were subject to the dynamic of reciprocity and retaliation that underlies international law. That dynamic does not operate for non-state actors, for they are neither beneficiaries of nor hostages to the territorial system. As long as non-state actors did not

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78 *Id.* at 44
79 *Supra* note 75, at 334.
amass significant arsenals, their indifference or even hostility to world public
order was inconsequential... [T]he United States, on the morning of September
11, 2001, awoke to a new reality.\textsuperscript{80}

This new reality is a combination of powerful non-state actors acting defiant of the existing
order. The existing order assumed physically immobile states, which can be pinpointed for
accountability purposes, as principal actors. Thus far, enforcement of international
humanitarian law is induced by, \textit{inter alia}, “consideration for public opinion, reciprocal
interests of the parties to the conflict, fear of reprisals, [and] liability for compensation.”\textsuperscript{81}

Unlike rational actors, terrorists purposely project a disobedient persona, discount reciprocity,
and are unaffected by the traditional means of reprisals. It is also preposterous to expect
reparation from these groups. Terrorists, by their nature, are irrational.

Above all, nuclear or legal deterrence, principally imposed through the means of
reciprocity and retaliation, are inadequate \textit{vis-à-vis} terrorists. Nuclear retaliation on non-
state actors is too costly and politically risky, or outright unlawful considering the territorial
integrity and political independence of the host state. Therefore, one principal means to
deter attack on the U.S. soil has foundered. These insurgents, in addition, are nurtured in
ineffective states: blind spots on the map where law enforcement is virtually absent or
meaningless. They are not only difficult to locate, but also tough to contain. Non-state
actors are dispersed and itinerant; consequently, opportunities for military engagement
through traditional means will be scarce.

UAS cannot eliminate terrorism, yet it can effectively fill the gap created by the
breakdown of nuclear deterrence. The current security relationship, with nuclear deterrent

\textsuperscript{80} W. Michael Reisman, \textit{Assessing Claims to Revise the Laws of War}, 97 Am J. Int’l L. 82, 86 (2003).
\textsuperscript{81} Rüdiger Wolfrum and Dieter Fleck, \textit{Enforcement of International Humanitarian Law}, in \textsc{The Handbook of International Humanitarian Law} 675, 686 (Dieter Fleck ed., 2008).
capability as a fundamental pillar, presumes state-to-state global structure. In order to account for extremely mobile, scattered, furtive, and robust non-state actors, drones are needed to provide surveillance and immediate military response within a limited window of opportunity. Such versatility will in due course prove as an effective deterrent against terrorists, whom are essentially liberated from the fear of nuclear attack. In fact, Juan Zarate, the Bush counterterrorism advisor, and other supporters of the Predator program argue that drones has had such positive ripple effects: “Surviving militants are forced to operate far more cautiously, which diverts their energy from planning new attacks.” Ubiquitous and injudicious use of combat drones, like any other weapon, is inimical to world order. However, when prudently used, UAS can be an optimal solution to deter non-state actors from pursuing vicious military ambition. Preserving new world order requires new resources. Drones could reinstate reprisal as an apparatus to impose LOAC on violent non-state actors.

**Improvised Explosive Device (IED)**

On March 7, 2010, “The Hurt Locker,” a movie portraying an Explosive Ordinance Disposal (EOD) team in the Iraq War, won six Academy Awards, including one for best picture. It once again reminded the public with the real danger of IEDs in the theater of operation. According to Defense Manpower Data Center, explosive devices, including IEDs, roadside bombs, and suicide car bombs, accounted for 67 percent and 58 percent of all combat casualties in Operation Iraqi Freedom and Operation Enduring Freedom, respectively. EOD squad has become an indispensable element of all troops – national and

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multinational forces, including UN peacekeeping operations, alike – fighting an asymmetric war.

UCAV is an effective countermeasure against IEDs for two main reasons. First, pilots and ground troops are less subjected to the danger of battlefield. The advantage of utilizing UCAVs are apparent considering risks scattered and hidden throughout the battlefield: “Uninhabited systems [i.e. UAS] offer the prospect of achieving military objectives without risking the politically unacceptable cost of friendly casualties.”

Since UCAVs are remote-controlled, pilot casualty is virtually nonexistent. In addition, UCAV can excuse ground troops from conducting dangerous assignments. Combat zone is an extremely volatile arena where irrationality abounds. That is, countries must exploit all means at their disposal to protect soldiers, including pilots, from being exposed to unnecessary risks – not just IEDs, but landmines, suicide attacks, snipers, anti-aircraft missiles, and etcetera. Airborne devices, especially unmanned ones at that, are second to none in protecting troops from the plethora of risks without compromising the success of the mission. If pilots and ground troops are removed from the battlefield, ground-based IEDs are no longer a threat.

Second, drones could assist ground troops in detecting and eliminating IEDs. Drones have “great range and loitering capability... Using synthetic aperture radar, a ground moving target indicator, and high-resolution electro-optical and infrared sensors, it collects information that is transmitted to users near real-time.”

Such long-term surveillance and reconnaissance capacity enables the operator to descry suspicious behaviors and objects. The achievements are undeniable. Indeed, without drones, the casualties of U.S. troops in the so-called “Global War on Terrorism” from IEDs would have been significantly higher:

85 Schmitt, supra note 72 at 9.
“UAS have saved countless lives, providing the Warfighter with evidence that IEDs have been planted on convoy routes, warning troops of ambushes, assisting troops in contact, and permanently removing high value assets (HVAs) from the battle.” Drones are evolving into a global watchtower that scrutinizes the warzone in advance to eliminate dangers before ground-troops are introduced. In order to safely conduct military missions without jeopardizing the probability of success in the future war, UAS is a must.

Less Costly

The UN Charter embodies the postwar ambition to eradicate significant military aggression outside the scope of Security Council authorization and self-defense. Despite the effort, certain degree of force that does not rise to the level of significant threat or use of force is yet a necessary evil to counter the prevalence of illegitimate violence. Maintenance of security comes at a cost. Terrorist factions spread out in global theater of operation makes the problem particularly more challenging. The crisis is also amplified by the parasitical presence of terrorist networks in feckless states. If an al-Qaeda affiliate resides in a state where meaningful law enforcement exists, criminal prosecution following arrest or capture would be the least costly remedy. That is, it is nonsensical to unleash a Hellfire missile in New York, especially at the risk of producing civilian casualty, because terrorists could be

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86 Supra note 43.
87 Without digressing too much into the realm of jus ad bellum, a threat or use of force is significant only if it endangers the territorial integrity or political independence of a state, hence a violation of the Article 2(4) of the UN Charter. The use of drones strictly against terrorist factions, especially with the consent of the host state, does not rise to the level of significant threat or use of force. When there is consent of the targeted state and the attack is significantly narrow in its scope, territorial integrity or political independence is unaffected.
88 The broad language of the AUMF is reflective of the difficulty: “[T]he President is authorized to use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, 2001, or harbored such organizations or persons, in order to prevent any future acts of international terrorism against the United States by such nations, organizations or persons.” Authorization for the Use of Military Force, Pub. L. No. 107-40, 2(a), 115 Stat. 224 (2001).
handcuffed with relative ease.  

*A fortiori*, if a terrorist is pinpointed in countries with fully functioning legal system, the U.S. could file a request for extradition to gain jurisdiction and afford the convict due process under the law, instead of resorting to military tactics.

Terrorists, unfortunately, are often beyond the reach of effective police force, difficult to distinguish from civilians, and hard to locate due to geological barriers. Nor do threats have a definite duration. In the absence of rule of law, it is futile to expect arrests and subsequent judicial proceedings. Under the doctrine of state responsibility, however, ineffective states have “the obligation to protect within the territory the rights of other States, in particular their right to integrity and inviolability in peace and in war,” and inaction constitutes “a breach of an international obligation of the State.”  

If these states are incapable of protecting the rights of other states from acts arising within their sovereign territory, other states can proactively and unilaterally seek to claim their right to security through “lawful use of force.” The U.S. is entitled to self-help by simultaneously engaging in Iraq, Afghanistan, Yemen, and Pakistan to offset the dispersed and burgeoning threats. The national security of the U.S. depends on its ability to suppress global terrorism, but it is both impractical and too costly in lives and money to wage a full-scale war against all harboring states that are simply unable or unwilling to control non-state actors.

Of course, diplomacy and engagement are essential, but could prove to be short-handed.

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89 “International law does not ordinarily distinguish between states that are capable of controlling their territory and those that are not… [But] the issue is not simply what is owed to a state that acts as a haven for terrorists, but what are the international legal consequences and permissible responses when that state violates the obligations that it owes to other states who have theretofore respected and deferred to its sovereignty and are now suffering a consequential injury… [U]nilateral action [against ineffective states] would appear justified, but would, as anywhere else, have to meet the conditions of any lawful use of force.” W. Michael Reisman, *International Legal Responses to International Terrorism*, 22 *Hous. J. Int’l L.* 3, 50-54 (1999).


91 Reisman, *supra* note 89, at 54.

92 “Is it lawful for a state to invade its neighbor if that neighbor fails to prevent its territory from being used to launch attacks across the common border? Are illegal attacks across a border by insurgents to be attributed to the state from which they are launched? There may be a growing inclination to answer that question in the affirmative.” Thomas M. Frank, *On Proportionality of Countermeasures in International Law*, 102 *A.J.I.L.* 715, 764 (2008).
UCAV is a lawful and cost-effective substitute. Terrorism is unlikely to perish in the foreseeable future and nation-building to enforce criminal liability to militant insurgents is a time-consuming task. Yet, states are entitled to exploit all necessary and appropriate means to forestall terrorism. Compared to a full-scale war or the use of imprecise outmoded weapons, combat drone is the lesser of two evils:

Militarily it [a large-scale military invasion] costs lives and quite expensive. Abroad, it is extremely risky both politically and diplomatically. Legally, it creates the kinds of problems under international law that were present in debated leading up to the war in Iraq. Because of these limitations, targeted killings against known terrorists have become a real and accepted option within the United States as the only reasonably effective way of reaching a hostile target.93

Drones could precisely locate the suspect with the help of an onboard camera, while the loitering capability grants an extra time to visually verify the target. Although drones are not immune from non-combatant deaths, the misery is far less severe than military invasion to achieve the inevitable task of battling terrorism. In fact, there are signs that indicate drones are increasingly becoming more discriminate and proportionate: “[T]he incidence of civilian casualties appears to be trending downward; during 2009, only 8.5 percent of the

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93 The report moves on to recognize the downside of unrestraint and widespread usage of targeted killing. It suggests targeted killing should be limited to instances in which there is no other reasonable alternative (as a last resort), when the threat is reasonably imminent, and as a preventive measure. These are ad bellum concerns and hence beyond the scope of this paper. Philip B. Heymann & Juliette N. Kayyem, Long Term Legal Strategy Project for Preserving Security and Democratic Freedoms in the War on Terrorism, THE NATIONAL MEMORIAL INSTITUTE FOR THE PREVENTION OF TERRORISM 65-66, (2005), http://belfercenter.ksg.harvard.edu/files/ltls_final_5_3_05.pdf.
reported casualties were identified as civilians.”\textsuperscript{94} Drones are perhaps the least damaging military solution for transnational terrorism.

**RECENT SUCCESS OF COMBAT DRONE**

Mary Ellen O’Connell, one of the most vocal critics of drones, wrote that the successful raid against Osama bin Laden swung the pendulum in favor of capture-and-trial law enforcement standards, instead of relying on drones, as “the legal and effective option for dealing with the criminals we call terrorists.”\textsuperscript{95} Of course, bin Laden was killed, not captured. She seems to conclude that the assassination of a terrorist is lawful and praiseworthy if a highly-trained unit of special forces conducts the killing, whereas a similar task would be unlawful – in fact, would rise to the level of “extra-judicial killing” – if involves the use of UCAV. Such view is misguided in light of abundant reasons vindicating the lawfulness and need for combat drone. Given that the role of UAV, if any, in the operation to purge bin Laden is yet uncertain, one extraordinary episode cannot be the theme of the global counterterrorism policy. Surely, it is impractical, if not impossible, to conduct similar operations and maintain effective counterterrorism policy without drones. Nor is it likely that such high level of care and scrutiny, in which the President himself monitored the raid, would henceforth be available, especially without incurring friendly casualty. Halting the drone program \textit{vis-à-vis} the protracted battle against global terrorism, which is unlikely to perish in the post-bin Laden era, is myopic at best. Navy SEAL commando teams are more appropriate in certain circumstances, but their aptness does not undermine other modes of warfare. UCAV is equally lawful and effective.


\textsuperscript{95} Mary Ellen O’Connell, \textit{The Death of bin Laden as a Turning Point}, http://opiniojuris.org/2011/05/03/the-death-of-bin-laden-as-a-turning-point/ (last visited May 3, 2011).
Although details of the drone-strike policy, especially the exact number of civilians and militants killed, remain classified or unknown, there is a substantial number of high-profile incidents that attest to the lawfulness and necessity of combat drones. In short, targeted killing eliminated prominent terrorist leaders with little collateral damage and disrupted the chain of command: “The reasons for the effectiveness of the counter-terrorism strategy so far are multiple… [T]he success of the Predator drone strike campaign on the Pakistani border has dramatically thinned the ranks of both al-Qaeda leaders and cadres.”

A series of successful drone strikes dealt a significant blow to the integrity of terrorist network. Indeed, adverse consequences on civilian lives were recorded, yet many more lives were saved. History will in due course evaluate the denouement of advanced technology in curbing threats by non-state actors. Still, the international community had thus far witnessed the death of notorious al-Qaeda and Taliban leaders responsible for, or planning on, undertaking atrocious schemes. These militants are certainly lawful targets under *jus in bello*. There is no systematic method of quantifying the impact of these operations, but the world is a step closer to peace and security as a corollary. Some of the recent successes include:

(i) *Abu Laith al-Libi*.  

On January 29, 2008, a guesthouse in North Waziristan was struck by a drone-launched missile. In the building were 13 militants, one of whom was Abu Laith al-Libi, the 3<sup>rd</sup> senior leader of the al-Qaeda command chain, who was “knowledgeable about how to conduct suicide bombing missions and how to inflict the most civilian casualties.”

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was responsible for initiating the alliance between al-Qaeda and the Salafist Group for Preaching and Combat, and had strategic ties with Jamaat al-Muqatila al-Islamiya and Libyan Islamic Fighting Group.

(ii) **Abu Khabab al-Masri.**

Under the auspices of the Pakistani government, UCAV eliminated six men – all identified as militants – at Afghanistan-Pakistan border on July, 28, 2008. One of the victims was al-Masri, an infamous scientist involved in chemical and biological weapons development program for al-Qaeda. He was known to be al-Qaeda’s one of the most seasoned experts in developing WMD.

(iii) **Abu Jihad al-Masri.**

On October 31, 2008, al-Qaeda propaganda and media chief, al-Masri, was targeted and killed in Pakistan along with two other individuals in a vehicle. Ayman al-Zawahiri, one of the highest ranked al-Qaeda leaders, introduced al-Masri in a provocative video with a strong anti-Western message. Al-Masri is suspected to be the chief of al-Qaeda’s intelligence branch, in charge of the ideological warfare. He is known to have made incendiary statements against the U.S. and the Pope.

(iv) **Sheik Ahmed Salim Swedan and Osama al-Kini.**

These men were responsible for the bombing of the Marriott hotel in Islamabad, as well as the 1998 bombings of U.S. embassies in Kenya and Tanzania. On January 1, 2009, the U.S. Predator drone believed to have killed them in South Waziristan close to the Afghan border. The U.S. official stressed that the success of the mission represented a major

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setback for the terrorist network, or “a significant degradation of al Qaeda’s leadership.”102

(v) Mustafa Abu Yazid.103

Al-Qaeda admitted the death of its top leader and financial official, Mustafa Abu Yazid, who also served as an adviser to Osama bin Laden. Here, the drone strike on May 21, 2010 purportedly killed other militants, as well as Yazid’s wife and daughters. Yazid was then ranked third in al-Qaeda’s chain of command, which is a crucial factor in weighing the in bello proportionality of the airstrike that caused civilian casualty.

(vi) Compliance with jus in bello.104

Number of fatalities by UCAV varies from count to count, but the overall trend is similar.105 According to Peter Bergen and Katherine Tiedemann’s drones database at the New America Foundation, the estimated total deaths from U.S. drone strikes in Pakistan from 2004 onwards range from 1,439 to 2,290, and the deaths of militants range from 1,149 to 1,829. That is, the average percentage of non-combatants killed is approximately twenty-five percent. The percentage dropped to six percent in 2010, in part due to better targeting. It is impossible to ascertain when an attack crosses the line of proportionality; nonetheless, the collateral death of six civilians per every hundred militants killed, many of whom were TSTs, will in normal circumstances be considered as lawful. Even if cynics find the ratio to be disproportionate, the bottom line remains intact: over the years, the drone program is becoming more faithful to jus in bello principles. Against the backdrop of eminent triumphs and potential, it is impulsive for critics to gainsay the lawfulness and effectiveness of UCAVs. Plus, up until now, the decade-old drone program was in its nascent form. The future

102 Id.
105 See supra note 43.
UCAVs, fortified by superior technology, will better conform to the demands of LOAC.

CONCLUSION

The tragedy of 9/11 ushered in a new era of belligerent non-state actors capable of threatening the national security. Such stark reality is amplified by the possibility of terrorists laying their hands on WMD, an abysmal combination that is not too far from reality. The failure to uncover one in Iraq is not indicative of the future – terrorists are still eagerly seeking. Within the boundary of law, proactive actions are warranted to prevent the doomsday scenario at all costs. UCAV clearly falls under the prescribed legal regime.

On April 11, 2011, Harold Koh virtually reiterated his stance on the use of drones at a lecture given at Yale Law School: The use of drones falls under the inherent right of self-defense against belligerent non-state actors. Koh should have articulated his support of the weapon solely on jus in bello grounds without conflating the issue with another momentous burden of justifying the war of self-defense against non-state actors. Advanced weapons system, such as combat drones, raises the ability to comply with the four-pronged LOAC with increasing exactitude. Ad bellum factors are inappropriate to emphasize the exceptional capability of drones to comply with jus in bello. Furthermore, Koh could have highlighted the need of drones in modern warfare, as well as various procedural mechanisms to maximize their lawfulness, to vindicate the Obama administration’s growing reliance on UCAVs. Regardless of whether targeted killing complies with domestic and international ad bellum regulations, the use of drone is in bello lawful and needed.

106 “The most immediate and extreme threat today is nuclear terrorism. Al Qaeda and their extremist allies are seeking nuclear weapons. We must assume they would use such weapons if they managed to obtain them.” Department of Defense, Nuclear Posture Review Report, http://www.defense.gov/npr/docs/2010%20nuclear%20posture%20review%20report.pdf.

107 This statement is radically different from Harold Koh’s implied thesis that because the U.S. is jus ad bellum entitled to exercise the right to self-defense against terrorists, combat drones can be used.
Combat drones are exemplary in their competence to comply with *jus in bello*. The drone operators are, in effect, obliged to heighten the standard of conformity due to greater availability of information. ICRC states that “[e]ach party to the conflict must do everything feasible to verify that targets are military objectives.” More precaution is feasible when drones are used. Distinguishing civilians from speculative intelligence out of haste is unlike determining from a live visual feed with a sufficient time for deliberation. Hence, to exclude such technological innovation from the ambit of law is equivalent to fighting the war on terror blinded without guns. Preserving peace and security *vis-à-vis* globalized theater of war is an overwhelming task that calls for help. Against such backdrop of instability, combat drones equipped with precision-guided munitions are perhaps the least detrimental, and certainly a lawful and necessary, alternative.

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108 *See supra* note 57, ch. 5 R. 16.