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Lethal Autonomous Weapons and Jus Ad Bellum Proportionality

Heather M. Roff

LETHAL AUTONOMOUS WEAPONS AND *JUS AD BELLUM* PROPORTIONALITY

Heather M. Roff[1]

Much of the debate over the moral permissibility of using autonomous weapons systems (AWS) focuses on issues related to their use during war (jus in bello), and whether those systems can uphold the principles of proportionality and distinction. This essay, however, argues that we ought to consider how a state's portended use of AWS in conflict would affect jus ad bellum principles, particularly the principle of proportionality. The essay argues that even the clearest case of a defensive war against an unjust aggressor would prohibit going to war if the war was waged with AWS. The use of AWS to fight an unjust aggressor would adversely affect the ability for peaceful settlement and negotiations, as well as have negative second-order effects on the international system and third party states. In particular, the use of AWS by one state would likely start and arms race and proliferate weapons throughout the system.

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"We have to conduct battles without any contact, so that our boys do not die, and for that it is necessary to use war robots."—Dimitry Rogozin, Deputy Prime Minister of Russia[2]

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1. Heather M. Roff is a Visiting Professor at the Josef Korbel School of International Studies at the University of Denver. She is a research fellow at the Eisenhower Center for Space and Defense Studies at the United States Air Force Academy, and has held faculty posts at the University of Waterloo and the United States Air Force Academy. Her research interests pertain to international ethics, security and emerging technologies, particularly lethal autonomous weapons, unmanned systems, and cybersecurity. She is also interested in the Responsibility to Protect doctrine, international humanitarian law, and the philosophy of Immanuel Kant. She is author of Global Justice, Kant and the Responsibility to Protect (Routledge, 2013), and over a dozen articles including "The Strategic Robot Problem" *Journal of Military Ethics* (2014) and "Gendering a Warbot" *International Feminist Journal of Politics* (2015, forthcoming). She is currently writing a monograph on autonomous weapons systems.

2. *Combat Robots to Become Russian Army New Recruits*, VOICE RUSS. (May 30, 2014, 5:28 PM), http://voiceofrussia.com/news/ 2014_05_30/ Combat-robots-to-become-Russian-army-new-recruits-1788/.

> "The DoD of FY2011-2036 Unmanned Systems Integrated Roadmap observes that warfighters continue to value the inherent features of unmanned systems, especially their persistence, versatility, and reduced risk to human life."—United States Department of Defense[3]

I. INTRODUCTION

The above sentiments about saving troops' lives underlie much of the debate and perceived advantages of lethal Autonomous Weapons Systems (AWS). AWS are armed weapons systems, capable of learning and adapting their "functioning in response to changing circumstances in the environment in which [they are] deployed," as well as capable of making firing decisions on their own.[4] While it is certainly rare to see a fully candid statement regarding the desirability of saving one's own troops, such sentiments are among the motivating factors for the development and deployment of AWS.[5] Most scholarly arguments over the legal and moral permissibility of lethal AWS, however, do not cite these purely self-interested reasons, but focus instead on whether AWS are capable of upholding *jus in bello* principles, particularly the principles of distinction and proportionality. Proponents often cite that machines will be better able to distinguish between combatants and noncombatants than human soldiers. Furthermore, since machines are not affected by emotions, they will refrain from engaging in retributive acts against civilian populations.[6] Detractors argue the opposite, citing the difficulty of telling the difference between combatants and noncombatants, particularly in counterinsurgency wars. Moreover, they argue that such AWS will be unable to fight proportionately because the judgment required for such calculations is beyond the programming

3. DEF. SCI. BD., U.S. DEF. DEP'T., TASK FORCE REPORT: THE ROLE OF AUTONOMY IN DOD SYSTEMS 81 (2012), *available at* http://www.acq.osd.mil/dsb/reports/AutonomyReport.pdf [hereinafter DOD TASK FORCE REPORT].

4. INT'L COMM. RED CROSS [ICRC], 31ST INTERNATIONAL CONFERENCE OF THE RED CROSS AND RED CRESCENT: INTERNATIONAL HUMANITARIAN LAW AND THE CHALLENGES OF CONTEMPORARY ARMED CONFLICTS 39 (2011), *available at* http://www.icrc.org/eng/resources/documents/report/31-international-conference-ihl-challenges-report-2011-10-31.htm.

5. *See* DOD TASK FORCE REPORT, *supra* note _, at 81–82, 85 (2012) (noting the "reduced risk" to loss of life in almost each instance of a "benefit" to these systems).

6. *See* Kenneth Anderson & Matthew C. Waxman, *Law and Ethics for Robot Soldiers* 11–12 (Col. L. Sch. Pub. L. & L. Theory Working Grp., Working Paper No. 12-313, 2012); *see also* Gary E. Marchant et al., *International Governance of Autonomous Military Robots,* 12 COLUM. SCI. & TECH. L. REV. 272 (2011).

and learning capacities of these systems.[7] They claim that *in bello* proportionality is context-dependent, and artificial intelligence now and for the foreseeable future is unable to make such difficult judgment calls.[8] There is some discussion of the importance of risk to human warfighters, but this mostly concerns the impact of AWS on aspects of military virtue.[9]

This debate is an important one and should not be dismissed lightly. However, I would like to ask another question about the moral permissibility of AWS, namely, whether AWS is compatible with *jus ad bellum*. In particular, is it permissible to wage war knowing that it will be fought with these systems? I argue that AWS pose a distinct challenge to *jus ad bellum* principles, particularly the principle of proportionality. I will attempt to show that even in the case of a defensive war, we cannot satisfy the *ad bellum* principle of proportionality if we knowingly plan to use lethal autonomous systems during hostilities because of the likely effects on war termination and the achievement of one's just causes.

My argument has two parts. First, I briefly outline *ad bellum* principles and offer the clearest case of a just defensive war. Second, I argue that *ad bellum* proportionality calculations require us to look beyond a one-round game with an enemy force to the overall consequences of a war. In particular, one must not merely look to the counterfactual of not fighting, but what the war as a whole will look like as well as to the probable consequences that will result. In this way, I follow Thomas Hurka's conception of proportionality, arguing that it

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7. *See* Heather M. Roff, *The Strategic Robot Problem*, 13 J. MIL. ETHICS 211, 219–221 (2014).

8. The terminology on both sides of the debate is not consistent. Asaro and Arkin, for example, discuss the principle of distinction, whereas Noel Sharkey discusses the principle of discrimination. *See, e.g.,* ETHICS OF 21ST CENTURY MILITARY CONFLICT 260–262 (E. L. Gaston & Patti Tamara Lenard eds.) (2012); Peter Asaro, *On Banning Lethal Autonomous Systems: Human Rights, Automation and the Dehumanizing of Lethal Decision-Making*, 94 INT'L REV. RED CROSS 687–709 (2012); Robert Sparrow, *The Turing Triage Test* 6 ETHICS & INFO. TECH. 203–213 (2004); s*ee also* Robert Sparrow, *Killer Robots* 24 J. APPLIED PHIL. 62–77 (2007); Robert Sparrow, *Robotic Weapons and the Future of War*, NEW WARS AND NEW SOLDIERS: MILITARY ETHICS IN THE CONTEMPORARY WORLD 117–133 (Paolo Tripodi & Jessica Wolfendale eds.) (2011); Noel Sharkey, *Grounds for Discrimination: Autonomous Robot Weapons*, 11 RUSI DEF. SYS. 86, 86–89 (2008); Noel Sharkey, *The Ethical Frontiers of Robotics* 322 SCIENCE 1800–01 (2008).

9. *See* KILLING BY REMOTE CONTROL: THE ETHICS OF AN UNMANNED MILITARY 86–105 (Bradley James ed.) (2013); s*ee also* CHRISTIAN ENEMARK, ARMED DRONES AND THE ETHICS OF WAR: MILITARY VIRTUE IN A POST-HEROIC AGE (2013), *available at* http://www.ewidgetsonline.net/dxreader/Reader.aspx?token=b6c16f34905245f08442982fbd8df93c&rand=538351197&buyNowLink=&page=&chapter=.

is inherently tied to all other *ad bellum* principles.[10] Thus if one cannot satisfy proportionality, the other principles will fall, like a line of dominos, along with it.

II. *JUS AD BELLUM*

Jus ad bellum is traditionally comprised of six principles: just cause, right intention, proper authority, last resort, the probability of success, and proportionality. Just cause provides the relevant normative reason to wage war, such as self-defense or defense of others, while right intention prescribes the proper reasons for acting. For instance, I may be unjustly threatened with war, thereby providing a just cause, but engaging in "defensive" war with an eye toward colonizing or annexing the aggressor state's territory is clearly impermissible. One's intentions in fighting must match one's publicly announced or official reasons for fighting.

The principle of proper (or sometimes legitimate) authority states that only legitimately recognized authorities may declare war. In the middle ages, this was clearly the province of princes. Today, it is the province of sovereign states.[11] One prominent criticism of the principle of proper authority comes from the direction of non-state actors. International law, for example, does not accord any privileges to these actors, but does place obligations on them.[12] While it is certainly true that states can wage war against non-state actors, the just war tradition would not consider these non-state actors proper authorities.[13]

Last resort and the probability of success are rather straightforward. Last resort requires that states attempt all reasonable alternatives available, such as diplomacy, arbitration, or countermeasures, before resorting to hostilities.[14] Probability of success, likewise, requires states to assess whether an actor is able to achieve its

10. *See* Thomas Hurka, *Proportionality and the Morality of War*, 33 PHIL.& PUB. AFF. 34, 34–66 (2005).

11. *See* Joachim von Elbe, *The Evolution of the Concept of the Just War in International Law*, 33 AM. J. INT'L L. 665, 665 (1939).

12. ANDREW CLAPHAM, HUMAN RIGHTS OBLIGATIONS OF NON-STATE ACTORS 189 (2006).

13. *See id.* at 35. Although beyond the scope of this paper, this principle begs the question that if all non-state actors are considered as illegitimate authorities in war, can they ever by definition wage a just war? *See id.*; *but see* COMMENTARY: III GENEVA CONVENTION RELATIVE TO THE TREATMENT OF PRISONERS OF WAR 52–61 (Jean S. Pictet, ed.) (1960) (discussing the origins of Art. 4(A)(2), which treats members of organized militias equally to members of recognized armed forces in an armed conflict).

14. *See* Gregory Kavka, *Was the Gulf War a Just War?*, 22 J. SOC. PHIL. 20, 25 (1991).

just cause through fighting. If a state is unable to do so, it would be futile to bear the costs of war.[15]

Finally, we have the principle of proportionality. *Ad bellum* proportionality, as distinct from its *in bello* counterpart, requires that we look to the overall consequences of a proposed war.[16] We must engage in a forward-looking counterfactual analysis and compare "the war and its effects to what the world would have been like had the war not occurred."[17] This calculation is notoriously difficult. Indeed, scholars like Hurka argue that such calculations cannot be "made simply or mechanically," for not all harms are of equal weight to potential benefits, and not all benefits are permitted in one's analysis.[18] For instance, we cannot count the overall economic benefits of engaging in a war, for those goods are unconnected to the *relevant* goods of waging war. According to Hurka, the "relevant goods" are those that proceed directly from, or are contained within, the just causes.[19] I will expand my discussion about proportionality throughout the remainder of this essay, but for now, I will follow Hurka in assuming that we must weigh only the relevant goods of waging war against *all* of the foreseen evils of doing so.

Let us turn now to the classic case of the defensive use of force. Unfortunately, it is not within the scope of this essay to address third party defense, harming of bystanders, and lesser evil justifications.[20] For our purposes, I will examine only a case in which an unjust aggressor (State A) intentionally and without justification *threatens* the central rights of another state (State D), namely the rights of territorial integrity and/or state sovereignty.[21] Under a forfeiture theory of self-

15. Hurka, *supra* note 9, at 35.

16. *See id.* at 40.

17. Kavka, *supra* note 13, at 24.

18. *See* Hurka, *supra* note 9, at 66.

19. *Id.* at 40.

20. *See generally* David Rodin, *Justifying Harm*, 122 ETHICS 74 (2011) (examining proportionality relationships through different harm justifications).

21. I am not making a distinction here between direct and conditional threats. The threat is towards the territorial integrity and/or sovereignty of a defending state. This could be mere political aggression to install a different political regime, or it could be aggression against a people (e.g. genocide), or a combination of the two. What matters in this scenario is that the threat is primarily against the state, and that the state in question has the ability to respond to this threat against its rights with lethal autonomous weapons systems. For discussion about conditional and direct threats and the objection of the "bloodless invasion" *see* DAVID RODIN, WAR AND SELF-DEFENSE 131–33 (2002); Seth Lazar, *National Defense, Self-Defense, and the Problem of Political Aggression*, *in*

defense, State A loses its right not to be harmed by threatening an imminent violation State D's rights. State D may inflict harm on State A to thwart an attack against it and to potentially restore State D's rights. The harm inflicted on State A must be necessary and proportionate. As noted above, only those benefits related to the just cause of defense will count in an *ad bellum* proportionality calculation, but *all* foreseen harms are included.

In the classic defensive scenario, most international lawyers, politicians, and some just war theorists would claim that State D is permitted to use proportionate force to thwart this attack.[22] I, however, would like to press on this intuition. In particular, in the case of an unjust threat, is a state permitted to respond with AWS? To restrict the case, let us assume that State D would contemplate sending *only* AWS and not a combination of AWS and human troops. This assumption prohibits us from bootstrapping additional justifications of individual self-defense for the lives of the human combatants; it restricts the case to one of purely robotic defense against threatened aggression.

III. PROPORTIONALITY AND AWS

Ostensibly, it would appear that the ability to use AWS against an unjust threat ought to be seen as a benefit in one's proportionality calculation. As its proponents argue, AWS saves soldiers' lives. This would surely weight heavily in favor of using robotic weapons, for the harms imposed would be placed on the unjust aggressor and not on the combatants and/or civilians of the defending state. The harms would be allocated to those liable to harm (i.e. the unjust aggressors). Moreover, in the event that AWS engage in collateral killing, one could argue that if it was in pursuance of legitimate military objectives, and the killing was foreseen but unintended, those deaths are unfortunate but not prohibited given the doctrine of double effect.[23]

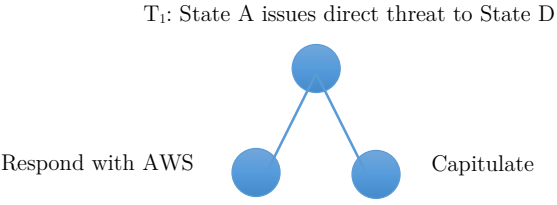
MORALITY OF DEFENSIVE WAR 13–14, 22–24 (Seth Lazar & Cécile Fabre eds., 2014).

22. The collectivist position would support a defensive response. The reductivist, however, may not. Collectivists hold that the state has an independent value from its members, and as such is justified in waging war in its defense. Reductivists do not think that the state holds any independent value that would justify collateral killing in war. Thus, reductivists hold that individual members of the state are the locus of value, and permissible killing must be justified through interpersonal morality, not a collective statist one that looks to war as an "exceptional" circumstance. For a good discussion of these positions, *see* Lazar, *supra* note 19, at 21, 32–34.

23. The doctrine of double effect states that collateral killing that is foreseen but unintended is permissible in war. Michael Walzer challenges this traditional view and wants to restrict its scope arguing for instead a principle of "double intention." The principle of double intention requires combatants to have two intentions: "first, that the good [act] be achieved"

In this scenario, call it Scenario One, State D must make a decision. It must either fight or capitulate. If State D deems it permissible to fight, then State D must have determined that it:: has a just cause (defense); possesses right intention (to thwart threatened attack); is a proper authority; has a reasonable chance of success; fights because this option is a last resort; deems the war proportionate, given the gravity of the threat and D's ability to displace harms to the unjust aggressor. The decision tree for Scenario One would look something like this:

Scenario One in a one round game at Time T_1:



This choice is certainly seductive.

State D may fight against an unjust threat without any harm to its human troops or civilian population. However, I fear that this decision relies too heavily on a presumption that a state's technological advantage provides a justification to fight where a state might not otherwise do so. The crux of the matter is that a state must justify the harms imposed by claiming there is a net benefit to be gained from any hostile actions. Furthermore, the benefits are, and indeed must be, directly related to the just causes, and achieving those causes must be reasonably likely to happen.

On most accounts, thwarting aggression is seen as a sufficient just cause.[24] This is because an attacking army places all those in its path at risk of imminent harm. The harm (to state or people or both) threatened is temporally impending, and this temporal element is important. In most theories of self-defense, there is no justification to inflict harm in self-defense unless the harm threatened is imminent and

and "second, that the foreseeable evil be reduced as far as possible." In the course of conventional war, this would require combatants to take on more risks to themselves to mitigate the harm to noncombatants. MICHAEL WALZER, JUST AND UNJUST WARS 155 (1977).

24. Jeff McMahan & Robert McKim, *The Just War and the Gulf War,* 23 CAN. J. PHIL. 501, 502–506 (1993) (asserting that stopping current aggression, whether to halt conflict or prevent future aggressions, is a just cause, while solely preventing future aggressions is not a just cause).

directed at one's vital interests.[25] In typologies of war, imminence is what marks the difference between preventive and preemptive war. If there is any distinction between the two typologies, then the temporal element cannot be ignored.

Yet in the case of defense with AWS, this imminence is subtly transmuted. In conventional war, we look to the three loci of imminent harm: the state, the human combatants, and the people. International law and the just war theory claim that imminent harm to the state entails that its political independence and territorial integrity is threatened, and the threat is sufficient to shed blood.[26] In practice, however, there is not a clean or clear distinction between imminent harm to the state's interests and the people's because, on most accounts, imminent harm is always bootstrapped to human combatants and the civilian population (if the defending military fails). While just war theorists would like to keep these categories separate, often they become mixed, and justifications of national self-defense are rooted in cases of individual self-defense.[27]

The ability to respond defensively with AWS, however, changes the calculation or at least lays bare the real loci of harm. For there is, and can be, no lethal threat to an AWS, and there are only secondary or tertiary threats to State D's human troops or civilians. In regards to

25. For a list of states permitting self-defense only in response to an "imminent" threat, *see* PAUL H. ROBINSON, CRIMINAL LAW DEFENSES § 131(b)(3) n.16 (1984). The Model Penal Code requires the force used by the defendant to be "immediately necessary for the purpose of protecting himself against the use of unlawful force... on the present occasion." MODEL PENAL CODE § 3.04(1) (1985). In *State v. Norman*, the state also found that the threat must be serious or grave enough to justify using lethal force in response. *See* State v. Norman, 324 N.C. 253, 266, 378 S.E.2d 8, 16 (1989). Of course in international law threats against a state are all seen as impermissible and prohibited by the United Nations Charter, Art. 2(4). However, in international law, for a state to legitimately and legally respond, the state must be the victim of an armed attack, and not a mere use of or threat of force (Art. 51). Morally, of course, one may want to claim that one does not need to wait for an attack to happen or be underway, but merely be "imminent." This would be to condone anticipatory self-defense or preemptive war, while prohibiting preventive war. *See* U.N. Charter art. 2, para. 4; art. 51.

26. *See* U.N. Charter art. 51 (allowing U.N. member states to use military force for the purposes of self-defense).

27. See for example President Reagan's speech to the American people justifying attacking Libya in 1986: "When our citizens are abused or attacked anywhere in the world on the direct orders of a hostile regime, we will respond so long as I'm in this Oval Office. Self-defense is not only our right, it is our duty. It is the purpose behind the mission undertaken tonight, a mission fully consistent with Article 51 of the United Nations Charter." Ronald Reagan, U.S. President, Address to the Nation on the United States Air Strike Against Libya (Apr. 14, 1986), *available at* http://www.reagan.utexas.edu/archives/speeches/1986/41486g.htm.

AWS, if one were to discuss "imminent harm" here, one would have to rely on arguments concerning property damage. Moreover, common law and US jurisprudence prohibit using lethal force in defense of property.[28] While some US states permit their citizens to kill wild animals in defense of property, no such exception exists for the killing of human beings.[29] While this article addresses the national defense of a state in war, a similar rationale could apply to the principle of defensive killing. Defensive killing is permitted only when the threats are *grave enough* and imminent enough to tip the proportionality scale.[30] In the case of defense with AWS, the brute fact is that a robotic army stands in place of human warfighters and thus mitigates the imminence of the harm to the vital interests of the people of the defending state.

One might object here and claim that all I have done is lay bare the fact that the imminence of the threat is to the state, and it is the threat to the state that justifies killing in defense regardless of how or by what means that killing is carried out. In deciding the proportionate response, the state must balance whatever harms it imposes against the good of maintaining its rights. In this case, the state claims that a threat to its enumerated rights supports waging war against an unjust aggressor, which typically entails sacrificing the lives of its service members as well as collaterally killing bystanders in the aggressor nation. In Scenario One, State D is merely using a weapon that does not require it to sacrifice its service members.

However, to satisfy the proportionality principle, State D would then need to justify wide ranging and harmful responses. That is, State D ought to have a reasonable expectation that it can achieve the relevant goods, and thereby either equal or outweigh the potential evils resulting from war against State A. The only value against which State D can base this calculation is its rights. If one holds that a state's rights permits waging war with human soldiers carrying traditional weapons and not only AWS, then we must revise the scenario, to include the potential that AWS will fail, and human warfighters will be utilized in a second round. The game tree would look something like this:

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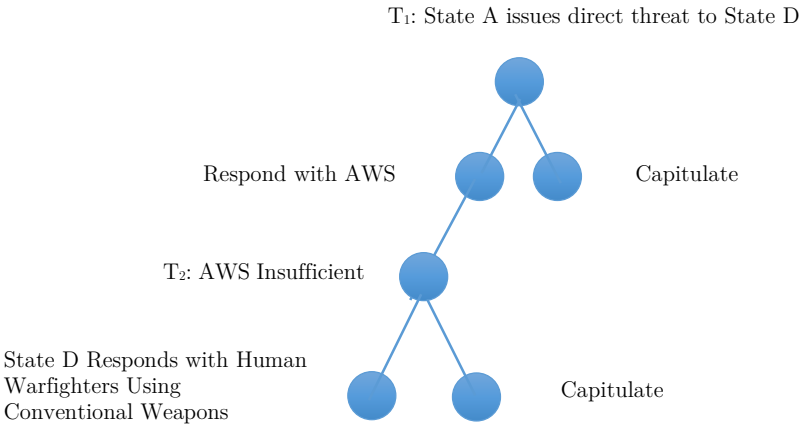
28. Eugene Volokh, *State Constitutional Rights of Self-Defense and Defense of Property*, 11 TEX. REV. L. & POL. 400, 400 (2007).

29. *See* Ron A. Bender, *The Right to Kill Wild Animals in Defense of Person or Property*, 31 MONT. L. REV. 235, 237–38 (1970); s*ee also* Katko v. Briney, 183 N.W.2d 657 (Iowa 1971) (stating that the law has always placed a higher value upon human safety than upon mere rights in property. It is the accepted rule that there is no privilege to use any force calculated to cause death or serious bodily injury to repel the threat to land or chattels, unless there is also such a threat to the defendant's personal safety as to justify self-defense).

30. *See, e.g.,* State v. Etienne, 35 A.3d 523, 537 (N.H. 2011) ("[Defensive killing] should be resorted to only when the danger is immense in respect of consequences and exceedingly imminent in point of time.").

Scenario Two:



Yet by granting this point, we concede that our proportionality calculations must take account of all of the harms (h) and relevant benefits (b) at Time 1 (T_1) and Time 2 (T_2). Moreover, given the dynamic nature of conflict, where an enemy force will change its behavior and perceptions at T_2, such calculations cannot be overly simplistic in that one takes the harms and benefits at T_1 and then carries that sum over, unchanged, to T_2. Rather, we must estimate additional harms and benefits at T_2 as well, while noting that these harms and benefits are dependent upon the estimated outcome of T_1. In other words, we must calculate proportionality in the following way, where P is the "proportionality" of the response:

$$P|_{T_2} = \left(b(T)|_{T_2} - h(T)|_{T_2}\right) + \left(b(T)|_{T_1} - h(T)|_{T_1}\right)$$

or, extending to an arbitrary time T_N:

$$P|_N = \sum_{i=0}^{N} \left(b(T_i) - h(T_i)\right)$$

noting that, in general, the harms (h) and benefits (b) are functions of time dependent on the initial conditions (i.e. the type of response) and that *total* proportionality will be the sum over all times, denoted simply as P.

For a response to be proportional, the condition on P is then simply:

$$P \geq 0$$

Proportionality in this equation is greater than or equal to the sum of benefits and harms at T_1 and T_2. This view makes the relative considerations more complex, even at T_1, for it requires a state to make calculations based on a strategic interaction with its adversary, as well

as an estimation of the likely distributed effects to third parties in the system. A strategic interaction would mean that State D estimates what State A will do once fighting commences and then predicates its decisions on the portended actions of State A. For example, if a commander reasons that fighting against an adversary's right flank will cause it to fall back to a rear position, then the commander will try to place troops in this area before fighting commences to anticipate his adversary's likely response. Instead of estimating only one scenario at a time, a commander or state must think multiple moves ahead.

The presumption that AWS will offer an advantage where states can "fight battles without any contact" is pernicious because it artificially manipulates one's sense of *ad bellum* proportionality by claiming that the harms suffered are either highly mitigated or absent because it assumes that the state using them will not face any additional threat from its adversary. Indeed, it presumes a one round game, and thus distorts the calculation. Indeed, it ignores the fact that, if properly calculated, any benefits or harms identified at T_1 are correlated with one's perception of the state of affairs at T_2. When pressed, then, it is actually Scenario Two that justifies waging a defensive war, and if one cannot justify waging war under Scenario Two, then one cannot justify waging war at all.

While my arguments are conjectural in nature, we have *prima facie* evidence to suggest that waging warfare with AWS at T_1 would generate too many costs at T_2 to satisfy the entire proportionality calculation. We cannot satisfy this calculation for two distinct reasons: first, the use of AWS will adversely affect the likelihood of peaceful settlement and the probability of achieving one's just causes. Second, the use of AWS in conflict would breed a system wide AWS arms race. Let us turn to the issue of peaceful settlement and achieving just causes.

Albert Camus once remarked that killing by using a machine as a proxy for a soldier is a danger that we ought to shun because what is "gained in cleanliness is lost in understanding."[31] What he meant was that sanitizing killing on one side and attempting to legitimize this supposedly clean form of violence is myopic because one can never kill cleanly. There will undoubtedly be consequences that will entrench the violence and perpetuate the cycle. Leaping ahead approximately sixty years, we see that Camus' observations still hold true and are increasingly prescient for the types of autonomous killing under discussion. Recent evidence from the United States' use of unmanned aerial vehicles, or "drones," in Pakistan, Yemen, and Somalia to target members of al-Qaeda and its affiliates suggests that using this type of weapon breeds more animosity and acts as a recruiting strategy for

31. ALBERT CAMUS, *Neither Victims nor Executioners: Saving Bodies*, *in* CAMUS AT COMBAT: WRITING 1944–1947 255, 255–77 (Jacqueline Lévi-Valensi ed., 2006).

terrorist organizations, thereby frustrating the U.S.'s goals.[32] Indeed, the U.S.'s adversaries paint its use of unmanned systems as disrespectful and cowardly, and this belief, in turn, incites distrust, skepticism, and hatred in the target population.[33] What may be gained in cleanliness is lost in understanding.

While these current unmanned operations still require human combatants in the combat theater at forward operating bases or airstrips, they are not wholly clean or without risk. AWS, on the other hand, would permit a state to excise the human from this kind of combat situation, and may eliminate the need for any support crew in theater. The perception of clean killing would increase. Thus, any findings we have about a target population's perception of unmanned drones may actually be even stronger in the case of AWS. Even if AWS are used defensively, the message it sends to one's adversary is that their lives are not worth sending a human combatant to fight. This perception, along with evidence from present drone operations, suggests that feelings of animosity may increase as a result of AWS use.

Acrimonious feelings affect the likelihood of peaceful settlement and negotiation between belligerent states. Substantial evidence indicates that when high levels of distrust, enmity, and hatred exist between warring parties, conflicts are prolonged and peaceful settlements are unlikely.[34] Data suggests that when belligerent parties begin to relate

32. *See* INTERNATIONAL HUMAN RIGHTS AND CONFLICT RESOLUTION CLINIC AT STANFORD LAW SCHOOL AND GLOBAL JUSTICE CLINIC AT NYU SCHOOL OF LAW, LIVING UNDER DRONES: DEATH, INJURY AND TRAUMA TO CIVILIANS FROM US DRONE PRACTICES IN PAKISTAN (2012), *available at* http://www.livingunderdrones.org/wp-content/uploads/2013/10/ Stanford-NYU-Living-Under-Drones.pdf; *see also* Hassan Abbas, *How Drones Create More Terrorists: Militants Take Advantage of Fearful Communities to Draw New Recruits*, ATLANTIC (Aug. 23, 2013, 9:06 AM), http://www.theatlantic.com/ international/archive/2013/08/how-drones-create-more-terrorists /278743/.

33. *See generally supra* note 31.

34. Political scientists find that in civil wars, or intrastate wars, where there is typically an indivisible good and high levels of distrust, peace negotiations are not as likely to occur as interstate conflicts. Peace settlement does seem to differ in terms of type and intensity of conflict. In interstate conflict, Slantchev identifies that 67 out of 104 interstate wars ended in negotiated settlement between 1816 and 1991. Civil or intrastate conflict, however, is far less. *See* Branislav L. Slantchev, *The Principle of Convergence in Wartime Negotiations*, 97 AM. POL. SCI. REV. 621, 621–632, (2003). Zartman finds that two-thirds of all civil wars end with either surrender or destruction, and Grieg finds that intrastate low intensity conflicts are less likely to see mediation than civil wars. *See* I. WILLIAM ZARTMAN ET. AL., ELUSIVE PEACE: NEGOTIATING AN END TO CIVIL WARS 3 (I. William Zartman ed., The Brookings Institution Press 1993); J. Michael Greig, *Nipping them in the Bud: The Onset of Mediation in Low-Intensity Civil Conflicts*, J. CONFLICT RES., 1–26 (2013). For our purposes, the type of hatreds ignited, however, would lend itself to the

to each other in this negative way, conflicts assume a zero sum characteristic, whereby they end by either total defeat or surrender.[35]

This zero sum view of war directly relates to the harms and relevant goods in the proportionality calculation, as well as the principle of likelihood of success. In terms of the proportionality calculation, one is required to weigh the likely effects of waging lethal autonomous war at T_1 on the enemy and enemy population, how those effects may affect the potential for escalation and duration of conflict at T_2. Moreover, one must also calculate whether the use of AWS will create a zero-sum environment whereby peaceful settlement and negotiation is no longer an option for the ending of conflict and achieving of just causes. In other words, if conflict becomes zero-sum, then the probability of success calculation becomes even harder to estimate.

From this vantage point, we see how AWS tie together *jus ad bellum*, *jus in bello* and *jus post bellum*. The means by which a state wages war - that is, the weapons and the strategies it uses to prosecute (and end) its war - directly affect the proportionality calculations it makes when deciding to go to war. Take the familiar example of nuclear weapons. Many believed that waging nuclear war was clearly disproportionate. The basis of this belief stemmed from concerns about nuclear fallout affecting neutral parties as well as the planet.[36] An

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kind of metrics identified in intrastate war, and not interstate peace negotiations.

35. *See generally supra* note 33.

36. In 1993 the World Health Organization (WHO) requested the International Court of Justice to consider the question of the permissibility of the use of nuclear weapons given their adverse environmental effects. The United Nations General Assembly in 1994 likewise asked the Court for an advisory opinion on whether there was *any* circumstance where using a nuclear weapon would be permissible. The Court did not issue an opinion to the WHO as requested, as it stated it the WHO asked for opinions outside of its scope of the WHO's activities, whereas it did offer an opinion as requested by the General Assembly. In short, the Court found that it was not illegal to possess or threaten to use nuclear weapons; however, it also claimed that the use of nuclear weapons must comport with international humanitarian law, as well as the various principles of environmental law. However, upholding environmental obligations must be balanced against the *lex specialis* of international humanitarian law, particularly the principles of necessity and proportionality. In short, any use of nuclear weapons must balance the harmful side effects against military objectives and the use of nuclear weapons must be necessary in that no other less harmful means would achieve those military objectives. The Court's opinion notwithstanding, there is wide agreement that nuclear weapons are disproportionate in their harmful effects and are inherently indiscriminate. *See* Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion of July, 1996), 35 ILM 809 & 1343 (1996); Legality of the Use by a State of Nuclear Weapons in Armed Conflict, 1996 REP. 66 (Advisory Opinion of July 8); Richard A. Falk, *Nuclear Weapons, International Law and the World*

argument about whether using AWS will satisfy *ad bellum* proportionality must take into account these kinds of considerations as well.

Additionally, the prospect of using AWS in conflict is likely to engender another distributed negative cost: inducing an AWS arms race. When it comes to estimating the harms in an *ad bellum* proportionality calculation, we must weigh all of the potential harms, and not, like their counterparts, only those properly related to the just causes for war.[37] As Hurka reminds us,"[i]n assessing a war for proportionality, it seems we count evils of all the kinds it will cause, with no limits on their content. There is therefore a thumb pressed down on one side of the proportionality scale, with more counting on the negative than the positive side."[38] Thus we must look to the probability that if one country utilizes or begins to utilize such a tactic, other countries may begin to justify or view as necessary their possession and use of AWS. The result, it is argued, may actually tend to increase the use of violent means rather than minimize them.[39] Autonomous war is thus more likely to occur as it becomes easier to execute. This may embroil communities in more war, thereby requiring more "skin in the game" in the long run.

Our results are counterintuitive. It appears that if a state finds itself threatened, it seems it must be willing to sacrifice the lives of its people as a first step for any response to be considered *ad bellum* proportionate. It cannot take a short-view of war and a Panglossian[40] view of technology. While states possess obligations to mitigate the harms to their peoples, it seems they must be willing to sacrifice them and forbear from autonomous killing. Thus, any state considering the

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Court: A Historic Encounter, 91 AM. J. INT'L L. 64 (1997); Michael J. Matheson, *The Opinions of the International Court of Justice on the Threat or Use of Nuclear Weapons*, 91 AM. J. INT'L L. (1997); NINA TANNENWALD, THE NUCLEAR TABOO: THE UNITED STATES AND THE NON-USE OF NUCLEAR WEAPONS SINCE 1945 (2007).

37. Hurka, *supra* note 9, at 45.

38. *Id.*, at 46.

39. *E.g.*, PETER SINGER, WIRED FOR WAR 265 (2009); Robert Sparrow, *Predators or Plowshares? Arms Control of Robotic Weapons*, IEEE TECH. & SOC'Y, Spring 2009, at 25; Jürgen Altmann, *Preventive Arms Control for Uninhabited Military Vehicles: an Ethical Issue*, 15 ETHICS & INFO. TECH. 137 (2013).

40. Based on Voltaire's satirical critique of Gottfried Wilhelm Leibniz's philosophical theory in Voltaire's work *Candide*. Embodied in the character of the tutor Pangloss: "Pangloss taught…that there is no effect without a cause and that, in this best of all possible worlds…everything is made for an end, [therefore] everything is necessarily for the best end." VOLTAIRE, CANDIDE 18–24, 42 (Daniel Gordon ed. & trans., Bedford/St. Martin's Press 1999).

use of AWS must take a longer view of war. In particular, it must look past the immediate loss of its "boys" to the lives of its people, as well as probability of escalation, peaceful negotiation and settlement, and unintended weapons proliferation and arms races. Paradoxically, the obligation to mitigate harm to one's people may sometimes require placing *some* of those people in harm's way.

The obvious objection to this account is that it seems morally perverse to require a state to use human warfighters carrying conventional weapons and endanger their lives.[41] If one can fight and not pay in blood, then a just war theory that required harm, when there exists a possibility of incurring no harm, seems at best incoherent. While this sentiment should not be easily dismissed, as there are important concerns here, I think it misses the importance of the scope of *ad bellum* proportionality calculations. Proportionality requires that states are able to balance the relevant good against the evil they impose through warfare.

Typically, this is seen as a balancing of harms on both sides. Yet if we view the response to aggression in a one-round game perspective, such as that in Scenario One, then we misrepresent our calculations. We posit that we are satisfied in a just cause, that AWS may offer a reasonable chance of success, that they might be the last resort (though given their "costlessness" this is debatable), that the response would be waged by a proper authority, and given the justness of the cause and the "costless" nature, the response seems proportionate. We could pursue our rights with no harm to ourselves and only incidental harm to an unjust aggressor.

I hope that my arguments here have shown that such a position should not be so easily accepted. Indeed, we have good theoretical and empirical reasons to be skeptical of these arguments. While I have assumed that the defensive use of AWS would also be in isolation from human combatants, which is of course unlikely in the near term, the thought experiment is helpful. The just war tradition is a regulative body of thought. Justifying war is not, and should not be, an easy business. My arguments here have assumed a clearly unjust threat and thus the justness of the cause. However, it is more often the case that such clarity is lacking. Often both sides to a conflict view their causes as just and both often invoke their rights of self-defense. Even terrorists

41. *See generally* Kenneth Anderson & Matthew C. Waxman, *Law and Ethics for Autonomous Weapon Systems: Why a Ban Won't Work and How the Laws of War Can*, HOOVER INST. (Apr. 9, 2013), http://www.hoover.org/research/law-and-ethics-autonomous-weapon-systems-why-ban-wont-work-and-how-laws-war-can (arguing, *inter alia*, that the proliferation of AWS outside the law of armed conflict would entice belligerents to hold enemy civilians hostage more often than they might using conventional means of war).

claim their actions as just and as responses to aggression.[42] But if we are to be prudent and claim that using AWS does not appear to satisfy *ad bellum* proportionality in theory, we should be very wary of attempting to do so in practice. For in practice, the case will likely be even more opaque. Technological superiority does not entail success, and technological hubris raises all the dangers Camus rightly noted.

42. *See* Jeffrey P. Whitman, *Is Just War Theory Obsolete?*, *in* ROUTLEDGE HANDBOOK OF ETHICS AND WAR 23, 29 (Fritz Allhoff, et al. eds., 2013) (describing how one of al-Qaeda's justifications for its terrorist attacks was the liberation of the land of the Muslim holy cities of Mecca and Medina from the influence of "the armies of the American Crusaders and their allies").