



# Not Even Close to a (Fair) Fight: Technology and the Future of War

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## **Introduction**

It takes many elements to make a war. While theorists have differed on what precisely the necessary elements are—for example, some argue that only states can go to war, while others contend that non-state actors can go to war as well<sup>1</sup>—all seem to agree that, for there to be a war, there must be at least two (if not more) sides fighting each other.<sup>2</sup> Of course, this criterion is not sufficient for there to be a war; but it does appear to be necessary. As Jeff McMahan puts it, “[war] refers to the aggregate fighting of a number of belligerent parties...we...say of each belligerent [country] in World War II that it fought a war.”<sup>3</sup> And this definitional point about what it takes for there to be a war strikes us as true completely aside from questions about any particular war’s justification or lack thereof<sup>4</sup>; it is so commonly assumed, in fact,

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<sup>1</sup> This is one of many disagreements between Michael Walzer and C.A.J. Coady. See, among others, Coady’s “Terrorism, Morality, and Supreme Emergency,” *Ethics* 114, no. 4 (July 2004): 773-5.

<sup>2</sup> I have argued elsewhere that war is a collective, rather than an individual, endeavor, and so for the purposes of this paper I will set aside the question of whether two individuals can fight a war against each other, and instead will focus on the somewhat vague, but easily understandable, “sides” that are engaged in prosecuting the war.

<sup>3</sup> Jeff McMahan, *Killing in War* (Oxford: Oxford University Press, 2009), 5.

<sup>4</sup> The question of war’s justification is one of the driving theoretical issues of just war theory. For the classic account of contemporary just war theory, see Michael Walzer, *Just and Unjust Wars* (New York: Basic Books, 2006).

that it is rarely given a great deal of philosophical attention. (To see this, notice that any historical, philosophical, political, or social account of any given war begins with an enumeration of the various sides engaged in that war.)

In this paper, I attend carefully to this particular element, and argue that the concept of ‘war’ *does* necessarily include the possibility that the opposing sides either will, or are at the very least able to, fight back to some recognizable degree. This is, I contend, one of the key differences between war and wholesale killing, slaughter, or genocide. Then, putting this into the contemporary context of the exponential expansion and advancement of wartime technology, I argue that the asymmetric proliferation of killing and maiming wartime technologies may soon make it the case that there will be no possibility of there being a (even a wildly unfair) fight. And with no actual possibility of having a fight on their hands, combatants for militarily technologically advanced political groups, states, or nations may cease to be warfighters, and instead become killers, slaughterers, or genocidaires. Bluntly, the exponential advancement of wartime technology has the potential not only to change the nature of war (a commonly advanced thesis in war theory), but also to wipe out ‘war’ as a meaningful category altogether. If the creation of new wartime technologies continues its asymmetric, exponential advancement, there will no longer be the possibility of two or more sides fighting; there will only be the possibility of scorched earth. Normatively, whether such slaughter is justified is an open question; however, it is a question that we will soon have to face, if wartime technologies continue advancing in their present direction.

## I. Fighting and Fighting Back

As any good dictionary will tell you, a war is an armed conflict between two or more political groups, states, or nations.<sup>5</sup> Armed, meaning that at a minimum all sides have weaponry of some sort, and conflict, meaning that the sides are attempting to settle their differences through fighting with those weapons. But, as any war theorist will tell you, having an armed conflict is not sufficient for there to be a war; much more is needed. Arguably, among other conditions, each side must have the recognized authority to engage in warfare for there to be a war. In this paper, I leave the question of the sufficiency conditions for war aside and focus instead on one of the necessary conditions for war, which is strongly hinted at, although not outright stated, by the dictionary definition. To have a war, there must be at least two sides that either are fighting via force of arms,<sup>6</sup> or that will fight, should the occasion arise. (Sometimes—although this is less true nowadays—it is simply impossible to engage your enemy, and so the fighting must wait for that possibility to materialize.) For as we learn from Hobbes, actual fighting need not be occurring for there to be war; there must simply be “the will to contend by battle... the nature of war consisteth not in actual fighting, but in the known disposition thereto during all the time there is no assurance to the contrary.”<sup>7</sup>

This raises the question of what it means to have a fight.<sup>8</sup> Arguably, you can only fight

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<sup>5</sup> See, among others, the relevant entries in the Oxford English Dictionary and the Merriam-Webster Dictionary.

<sup>6</sup> Traditionally, “force of arms” refers to physical weaponry, such as swords, guns, tanks, bombs, etc. However, it seems that it can just as well apply to the cyber-weapons that we are now seeing proliferate throughout the world. I discuss cyber-warfare in more detail below. Thanks to Colin Lewis for raising this point.

<sup>7</sup> Thomas Hobbes, *Leviathan* (Cambridge: Cambridge University Press, 1991), Chapter xiii.8.

<sup>8</sup> To the best of my knowledge, no one has yet given a meaningful or extended conceptual analysis of what it is for something to be a fight. So, what follows is my initial attempt at doing so. It is not a full or complete account, of course, but it is hopefully enough to begin the discussion. By contrast, much

against someone who is able and willing to take up arms against you; otherwise, you are not fighting, but rather are annoying, aggravating, beating, killing, slaughtering, annihilating, destroying, or exterminating.<sup>9</sup> To fight is to contend with another, to struggle against them for supremacy. If there is no contention or struggle, it is difficult to say either that a fight is occurring or has occurred. This is why it is possible for someone to refuse to fight: famously, pacifists and nonviolence advocates refuse to physically fight for their causes. So, when the police attacked U.S. Representative John Lewis at Selma in 1965, it was a physical beating that took place, not a physical fight.<sup>10</sup> You simply cannot fight with someone who will not fight you. Added to that, you cannot fight with someone who *cannot* fight you; this is why it is impossible to (physically) fight a quadriplegic, for instance. Of course, you may well be able to have other kinds of conflict with them, but you cannot have a physical fight of the kind that we are focused on here. In other words, while every fight is a conflict, not every conflict is a fight.

Importantly, this point about the actual ability to fight seems to underlie argumentation from traditional war theorists, such as Averroes and Grotius, for why states should not attack women, children, and in some cases, old men. Averroes argues that “any males who might take up arms” can be attacked in war, because, as Larry May interprets him, “the men [are] all able to fight.”<sup>11,12</sup> But contrastingly, “children, women, and old men” cannot be slain, because, according to Averroes, they are not able to take up arms to defend their society.<sup>13</sup> Similarly, Grotius argues that killing women, children, and old men is not part of warfare because they are generally “untrained and inexperienced in war.”<sup>14</sup> Of course, there is a normative element to these arguments, but there is also a conceptual point here about what makes for a fight, or for warfare, as opposed to mass killing, slaughter, or genocide. To have a war, there must be sides capable of fighting. Averroes and Grotius viewed women, children, and old men as incapable of fighting, and so as incapable of forming (or participating in) one of the sides necessary for there to be a war at all.

These medieval arguments form the beginning of the debate surrounding the conceptual combatant/non-combatant distinction and the associated moral principle of noncombatant immunity, a distinction and a principle about which much ink has been spilled.<sup>15</sup> It might appear that I am simply re-adjudicating that debate, albeit from a different point of view;

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has been written on the notion of a fair fight. For one seminal account, see Thomas Nagel, “War and Massacre,” *Philosophy & Public Affairs* 1, no. 2 (1972): 123-144.

<sup>9</sup> Of course, I am here focused on the notion of a physical fight. But notice that this can be appropriately extended to other kinds of fights, such as verbal, legal, philosophical, or even internal fights. Thanks to Sonja Tanner for raising this point.

<sup>10</sup> On March 7, 1965, Lewis and others marched across the Edmund Pettus Bridge in Selma, Alabama, USA, in support of Black Americans’ civil rights. They were met by Alabama State Troopers and local police, who surrounded and beat the nonviolent protesters until they scattered. This incident became known as ‘Bloody Sunday,’ and helped galvanize support for the Civil Rights Movement in the United States.

<sup>11</sup> Averroes, “Jihad” [from “Al-Bidaya”] (c. 1767), para. 3, in *Jihad in Classical and Modern Islam*, ed. and trans. Rudolph Peters (Princeton: Markus Weiner Publishers, 1996), 33.

<sup>12</sup> Larry May, “Killing Naked Soldiers,” *Ethics & International Affairs* 19, no. 3 (2005): 39+.

<sup>13</sup> As quoted in Larry May, “Killing Naked Soldiers”: 39+.

<sup>14</sup> Grotius, *On the Law of War and Peace* (Oxford: Clarendon Press, 1925), 735.

<sup>15</sup> For some recent notable discussions of the combatant/non-combatant distinction, see, among others, Seth Lazar, *Sparing Civilians* (Oxford: Oxford University Press, 2015) ; Larry May, “Killing Naked Soldiers”; Helen Frowe, “Non-Combatant Liability in War,” in *How We Fight: Ethics in War*, ed. Helen Frowe and Gerald Lang (Oxford: Oxford University Press, 2014), 172-88 ; and Jeff McMahan, *Killing in War*. For the initial discussion that kicked off the debate in contemporary just war theory, see Michael Walzer, *Just and Unjust Wars*, chapter 9.

however, I maintain that I am focused on a separate conceptual issue. To see this, concentrate on what appears to be an implicit premise of the combatant/non-combatant distinction, which is that there exists combat, or a fight, with which people either are or are not involved. (According to international law, those who are “hors de combat” may not be targeted in war.<sup>16</sup> Hors de combat literally translates to “out of the fight.”) Without combatants—of some kind or other—you cannot have combat; but this is the case regardless of who, or what, those combatants turn out to be. This is true so long as not everyone is a non-combatant. As mentioned above, if *everyone* refuses to fight, or is unable to fight, then there is no combat; whatever occurs in such a case, be it justified or not, is not a fight. It may be a conflict, a killing, a beating, etc., but conceptually, it is not a fight. So, the conceptual question of what it is to have a fight, or what it is to have combat, while related to the combatant/non-combatant distinction, is separate from it. Again, part of my argument here is that the concept of a ‘fight’ is rarely interrogated, in part because it is so familiar as to appear common sensical, and in part because it is implicitly assumed by other debates that are prevalent, and demanding, in the contemporary war theory literature.

To have a fight, then, there must be, at a minimum, two (or more) opponents (sides) that are able and willing to fight. Notably, “willing” here need not mean wanting or desiring to do so, or having the intention to do so, or being (subjectively morally or otherwise) justified in doing so, in any robust philosophical sense; rather, it often simply refers to what the opponent will, or is likely to, do if attacked. Many people do not have the full intention to fight, but will do so if threatened or attacked, unless they have taken up a deliberate stance of nonviolence or pacifism (e.g., John Lewis). For lack of a better term, fighting back seems to be somewhat instinctive; consider how many people kick or whack a doorway when they accidentally run their shoulder into it, or pound their fist on a nearby table when they drop something on their foot. Similarly, combatants may not have the desire to fight against the opposing side in a war—self-reporting from U.S. combatants indicates that they often care more about keeping their fellow company members alive than killing enemy forces<sup>17</sup>—but they do tend to fight once bullets begin whizzing by their heads, even when they are unsure that their side is the right, or justified, one.<sup>18</sup> As Walzer writes, soldiers do not often “choose to throw themselves at barbed wire and machine guns in fits of patriotic enthusiasm...they [do] fight, [but] unwillingly.”<sup>19</sup> Of course, some *are* willing to fight in the most robust sense of the word; members of Daesh<sup>20</sup> often publicly declare both their desire and intention to fight for, and their belief in the rightness of, their so-called caliphate. Regardless, my point here is simply

<sup>16</sup> ICRC, Customary IHL Database, “Rule 47: Attacks against Persons Hors de Combat,” [https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1\\_rul\\_rule47](https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_rule47) (October 20, 2019). Originally published by Cambridge University Press, 2005.

<sup>17</sup> Leonard Wong, Thomas Kolditz, Raymond Millen, and Terrence Potter, “Why they fight: Combat motivation in the Iraq war,” Strategic Studies Institute, U.S. Army War College, 2003. See also, among others, Liane Hansen, “Why Do Soldiers Fight?: interview with James McPherson, author of *For Cause and Comrades: Why Men Fought in the Civil War*,” NPR (May 29, 2005), [www.npr.org/templates/story/story.php?storyId=4671512](http://www.npr.org/templates/story/story.php?storyId=4671512); and Karl Marlantes and Sebastian Junger, “Combat: The Emotions of War,” in *Going to War*, produced by Michael Epstein for PBS (premiered May 28), 2018, <https://www.pbs.org/tpt/going-to-war/themes/combat-experience/>.

<sup>18</sup> Philosopher Ludwig Wittgenstein famously fought for Austria in World War I, despite explicitly recognizing the wrongness of that war. McMahan, *Killing in War*, 1-3.

<sup>19</sup> Walzer, *Just and Unjust Wars*, 35.

<sup>20</sup> I use Daesh here, rather than ISIS or ISIL, in keeping with its Arabic-speaking and Middle Eastern detractors, who call the group Daesh to avoid giving the impression that they consider the group to be politically legitimate in any way. Faisal Irshaid, “Isis, Isil, IS or Daesh? One group, many names,” *BBC* (December 2, 2015), <https://www.bbc.com/news/world-middle-east-27994277>.

that it is possible to have a fight with reluctant, unsure fighters. Neither wholeheartedness nor (subjective moral or otherwise) justification, in other words, are requirements for there to be a fight.<sup>21,22</sup>

Similarly, fairness is not a requirement for there to be a fight. It need not be the case that all sides have an equal chance of success, or equal force of arms, for there to be a fight. Unfair fights, or dirty fights, or fights where one side hits below the belt, so to speak, are still *fights*. The term ‘asymmetrical warfare’ refers to just this imbalance. Asymmetrical warfare occurs when there is a significant imbalance in the relative military power of the two belligerents.<sup>23</sup> However, as war theorists have come to realize, an imbalance in military (also sometimes called material<sup>24</sup>) power does not necessarily translate to an inability to either fight or win.<sup>25</sup> Other factors, such as the ability to manipulate alliances and rivalries, the presence and use of soft power, the knowledge of and willingness to use guerilla tactics, etc., all play a key role in determining the outcome of asymmetrical—also sometimes called unconventional—warfare.<sup>26</sup> Historically, relatively militarily stronger belligerents have tended to win asymmetric wars, with some notable exceptions (the American and Haitian Revolutions come quickly to mind). However, since 1950, relatively militarily weaker belligerents have won a majority of all asymmetric conflicts.<sup>27</sup>

One lesson to take from this is that, contra Thucydides, material power does not imply victory in war.<sup>28</sup> Another lesson, and the one that I wish to draw out from this discussion, is that we can distinguish between fair fights, unfair or asymmetric fights, and non-fights. Asymmetric wars are still fights because the relatively weaker side has the ability to fight back to some recognizable degree. They may not be able to fight back militarily in the same battlespace as the attacking side, but as the twentieth century has shown us, battlefields come in all shapes, sizes, and kinds. Importantly, the capacity to fight back has to be, if not conventionally militarily robust or matching the other side, at least *present* to some relevant degree. For example, during the 1999 NATO high-altitude bombings of Kosovo, Serbian forces were unable to fight back aerially to any significant degree, but Milošević attempted to leverage alliances with Russia and China to bring about UN censure of NATO, while using ground air-defense forces to maintain control of Kosovo proper.<sup>29</sup> Such asymmetric warfare

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<sup>21</sup> This also follows Elizabeth Anscombe, who argues that even conscripted or compelled warfighters, if they take up arms, count as fighting. Anscombe, “Mr. Truman’s Degree,” Pamphlet published by the author (Oxford, 1958): 5-7, as well as her “War and Murder,” in *Nuclear Weapons: A Catholic Response*, ed. Walter Stein (London and New York: Merlin, 1961), 43-62.

<sup>22</sup> Here, and throughout most of the paper, my argument is conceptual, not moral. What it takes for there to be a fight, I contend, is different from what it takes for any conflict, fight or not, to be *justified*. I am primarily interested in the first question here; the second is worth a paper, or papers, of its own.

<sup>23</sup> The term was first popularized by Andrew J.R. Mack, in his 1975 article “Why Big Nations Lose Small Wars: The Politics of Asymmetric Conflict,” *World Politics* 27, no. 2 (January 1975): 175–200. The term has since been taken up by contemporary war theorists.

<sup>24</sup> T.V. Paul, *Asymmetric Conflicts: War Initiation by Weaker Powers* (New York: Cambridge University Press, 1994), 20-22.

<sup>25</sup> *Ibid.*, 4.

<sup>26</sup> See *ibid.*; Michael A. Allen and Benjamin O. Fordham, “From Melos to Baghdad: Explaining Resistance to Militarized Challenges from More Powerful States,” *International Studies Quarterly* 4, no. 55 (2011): 1025–1045; Ivan Arreguín-Toft, “How the Weak Win Wars: A Theory of Asymmetric Conflict,” *International Security* 26, no. 1 (2001): 93-128.

<sup>27</sup> Arreguín-Toft, “How the Weak Win Wars”: 97.

<sup>28</sup> *Ibid.*, 96.

<sup>29</sup> Notably, some scholars argue that the 1999 NATO campaign was not a fight, for precisely the reasons I elucidate here. As Paul Robinson puts it, “In its air campaign against Yugoslavia, NATO showed that it was willing to kill for its principles but not to fight.” Paul Robinson, “Ready to Kill but Not to Die:

is not a new concept; but there is a difference between asymmetric warfare—which involves the ability of a side to fight back in some capacity and to some degree—and straight-up mass killing, slaughter, or genocide—which is what occurs when there is no possibility of a fight at all. To put the point another way, the overall power imbalance (calculating not only material power, but also political power, social power, soft power, etc.) cannot be too massive. If the imbalance is too great, what occurs is not a fight. To see this, consider that forcefully hitting a young child, even if they hit you back, is not fighting; it is abuse. Similarly, we might think that the power imbalance between the German SS and European Jews was great enough such that Germany did not fight those European Jews who came within Germany's purview during World War II; it committed genocide against them. And this is true despite the fact that some European Jews did try to fight back.<sup>30</sup>

Thus, we end up saying something slightly linguistically odd: sometimes, people can try to fight back, even though what is occurring is not a fight. To alleviate this oddness, consider that 'fight' can be used both as a noun and as an adverb. The Jews fought back, although they were not *in* a fight; they were caught in a genocide. This is because what it takes for there to be a fight is not merely the bare physical *ability* to fight back, but also the relevant *power* to fight back. And power, as I have already noted, has a variety of not only physical, but also social and political components. So, to have a fight, the two (or more) sides involved must have the capacity, in terms of power, to fight back against each other to a recognizable degree. The question of recognition here is complicated; however, what is important for the purposes of this paper is that a threshold does exist, such that when the relative power imbalance is too extreme, what is occurring is not a fight, but rather a mass killing, slaughter, or in some cases, genocide.<sup>31</sup> Colloquially, fights can be unfair or asymmetric, but they cannot be *wildly* unfair; when they are, what is occurring is not really a fight.<sup>32</sup>

Notice, however, that just because something is not a fight, that does not necessarily mean it is unjustified. Although I use the example of the Holocaust above to elucidate the distinction between fighting back and being in a fight, I am not meaning to imply that such non-fights are always morally wrong. Perhaps, in some instances, engaging in mass killing or slaughter is justified. (I take it genocide, by contrast, is always morally wrong because it involves not only the widespread killing of those unable to fight back, but also the targeting of a social, political, or ethnic group as a whole for humiliation and extermination.) Regardless, I do think it is important to call things by their proper names. If one side attacks another side, and that second side does not have the power to be in a fight—not even an asymmetrical one—with the first side, then that attack is not warfighting but mass killing. This is the case, I maintain, even if the second side tries to fight back, because what it takes for there to be a fight is more than simply the accoutrement of war (such as threats, signals, persons in uniforms, etc.). There must be the capacity, or power, to fight back to a recognizable degree. Paul Robinson recognizes this when he writes that such a massive power

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Nato Strategy in Kosovo," *International Journal* 54, no. 4 (1999): 673. Thanks to the guest editor of this issue for encouraging me to consider this case.

<sup>30</sup> The Warsaw Ghetto uprising is perhaps the most famous instance, although certainly not the only one, of European Jews fighting against the German genocide. Markus Meckl, "The Memory of the Warsaw Ghetto Uprising," *European Legacy* 13, no 7 (2008): 815–824.

<sup>31</sup> Thanks to Karen deVries for raising this point.

<sup>32</sup> One worry with my argument that might arise at this point is that I have described a threshold view for what counts as a fight, and threshold views are notoriously difficult to pin down. It is true that the threshold I have described is somewhat vague; however, what is important here is that the threshold exists, such that some conflicts are fights, and some are not. As Anscombe puts it, "Wherever the line is, certain things are certainly well to one side or the other of it." ("Mr. Truman's Degree": 5). A more careful delineation of this threshold is a future paper in and of itself.

imbalance “turns soldiers [on the more powerful side] from warriors into mere killers.”<sup>33</sup> We may not like the term mass killing—it may strike some readers as normatively contentious—but that is what it is, at the conceptual level, and this is so regardless of its normative status.

We can now consider how this conceptual point about what it takes for there to be a fight links back to the aforementioned conceptual issue for just war theory, namely the combatant/non-combatant distinction. If we follow many contemporary just war theorists—revisionists and traditionalists both—we might say that combatant status depends on whether the individual in question either poses a threat, or is a part of a side that poses a threat.<sup>34</sup> Revisionists and traditionalists tend toward broad agreement regarding this conceptual question of who counts as a combatant; where they disagree strongly is regarding when, and under what conditions, combatants and non-combatants may justifiably be targeted.<sup>35</sup> Following this thread, a side may pose a threat, and thus its personnel (who partially comprise that threat) are combatants, regardless of the threat’s justification. But then, we must ask the question: What does it take to pose a threat? Arguably, what it takes to pose a threat is different from what it takes for there to be a fight; it may be possible for a side to threaten what it cannot, given relative power imbalances, actually do.<sup>36</sup> Depending on how all of the relevant concepts hang together, it may be possible to have combatants who are unable to enter into a fight. Consequently, such combatants can only try to fight back individually or be killed, justifiably or not. But alternatively, we might say that if a side threatens, but does not actually have the ability to fight back to any recognizable degree, then its personnel are not combatants, regardless of their liability to attack (i.e., regardless of whether the associated normative question here is answered in line with the traditionalist principle of non-combatant immunity or with the revisionist principle of moral responsibility for unjustified threats and harms). This may strike us as the more intuitive view; yet, this position carries with it the possibility that, in a multi-side conflict, individuals may be combatants vis-à-vis one opponent but not another.<sup>37</sup> Consider again the high-altitude bombing of Kosovo. Do we conclude that Yugoslav forces were, at one and the same time, combatants (when asymmetrically fighting NATO) and killers (when engaging in ethnic cleansing of Albanians)? I find this to be an acceptable conclusion to reach; but it does complicate, and possibly challenge, the traditional combatant/non-combatant distinction by introducing the idea that the relative power of an individual’s side matters to whether they are a (just or unjust) combatant, killer, victim, or some combination thereof. Resolving the combatant/non-combatant distinction, then, requires first settling the question of what it takes for there to be a fight. And for that, I have argued, we must look to the relevant amounts of power.

So far, I have made my argument at the conceptual level. Now, I would like to move to the practical level by noting that my conclusions match the commonly held beliefs of

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<sup>33</sup> Robinson, “Ready to Kill but Not to Die”: 673.

<sup>34</sup> See, in addition to the theorists already mentioned in the earlier discussion of the combatant/non-combatant distinction, Thomas Nagel, “War and Massacre,” and Jeff McMahan, *Killing in War*. There are many nuanced issues concerning what it takes to be “part of a side” such that one is a combatant; I will not review these here.

<sup>35</sup> See Seth Lazar, *Sparing Civilians*. Traditionalists argue in support of the moral equality of combatants and the principle of non-combatant immunity, which together state that all and only combatants in a war or military conflict may justifiably be targeted (i.e., all combatants are liable to attack, and no non-combatants are liable to attack). Revisionists, by contrast, hold that only those who are morally responsible for an unjustified harm or threat of harm may justifiably be targeted (i.e., only some combatants and non-combatants, namely those responsible for unjust harms or threats, are liable to attack).

<sup>36</sup> For a classic discussion of threats in just war theory, see Walzer, *Just and Unjust Wars*, 78-82.

<sup>37</sup> Thanks to an anonymous reviewer for pushing me on this point.



warfighters, especially those in Global North militaries. Combatants often seem to believe, or at the very least seem to want to believe, that they are fighting other combatants; that is, other warfighters. They often claim that they do not, and will not, fight against those who are unable to fight back.<sup>38</sup> To put the point another way, Global North warfighters, at least, tend to believe that those they attack are capable of being *belligerents*; that they are capable of engaging in a war or, at a minimum, of engaging in a fight.<sup>39</sup> Of course, the truth of this belief is suspect, but it is certainly a prevalent psychological phenomenon. It comprises a fundamental part of what warfighters take themselves to be doing when they go to war.<sup>40</sup> They are fighting against other fighters, those with the power to fight them; they are not committing (justified or unjustified) mass killing or slaughter by attacking the powerless. When this belief is challenged, either conceptually or by their experiences, warfighters often report feelings of guilt, shame, or cognitive dissonance.<sup>41</sup>

Although “internalization is extremely difficult to measure,” the strength of this belief can be most clearly seen when it is forcibly shown to be false, as often happens in classic literary works on war.<sup>42</sup> Consider the response of the soldiers in Vonnegut’s *Slaughterhouse Five* to the wholesale fire-bombing of Dresden: they hide, horrified, and conclude that this is not war but slaughter, not fighting but hell.<sup>43</sup> Similarly, the soldiers in Heller’s *Catch-22*, having been ordered to engage in general area rather than targeted bombing, come to see war as insanity, as mass killing, and the desire to escape their murderous orders as the only sane position.<sup>44</sup> These are just two of innumerable fictitious examples (many of which are drawn from authors’ actual experiences in war) that portray the scuttling of warfighters’ beliefs that they will be, or are, fighting those with the power to fight them. When these warfighters realize they, or those on their side, are killing those who are unable to fight back to any recognizable degree, they—among other responses—cease to view themselves as fighting, and come to see their and their fellows’ actions as horrific, as (inadvertent though they may be) murderous and even genocidal.<sup>45</sup> And importantly, this shift in warfighters’ perspective often occurs even when they view their cause as just,<sup>46</sup> and even when, legally speaking, those killed are enemy soldiers

<sup>38</sup> *Do the Geneva Conventions Matter?*, ed. Matthew Evangelista and Nina Tannenwald (Oxford: Oxford University Press, 2017). See also Colin H. Kahl, “In the Crossfire or the Crosshairs? Norms, Civilian Casualties, and U.S. Conduct in Iraq,” *International Security* Vol. 32, No. 1 (Summer 2007): 7–46.

<sup>39</sup> For an excellent history of the development of this belief, see Sahr Conway-Lanz, *Collateral Damage: Americans, Noncombatant Immunity, and Atrocity after World War II* (New York: Routledge, 2006), especially chapter 8.

<sup>40</sup> Elizabeth Grimm Arsenault, “Geneva Convention Compliance in Iraq and Afghanistan,” in *Do the Geneva Conventions Matter?*. See also McMahan, *Killing in War*, 4, and Lazar, *Sparing Civilians*, esp. chapter 5.

<sup>41</sup> Xue, Chen et al. “A meta-analysis of risk factors for combat-related PTSD among military personnel and veterans,” *PLoS One* vol. 10,3 e0120270, March 20, 2015, doi:10.1371/journal.pone.0120270; Wright BK, Kelsall HL, Sim MR, Clarke DM, Creamer MC, “Support mechanisms and vulnerabilities in relation to PTSD in veterans of the Gulf War, Iraq War, and Afghanistan deployments: a systematic review,” *Journal of Traumatic Stress* 26 (2013): 310–318, 10.1002/jts.21809.

<sup>42</sup> Sahr Conway-Lanz, “The Struggle to Fight a Humane War: The United States, the Korean War, and the 1949 Geneva Conventions,” *Do the Geneva Conventions Matter?*, ed. Matthew Evangelista and Nina Tannenwald (Oxford: Oxford University Press, 2017), 101.

<sup>43</sup> Kurt Vonnegut, *Slaughterhouse Five*, esp. chapters 8-10. Lee Roloff, “Kurt Vonnegut on Dresden (interview with Lee Roloff),” *Kurt Vonnegut’s Slaughterhouse Five*, ed. Harold Bloom, 83-88.

<sup>44</sup> Joseph Heller, *Catch-22*. Robert Brustein, “The Logic of Survival in a Lunatic World,” *Joseph Heller’s Catch-22*, ed. Harold Bloom, 3-8.

<sup>45</sup> Of course, they may be incorrect to draw such normative conclusions; as I said above, I hold the conceptual and normative questions separate. What I am pointing to here, rather, is the conceptual response, that warfighters come to view themselves as engaging in a different, non-war activity.

<sup>46</sup> Barry Lam, “Soldier Philosophers, Parts 1 & 2,” *Hi-Phi Nation* Podcast, Duke University, 2017.

or combatants.<sup>47</sup> What is important is that those killed had no power to fight back, militarily or otherwise. All they could do was die, and this changes them, in the eyes of many warfighters, from being fellow (albeit enemy) fighters to being victims.

While this psychological phenomenon is not universal among warfighters, it is prevalent, according to both available sociological data and reams of literary works. So, either there is a general misfiring occurring here, or warfighters are picking up on something essential about the nature of war, namely, that each side must have the power to fight back to a recognizable degree for there to be a (fair or unfair) fight. Perhaps unsurprisingly, I think that this phenomenon is a result of warfighters being sensitive to what is necessary for there to be a fight. As they—perhaps intuitively, perhaps as the result of conceptual inquiry—grasp, when the power differential between the purported sides is too great, you don't have a fight on your hands; you have a mass killing, slaughter, or genocide.<sup>48</sup> This is true regardless of whether the people on the purportedly opposing side are literally trying to fight back or not (i.e., whether they are legally combatants or not), and whether they are liable to attack or not.

## II. Expansion and Advancement of Wartime Technology

So far, I have argued that to have a fight, and thus to have a war, the power differential between the two (or more) sides purportedly fighting cannot be extreme. When it is, what occurs is no longer a fight, fair or not, but rather something more akin to mass killing, slaughter, or genocide. Importantly, power here does not refer only to traditional military power, but to all kinds of power, including the power conferred by advanced technology. Initially, we might think that the expansion and advancement of a variety of wartime technologies (by this I simply mean those technologies that can be used in war to confer an advantage) actually helps to narrow this power differential, because states without the ability to support a traditional military can instead choose to develop and/or acquire such technology. More abstractly, perhaps the advancement of wartime technology works to democratize power, in a sense, throughout the international community.<sup>49</sup> Consider cyber weaponry: Iran's hacking of U.S. governmental and private computer systems in response to the January 2020 assassination of Major General Qassim Sulaimani is a case in point of a militarily weaker state having the power, via technology, to fight against a relatively militarily stronger state.<sup>50</sup> To be clear, the claim here is not that it is good (or bad) that militarily weaker states can now fight via cyberwarfare—it is simply that, in some cases, the advancement of technology can decrease the power gap between opponents such that they are able to enter into a fight with each other.

However, I contend that this is only true up to a point. The exponential expansion and

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<sup>47</sup> According to the laws of war, combatants are members of the armed forces of the sides purportedly at war, or non-members who are directly engaged in hostilities against the opposing side(s). See Articles 43, 48, and 51 of the First Additional Protocol to the Geneva Conventions. As quoted in Lazar, *Sparing Civilians*, 1-2.

<sup>48</sup> Some might respond here that this does not match how political leaders, in particular, often use the relevant terms. That is undoubtedly true; however, insofar as I am doing conceptual analysis, I need not fully adhere to actual language use in the world. It is enough for my purposes that many of those doing the actual warfighting seem to have something like my threshold view of what it takes for there to be a fight, and hence (assuming other conditions are met as well) a war.

<sup>49</sup> This may be a partial explanation for why relatively militarily weaker belligerents have won most asymmetric conflicts since 1950. Arreguín-Toft, "How the Weak Win Wars": 97.

<sup>50</sup> Zolan Kanno-Youngs and Nicole Perlroth, "Iran's Military Response May Be 'Concluded,' but Cyberwarfare Threat Grows," *New York Times*, January 14, 2020, <https://www.nytimes.com/2020/01/08/us/politics/iran-attack-cyber.html>.

advancement of wartime technology may eventually make wars impossible, because some near-future technologies, if realized and weaponized, have the potential to make it the case that there is no relevant ability to fight back against them to a recognizable degree. Such technologies—described in more detail below—would explode the power differential, rather than shrink it. So, rather than there being wars, there would be mass killings, slaughters, and perhaps genocides. If this is correct, then there will no longer be warfighters; there will only be killers, victims, and possibly genocidaires.<sup>51</sup>

Consider so-called ‘rods from God.’ Perhaps the simplest of the near-future wartime technologies, it is the kinetic bombardment of *Lazy Dog* missiles from the Vietnam War re-imagined for the space age. *Lazy Dog* missiles were 2-to-3-inch-long steel rods, with stabilizing fins, dropped by the hundreds over Vietnam. They could penetrate up to 9 inches of concrete, and, while technically not bombs, were devastatingly effective at killing.<sup>52</sup> Rods from God are 20 feet long tungsten poles, launched from orbit, that would hit the Earth with the power of an intercontinental ballistic missile (ICBM), and have the yield of a small tactical nuclear bomb.<sup>53</sup> The destruction would be roughly equal to that seen at Hiroshima and Nagasaki, but without the problem of subsequent nuclear fallout.<sup>54</sup> In addition, they would penetrate up to 200 feet into the ground, thus destroying any underground bunkers or missile silos.<sup>55</sup> There is functionally no defense against them; once in an orbital system, they could be launched within a 12-14 minute window. Their infrared launch signal would be impossible to detect (unlike that of an ICBM), and missile defense systems would be unable to defend against them, due to both their lack of launch warning, and their high speeds and angles of attack.<sup>56</sup> While rods from God do not exist yet, the technology is close enough to being actualized that it was mentioned in the “U.S. Air Force Transformation Flight Plan” put out by the U.S. Air Force in November 2003, which noted additionally that rods from God could be targeted discriminately toward city-sized military installations, or indiscriminately toward civilian cities.<sup>57</sup>

Secondly, consider weaponized designer viruses. This near-future technology has historical roots, as biological warfare has been a mainstay of human conflict over the centuries (e.g., smallpox blankets during the Native American genocide, or the use of anthrax by Germany during World War I).<sup>58</sup> Designer viruses are artificially created or re-engineered

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<sup>51</sup> If nothing else, one entailment of this possible future is that changes will need to be made to combatant training. Rather than inculcating the norms of fighting, if the technologies I describe below (and others relevantly like them) are realized, combatants will need to be taught the norms of mass killing and slaughter.

<sup>52</sup> David Karmes, *The Patricia Lynn Project: Vietnam War, The Early Years of Air Intelligence* (Bloomington, IN: iUniverse, 2014), 117-8.

<sup>53</sup> Jonathan Shainin, “Rods From God,” *New York Times* (December 10, 2006), [www.nytimes.com/2006/12/10/magazine/10section3a.t-9.html](http://www.nytimes.com/2006/12/10/magazine/10section3a.t-9.html).

<sup>54</sup> John Arquilla, “RODS FROM GOD: Imagine a bundle of telephone poles hurtling through space at 7,000 mph,” *San Francisco Chronicle* (March 12, 2006), <https://www.sfgate.com/opinion/article/RODS-FROM-GOD-Imagine-a-bundle-of-telephone-2539690.php>.

<sup>55</sup> Jack Kelly, “Rods from God,” *Pittsburgh Post-Gazette* (July 28, 2003), [www.newspapers.com/newspage/94403109/](http://www.newspapers.com/newspage/94403109/).

<sup>56</sup> Keith Abney, “Dual-use Challenges in Space for Just War, Ethics, Law and Policy,” presentation June 29, 2019, International Society for Military Ethics (ISME) Conference 2019, Colorado Springs, CO.

<sup>57</sup> Eric Adams, “Rods from God,” *Popular Science* (June 1, 2004), [www.popsci.com/scitech/article/2004-06/rods-god/](http://www.popsci.com/scitech/article/2004-06/rods-god/).

<sup>58</sup> DS Jones, *Rationalizing Epidemics* (Cambridge: Harvard University Press, 2004), 97; WS Carus, “The history of biological weapons use: what we know and what we don’t,” *Health Security* 13, no. 4 (2015): 219–55.

viruses that could be designed to produce rapid, lethal effects, and in targeted populations.<sup>59,60</sup> This technology exists (it is how we create better vaccines<sup>61</sup>); the worry is that it could be weaponized and deployed on a large scale.<sup>62</sup> Designer viruses would be almost impossible to defend against, primarily because they are impossible to screen for,<sup>63</sup> and also because it would be functionally impossible to develop a counter-virus or vaccine before dying from the initial exposure and infection. Many viruses, especially those likely to be altered for such purposes, kill quite widely and quickly.<sup>64</sup> While designer viruses will likely be indiscriminate, and thus will take out anyone in their path, it is also possible that they could be targeted to specific populations linked by genetic similarities and uniquities.<sup>65</sup> The advent of biotechnologies that allow for gene editing, such as CRISPR/Cas-9, might make it possible to “build a bioweapon that can be restricted to attack only individuals with a particular genetic flag revealing their ancestry, gender or family.”<sup>66</sup> This may sound like science fiction; however, in February 2016, U.S. Director of National Intelligence James R. Clapper added gene editing to the list of threats considered possible weapons of mass destruction by the U.S. intelligence community.<sup>67</sup> Designer viruses are based in technologies that currently enjoy widespread use, and are a real enough concern that there are a number of federal agencies worldwide dedicated to biodefense.<sup>68</sup>

Thirdly, consider electromagnetic pulses, popularly known as EMPs. This technology was first tested by the U.S. military in a wartime capacity nearly 60 years ago.<sup>69</sup> When a thermonuclear weapon is detonated, it creates (among other things) an EMP, which overloads the circuits of any electronics within the blast radius that lack sufficient insulation, or

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<sup>59</sup> Abigail Fagan, “This Is What It Would Take to Turn a Virus Into a Weapon,” *Vice* (April 4, 2018), [https://www.vice.com/en\\_us/article/ywx3bk/this-is-what-it-would-take-to-turn-a-virus-into-a-weapon](https://www.vice.com/en_us/article/ywx3bk/this-is-what-it-would-take-to-turn-a-virus-into-a-weapon).

<sup>60</sup> Technically, the same thing could be done with bacterial infections, as well. All that would need to be done would be to engineer particular traits into the infectious bacteria, including a strong antibiotic resistance. Thanks to Colin Lewis for this point.

<sup>61</sup> For instance, the flu vaccine each year is bioengineered using a number of strains of the flu. The current hepatitis B vaccine was genetically engineered in 1986. Lawrence M. Fisher, “Biotechnology Spotlight Now Shines on Chiron,” *New York Times* (October 13, 1986), [www.nytimes.com/1986/10/13/business/biotechnology-spotlight-now-shines-on-chiron.html](http://www.nytimes.com/1986/10/13/business/biotechnology-spotlight-now-shines-on-chiron.html).

<sup>62</sup> Fagan, “This Is What It Would Take to Turn a Virus Into a Weapon.”

<sup>63</sup> *Ibid.*

<sup>64</sup> Mark Shwartz, “Biological warfare emerges at 21<sup>st</sup>-century threat,” *Stanford Report* (January 11, 2001), <https://news.stanford.edu/news/2001/january17/bioterror-117.html>.

<sup>65</sup> Joe Donnelly, “I Asked a Biological Weapons Expert How Far-Fetched Metal Gear Solid’s Genome Soldiers Really Are,” *Vice* (September 2, 2015), [https://www.vice.com/en\\_us/article/9bgqc3/i-asked-a-biological-weapons-expert-how-far-fetched-metal-gear-solids-genome-soldiers-really-are-030](https://www.vice.com/en_us/article/9bgqc3/i-asked-a-biological-weapons-expert-how-far-fetched-metal-gear-solids-genome-soldiers-really-are-030).

<sup>66</sup> Alex Hern, “‘There are things worse than death’: can a cancer cure lead to brutal bioweapons?,” *The Guardian* (July 31, 2017), <https://www.theguardian.com/science/2017/jul/31/bioweapons-cancer-moonshot-gene-editing>.

<sup>67</sup> Antonio Regalado, “Top U.S. Intelligence Official Calls Gene Editing a WMD Threat,” *MIT Technology Review* (February 9, 2016), <https://www.technologyreview.com/s/600774/top-us-intelligence-official-calls-gene-editing-a-wmd-threat/>.

<sup>68</sup> Fagan, “This Is What It Would Take to Turn a Virus Into a Weapon.”

<sup>69</sup> In 1962, Operation Fishbowl tested the impact power of the EMP that is naturally created when a thermonuclear weapon is detonated. Morgan Wright, “US would be crippled by an EMP attack, which we pioneered nearly 60 years ago,” *The Hill* (January 30, 2019), <https://thehill.com/opinion/technology/427633-us-would-be-crippled-by-an-emp-attack-which-we-pioneered-nearly-60-years>.

shielding; this includes most consumer and even governmental electronics.<sup>70</sup> Shielded, or hardened, electronics are knocked out, but can be rebooted if their insulation is strong enough to withstand the pulse.<sup>71</sup> In the near future, EMPs could be decoupled from conventional thermonuclear weapons,<sup>72</sup> and could be made strong enough to wipe out any electrical-based systems, such as the U.S. power grid, the fiberoptic cables that support the internet, military and civilian telecommunications systems, and even life support systems that are electronically operated.<sup>73</sup> This is not to mention planes, autonomous trains, and the digital databanks that store worldwide economic records and information.<sup>74</sup> Such decoupled EMPs would be nearly impossible to detect prior to activation, because any system able to detect them would have to be unshielded, and thus would be immediately, or quite rapidly, compromised by the ensuing blast.<sup>75</sup> While an EMP event of this magnitude would not be immediately massively lethal, it would have a large number of lethal effects, as current societies are almost entirely dependent on interconnected, dual-use electronic devices and systems.<sup>76</sup> In addition, it is almost impossible to defend against such EMPs, because the amount of insulation necessary to shield the relevant electronic device or system would make the device or system functionally unusable, or at the very least unable to connect to other systems.<sup>77</sup> Of the three examples I have discussed, this technology is perhaps the closest to being actualized: in 2012, Boeing announced the successful test of the Counter-Electronics High-Powered Microwave Advanced Missile Project (CHAMP) missile, a non-kinetic missile that was able to render targeted electronic systems useless while leaving the physical structures housing them intact.<sup>78</sup> This “mini-EMP in a rocket” currently has a target radius too small to do the kind of damage described above, but it does demonstrate the general feasibility, and possible imminence, of

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<sup>70</sup> “Strategic Primer: Electromagnetic Threats: Current Capabilities and Emerging Threats,” *American Foreign Policy Council*, Winter 2018, Volume 4 (Washington, D.C.: AFPC): 1-3.

<sup>71</sup> *Ibid.*: 4-5.

<sup>72</sup> Paul Marks, “Aircraft could be brought down by DIY 'E-bombs,’” *New Scientist* (April 1, 2009), <https://www.newscientist.com/article/mg20227026-200-aircraft-could-be-brought-down-by-diy-e-bombs/>.

<sup>73</sup> “Strategic Primer: Electromagnetic Threats: Current Capabilities and Emerging Threats”: 6-7; Henry F. Cooper, statement before the Senate Energy Committee, “On Protecting the Electric Power Grid” (May 4, 2017), [https://www.energy.senate.gov/public/index.cfm/files/serve?File\\_id=C93079C7-50EB-49EE-B3A7-BA91E1DBA880](https://www.energy.senate.gov/public/index.cfm/files/serve?File_id=C93079C7-50EB-49EE-B3A7-BA91E1DBA880); Ariel Cohen, “Trump Moves To Protect America From Electromagnetic Pulse Attack,” *Forbes*, April 5, 2019, [www.forbes.com/sites/arielcohen/2019/04/05/whitehouse-prepares-to-face-emp-threat/#77de0c77e7e2](http://www.forbes.com/sites/arielcohen/2019/04/05/whitehouse-prepares-to-face-emp-threat/#77de0c77e7e2).

<sup>74</sup> “Strategic Primer: Electromagnetic Threats: Current Capabilities and Emerging Threats”: 18-20; “Assessing the Threat from Electromagnetic Pulse (EMP): Executive Report,” Report of the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) Attack (Washington, D.C., July 2017), 4-5.

<sup>75</sup> Richard Wilson, “Satellites, Non-lethal Weapons and War in Space,” presentation June 29, 2019, International Society for Military Ethics (ISME) Conference 2019, Colorado Springs, CO.

<sup>76</sup> “Strategic Primer: Electromagnetic Threats: Current Capabilities and Emerging Threats”: 2-3; “Assessing the Threat from Electromagnetic Pulse (EMP): Executive Report,” 1-5; Mike Pearl, “We Asked a Military Expert How Scared We Should Be of an EMP Attack,” *Vice* (May 7, 2015), [https://www.vice.com/en\\_us/article/kwxq4v/we-asked-a-military-expert-how-scared-the-us-should-be-of-an-emp-attack-508](https://www.vice.com/en_us/article/kwxq4v/we-asked-a-military-expert-how-scared-the-us-should-be-of-an-emp-attack-508).

<sup>77</sup> “Strategic Primer: Electromagnetic Threats: Current Capabilities and Emerging Threats”: 21-3; “Assessing the Threat from Electromagnetic Pulse (EMP): Executive Report”: 15-16, 20.

<sup>78</sup> “Boeing Non-kinetic Missile Records 1st Operational Test Flight,” *Boeing*, October 22, 2012, <https://boeing.mediaroom.com/2012-10-22-Boeing-Non-kinetic-Missile-Records-1st-Operational-Test-Flight>.

a weaponized large-scale EMP.<sup>79</sup>

To be clear, none of these wartime technologies exist yet; however, their bases, in all cases, are live projects in a variety of Global North states. The resources necessary to actualize these technologies are immense and wildly expensive, and so such technologies will be developed asymmetrically, if at all. To put it bluntly, Laos, D.R. Congo, and Papua New Guinea are not going to develop and deploy rods from God; however, the U.S., or China, or Russia, could very well do so. Regardless, such technological advancement is exponential; while I have described three examples, surely many more are just over the horizon, if not already here. The historical nature of wartime technological advancement is that of an arms race; so, states that have the money and material resources are likely to work to engineer such weapons, or at the very least, take advantage of them, should they be developed by domestic private industry.

It is worth noting at this point that there are several international laws and treaties, as well as multiple domestic laws, policies, and procedures, that govern the public and private development of wartime technologies, especially those with the capacity to be used as weapons of mass destruction. (I say ‘capacity’ here because one key feature of the possible weapons I describe above is that it seems that they could be used discriminately or indiscriminately.<sup>80</sup>) The legal questions here are complicated, and it may be that the relevant laws will block, guide, or ameliorate the advancement of such technologies. The road from research and development to deployment, to put it mildly, is far from straightforward.<sup>81</sup> So, the argument is not that these wartime technologies will necessarily come to pass (although history suggests that they will); it is, rather, that such technologies are on the horizon, legal or not, and if they do come to pass, they may skew the relevant power imbalances such that fights, and thus wars, are no longer possible.

To see that the near-future technologies I have described have this potential to radically transform armed conflict, consider that they share a number of features that eliminate the possibility of fighting back against them to any recognizable degree. Rods from God, designer viruses, and EMPs all have (a) rapid-to-instantaneous deployment capabilities, (b) the potential for mass lethality, and (c) sap the power of the attacked side to defend or retaliate, by taking away either human power, technological power, geo-political power, or traditional military power. First, the rapid-to-instantaneous deployment capabilities make it functionally impossible for the opposing side to pre-emptively retaliate (a la MAD). Such near-future technologies are importantly unlike traditional thermonuclear weapons: you cannot see them coming in enough time to either stop them or launch a pyrrhic counterattack. Thus, at least one key pragmatic mechanism traditionally regarded as controlling the use of thermonuclear weapons is not in place here.<sup>82</sup> Rather than a détente facilitated by the promise of automatic reprisal, then, a state facing the possibility of rapid-to-instantaneous deployment of such near-future technologies must place its hope in mutual defense treaties, in the conviction that an allied state will respond after the fact, should the initial state be attacked. Given the global

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<sup>79</sup> John Reed, “Boeing’s flying blackout,” *Foreign Policy* (October 22, 2012), <https://foreignpolicy.com/2012/10/22/boeing-flying-blackout/>.

<sup>80</sup> One response to my argument might be that such wartime technologies are morally bad not because they make war impossible, but because they are by nature indiscriminate. First, I do not make any claims about the normative status of such technologies, although if it does turn out to be true that they are indiscriminate by nature, then they are bad for that reason. Second, it does seem that such technologies need not be indiscriminate; they could be discriminate, and still make war, conceptualized in part as a fight between two or more sides, impossible. Whether this is morally good or morally bad remains to be argued.

<sup>81</sup> Thanks to the guest editor of this issue for pressing me on this point.

<sup>82</sup> For a classic discussion of nuclear deterrence theory, see Gregory S. Kavka, *Moral Paradoxes of Nuclear Deterrence* (Cambridge: Cambridge University Press, 1987).

breakdown of such mutual defense treaties in the 21<sup>st</sup> century, though, it is unclear whether such political alliances still hold sufficient power to constitute a side's ability to fight back (given that the side itself will not be able to fight back, in part because it will not have the time to do so).

Second, the mass lethality makes it unlikely that there will be enough of the population left to meaningfully engage in anything resembling warfare. As discussed above, you can't have a side without a sufficient number of individuals willing and able to fight for that side. Notice here that the mass lethality, while massive, need not be indiscriminate; such near-future weapons may have the capacity to simply wipe out, or at the least seriously diminish, a side's entire fighting force, thus dismantling its ability to engage in a subsequent fight. So while indiscriminate attacks are a serious concern, it is not the indiscriminateness that is doing the work here; rather, what matters is the potential for a (just or unjust) rapid-to-instantaneous mass killing or slaughter which leaves the attacked side unable to mount a serious warfighting response. Finally, the general ability of these technologies to sap a side's power to defend or subsequently retaliate appears to make it the case that there is no fight to be had. If a side does not have the power to fight, because it literally cannot fight back to a recognizable degree, then that side cannot be in a fight. Instead, it is caught in a mass killing, slaughter, or potential genocide (depending on what else is occurring). Broadly, if this is the direction that wartime technology is going, then soon there may not be the possibility of a fight between technologically affluent sides and technologically poor sides, or even, potentially, between multiple technologically affluent sides, depending on the particular technologies used in the initial attack. The exponential advancement of wartime technology, then, given its likely impact on relevant power differentials, may make war impossible.

## Conclusion

To be clear, the claim here is not that such wartime technologies are inevitable, or even necessarily bad.<sup>83</sup> Normatively, perhaps such technologies, should they come to pass, will be overall good. Rather, the claim is that these near-future technologies, or technologies with relevantly similar features, are likely to be developed, if the past proliferation of wartime technologies, and the exponential advancement of technology more generally, are any guide. Such technologies could, if actualized with the key features I have noted, wipe out 'war' as a meaningful category because they fundamentally change the opposing side's power to fight back to a recognizable degree. In short, it is practically impossible to be powered-up enough to be able to fight against attacks of that nature.<sup>84</sup> And if the opposing side lacks the power to fight back to a recognizable degree, then there is not a fight. And finally, if there is not a fight, then there cannot be a war. For better or for worse, there can be mass killings, slaughters, or genocides, but not wars. Ultimately, then, we may be coming to the end of the possibility of there being fair, or even unfair, fights between states or other political groups. As a conceptual point, the future may come to include neither warfighters nor wars, but only victims, killers, slaughterers, genocidaires, and scorched earth. Whether this is a morally desirable future or not remains to be determined.

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<sup>83</sup> As I discuss above, to arrive at any such normative conclusion would require an entire paper, or papers, of its own.

<sup>84</sup> This may well be part of what makes the advent of such wartime technologies so terrifying.

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