

Ethics and the Advancement of Military Technology

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Abstract

The world is changing. We have moved from the industrial age into the age of technology. Technological advances in today's world are measured in leaps and bounds. The rate at which technology is growing is exponential. The United States Military is at the forefront of today's cutting edge technology. Smart weapons, smart ships, fly-by-wire aircraft and body armor are just a few of the many perks enjoyed by our military services. From an ethical standpoint, we would like to examine why continuing to develop advancing military technology is justifiable and necessary. The continued advance of military technology has reduced the amount of collateral damage experienced in battle significantly. Our goal as a nation with regards to war fighting is essentially to have zero collateral damage as a result of attacking legitimate military targets. If precision military technology continues to grow and develop, this may be a very attainable goal. Therefore, ethically, we must continue to develop advanced military technology in order to limit collateral damage in warfare.

Preface

When people hear the word "war", one of the first things that comes to their mind is the notion of death and killing. In most cultures, the killing of human beings is deemed an unethical act. There are, of course, exceptions to this with the historical human sacrificial offerings by the Mayans and capital punishment today in the United States, among others. Thus, to argue the ethics of war and military weapons designed to kill people seems somewhat counterintuitive. Our arguments will not focus on the ethics of war, but rather on how advancing technology has affected how war is conducted and whether we should continue to develop new technologies.

War is always going to exist in our world. It is an inevitable and unfortunate fact of society- past, present and future. We realize that war should be a last resort after all other means of diplomacy have failed. However, there are circumstances when a war is considered just. A just war is a war that is justified by legal, moral, and ethical standards. In these cases, attacking

legitimate military targets and limiting the collateral damage caused by these attacks is the focus of our argument.

Ethics and Military Technology

“Don’t fire until you can see the whites of their eyes”, said Colonel William Prescott to his troops at the Battle of Bunker Hill in 1775.¹ Conventional warfare, such as was fought in the Battle of Bunker Hill and every war in history until the Vietnam War, is no longer an effective method of warfare, due to the rapid technological advances in the military weapons. Since 1918, when the first testing of guided missiles took place, military technology has expanded exponentially.

In World War II, it took 108 B-17s dropping 648 bombs to destroy a target. In the Vietnam War, a similar target required 176 bombs. Now, only a few precision guided missiles can easily accomplish the same task, and do it more precisely.²

Today, the United States military employs robots mounted with machine guns, self-guided bombs called “Brilliant Weapons”, and even digital camouflage for troops and vehicles.³ From an ethical standpoint, we must evaluate how advancing military technology impacts war fighting and its affects on today’s society.

Counterarguments conclude that continued development of military weapons and technology is unethical due to the removal of the human element from war, the collateral damage that results from smart weapons missing their targets, and overspending of taxpayers’ money, among other reasons. Due to the many ethical frameworks available to evaluate the issue, there may be several “right” answers. Our position on this issue is to focus on the importance of developing advanced military technology that limits collateral damage for the purpose of sparing innocent (non-combatant) human life. The United States military wants to destroy our adversaries’ military targets, not its’ civilian population and not the building next door.

Why Limit Collateral Damage?

Collateral damage is defined as “the damage and destruction of targets or personnel not considered as lawful military targets; for instance, accidental bombing of civilian population or medical facilities”.¹ Given the definition, most would agree that bombing civilians, medical facilities, or other non-military targets is unethical because it targets people who have no part in

military conflict. In World War II, there was little attention given to collateral damage. As a result, entire European cities were demolished and over 35 million non-combatants died.⁴

In support of the claim that limiting collateral damage is ethically right, we look to an ethical framework called Virtue Ethics. Virtue Ethics, as the name would imply, is centered on what makes a good (virtuous) moral agent. The goodness of the moral agent is determined by the virtues and moral character of the moral agent. In our context, the decision by the U.S. military to limit collateral damage as much as possible is virtuous in many ways. As an example, one virtue that is pertinent to this decision is Distributive Justice, which, according to Aristotle is one of the four chief virtues. Distributive Justice is a virtue that entails “giving people what they deserve and maximizing benefit to the worst off”.⁵ Clearly, civilians and other non-combatants do not deserve to be targeted in military confrontation, so by developing technology that mitigates collateral damage, we are giving non-combatants what they deserve, and that is removal from military confrontation. Also, in many third-world countries where modern warfare takes place, civilians living in war zones are “worst off”. Advanced military weapons are benefiting these civilians by limiting civilian deaths and damage to non-military buildings and infrastructure.

Now that we have established that it is ethically important to limit collateral damage as much as possible, we can take a deeper look at the advancement of military technology as a means of mitigating collateral damage.

Our Ethical Reasoning

As stated earlier, we believe it is right to continue to develop military technology because more accurate weapons can lead to less collateral damage. To support our view, we use the ethical frameworks of Consequentialism and Deontology. According to the Stanford Encyclopedia of Philosophy, Consequentialism is “the view that normative properties only depend on consequences”.⁶ John Stuart Mill’s Utilitarianism is a form of Consequentialism. Consequentialists argue that a morally right act is an act that produces good consequences. Thus, if lower collateral damage is the consequence, the means by which that is achieved is justified. So, in our case, the continued development of military technology is justified because better technologies allow us to hit the targets we aim for and lessen the amount of collateral damage to those we are not aiming for. Less collateral damage is a good consequence because it mitigates

the loss of innocent human lives, so the action of developing more military technology is justified, according to Consequentialism. We realize that one could argue against this claim by saying that if our claim is true, *any* means of mitigating collateral damage is justified. We feel, however, that this claim is somewhat of a slippery slope fallacy. Let us remember that we are discussing ethically sound methods of achieving minimal collateral damage. For example, if the entire earth were destroyed, collateral damage would not exist because there would be no civilians left to kill during war time. Technically, wiping out the human race would be justified because it completely eliminates collateral damage. This is an absurd proposition that few would deem ethical. So while this counterargument is structurally sound, few would accept the means as justifiable to the ends.

Deontology determines the rightness of an act based on the nature of the act itself. We will go into the Deontological support of our argument much deeper in the next section, but the basic idea is that the act of development of military technology is right because the intentions are right; being that the goal is to lessen the loss of civilian lives.

It's Our Responsibility to Limit Collateral Damage

The United States has the ability to limit collateral damage through advanced technologies such as precision guided missiles. Looking at the issue through a Deontological lens, we could argue that we have the responsibility and duty to limit collateral damage. There are several different views on the source of this so-called "duty". For some, the source of duty could be from God. For others, like Emanuel Kant, it could be the categorical imperative.⁷ The source of duty for the U.S. military can be found in the Law of Armed Conflict. The general principles of the Law of Armed Conflict are as follows:

1. "The law seeks to minimize unnecessary suffering and destruction by mitigating the harmful effects of hostilities through minimum standards of protection for combatants and to noncombatants.
2. Use of "minimum force" required for partial or complete submission of the enemy. Employing force not required for partial/complete submission prohibited.

3. Dishonorable (treacherous) means or expedients and dishonorable conduct during armed conflict are forbidden.
4. We have a responsibility to the Law of Armed Conflict. The United States military is responsible for abiding by the Law of Armed Conflict. There are several legal bodies which affect the Law of Armed Conflict. These include: The Hague Convention of 1907, The Geneva Conventions of 1929 and 1949, The United Nation Charter of 1949, Department of Defense Instruction 5100.77, and the Rules of Engagement.

Adherence to the Law of Armed conflict:

1. Nations will adhere to the law – it is only effective when obeyed by belligerents.
2. Adherence to the law of armed conflict is binding upon the US government, its citizens, and the members of its armed forces.
3. Commanders shall observe the Law of Armed Conflict and ensure that their commands do as well. To fulfill this obligation, departure from regulations is authorized when necessary”.⁸

The Law of Armed Conflict encompasses universal moral code and was written to uphold such. Restraint on the part of the U.S. is essential because of this law and because of the ethical and moral standards on which it is based. We will discuss in further detail these ethical and moral standards.

Continued development of military technology helps to adhere to the Law of Armed Conflict in many ways. Smart weapons help to adhere to the law by using the “minimum force” required for partial or complete submission of the enemy. Non-lethal weapons such as focused microwave energy and sound are a great example of technology that utilizes minimum force to subdue an enemy force or individual.⁹

We have seen the effects of collateral damage in past wars. In World War II, the fire bombings of Tokyo and the dropping of the atomic bombs on Hiroshima and Nagasaki yielded enormous collateral damage. These attacks serve as prime examples of how the lack of advanced technology that limits collateral damage can have devastating effects. Without

actually going into the ethics of these attacks, it's clear that today's advanced technology can deter and prevent the use of weapons designed for maximum psychological and human destruction in the future. This is precisely why it is our responsibility as a nation to continue to develop military technology that limits collateral damage.

Some, however, argue that today's advanced military technology does not, in fact, cause less collateral damage, but more. A National Geographic article points out that smart weapons have their limitations in terms of knowing which building to hit. The author points out that in some cases; collateral damage is increased because we hit the wrong buildings. "The problem now is not putting a weapon on the aim point, but it's figuring out the aim point", said Stephen Biddle, research professor of national security studies at the U.S. Army War College's Strategic Studies Institute in Carlisle, Pennsylvania.¹⁰

The War on Terror and the War in Iraq have seen substantial use of guerilla warfare due to the United States' ability to put precision guided explosives on any target on the globe. U.S. adversaries are increasingly hiding amongst civilians and placing military headquarters in the middle of crowded cities to avoid the U.S.' precision guided weapons. Because of this, it is more crucial than ever for the military to utilize as accurate of weapons as possible.

The argument presented above does shed light on an important point, but hitting the wrong building is not a matter of technology, but rather a matter of human error and the receipt of bad intelligence. Therefore, for one to argue that continuing to develop military technologies is unethical based on human error is a fallacy called *irrelevant reason*. In summary, the U.S. military has a duty to mitigate collateral damage and the means by which that can be accomplished is more accurate weapons and better technology.

Ethical Counterarguments

So far, we have looked at the issue through the viewpoints of both Consequentialists and Deontologists and provided justifications for the continued development of military technologies. We have also presented our thoughts as to why limiting collateral damage is necessary using Virtue Ethics. Now, we will present some opposing points of view and the ethical frameworks used to support them. Perhaps the most valid ethical argument against the continued development of military technologies stems from the same ethical framework we used to support our arguments; and that is Virtue Ethics. Virtue Ethics obviously has a totally different

ideology than do both Consequentialism and Deontology. As we stated earlier, instead of focusing on duties or consequences in terms of actions, Virtue Ethics, as the name would imply, focuses on virtues and what makes a good moral agent rather than a good action.¹¹

Critics of military technology that approach it from the angle of Virtue Ethics argue that today's smart weapons and unmanned equipment have "produced a collective loss of humanity – a marginalization and even an elimination of the human element in warfare".⁸ They argue that this dehumanization has, in affect, "sanitized" war because the enemy is no longer a living, breathing being, but rather an image on a GPS screen or a location on a grid used to guide smart weapons. This makes it easier for our military to "pull the trigger" and kill enemy targets. This is a very valid point and many agree that it is not virtuous to dehumanize people, regardless of the ultimate purpose.

Our response is that while there may be a dehumanizing factor associated with smart weapons, they are an effective means of accomplishing military objectives. The United States wishes to preserve the lives of its soldiers and an effective means of doing that is to mitigate their involvement in armed conflict. People have been dying in wars long before current day technologies were available to be able to consider them "dehumanized". Military targets will be destroyed whether dehumanized or not. It is in the nature of war to kill enemy personnel and to argue the ethics of that would be to argue the ethics of war itself, which is not our intention. What is important here is that by developing more accurate weapons and better technologies, we are able to spare *innocent* (non-combatant) lives and mitigate collateral damage.

Underlying Ethics of Current Military Doctrine

We touched upon the Laws of Armed Conflict above and mentioned some of the underlying legal bodies like the Geneva Conventions that support the laws. Since these laws are the ethical code by which our military operates, it is important to understand the underlying ethical frameworks behind them. For this, we look to another principle that the U.S. military is responsible for called the Notion of Proportionality. The Notion of Proportionality states that:

“In the conduct of hostilities, it is not permissible to do any mischief that does not tend materially to the end (victory or the cessation of hostilities), not any mischief of which the conduciveness to the end is slight in comparison with the amount of mischief. Two criteria apply to the determination of excess. The first is the

victory itself, or what is called military necessity. The second depends on a notion of proportionality: we are to weigh the mischief done which presumably means not only the immediate harm to individuals but also any injury to the permanent interests of mankind against the contribution that mischief makes to the end of victory”.⁸

In laymen’s terms, the Law of Proportionality is a Utilitarian approach to determine how much “mischief” is acceptable to achieve victory. The word “mischief”, as used in the Notion of Proportionality, basically means military force. The United States must focus on destroying enemy targets and avoid destroying anything else that does not contribute to winning and accomplishing our objectives. We must also accomplish our objectives in a befitting manner. This is illustrated in Michael Walzer’s *Just and Unjust Wars* with the principle of “Winning and Fighting Well”. We are not just out to win by any means necessary. We do want to win but we want to win by adhering to our ethical and legal responsibilities; thus, fighting well.

Developing the Laws of Armed Conflict has long been a struggle between Utilitarians and Humanitarians. Humanitarianism is an ideology whereby people practice humane treatment and provide assistance to others.¹² The result is Utilitarian guidelines like the Notion of Proportionality with Humanitarian essences like the “use of minimum force”, as documented above. Humane war is a tough concept to grasp, but with ethical and ideological frameworks like Utilitarianism and Humanitarianism, we seek to achieve military objectives in the most humane and effective ways possible.

The Rule of Double Effect

There are circumstances when we can not adhere to the responsibilities dictated by the Law of Armed Conflict and the Notion of Proportionality. This is known as the rule of double effect. According to the rule of double effect; “Under the laws of armed conflict, it is illegal to kill noncombatants”.¹³ However, there are certain circumstances where the killing of civilians cannot be avoided. But, they must NEVER be the aim or objective of any legitimate military activity. Regrettably, there are few instances where, despite the best precautions of military commanders, civilians will die as the result of legitimate military operations, primarily due to the proximity of the noncombatants to military objectives. It is the responsibility of the commander to ensure that noncombatant fatalities are kept to the minimum and that every precaution possible be taken to prevent the killing of them”.¹⁴

In essence, our ultimate goal is to achieve zero collateral damage by only destroying hostile military targets. In a perfect world, and with the technology to accomplish this, zero collateral damage would be a realizable and attainable goal. The Rule of Double Effect would be a thing of the past. Since we must abide by the laws and ethical standards associated with limiting collateral damage, we must continue to develop military technology that allows us to reach our goal of zero collateral damage.

Other Issues Regarding Advancement of Military Technology

In order to get an idea of some of the ethical issues surrounding military technology from a military standpoint, we talked with a Marine Colonel. One of the predominant issues he pointed out was whether it was ethical for the United States to be spending so much money on developing military technology when it could arguably be used for other, more “so called” worthy causes.

This issue is also surfaced by Scientists for Global Research who argue that “there needs to be a major shift in both resources and emphasis away from military science and technology towards areas such as clean technology, research on non-violent conflict resolution, and science and technology for poverty alleviation”.¹⁵

The United States is the highest military spender in the world with over \$455 billion spent in 2004.¹⁶ While this seems like an absurd amount of money, one must keep in mind that we are not concerned with the entire military spending number. The relevant number for our purpose is \$61.8 billion, which is the amount of money spent on military research and development in 2004.¹⁷ In 2006, clean technologies spending totaled \$2.17 billion and spending on the development of non-lethal weapons totaled \$300 million.¹⁸ Military R&D spending obviously greatly outweighs the rest by a substantial amount. To argue whether this is ethically right or not depends on what ethical framework the arguer uses.

The arguments we have made throughout this paper focus on the duty of the United States military to mitigate collateral damage and the vitality of better technology to do this. One may use the Utilitarian and Consequentialist approaches and say that it would be a better overall result to use the \$61.8 billion spent on military R&D and use it for food for the world’s poor. Virtue Ethicists would say that where the money is spent depends on a person’s beliefs.

Regardless of a person's point of view, if the United States wishes to remain at the forefront of weapons technology, we must spend the money necessary to achieve it.

Concluding Thoughts

Since the beginning of time, mankind has constantly developed more effective ways to destroy each other in war. Looking to history as a benchmark, World War II served as a stepping stone for the development of technology. During those days, it took 108 B-17s dropping 678 'dumb' bombs to destroy an objective, and over 540 airmen put in harms way to destroy one target. These bombs were not accurate, to say the least. Wind speed, velocity, and weather were all factors in whether or not a bomb reached its target. Present day, it takes 1 plane and 1 pilot to destroy a similar target. Air-to-air missiles can be fired and effectively strike a target from over 100 miles away. Drones can be sent into a combat zone thus, keeping pilots out of harms way. Most importantly, non-combatant lives are spared as a result of these advanced technologies. None of this could be accomplished without the development of technology via micro processing guidance systems, GPS, and other technological advancements to make these weapons more accurate and effective. The calculating and processing of the variable factors are now taken over by the developed technology, which makes them more effective and therefore minimizes collateral damage.

In our discussion of the ethics of advancing military technology, we argued that ethically, we must continue to develop advanced military technology in order to limit collateral damage in warfare. We explained our reasoning using ethical frameworks such as Consequentialism, Deontology, and Virtue ethics with a focus on moral duty and the "best possible consequences". Ethics, like all other forms of philosophy, has no definite right or wrong answer. Because war will always exist, it is our responsibility to make the means by which we conduct war as ethical and responsible as possible. Since our ultimate goal is zero collateral damage in warfare, we have the legal, moral, and ethical obligation to continue to develop advanced military technology that limits collateral damage.

Works Cited

- [1]“Teachers Guide to: Revolutionary War.” History Central [Online Document],1 Jan. 2000. 4 Apr. 2007
Available at: <http://www.historycentral.com/Revolt/Teachers.html> .
- [2] What is New With Smart Weapons. 2007. Global Security. [Online Document], 03 Mar 07. Available at:
<http://www.globalsecurity.org/military/systems/munitions/intro-smart.htm>
- [3] P. Warren, “Robot Warriors take over the battlefield. Future Intelligence. Future Intelligence. [Online Document], 01 Mar 07. Available at: <http://www.futureintelligence.co.uk/content/view/94/62/>.
- [4] Unknown. Learn About World War II. [Online Document], 2001. 16 Apr. 2007. Available at:

<http://www.digitalhistory.uh.edu/modules/ww2/index.cfm>.

- [5] J. Lamont, *Distributive Justice*. Stanford: Stanford University Press, 1996.
- [6] J. Bentham, *An Introduction to the Principles of Moral Legislation*. Oxford: Oxford University Press, 1996.
- [7] Deontology. 2007. *Healthcare Ethics*. [Online Document], 01 Mar 07. Available at: <http://www.ascensionhealth.org/ethics/public/issues/deontology.asp>.
- [8] L. Fridman, "Global Media and Documentary Rhetoric." *Global Media Project*. [Online Document], 6 Mar 06. Available at: http://www.watsonblogs.org/globalmedia/2006/03/literature_review_global_media.html.
- [9] "The Viability of Directed-Energy Weapons." *The Heritage Foundation*. [Online Document], 28 April 2006. 4 April 2007 Available at: <http://www.heritage.org/Research/NationalSecurity/bg1931.cfm>.
- [10] B. Handwerk, "Smart Bombs Change Face of Modern War." *National Geographic News*. 18 Feb 05.
- [11] M. Homiak, "Moral Character." *Stanford Encyclopedia of Philosophy Entry on Moral Character* (2003).
- [12] M. Lacey, "Utilitarian vs. Humanitarian: The battle over the law of war." *HighBeam Encyclopedia*. 22 Jan. 02.
- [13] E. Anscombe, *Doctrine of Double Effect*. Stanford: Stanford University Press, 2004.
- [14] M. Walzer, *Just and Unjust Wars*. United States: Basic Books, 1977.
- [15] C. Langley, "Military Influence On Science, Engineering And Technology." [Online Document], 02 Nov 06, 26 Feb 07. Available at: <http://www.sgr.org.uk/armscontrol/militaryinfluence.html>.
- [16] "2004 United States Budget." 16 Apr. 2007. [Online Document], 16 Apr. 2007. Available at: <http://www.whitehouse.gov/omb/budget/fy2004/summary.htm>.
- [17] J. Kitfield, "Down Payment on Technology Revolution." *GovExec*. 04 Sep 03, 1 Mar 07.
- [18] "North America Clean Technology Spending Hits Record." [Online Document], 25 Oct 06, 20 Feb 07. Available at: <http://www.planetark.com/dailynewsstory.cfm/newsid/38654/story.htm>.