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Human Judgment and Autonomous Weaponry: What Does it Mean?

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Human Judgment and Autonomous Weaponry:

What does it mean?

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Dedication

I am dedicating this senior project to my uncle Chris Hughes who past away from cancer my senior year of high school. He never got to witness my achievements here at Bard on the lacrosse field and off but I know he would be very proud of me and the man that I have become. He always wanted me to challenge myself and too chase my dreams. Thank you for being my best friend and a great uncle. I will never forget you.

Rest in Peace

<u>Acknowledgements</u>

I want to thank my parents for allowing me to attend Bard College, a place that will always be apart of my life and a place where I was able to grow and mature into the man that I am today and meet people that I will call friends for life. As well as all the professors that I have had over my four years at Bard especially to Chris McIntosh, who has been my professor, and advisor for four years and who has overseen my senior project from start to finish. I could never repay you for the support you have given me over the years. Thank you to all!

Dalton Davis

Section 1

Table of Contents

How much human control is needed with these new drones?

Human cost

How they affect soldiers

New weapons better or worse?

How does PTSD affect the argument of human judgment?

Section 2

<u>Introduction</u>

I am naturally drawn to information about history and war, and I have grown up in the age of technology. It's natural for me to examine the future of war and the fact that it will be greatly impacted due to the nature of technology. There have always been many questions concerning warfare. When to engage in war? How to fight a war? At what cost are we willing to go to war? However, the big question today is the relationship between human nature and war? Can war ever be morally justified if we are completely devoid of human interaction during the conflict? Throughout history the human race has proven to be an inherently violent species that will slaughter each other with the best weaponry available at that time. War is hell! The venue really does not matter; it could be the battlefield, the sea, air, or even in the use of unmanned autonomous weapons! Future warfare is, therefore, inevitable. The technological evolution of warfare has brought us to the use of Lethal Automated Weapons Systems (LAWS) which will command the battlefields of tomorrow. Will the use of new technology, without human involvement (interaction, policing), bring more human closure to warfare or act as a great catalyst to warfare? Research question: Since Autonomous weaponry was launched onto the battlefield after 2001, debates only focused on human control, a very straightforward debate. Should there be humans controlling weapons 24/7? Or partially? Now that LAWS have been introduced a new debate concerns are the idea of human judgment vs human control. Human judgment and human control have been laid out as two different things; the idea that humans must control these weapons in order for them to function within the laws of war and humanitarian laws and

the other, human judgment, is the idea that humans must think before using the weapon. Critics of LAWS weigh on the side of always keeping in the human in the loop through either with control or judgment and the opposite side believes that it isn't human control but "appropriate levels of human judgment" that is needed with LAWS. The question, after all the debate are finished and after the dust settles from each side proposing its arguments over these weapons, is in the end does anyone know what is the right amount of judgment, and and even simpler question, do any of these pro-LAWS or anti-LAW people know what human judgment with these weapons means?

Violence, unfortunately is a part of most humans. Man, over the centuries, has done horrible acts of violence to his fellow man in many different ways. The idea of violence and the imagery that comes with that has changed through the years. No longer just a man assaulting someone with a knife or gun, we now see man fully stocked with extremely powerful weapons. Violence also has always been in the streets and is influenced by many things, such as social life, entertainment, media, and the military. Semi Autonomous and now LAWS being used regularly has created a new outlook on how violent acts are carried out and on whom these acts of violence are carried out on and with media covering everything the general public is witnessing all of it for themselves, therefore altering the idea of violence all together.

How LAWS changed the idea of violence

Acts of violence vary; they can be carried out in numerous ways and with many different weapons. Someone can cause harm through violence just by using his or her fists. As time has gone on, though, and weaponry has evolved, so has the idea of violence. Violent acts happen all over the world every day. What the public sees and hears on television, reads on the Internet,

and hears from politicians in power is a driving force to how they portray simple ideas. Violence now is seen all over the news, and the weapon of choice is usually firearms. Though Firearms really should only be for police and military personnel, the public is able to obtain them very easily. These weapons have shifted the idea worldwide of violent acts. I am not saying that there was not already gun violence, but what I am saying is that weaponry and the policies that go in hand with them shape the idea of violence and how violent acts are conducted in a way. There have been mass shootings with pistols, shotguns, and simple hunting rifles but the use of fully automatic assault rifles is fairly new. Since the U.S. is constantly in combat and has always been evolving its weaponry, it has changed the idea of violence by continuously showing the world new ways to be violent. It is very easy now to follow the conflicts that are occurring in the world, and all this violent warfare takes a toll on the citizens of this world. The violent acts that are seen now outside of warfare are so similar to warfare by the weaponry that is used that it shows just how our idea of violence has already changed. When the semi-autonomous drone was sent into combat with hellfire missiles attached to it to take out combatants we once again saw another lens of violence. A man sitting hundreds of miles away could blow a truck up, killing everyone around it, and then getting up and leaving like nothing happened. There was no hand-to-hand combat, no tank warfare and no dignity when taking someone's life. Violence became a video game, and with a push of a button someone was killed. For critics of LAWS this took the dignity out of warfare and a sense that these weapons are actually more violent than regular fighting. The sheer simplistic use of these drones was incredible. It took almost the action of being violent out of a violent act, making our military seem untouchable. Violence in warfare has turned to a video game where one side is extremely well equipped fighting an enemy who can not combat

these drones. Though not cowardly, it does not seem like warfare with the usual violence that comes with it. And with less human control than regular combat it takes the blame out of the violent act. Now with the upcoming future looking bright for fully autonomous weaponry, people will see violent acts being committed not by a human but rather by a machine, showing the world that violent acts can be committed against a person done not by a human but by a machine and the human could never take responsibility for it. People will see this and think that they could get away with new forms of violence. If any type of these new weapons were to be leaked to the public and how to develop them, then you will see the military form of violence hit the streets just like the AR-15 and bump stocks, which are tools to create these horrible acts of violence. People will think that if the government gets away with these machines then why can't I. If these machines are able to evolve into almost killer robots that can take anyone out without a trace, then we will see violent acts accruing more frequently with no one to blame or put a face to the killer. Violence is constantly evolving, just like the weapons that are used to carry out violence. People learn how to carry out these acts by studying what is going on in the world around them. Semi Autonomous Weapons and LAWS are putting a new spin on violence they are naturalizing the idea of targeted killings as well as changing the idea of assassinations and making them more common. The violence around these weapons is to "easy" it is showing people how easy the military can destroy life and that is putting a very different spin on the idea of violence as a whole. These weapons aren't just showing regular people all over the world the simplistic nature of the violence behind these weapons but also other country leaders. While arms races of the past have been a bit different, this new technology arms race is something that is incredibly scary and very real. It doesn't just effect military personnel it also effects everyday people. Whether it be via

Internet, seeing it on the news or by reading what their government is doing to other people so effortlessly will change how the idea of violence and how to do it. The violence that comes with these weapons could be very precise and effective but to many that is what is exactly wrong with these drones. Because the violence that they enact is too precise and out of nowhere to the enemy, many feel that violates human rights and the basic laws of warfare.

The debates as to whether LAWS are necessary on the battlefield today are very interesting they bring into account a many interesting, as points that need to be addressed if LAWS are going to be used effectively in the future. The issue I have seen when reading articles about these new weapons is the fact that the intellects writing about them tend to group LAWS with semi autonomous weapons as well. There are many differences between the two, and the main ones are the human control and in fact the human judgment needed for each weapon system. The fact that most people do not know the differences between these weapons supports my research question: that most people do not understand these new systems and when they try to argue how much human judgment is needed they fail to because no one really understands the idea itself and cannot tie it to how it should be used with these weapons. The starting point of many arguments should be that because LAWS are very different than semi autonomous they both need different levels of human control and that the idea of human judgment might just be something that cannot work with these weapons at all.

What are LAWS

Lethal Autonomous Weaponry, or LAWS, for short are weapons that have no human interaction. "Lethal autonomous weapon systems (LAWS) are capable of selecting – using

sensors, image recognition and software – both the target and means of attack."[1] These

weapons will be built with Artifical intellegince that can learn on the battle field be able to go

into a town and find its targets and eliminate them without destroying the whole town block or

harming noncombatants. "According to the definition of LAWS provided by the International

Committee of the Red Cross (ICRC), an autonomous weapons system is defined as: "any

weapon system with autonomy in its critical functions. That is, a weapon system that can select

(i.e. search for or detect, identify, track, select) and attack (i.e. use force against, neutralize,

damage or destroy) targets without human intervention."[2] This idea of no human intervention

is what the military and Department of Defense is wanting because they want to keep PTSD low

with its troops, while the military wants to be able to be more accurate with its strikes. These

weapons allow troops to stay safe as the drone clears building and close quarters, looking for its

target. Keeping combatant and non-combatant casualties low is important, and these drones

are important to that. As well as "dog bots," the military is investing billions into the idea of

what is called swarm drone technology. This is another form of autonomous weaponry that as

of now is non-lethal, but as production is increased and testing is successful, I believe that they

will become lethal. As seen recently on "60 Minutes" these drones look like nerf footballs and

when thrown or launched automatically, can fly together like a flock of birds over an area and

run surveillance, look for snipers, and much more. These drones can talk to other drones on

the battlefield to achieve a single goal together as a unit.[3] On October 26, 2017 the DOD

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[1] Iaria 2017

[2] International Committee of the Red Cross (ICRC), *Views of the ICRC on Autonomous Weapon Systems*, 11 April
2016, p. 1, https://www.icrc.org/en/document/views-icrc-autonomous-weapon-system.

[3] Jenkins 2017

conducted a test of these drones and what they could do. The demonstration showed off

Perdix's collective decision-making, adaptive formation flying, and self-healing abilities. The

drones collectively decide that a mission has been accomplished, fly on to the next mission, and

carry out that one. The benefit of a swarm is that if one drone drops out—and a few appear to

crash—the group can rearrange itself to maintain coverage. [4] These drones, as of now, are not

built to have any lethal attachments, but just like UAVS I believe they will be armed and ready

soon after production. On the non-lethal side, the military has drone defense systems that are

very close to being fully autonomous; they sense a threat coming and engage it. The LAWS are

not the ones that I am discussing in my paper because there are not many critics about

autonomous defense systems because they are not lethal and the idea of human judgment

does not affect them for this.

Semi vs. Fully Autonomous Drones

Being that semi autonomous drones are already on the battlefield and are being used in

full effect, the general population still needs to understand that there is a difference between

semi-autonomous weapons and fully autonomous. The main difference between these weapons

is the human interaction that takes place with the semi-autonomous. The drones that are used

today for surveillance and air strikes are controlled by a soldier in a trailer, either nearby or

halfway across the globe. This human control is needed for these weapons to be fully effective in

their missions, for without the human soldier the drone could not do its job. The soldier is telling

the drone what to do, when to strike and whom to kill. This is important for two reasons: one,

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[4] Jenkins 2017

the drone does not act on its own and can not itself conduct kills without its pilot ordering it to and two, the blame and accountability rest with the pilot, not the piece of machinery. The soldier himself is the one doing the killing; he is flying the drone and in the end making the call whether to take the target out or let the target live. This is a major difference when looking at these weapons because in the debates that are brought up about LAWS, they are mainly focused on the human side of it and who would be to blame if something went awry. There have been mistakes made in the past where semi-autonomous drones have taken out wrong targets and leveled city blocks for no reason to achieve the mission at hand, but the blame and the hate has been put on the soldier and commanding officer. The human was to blame and the accountability was on a person, not an algorithm or code that was made. Even though semi-autonomous drones are effective, the pilot makes mistakes, and the drones often level city blocks and disrupt public events to get the job done. But this human control does come at a price, which is the effect controlling these weapons has on its pilot. Thus another key distinction between semi and fully autonomous weaponry is the physiological effect it has. PTSD, which will be addressed at length later, has sky rocketed in the operators of these drones. The operators, who are sitting in an air-conditioned room, are killing people thousands of miles away and then going home to their families. That, over time, makes them start to question, "Why me? Why do I get to take a life and then go right back home like it never happened?" These questions seem simple, yes, but too these operators it makes them wonder if it is even worth it. They start to feel like it is to easy and makes them almost regret taking the job. These pilots, are basically operating a video game, which to them is not real life until they sit down and think about it. Many believe they are cowards, not "true" soldiers, and that makes them turn down help. The pilots believe that if they

reach out to someone for help they will be looked at in shock because they are not on the ground in the real fighting, and it makes them sit with their thoughts more. With fully autonomous weaponry, the pilot really has no control of the killing. He or she isn't making the targets or conducting the strikes themselves, which cuts them out of the equation enough to give them peace of mind.

An upside to the semi-autonomous drones as well is that with the human controlling the weapon, there still is humanity in these weapons. A human being is still behind the controls, and in the end that human will make the tough decision whether or not to end another human's life. With fully autonomous weaponry, it is the machine's duty to make that final decision and will be the one in the end that should take full accountability for the actions. Fully autonomous weapons have a commanding officer but no pilot or human controlling it. It is set onto the battlefield to take out a target or clear a building on its own. The machine makes the decision and truly controls all the power. If something goes wrong, who is to blame then? The soldiers that it was clearing the building for? The production of these weapons is being stunted because no one seems to have the answers to that question. Another point is that with semi-autonomous weapons the targets are picked by the operator which holds the soldier accountable for the strike. The US Department of Defense, for example, states that a "semi-autonomous" weapon system is one that "once activated, is intended only to engage individual targets or specific target groups that have been selected by a human operator" [5]. The human operator has preselected these targets, and they are the ones that are going to be destroyed. The issue with that is, even though the

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[5] Dod 2012

accuracy of the semi-autonomous weapons is high, they tend to take out whatever is around them as well. The death toll of noncombatants has been rising ever since these weapons made their debut, and the number will only continue to rise. However, with fully autonomous weapons, the government believes that they will be so accurate that noncombatants would be out of harms way. That benefit comes at a cost, because the algorithms that are being used for these weapons are very smart and could start to learn incredibly fast. We do not know if the military will be able to keep up with the targeting systems of these weapons. They could kill everyone with a gun on them, even a child soldier placed out as a decoy. The future for these weapons is bright to me, but they need to be carefully designed so that if necessary a human operator can override and take control. If not these drones could become the killer robots, we see in movies.

Being that my research question is about analyzing different views on human judgment and LAWS. If there is such a thing as judgment with LAWS, it is important to look at the arguments intellects have made about it in warfare in general. Many scholars try to preach that human judgment is needed in all forms of warfare and come up with arguments that lead to no strong conclusion as you will see in later chapters. But all do believe that human judgment should be added to these weapons and to warfare in general.

<u>What is human judgment in war?</u>

Judgment "is the evaluation of evidence to make a decision" Adding a human just means the ability for a human to evaluate evidence and make a decision based on that evidence. That is the Wikipedia and English definition of judgment and it is crucial to the idea of LAWS. Up until this point in history we have seen a human take on warfare and all the gruesome decisions that

come with it, whether it is on the battlefield, in hand-to-hand combat, or in an airplane doing a bombing raid. Humans have always made the tough decisions in warfare, from the inventors of the atomic bomb to the pilot of the Aneola Gay, who had to pull the Bombay doors and drop the bomb itself which impact changed the world forever. These acts of human judgment change not only war but also the world. Humans have always been an integral part of the war and weapons that are used for it. However, in the last few decades we have seen less and less of humans making some important decisions. With semi-autonomous drones, the human operator still has to look at the target and evidence of the target and whether or not to take that target out. It is not the same as being a foot soldier in the Pacific Island in WWII. With drone warfare in full affect, we are seeing the loss of human control on the battlefield and the judgment starting to move more to the AI realm. With fully autonomous weaponry, drones and bots will be able to look at evidence and targets and make the final decision whether or not to take the target out. The true hands-off idea of war, this keeps the soldier safe from backlash. If the the soldier chooses to take a target out and it is a mistake or noncombatants are killed, then he is to blame. LAWS will be able to look at all evidence and use high tech advancements, like facial recognition, to find its true target and eliminate it.

When looking at the debates on whether fully autonomous drones are worth pouring billions of dollars into developing and using them the main questions are; how much human judgment is needed with these weapons and how human control and human judgment are different with these weapons? In all debates about weapons human judgment and control is brought up but there are not many weapons such like LAWS and unlike other weapons the idea of control is not black and white. Most weapons have direct control from a human and that allows

many people who discuss them to formulate argument and make concise points on why they are bad or why they are needed. What I have seen from ready countless articles on LAWS is the fact that the debates on human judgment and control is not black and white at all it is extremely complex. Even though the arguments that are brought up around these weapons are very simple and are repeated but are reworded in many articles. In the next section I lay out the debates and the difference between human judgment and human control that many scholars and the DOD propose and what they seem is best fit when using these weapons.

<u>Human Judgment vs. Human Control with LAWS</u>

To some human judgment when working with these weapons should be the standard. Critics of these weapons believe that human control is meaningless and too general to work with these weapons. Actually people saw LAWS in a better light if the commander used judgment instead of the idea of "human control." During the conference for conventional weapons in Geneva, the delegates were given short briefing papers on Human Control and Judgment with autonomous weapons. The paper included what the standard of human judgment with these weapons would entail. "This standard would place the emphasis on the human commander or operator and her capacity to judge the likely effect of using an AWS in a particular instance of armed conflict". [6]The new standard would take a less restrictive way of how the commander would use these weapons and allow them to assess the situation in depth and, in the end, chose whether to use these LAWS. ""For example, the United States Department of Defense Directive 3000.09 states that "autonomous and semi-autonomous

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[6] Roff 3

weapon systems shall be designed to allow commanders and operators to exercise appropriate levels of human judgment over the use of force."" [7]Furthermore, human judgment falls into all categories of these weapons, from how it is made to the logarithms that are being developed. Each step in the creation of these LAWS has to go through some form of human judgment. They will be "designed" so that commander and pilots will be able to use their own judgment; the machine will not be able to override that judgment. To me it seems that a key design idea is that these machine will not just roam free they can still be turned on and off and stored awaiting the next operation. Many people believe that the logarithms that make these AI's will learn to quickly learn and eventually override the judgment used by its commanders in the field of duty, allowing it to attack and do whatever it wants. Critics on Human Control believe that it is not restrictive enough, and, in fact, that is what could happen if human judgment is not used during the whole design process and use of these weapons. During the convention Israel commented on the use of human judgment with LAWS, stating "it is safe to assume that human judgment will be an integral part of any process to introduce LAWS, and will be applied throughout the various phases of the research, development, programming, testing, review, approval, and decision to employ them". [8] Israel's comments on human judgment in 2016 at the Geneva Conventional Weapon Conference sums up the argument over should we use human control or judgment when using these weapons? As well as tying together why human judgment is good not only in warfare itself but also with LAWS. In conclusion, human control works like human judgment, almost hand-in-hand with most weaponry. With LAWS, however,

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[7] Roff 3

[8] Roff 3

human judgment must come at all levels from development to the firing of the weapon in combat. Human judgment at all levels will make these weapons feasible to actually use on the battlefield. If they go through so many different "tests" of human judgment, then there should be no need to worry about these weapons taking a mind of their own or malfunctioning. Both policy approaches require that a human make proportionality calculations and undertake all feasible measures for precaution in attack. The weapon system cannot be tasked with making a proportionality calculation or estimating whether the principle of precaution is met. No matter which policy is used, control or judgment, a human should always be involved when using LAWS. I have thus far addressed policing and accountability, but how does one begin to address the issue of having "judgment" in the use of autonomous weapons? The United States, the pioneer of these type of weapons systems, brought this up in Geneva in their statement about conventional weapon systems and LAWS. A main point in their statement from 2016 is that many critics of LAWS raise the question of "meaningful human control," when the question should be "appropriate levels of human judgment." The United States' putting such importance on this is huge and appears to me to be a declaration to the fact that there still has to be sound judgment, based in factual intelligence when making the decision to use autonomous weapons. The United States seem, fully aware it will be developing, testing, and employing weapons that are questionable to societies all around the world. Those in command appear to want individuals in positions of power, to have a complete understanding of the intelligence information and to make a judgment decision on the use of these weapons knowing full well their complete capacity for destruction. They are taking the idea of human control out of the minds of people, so that if something were to go wrong then the human operator would not be

punished. To strengthen this claim the statement includes three key points: "In sum, these three aspects—namely *first*, reliable and tested weapons that are engineered to perform as expected; *second*, established training, doctrine, and procedures for users of the weapon systems; and *third*, clear and readily understandable interfaces between weapons systems and users—collectively help ensure that weapon systems can be used with the appropriate level of human judgment over the use of force, and in turn, consistent with the law of war and any applicable policy and mission requirements" [9]The tone used to make these statements is important it is almost like the U.S. knows something is going to happen. If the humans are trained properly and something goes wrong, then who is to blame? If the operators of these systems are trained well and the systems technology is up to date, then really who is charged if something goes on that is against the laws of war? The answer to that question is that no one really knows, since LAWS are still in development no one know what will happen if something goes wrong with these weapons. The military has just been testing what they have and that is not a lot and critics of these weapons don't have much but what they argued for with semi autonomous weapons which as I discussed earlier are different in many ways to LAWS. There is so many grey areas still when it comes to LAWS that writers on them are making complex arguments for and against them with really no intel that they are bad in the first place. This leads to many question that are left unanswered and that we have to wait to see what happens when these weapons are brought fully to the world stage. There are no laws of war that say that humans have to be involved in it at all times but the laws are against humans and humans

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[9] Meier 2015

fight wars not robots.[10] This means that humans most have some control or judgment in

warfare for the laws of war to pertain to them. Obviously the laws of war are for people but

these laws and humanitarian laws even though they are simple can help with the problem of

defining what human judgment or human control with LAWS is or frankly what judgment

means all together. It may seem obvious that the laws of war apply to people, not machines,

but that position has important implications. It means when using a weapon—even an

intelligent one—the person launching that weapon, or ordering the weapon to be launched,

has a responsibility under international humanitarian law to ensure that the attack is lawful.

The human cannot delegate this obligation to a machine. A human could delegate specific

targeting functions to the weapon, but not the determination of whether or not to attack, nor

the judgment about the lawfulness of the attack.[11] Judgment with these weapons is a grey area

because the human might think that they are controlling the machine but when in fact they

have no idea at all. The machine will have the final decision whether or not that it should strike

or not. Human control is out as well if we look at it from Paul Scharre perspective that human

control can not be used with these weapon. With any weapon he sees it that doesn't have a

human making tough decisions even if the weapon is a intelligent one than it is going against

the laws.[12] Human control and judgment are used in diplomatic solutions around a table,

judgment is there when laws are passed and when alliances are made. Human judgment and

control are different, but in every aspect of important decision making they are involved. We

would not want machines discussing nuclear alliances or machines making legal decision for

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[10] Scharre 2016
[11] Scharre 2016
[12] Scharre 2016

people. Machines do not have feelings; they show no emotion when carrying anything out. The military wants none of those things in war. Human judgment is the act of decision making and the control is after the decision is made whether to still fire and carry out the mission. One can overturn the other and machines can not do this. What is clear is that—from both ethical and legal perspectives—we must place the role of the human at the center of international policy discussions. This is in contrast to most other restrictions or prohibitions on weapons, where the focus has been on specific categories of weapons and their observed or foreseeable effects. The major reason for this—aside from the opaque trajectories of military applications of robotics and AI in weapon systems—is that autonomy in targeting is a feature that could, in theory, be applied to any weapon system.[13]

Just like human judgment and control, weapons like UAVS and LAWS have another key component that intellects are looking at and that is accountability. Unlike judgment, we are able to understand the concept of accountability; that someone or something has to take the blame for what happens. Accountability, though, paints a picture of future debates we will see about LAWS and what will happen if the weapons do go arwy and start overstepping what they were created to do. Critics are afraid of what will happen if they do overstep and who will be at fault when something that has no human control messes up. That is the reason that accountability is talked about in such depth when it comes to LAWS. If there was no one to blame for a mistake, then these weapons could be unleashed on their one with no laws in place to stop them or their creators. Accountability with any weapon is important but is not as

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[13] Davison 2018

straightforward when looking at lethal autonomous weaponry.

<u>Accountability</u>

Just like when looking at human judgment I find it best to define the word that is used so frequently on a subject. Accountability is defined as the fact or condition of being accountable or responsible, which in terms of LAWS and most weapons is extremely important. It is important because sometimes even the most lawful weapons can be used to do unlawful things. Most lawful weapons are attached to a human soldier directly or still have a human controlling said weapon. That to me truly puts the accountability or responsibility on the soldier, operator, or commander. The more human control with weapons the more responsibility goes to the user. When semi-autonomous drones were brought to the stage, human control lost a foothold in this weapon. The operator only had to press a button and move the drone to its target to execute the mission. If something were to go wrong, like a drone mistaking a airliner for a enemy and shooting it down, then that blame goes to the commander and soldier, the ones who were controlling and looking over the weapon. Someone has to be held accountable if any weapon is used for the unlawful killing of non-combatants and even combatants. There usually is a right way to carry out a mission, and if there is not then someone is going to have to stand up and take responsibility for whatever happens. Many critics of the LAWS and semi-autonomous weapons say that because the weapons are so precise they needed to be banned. Just because they are precise, however, does not mean we have to ban them. The large caliber weapons on navy ships still have humans controlling them,

but since they are used for lawful purposes then there is no need to ban them or question the

accountability of the operator. Likewise, "the International Committee of the Red Cross (ICRC)

makes the point plainly that 'a weapon that can be used with precision can also be abusively

used against the civilian population. In this case, it is not the weapon which is prohibited, but

the method or the way in which it is used.'"[14] This brings up an interesting point to

accountability, whether to hold the weapons responsible for the mistake or the operator. If we

look back to the section on human judgment in Laws, Israel stated at the CCW in 2016 that

human judgment will be used in every aspect of these weapons from the creation to the usage

of them. If these weapons have to go through so many levels of human judgment, then the

accountability still should be on the operator and the state. To let these weapons be designed

with massive levels of human judgment and tested over and over again with trained

professionals making sure everything is just right before they can be released to the battlefield,

then it is on humans, taking the argument away from people who are still skeptical with the

idea of accountability with LAWS. We can not put the blame or responsibility on these

weapons. It is not the weapon that needs to be taken to court; rather, it is the way it is being

used or designed and that falls on humans. Weapons are usually designed around the laws and

policy that are built to take the pressure of the government and military. Even though these

weapons will be made to have no "human in the loop," they still are designed by humans and

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[14] A Guide to the Legal Review of New Weapons, Means and Methods of Warfare: Measures to Implement Article 36 of Additional Protocol I of 1977. 88 (64) INT'L REV. OF THE RED CROSS 937 (DEC. 2006) available at https://www.icrc.org/eng/assets/files/other/irrc_864_icrc_geneva.pdf. (emphasis added).

put into the battlefield by humans. No matter how autonomous they are, they truly will still

have some form of human control, and that means some human will have to be responsible to

whatever happens, good or bad.

One cannot talk about new aerial warfare debates without looking back at the debates

on airplanes that came before and the effect it would have on waging war. The debates about

airplanes were revolutionary because airplanes were also revolutionary. They changed the way

countries fought wars and how they enacted violence towards their enemies. While the

debates about them have some similarities to the debates about LAWS and semi-autonomous

drones but there is a large difference, and that is the fact that airplanes when they first were

invented had humans piloting them. The debates focused not on who was to blame because

that was obvious as well as not very relevant to the time because there was no human rights

organization protecting noncombatants but more on how it would totally change warfare and

give a strategic advantage to one side. As time went on and WWII was in full force, we saw

countries firebombing cities and eventually dropping nuclear bombs on cities that wiped out

thousands of noncombatants. However, at the turn of the 20th century, no one knew that these

machines would help those events or even that those events would occur. Those debates on

those machines were very two-sided, one for them and one against them, and they did not take

the judgment approach that many scholars do today when talking about LAWS. Still the debates

on airplanes set the stage for debates that would happen over a hundred years later on semi-

autonomous drones and as well as the debates today on LAWS. It is critical to look at these

early debates to get the idea of what scholars of that time period cared about when discussing

new weaponry, as well as to see what was missing in these debates. If debates of these

weapons were taking place today, I do believe that airplanes would not have become what they are today and we would be fighting wars very differently.

Original Debates about the use of Airplanes

As I began to research the writing of this paper, I realized we did not get to the use of drones in war by accident. There had to be a story behind how mankind began bombing each other from the air. I soon learned that bombing basically began in 1914, it was a concept invented by the Germans and Austrians in World War I. Then, as now, the Germans were a nation of engineers and had great minds working for their armies, constantly looking for new ways to win World War I. In this war, technology would decide who would win, and the winners of this war would be able to basically control the world. This began between Germany, Austria,and Turkey on one side, and Britain, France, Italy, Russia, and ultimately the United States on the other. The invention of the machine gun eventually turned this war into a terrible stalemate with both sides staring at the other across trenches. It was a horrible bloodbath millions being killed every year. Realizing they had to break the tie somehow, both sides launched a new American invention, the airplane, armed it and began the first dog-fights over the trenches. They soon realized the airplane could not only fly reconnaissance missions but also machine gun troops and drop bombs, opening up offences for the soldiers on the ground. This began a brutal back and forth battle between the two sides to achieve "Air Superiority" over the battlefield. Both side's Air Force fighter planes battled it out, with both sides able to dominating the skies based on who had the best fighter planes and pilots at any given time. It became very clear this new technology and air

superiority would help determine who would win this war.[15] Moving forward, World War II has

been called the single most influential event in world history. It has certainly left its impact on

the way we conduct our air warfare today and our use of drones. Throughout the 1950s during

the Korean War, American policy once again focused on the tactical bombing of military versus

civilian targets as a way to keep the war from escalating. During the 1960/70s and the Vietnam

War, the use of American bombing was again primarily kept to military targets. With the

introduction of smart weapons or bombs during this war, the U.S. was able to target military

targets more easily and prevent civilian casualties, increasing the effectiveness of the bombing.

This manner of waging war fits the American way of life and philosophies and has become the

way we wage aerial war today.[16]

Much as it is important to study debates on airplanes first being introduced to combat, it

is even more important to study debates on semi autonomous drones because they are still being

used frequently today since LAWS are still being developed as well as the fact that many writers

on LAWS are pulling most of their information for their arguments from these debates. Semi

autonomous weapons have spurred dozens of debates on human judgment, human control, and

accountability, and all have conclusions, in my opinion, because they are not fully autonomous.

Still these debates and the people who write about them are key to debates in LAWS because

those against semi autonomous weapons are currently the ones who are leading the charge to

get them banned and also to get LAWS banned before they even hit the battlefield. When reading

anti-drone articles compared to the ones on LAWS, there is not the volume of talk on human

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[15] Aerial warfare during world War 1- Bernard Wilson/The British Library

[16] Aerial Bombing-Alexander Mosely/ Encyclopedia of Military Ethics./2011

judgment as we see in debates on LAWS, primarily because there are still humans controlling these weapons. These debates, showing many different angles and ways of thinking about futuristic warfare, allow us to formulate what could happen if LAWS got into the wrong hands or learned so fast that they completely disobey commands and orders. That is because there have been countless problems with drone warfare and targeting killings and the fact that their being non-combatants has led to a global outcry to stop them or to make them more precise. The scholars calling for more precise weaponry are also the same scholars who are writing to ban LAWS, demonstrating that many of the articles written about LAWS are taken from debates on semi-autonomous weapons. This is important to my research question of is there anyway to answer how much human judgment is needed with LAWS and is judgment even a reputable way to discuss LAWS on the battlefield. As well as why is the military pushing so hard to get rid of the human control or judgment within these weapons, maybe it is because they want to be able to move freely without any problems from the humanitarian laws or the laws of war because they are only for humans, not robotics or AI.

Current Debates of Semi Autonomous Drone Warfare

Since the Vietnam War, the introduction of an advanced new technology allowed us to have a laser guided bomb, called the "smart bomb" that could be directed to the target by a pilot in a plane. The U.S. Air Force could make precision strikes against targets with a fair degree of certainty that civilian deaths would be reduced in comparison to the old carpet bombing way with traditional iron bombs. The primary way that the U.S. used to strike its enemies throughout the 1980s and 1990s, these weapons were used with devastating effect in Bosnia and during the

Gulf and Iraqi wars. As long as the U.S. had air superiority over the battlefield, it would always win every major war. By having air superiority, the U.S. could win the ground war because the enemy could be hit and did not really stand a chance. We could also see where they were going and strike first. Our manned F-16 and F-15 fighters gave us this power over the battlefield and the advent of GPS allowed us to further dominate the battlefield like never before. All of this technology changed war forever, and as long as we held the technology advantage in aircraft and systems, we would rule the air. And, we have been successful at accomplishing this! Then in 1995, it all changed with the invention of the drone called the Gnat by General Atomics. This drone was able to remain in the air for days, fly anywhere and stay unseen spying on the enemy. Then around 2000, the CIA came up with the idea to arm drones with our smart bomb Hellfire missiles. These were first used in Afghanistan after the September 11 World Trade Center attacks and proved to be very effective in killing The Taliban and not killing civilians. We then ushered in the next big technological breakthrough; drones had cameras that could be used locally by soldiers on the ground nearby to see their targets and launch their Hellfire. But then the Air Force linked them up with our satellite based GPS system. This meant for the first time in history a pilot could fly an aircraft by remote control, from halfway around the world by live video feed, and launch his missiles against targets with extreme accuracy. All of this could be done at no risk to the pilot himself. These new Predator Drones now allowed the U.S. Air Force to stay over a target 24/7, using cameras and intelligence, conduct war with precision and deadly accuracy that the enemy had no defense against. This intelligence has changed the way we wage war and think of war today. Now we can attack our enemies and not lose a plane or a pilot. The enemy cannot move or hide without being seen and attacked around the clock. This is impossible to do with

manned planes that are exposed to counterattack and have to leave to refuel and rearm. A drone can fly for days over the battlefield, and its operator airman can kill at the time and place of his choosing once a target has been cleared for attack. "Drones are the most discriminating use of force that has ever been developed", says Richard Pildes, a professor of constitutional law at NYU. "The key principles of the laws of war are necessity, distinction and proportionality in use of force. Drone attacks and targeted killings serve these principles better than any use of force that can be imagined."[17] The simple fact is drones have changed the way we conduct warfare and have given our Air Forces a method of taking out our deadly enemies, that are truly trying to destroy our country and our democratic way of life. The arrival of the armed drone could not have come at a better time for our troops in the field.

The wars we are fighting in Afghanistan and now again in Iraq against the Taliban are not wars against masses of Soviet tanks and millions of troops. These are ideological wars against guerilla-style, small units that are more like tiny terrorist armies. They slaughter innocent men, women, and children by the thousands. Fanatical, they conduct their slaughter in the name of their Allah and then hide behind human shields. They have proven their ability to kill us right here in our own land, while seriously damaging our economy and our quality of life and freedom, as evident in the 9/11 airplane attacks and in numerous terrorist attacks on the U.S. and our allies. Our leadership failed to recognize how serious of a threat these groups really are and truly underestimated the threat. They were shocked into reality by Osama Bin Laden and by the seeing ISIS take over big pieces of Iraq. They were further shocked by the brutal display of terror, such

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[17] Pildes 2013

as cutting off the heads of individuals on live video. Drone warfare has given our leadership the opportunity to attack these groups, taking them down from the top. We have been able to do this with a minimum amount of civilian casualties and the need to risk our pilots and the lives of our special forces on a daily basis. In my opinion, this is a very "just" way to wage war. Compared to Hamburg and Tokyo in World War II and the civilian deaths caused by our bombers, drones have given us a moral and legal way to fight for our way of life and do so with mercy for the innocent. War is hell! It is never pretty, clean, or easy to fight. It is, unfortunately, a fact of life that humans always have and always will butcher each other. Sometimes we go to war over land, religion, greed, resources, economic, governmental, and societal differences. Today, for the first time in human history, we do not need to wipe out entire cities. We can strike military and industrial targets with precision and accuracy that was undreamed of in the past, because drones have changed the way we fight wars and how it has enabled us to fight a "just" war against ISIS and the Taliban. Predator strikes have allowed us to cut the head of the snake off with very few casualties to our people. Is it moral to fly a Predator from behind a desk in Wyoming or Tampa and wipe out a jeep full of terrorists before lunch, and then take a break and come back and kill a Taliban leader all half way around the world before5:00pm? I offer it is, since that same bunch of killers were just videoed raping little girls in a village and beheading them two hours earlier and filmed doing it by the same Predator and operator just before they were vaporized by a Hellfire hit. Easy call, right? I think so. President Obama thought, which is why he ordered hundreds of Predator strikes against our enemies. All of our future Presidents will no doubt follow his lead because we have the legal right to defend ourselves from these criminals. We also have a responsibility to people all over the world to try and fight for their rights as well, be it in

Afghanistan, Iraq, Somalia or Nigeria. To follow up on my pro drone argument, I chose to reference John Brennan's speech, in which he talks about the effectiveness of drones: "We argue that the use of drones can serve as a coercive measure short of full- scale war and thus provide a more proportional response to certain security threats. To the extent they are successful, drones arguably raise the threshold of last resort of large-scale military deployment by providing a way to avoid deploying troops or conducting an intensive bombing campaign while still counteracting perceived threats".[18] What Brennan is talking about is something that I base my argument on. Drones have the capability to be lunched and take out certain targets so that we as a nation do not have to deploy our troops in a full scale invasion. Fewer troops on the ground mean less body bags with the same amount of efficiency to accomplish the mission. Drones also allow us to instead of completely leaving whole towns and civilizations in chaos, because they are complete dust, we are able to pick out areas we need to attack and attack with extreme caution. Like I said in class, drones prevent us from destroying the identity and society of these towns. Regular bombing and the idea of "total war" would flatten areas, destroying local culture and the local environment so bad that these enemies would probably hate us more. They would be faced with a complete loss of their sources of food and just life as a whole. Patterson and Casale also would argue that drones on the battlefield are very effective and useful. In their article "Targeting Terror, the Ethical and Particular Implications of Targeted Killing," they discuss the use of drones on terrorists in Yemen and Iraq and how without the use of drones, innocent lives would be lost on both sides. "U.S. troops are simply too valuable to be risked in what could become a bloodbath. Consider the events in Madrid in March 2004—the terrorists were

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[18] Becker 2012

committed to not being caught and destroyed themselves and dozens of innocent bystanders. Targeted killing of terrorists is a smart and ethical alternative that may actually protect human life".[19] Without the U.S. putting troops on the ground in these areas, many non-combatants were kept out of harms way from the terrorist attacks and the conventional bombing from the allies. The destruction from conventional warfare is so immense that these drone strikes allow nations to take targets out without the casualties.

Continuing with the current debates of Drone warfare, we see an idea that is scaring advocates to shut these weapons down, and that is the temptation to go to war with these weapons. Columbia Law School wrote on this extensively citing, "Drone technology provides powerful temptation to go to war. As the U.S. government increasingly uses drone technology outside of traditional armed conflict theaters, it sets dangerous precedents: that the government may kill secretly and refuse to answer credible concerns; and that using lethal force is the American norm and standard, despite the costs to U.S. legitimacy and local populations. Serious evaluation of these precedents is necessary". [20] This new topic is making people wonder about these weapons. We do know that the government uses these drones not only in areas where we have had conflicts before. Policing nations is one thing, but we can not use these weapons to destroy local communities and to tempt other nations to go to war through unsolicited killings. Since Congress is in the dark most of the time when it comes to the use of these weapons, Columbia Law School speaks on that fact and asks Congress and everyone to question the use of these weapons. There have been many reports on how in 2010 and 2011 that the military is not

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[19] Patterson and Casale 644
[20] Columbia Law School 2013

giving true numbers when it comes to civilian deaths from these weapons and times they have been deployed. "Recent reporting by McClatchy Newspapers suggests the folly of taking such assurances of effectiveness and precision at face value. It suggests two layers of obfuscation: U.S. intelligence reports may understate the true number of civilian deaths, and U.S. officials may understate the numbers even further. According to McClatchy, U.S. intelligence reports from the period of January 2010 to September 2011 described a single civilian casualty. However, media reported significantly more civilian casualties during that period. A ground investigation by the UK's Bureau of Investigative Journalism found that, within the period the intelligence reports covered, there were at least 45 civilians killed in 10 strikes".[21]

Drones changed the way we fought wars and, as well, changed the way our enemies were effected. Knowing the evolution of warfare is important to get the broad idea of how warfare got to the point it is today to understand just how far we have come. World wars between nations, it seems, is a thing of the past, and smaller conflicts and tech heavy battles seem to be looming in the future of warfare. Drones are leading the charge as to who controls the air and really the battlefield. Drones allow us to to spectate from above and take out enemies from trailers hundreds of miles away. There are no larger scale tank battles like in WWII or even in the wars in the Middle East. Spec operation teams alongside drone killings are most peoples' ideas of warfare now. Not only is the act of warfare changing but so are the laws of warfare and warfare's affected on non-combatants. War has always effected people but now we are seeing more psychological effects not just physical effects on populations. These changes have not been over centuries; it

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[21] Columbia Law School 2013

has been a very quick shift in tactics and warfare, in my opinion, and that is extremely important to think about when it comes to drones. In the last 17 years these drones have taken huge leaps as to how we fight other countries, and it will only get more advanced as time goes on. Warfare is evolving as fast as technology will allow it now, and it is only a matter of time until we see the next massive shift once again in the area of warfare, much like what occurred in 2001 after 9/11, when drones lead the way on the war on terror.

Evolution of Warfare

Before examining our current weaponry, it is important to understand the evolution of warfare. According to the work "A Short History of War – The Evolution of Warfare and Weapons," by Richard Gabriel and Karen S. Metz, "What made the birth of warfare possible was the emergence of societies with fully articulated social structures that provided stability and legitimacy to new social roles and behaviors. The scale of these fourth millennium urban societies was, in turn, a result of an efficient agricultural ability to produce adequate resources and large populations. It is no accident that the two earliest examples of these societies, Egypt and Sumer, were states where large-scale agricultural production was first achieved. The revolution in social structures that rested upon the new economic base was the most important factor responsible for the emergence of warfare.[22] And so it began!

As human history moved forward through time, mankind found more and more ways to butcher each other. From the early Chinese use of rockets in warfare to medieval times where

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[22] A Short History of War – The Evolution of Warfare and Weapons," Richard Gabriel and Karen S. Metz

gunpowder was first used time guns and cannons making the armored knight obsolete, technology has been the reason war has changed.

As the industrial age arrived, the American Civil War brought new death dealing machines onto the battlefield with devastating results. The clash of the armored warships, the Monitor and the Merrimac. doomed wooden sailing warships, and the the Confederates used a submarine to successfully sink an enemy warship, the CSS Hunley. A fully automatic machine gun was introduced in combat, and trains and railroads were utilized for the first time in warfare as well.

Warfare quickly became even more dependent on technology to give the advantage on the battlefield. From the introduction of the airplane and tank in World War I to the first use of poisonous gas in the trenches, warfare became even more deadly, killing millions in World War I alone. "Consequently, after the World War I, that civilized nations agreed that limits had to be put on some of the new weapons systems because they were morally unacceptable and deadly.[23] The ban was issued at the Geneva Protocol in 1925 in Switzerland.

The U.S. then fought World War II, where millions more soldiers, as well as civilians, were killed. World War II technology gave us radar, atomic weapons, jets, and, for the first time, weapons systems that had no humans aboard them, like the V2 rocket, sound seeking torpedoes and guided missiles, and bombs developed by Germany and the United States. These weapons were all successfully used in combat. This war led to the atomic age, where we all live in fear of nuclear annihilation. Recently the Gulf War and the other Middle Eastern wars have

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[23] Politico/" Why the world banned chemical weapons", Mark Perry/ 4/16/17

brought about a new age of death technology with the introduction of Electro- optically guided missiles and laser-guided bombs and munitions and more importantly, the first use of Predator Drones. In addition, the use of an Air Force weapon that featured hundreds of small explosive devices that could loiter over the battlefield until they detect and decide to attack an enemy tank column approaching and then fire by themselves into the enemy vehicle without human guidance was utilized. The use of the Drones and Lethal Autonomous Weapons Systems had arrived.

The use of autonomous weapon systems and lethal autonomous robots in warfare should not be confused with military drones that are currently used. The major difference is the fact that the drone is remotely controlled by a human pilot. Most would agree the earliest and most primitive form of a lethal autonomous weapon would be the land mine and naval mine used since the 1600s. The question I consider, and a question I assume asked by many, is will this new way of fighting a war turn into covert operations with virtually no accountability, which could escalate situations before anyone has the ability to use diplomacy to solve problems?

Many people think the use of LAWS is barbaric, cruel, and morally corrupt, while others think that death from the air is something new and that these new autonomous weapons systems can be used thereby to protect our troops and even eliminate the idea of boots on the ground completely. The "Bulletin of Atomic Sciences," published 20 September 2013, notes that the Directive 3000.09 signed in November 2012 by United States Deputy Defense Secretary Ashton Carter was initiated to establish protocol for the use of autonomous weapons. This directive has been widely debated and interpreted, and many felt this directive would act as a

policing of the use of these types of weapons as the U.S. explored the additional uses for these types of weapons. This type of policy is important as a foundation for reviewing the ongoing future use of autonomous weapons.[24]

There continues to be ongoing discussions and debates regarding the use of any and all unmanned weapons. According to the Bulletin of Atomic Sciences, "The real issue is whether the world needs to go this way at all. The message of this policy (directive 3000.09) is: full speed ahead."[25] Long before the directive indicated above was signed under President Obama, drones were being upgraded and used. They have now evolved to become fully autonomous and are being considered machine intelligence designed to revolutionize warfare. This intelligence brings a whole new side to warfare to consider; human beings are the ones affected by wars and could be a casualty of the aggression, but not requiring human involvement to conduct war or stop an aggression may seem like a great idea to many. Less humans involved in the battle equals less casualties. However, removing the human equation governing the strategies and decisions of war may, in fact, make the conflict less humane. Terminator-like machines that can police citizens and clear rooms without any human control could be effective, but how will these machines make decisions? Humans bring terror to war, but they also bring intelligence, strength, courage, and experience important qualities in solving conflict and bringing individuals together for the greater good.

Soldiers can go into a village under fire with the goal of saving some civilians, even if

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[24] Bulliten of Sciences 2013
[25] Gubrud 2014

that means risking their lives. These autonomous weapons systems might be able to clear this same village in less time, with less risk to soldiers, but they will not have the human quotient decision making skills involving both proactive and reactive thinking! Soldiers are trained to make the hard decision in battle, but autonomous weapons systems are simply programmed! They could choose to take out a target without knowing all the facts. Many people, including historians, politicians, professors, and businessmen, say the use of autonomous weapons are an inevitable and natural evolution of our society and capabilities. With LAWS and AWS, the major questions concern who takes the blame when something goes wrong? Can these weapons truly be used without any human control, and how effective can they be? Where does the judgment go when talking about these weapons, and what happens when they are turned into an offensive weapon? When these weapons are in warfare, will they be able to take on missions with the laws of war in mind or just kill until the job is done? We must consider so many moral and ethical questions when moving into the arena at "full speed ahead."

Whenever a new weapon comes to the battlefield, some will always disagree with the use of it. Many people who critique LAWS believe that the U.S. will use them to police countries with less military strength than our own country. Countries with autonomous weapons will have major leverage over countries not possessing this technology. Smaller and poorer countries would be left vulnerable and completely defenseless against AWS. Countries using autonomous weapons systems will also have the potential to strike at any time. This idea of not knowing when the weapon will hit violates one of the three laws of war. Also, with the future being bright for LAWS, the international community will need to figure out who takes the blame for these weapons if something were to go wrong. Would the country be blomed or the

individuals who designed the algorithm or the machine itself? Since it is not human controlled, how will it be taken to court for war crimes or punishment? Generally, there is Due Process when a human error occurs, and we know where to find accountability. When employing autonomous weapons systems, how do we determine the strategy is correct and how do we make sure the plan runs smoothly? These machines will be able to carry out missions without any human involvement, but critics are worried they do not have any capacity to make a moral decision on these missions because they are programmed to focus on only accomplishing the mission. These machines are built as an extension of the military to be the best "soldier." When they do not fit in the laws of war, will they still be used like many other weapons were used in the past?

War is generally thought to be a conflict of equal parties. However, using LAWS changes the playing field, making one side far superior over the other. There is a thought that using LAWS provides us with the opportunity to unjustly police nations that do not possess autonomous weapons systems. Who is accountable when a disaster occurs? We can assume it will. Does the use of LAWS really fit into the confines of military strategy and war? Who is responsible for insuring the countries possessing this type of weapon is using it in the right way and for the right reasons? What are the boundaries? And finally, what toll will this take on the individuals responsible for making the call to use autonomous weapons systems?

"Throughout history war has been perceived as a large-scale duel between equals. Although the methods and means change constantly and "equal" no longer entails "evenly-matched," the deployment of killer robots to do the killing for us is a game-changing development. Whereas many advances such as gunpowder, the steam engine, and the cannon

changed the way war is fought, FAW technology is the first that will change the very identity of who is fighting it".[26] Currently there is still human involvement with the use and deployment of most of our weapon systems. When humans are removed completely, then we have to fully put our trust in AWS. By relying solely on the use of autonomous weapons machines instead of humans, we are giving up our ability to strategize and make morally correct decisions. When you take the human out of it, critics say, it becomes unethical. War is ultimately about gaining an advantage over the adversary. One side may even have natural advantages over one another. For example, one side might have a better view of the battlefield based simply on positioning. There are always certain strengths and weaknesses of each opponent, but having the use of extreme technology may tip the scales of battle unfairly. Some say that killing machines demoralize war. "Even in the hell of war, we can find humanity, and that must remain so".[27] This quotation is profound to me because it is absolutely true, whether people want to admit it or not. War is a part of the world we live in; it is how countries came to be, and how evil leaders were destroyed. Humans have made war hell, but humans also bring out whatever is good left in the war. This good is evident in media coverage in war stories, journals, and word of mouth. Critics argue that with the advancement in autonomous weapons war will be pure hell. One side will massacre the other, with no remorse and killing without any heart.

Weapons help win wars, but they can also help drive imperialism. Countries use brute force sometimes to bully their way onto land that is not theirs and try to influence people that do not want anything to do with them. In the past weapons have not had much of an

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[26] Ekelhof 6
[27] Ekelhof 7

imperialistic value other than being attached to the conquering soldiers, but after the wars in Iraq and Afghanistan, the weapons that were used to help win the war were not put away. The Bush Administration, as well as the Obama administration used semi autonomous weapons and the idea of the war on terror not only to police the Middle East but also to place drone bases in regions and the Middle East so that they would be closer to the the areas that they strike. These drones allow the US to police countries that have little to no air force to combat drone attacks, while being able to have a presence in these countries without having many boots on the ground. When strikes occur, that is a presence to these lesser nations that the major powers at play are still very much intertwined with their lives, even if it is in a negative way. The idea of placing strategic drone operations in countries like Libya allows the US as well to display its firepower to these nations to show what it could do to them if it wanted as well as be intertwined in the social and political life in these countries.

Drones and Imperialism

The U.S. has always been a capitalist and imperialistic society. Doing what we wanted to other countries through means such as war, loans, military occupations, business deals that truly only support our state, and many treaties allowed the United States to remain the number one super power in the world for over a hundred years. The U.S. has always used its military prowess as well to get what it wanted and to lead the charge of its imperialistic needs. We have used the idea of war to take over other nations and get a foothold in their markets and government to better our nation. Thinking that once everyone is for democracy then there will be less wars in the future and all the nations will work together in harmony. The U.S. preaches

that it wants to protect the world from the evils that attack democracy, but in the end it is

really just trying to protect domestic capital and the American people. The weapons that were

used for these wars and imperialism were not as futuristic as the times of the 21st century, but

the idea is still all the same. Drone warfare has allowed the U.S. to continue to pursue their

imperialistic intentions and now LAWS are raising more eyebrows from critics to see just how

far the US will take them to expand. After the attack on the World Trade Center in 2001, the

U.S. government once again had to fight a war, the "war on terror." Boots were on the ground

in the Middle East and with these troops came a new era of weaponry. Drones used for

surveillance were strapped with hellfire missiles and were used to attack targets of interests

that were thought to be terrorists fighting against the American public and democracy. The

"war on terror," even after troops were pulled out, was still in full effect, fueling the

government to continue drone strikes backed by the American public and allowing the U.S. to

continue to have a presence in the Middle East. "The so-called "War on Terror" is used to justify

the drone program. However, contrary to what the U.S. government and bourgeois media say,

this is not a war for "democracy in the Middle East." The U.S. has no qualms about supporting

undemocratic regimes. It has upheld numerous tyrannical states in the past and continues to do

so in the present—so long as U.S. interests are maintained".[28] The U.S., still is in the Middle

East, not only to protect its economic interests in the area but also to continue to police the

environment and test its new weapons on the population in this area. Once the troops had left,

drones still fly over this area looking for insurgents, which is true but it the only reason. Drones

in the Middle East protects U.S. imperialism, showing the rest of the world what these drones

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[28] Lee 2015

can do to a nation who is for less "superior." Nations all around the world will follow the U.S. and do the same thing to other nations. The war on terror has increased instability in the region and allowed the U.S. government to use these drones with very little consequences because it is a war on an evil that is trying to fight against democracy. "The instability devastating the region arose precisely because of Western imperialism. The imperialists are therefore fighting against the terrorism they themselves created, while sowing the seeds for even more chaos and instability". [29]The war in Iraq and Afghanistan devastated the Middle East because of the idea of protecting democracy. The attacks on the Trade Centers was awful and inhumane, and action had to be taken. Given the way the war was carried out, though, the lasting effects after the war on the country was terrible. The U.S. was not physically there but with the aerial drones the Middle East will forever have the animal of U.S. imperialism shadowing them, waiting to strike.

Another way that the U.S. uses drones to expand U.S. imperialism is strategic placement of drone facilities. Most recently, the US has placed drone facilities in Africa to launch attacks in the Middle East. If drones were not in the world today, there would be no need to go into another country and place these facilities. However, with the surge of drone technology and the drone strikes continuing, the U.S. needed sites to launch them from and they chose Africa. Africa throughout history has been tied to the U.S. and the world and we see just another chance for the U.S. to bring its presence to another country. "The last section of the Intercept articles, titled "Target Africa," details the recent expansion of U.S. military bases in various regions of Africa. At present, these seem to be used primarily for refueling aircraft and drones. However, this expanding military influence shows the continued efforts of U.S. imperialism to

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[29] Lee 2015

shore up its interests worldwide, even if it has been forced to beat a strategic retreat in many

areas due to the economic crisis". [30] The U.S. is using the use of drones to make sure countries

throughout the world feel its presence, economically and militarily. It is showing the world that

no expense should be spared when fighting to protect democracy and the more powerful

countries should have the right to place bases anywhere for the sake of protecting everyone.

While the government explains to the public that these launch sites placed all around the world

are just for strategic launches, there are more underlying factors. The main reason is certainly

to have a better launch point closer to the enemy so that we can strike quicker, but what the

U.S. is doing, as well, is showing the lesser countries what it is capable of. The U.S. has these

drones and will soon have fully autonomous ones, and by placing these bases in developing

countries, it is showing the world that the U.S. will go anywhere to have a strategic advantage

over the enemy, whether it be location or technology with the weaponry. Being that it is in

Africa and in a developing region shows, as well, that just the location of these bases are

imperialistic. The United States has to chose these countries because most other countries

would not allow a base for such weapons on their land; they do not want to be involved with

weapons seen by many as a danger to the world. [31]The U.S. could not just place these weapons

anywhere, and by choosing Africa they know that the local government would not cause

trouble. These weapons allow us to place facilities in countries and keep them relatively quite,

where as in the past if we wanted any type of military base in another country the local

government and people would see our soldiers, MPs, tanks and vehicles roaming around its

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[30] Lee 2015
[31] Lee 2015

land. Because drone bases and drone strikes are very secretive, they do not disrupt the local culture or environment like in the past. That is a positive to these bases but the real negative is that the U.S. still has to put its mark on all these territories to fight another country.

The way these drones have changed warfare and the way we look at assassinations and the vernacular around warfare is very American and is another way that the U.S. has used drones to change the playing field for war and to make the rest of the world understand this so they soon could follow. When drones were used and America coined the term "war on terror," it set the stage for the U.S. to mold the war anyway that it wants. The U.S. was far more advanced then its enemy and could, if it wanted to destroy them at the touch of a button. Instead, they chose to drop boots on the ground and use semi-autonomous drones, which Americanized the war from the beginning. The words that were being used during this war on terror and how soldiers described the enemy and its culture was classic for wartime but had a very American vibe to it that the world was able to watch the war through technology. To make it worse, using drones placed a new soldier in the battlefield, and once again death from above was a man in a shed looking at a computer screen taking out combatants and non-combatants. "Military personnel involved in drone operations have been known to refer to targeted images of children on computer screens, prior to being obliterated, as "fun-sized terrorists".[32] The way the operators described the humans they were choosing to take out, including their children, was already frowned upon to began with, but true American fashion we did not care because the attack were on us first and we had to protect democracy. The U.S. was able to show the world how the future of warfare would be fought with these drones and that is imperialistic on

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[32] Harris 2016

its own by changing the view of warfare and how we take out our enemies. These drones, led

to an imperialistic view of the vernacular that comes with war like assassinations? The war on

terror and the use of drones allowed the US to show the world what these drones could do and

that changed the definition of many words of war. The drone strikes changed how

assassinations were carried out and how normalized these new assassinations were. Drones

"lay bare the normalization of assassination as a central component of U.S. counterterrorism

policy. Assassination is not all that is normalized. The latest expose of drone operations in

Somalia, Yemen, and Afghanistan provide new details on how utterly routine is the

indiscriminate killing of innocent people in these military assaults". [33] The war on terror was

fought in such a way that was so Americanized and normalized these targeted killings were so

effective at not only taking out the target but also demolishing the culture of the Middles East.

The non-combatants of the Middle East will always be under the American attacks, and the

targeted killing and the routine use of these drones has become normalized by the U.S.

Following WWI, the U.S. has been viewed as the most superior military power in the world.

When drone strikes became so routine and assassinations so regular, coupled with this new

idea of using precise drone strikes to take out terrorists, many other nations saw drones as

acceptable. However, what many did not see is the number of civilian deaths that come with

these strikes, because the DOD hid most of the real numbers of non-combatants killed.[34] The

U.S. made these strikes the new image of warfare, proving that boots on the ground to fight

wars no longer needed. The country that the US uses these weapons on shows the world that

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[33] Harris 2016
[34] Harris 2016

drones could police a whole country and make people terrified, and that a superpower can overtake a country that they see as lesser and one that is challenging democracy. The U.S. will always try to put its mark on the world through everything from economics to military technology, and the use of drones and in the future LAWS will continue to shape warfare. The U.S. will always normalize the actions of these weapons and use them to leave an American mark on as many countries as it can.

As my research question describes that human judgment with LAWS is one of the main issues that critics are having with these weapons. Scholars who write on these weapons, though, do not seem to define what human judgment with weaponry is and why is it important to have. Many arguments that are raised are very simple, yet the authors try very hard to overcomplicate them so people will either agree or disagree with them quicker. Even the DOD comes up with arguments like "judgment isn't the correct term it is control" then go on to describe how control is with semi-autonomous weapons, thinking it is the same thing when it is not.[35]In the next section I introduce some of the critiques of LAWS and some of the main arguments that critics have about them. The arguments are valid, but they have no end point because these weapons have only been tested in warehouses and not on the battlefield, limiting critic to arguments that they have made on previous drone weaponry. Consequently, no one really has the answer to the connection of human judgment and drones and more importantly what human judgment when it comes to weapons means.

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[35] DOD at Geneva Convention 2016

<u>Critics of LAWS</u>

Many critics of these drones see that their future development will leave some humans totally defenseless. Having this scenario hang over the heads of civilians as a possibility of death and destruction can be seen as a form of ongoing mental torture. Having the threat of this type of violence without much, if any, warning would wear on the mental stability of countries facing this type of attack. The ability to launch unmanned autonomous weapons means no one is safe! Even if they hunt down their target, these drones leave the citizens of that area always on guard. Another important issue still being evaluated and discussed concerning these weapons is that they will be the closest thing to nonhuman interaction ever. Classic weapons are always traced back to a human making the call on what strategy to use and who will be the target, leaving a trail of accountability. Even the new age air-to-air missiles and conventional UAVs can be traced back to a human calling out the launch order. Swarm bots and other similar weapons robots have no human tracking; they can fly around producing death and destruction without any human interaction. The question this raises is how do they know who to kill and not kill, what to destroy, and what to save? With no human interaction, people wonder how these mechanical killing machines know not to target civilians, even if they are near to the target zone. Using these types of weapons, are we giving up the option of guidelines or are we prepared to level an entire village simply to accomplish the mission?

The objective when using drones as a combat solution is to insure they are able to penetrate behind enemy lines and to eliminate the enemy without killing thousands of innocent civilians, while reducing the possibility of loss of life. However, it is important to

remember that at this time drones are still being programmed and operated by human beings.

For example, a Predator Drone flying over Afghanistan may not have a human pilot on board,

but it is being operated by a soldier in Colorado who makes the decision when or when not to

fire its weapons. "Human judgment regarding whether lives will be taken and objects

destroyed during armed conflict inherently triggers an evaluation under International

Humanitarian Law (IHL) as to the lawfulness of an attack. As the link degrades between human

interaction and lethal action by weapon systems, how can legal advisors evaluate who

"decided" to kill? Is it possible that human control over AWS might be diluted to the point

where it would no longer be reasonable to say that a human decided that such a weapon would

kill?"[36] This also puts a strain on who is to blame should a mission go wrong. Whom do you

punish if something goes wrong, but there is no human interaction with these weapons? The

machine? How do you do that? Countries will look at other countries who have these

technologies and not know who to blame for the mistakes. One big issue I see so far with some

of these articles is they have not yet addressed the idea of policing some countries and

stereotyping their targets through this policing. Policing a country has huge mental effects on

the population in that country to basically always believe that someone is watching them. To

me that is inhumane.

Critics look at LAWS as taking the human dignity out of warfare. Bonnie Docherty, a

strong advocate of banning these weapons, talks about the change to humans if they were

killed or wounded by one of these weapons. She says, "It would undermine human dignity to be

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[36] Schuller 2017

killed by a machine that can't understand the value of human life".[37] Humans in warfare are matched against other humans. That is how war has gone on for thousands of years. I have never been in combat, like many people in this world, but being beaten by a human rather than a machine at anything feels much different than getting beaten by a system. If a human is killed or bested on the battlefield by a robot, then, that soldier died by something that artificial bested him or her in combat.[38] The robot is built to know every weakness that the soldier has so the system can eliminate the target. These machines can not understand the value and fragility of life because they are machinery, therefore taking the dignity out of war. Soldiers from different countries leave their homes and families to fight for their countries. Every soldier should fight and die with dignity, and this robotics take it away from them. Docherty's comment adds to the idea that LAWS and other autonomous weaponry take the human out of warfare, thereby changing the parameters of the battlefield.

Let us take a step back for a second and look at the potential risks that could happen if autonomous weapon systems make a mistake or malfunction causing harm. Critics of these weapons like to reflect on the Cold War as an example of the importance of having human interaction as a deterrent. During this time, when tension was extremely high, many closecalls that required poise and patience.   Human intervention and judgment helped keep the world from war, and with less human control using weapons of mass destruction, it could have been the end of the world as we know it.

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[37] Peralta 2016
[38] Peralta 2016

Individuals, no matter how well educated or trained, make mistakes in times of conflict. However, the mistakes of the past have not resulted in world-shattering mistakes. If we were to implement the ongoing use of LAWS in the future, one mistake could have catastrophic consequences. For example, these types of weapons may have the capacity to destroy accidently a civilian airliner that looked like a missile from another country. This "accident" would have the potential to launch us into war, when we had no intention to enter into it in the first place. As said before, since there is no human involvement in using these weapons, who would be held accountable for a mistake of this stature? If human error were to cause a malfunction of this magnitude, the individual responsible would be taken to court and punished.

When these weapon systems malfunction, who is to blame? That is just one important question posed by the groups looking to ban autonomous weapons systems, but it may not be the question that worries them the most! "Paul Scharre, one of the architects of Directive 3000.09, has suggested that the risk of autonomous systems acting on their own could be mitigated by negotiating 'rules of the road' and including humans in battle networks as 'fail-safes'".[39] What this quote is suggesting is that if autonomous weapons are used in warfare, we will need to set up a new Geneva style convention where new rules of engagement are established that directly deal with the use of LAWS, and that humans are always included as part of the battle network. This is another course of action that we could humanely and

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[39] Scharre 2017

morally successfully incorporate these types of weapons systems into our arsenal. It is important to remember that machines always break and malfunction.[40]

Imagine a situation created by an AWS that sparked a military response against the U.S. or started a war in which humans would have to assess and respond to without warning or very little intelligence information. There would be no room for diplomacy, no time to get any U.S. personnel out, and no pre-warning system to the country in the line of fire saying that it was a false alarm or rouge AWS. Instead, the weapon systems will be in full attack mode doing what they were designed to do: seek and destroy, thus creating an aggressive action which is war. "Our experience with the unpredictable failures and unintended interactions of complex software systems, particularly competitive autonomous agents designed in secrecy by hostile teams, serves as a warning that networks of autonomous weapons could accidentally ignite a war and, once it has started, rapidly escalate it out of control".[41] We have seen the failures firsthand in 1988 when an air defense system shot down an airliner. The United States has come a long way since then, and though human error was the cause of it, freak things happen. We as a country need to be prepared to explain what happened, holding someone accountable, and to insure it will never happen again by training the individual to be stronger and more aware of the situation. Since it was human error, that person was blamed the and situation was diluted.

LAWS could not only start war like the quote but also escalate a situation with continuing aggression, when we as humans are trying to suppress the situation before it goes

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[40] Gubrud 2014
[41] Gubrud 2014

nuclear. Many believe the weapons robotics movement is moving at a pace that we can not

keep up with. That is a huge issue; humans still are not ready for these weapons to hit the

battlefield because there is no way to stop them once they are. It even scares the sketchy

teams that build these weapons. They have had some idea what these weapons are capable of,

but at the end of the day they are nervous to reveal the truth because they do not know what

will truly come of them. It it shocking to believe the creators are being stunned by the

mechanics and capabilities of these weapons. Do the creators really have the knowledge of

what is needed in a battle using AWS? Do they have the battlefield experience to translate that

to the AWS they are building and programming? These questions raise another question, and

that it what happens when the creator learns too much?

Before soldiers are sent out to do a mission, they discuss the details of the mission

and how many could be lost to get the job done. The idea of less casualties, both combatant

and non, is why LAWS are being pushed to enter the battlefield as soon as possible. By taking

the human out of war, you allow many soldiers to go home to their families, while possibly

saving civilians. No humans no human error. Mistakes would almost be nonexistent on the

battlefield, and missions could be taken care of with one LAW instead of wasting money on fuel

weapons and human lives. These systems are not only smarter more precise and accurate; they

could take out a single target, instead of level a city block and kill hundreds. We saw this in Syria

with the bombings of towns to get some insurgents. LAWS could go in, take the target out, and

eliminate the loss of fragile life. These weapons could change the entire face of warfare by

getting jobs done so we do not have to get into big conflicts with other countries.

Many countries have discussed the potential ban on these weapons. People are comparing this ban to the one on land mines. There are some big differences, though, in these weapons and how to ban them. It is just too early to try to ban them. No matter how many countries band together to stop them, until we see what the future holds for these weapons a ban will not be placed on them. When something does happen with these weapons, the countries that do not like them would have established their arguments and will be ready to attack these weapons fully. The campaign for the ban of these weapons just needs to be patient, because something will go wrong in the future, and when it does PAX and the NGOS associated with them will be ready.

Every soldier has to make difficult decisions that affect other human beings. Whether you are a tank commander charging to liberate a city, a grunt in a firefight, or a UAV operator watching the battlefield from thousands of miles away, every solider in any division of the military will face a tough decision. PTSD from war has always affected soldiers from being shell shocked, to losing complete and utter mental focus while on the battlefield, or to just thinking all the time if "I made the right decision." Soldiers who are on the front are treated for PTSD normally and taken care of because they are the ones who are in the fight and first responders. More recently, however, since 2001 and the use of semi autonomous weapons such as the UAV has taken control of how we wage war. The military is having to treat operators of these aircrafts as well for trauma and PTSD. The next section will go into detail on why the rate of PTSD in drone operators has risen and what effect might the creation of LAWS help with this issue.

PTSD and drone warfare

"In the 21st century, in the information age, war fighting is no longer a matter of geography; it's a mentality," Brown said. "And these airmen no doubt are war fighters; they have the burden of life and death on their shoulders every day, every time they walk into that facility".[42]

As Col. Jason Brown states in Sarah MCCamon's article, "The Warfare May Be Remote but The Trauma Is Real" that war has changed and from strategic land defense and offensives to the mentality of all warfighters. The airmen of the 480th wing division see everything from rape to torture to beheadings. These pilots must watch everything they have to witness all the horrors of war over and over again.[43] "One Air Force survey found that among analysts engaged in this kind of work, nearly one in five had witnessed a rape within the past year. Some airmen reported witnessing more than 100 incidents of rape or torture, according Lt. Col. Cameron Thurman, the wing's surgeon".[44] The things that are seen by these pilots can not be unseen and they operate the drone for hours, putting a toll on their mental state. Obviously seeing stuff like that is going to affect you as a person and you understanding of human life, but what many fail to realize is that these soldiers witness it so often and at such a high volume. The impact of seeing these horrors has made many drone operators think suicidal thoughts, have trouble sleeping, and have terrible operational stress. Also with advancements in technology, the pilots are not seeing these acts on a scratch TV screen but rather as if they were standing right in the action. According to Col. Brown these pilots find mass graves, witness executions, and people

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[42] MCCAMON 2017
[43] Brown 2017
[44] MCCamon 2017

being skinned alive on a daily basis. "I mean that's warfare; it's clear and simple, and it's in HDTV," Brown said. The problem is that the airmen cannot look away; they are supporting US troops on the ground and must be the eyes for these troops and help guide them and other drone pilots. They can not just see something that is terrible and leave like other pilots or soldiers do. "Remotely piloted aircraft pilots may stare at the same piece of ground for days," said Jean Lin Otto, an epidemiologist who was a co-author of the study "Drone Pilots Are Found to Get Stress Disorders Much as Those in Combat Do" in the *New York Times*. "They witness the carnage. Manned aircraft pilots don't do that. They get out of there as soon as possible".[45] Manned pilots have the nice option of just dropping their payload and returning to base but the UAV pilots and other drone operators must stay on target because that is their job, a job that does not just watch the terrible acts of war but also contributes to the violence through targeted killings. This is the hardest to live with, having to make the tough decision to end another human being's life.

It is not just what they see, but the weight of decisions they have to make, he says. Airmen often have to discern whether they are looking at a group of women and children or a group of combatants. "Their job is to decide who on that battlefield gets blown up, and who on that battlefield gets protected," Thurman said. Thurman is the surgeon on duty at the Langley Air force base in Hampton, Va. In MCCamon's article he discusses the judgment that these pilots make and the pressure that sits on their shoulders when it comes to the life and death of someone else who could be a child or a noncombatant. The issue which is very common is that the commanders in charge are not giving enough details to the strikes that they are performing

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[45] Dao, Otto 2013

and it is taking a toll on the pilots who must do the killing.[46] The pilots that were interviewed in MCCamon's article describe that the orders that were given to them were vague, making the pilots re think their orders and whether or not they truly were doing the right thing. "We were striking a lot at that time, and for me, it felt like I wasn't getting enough of the story behind the strikes," she said. "I like to know everything I can about what we're going to be doing, and for me, that was what was bothering me. I felt like I didn't know enough." Even if the decision was the correct one, the wrong decision could have meant the lives of even more innocent people and knowing that weighs heavily on the mind of a drone pilot who has long hours and infrequent shift changes. Moreover, once the pilots have done their long shift, they are able to go right back home and try to live their normal lives, which many pilots explain is not as easy as it sounds. "They are going literally from combat to cul-de-sac in a short drive," Ogle said. "Ten minutes, 15 minutes, [they] drive home. They've gone from being eyes, head in the fight, and making critical life and death decisions, to then being involved in all the normal ... responsibilities that we have, where they're a spouse, they're a parent." These situations are the ones these pilots struggle with everyday and the ones who in the end make the thought decisions when it comes to whether lives or dies.[47]

Now that PTSD is affecting all types of military personnel it is important once again to think of how human judgment is effected. Drone pilots suffering from PTSD are interesting. They have to deal with the heavy burden of taking someone's life and then getting off shift and going home, leaving some pilots to question whether their killing if it was right or wrong. They

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[46] MCCamon 2017

[47] MCCamon 2017

then return to work the next day and think more about their next assignment and use more

judgment in this shift than they did in the past one. Pilots of these machines do not get to

unload the burden on taking someone's life on the machine itself because they controlled it

and made the decision to execute the killing. The question becomes who shoulders the feelings

of guilt and remorse that can result from even justified drone strikes that kill only enemy

combatants, Calo says. "People feel more, or less, responsible for tasks they perform,

depending on whether or not [the tasks] happened to them virtually or physically."[48] If pilots

do not get to talk about their missions and continue carrying on their orders, then eventually

some pilots can not take the emotional and mental stress that it takes to be a drone pilot and

snap. What David Axe is arguing is that weapons with more autonomy could take this PTSD

problem in these pilots away.[49] Consequently, it is time to fire the missile or drop the bomb, the

human being feels like he is shooting, rather than the drone. No one disputes that human 'bot-

operators make the decision to fire or not to fire. The issue is not the actual cause and effect

underpinning a drone strike. It is the psychological aspect that Calo is concerned about. _____

"How much people feel in control of the drone matters to how they experience war," Calo says.

In reality, the human and the drone inflict the violence as a team, but the moral and emotional

burden falls only on the mind of the human controller. Unmanned aircraft with additional

autonomy, requiring less human monitoring, could potentially ease those burdens.[50] If there

was more autonomy, then the stress of these pilots, the judgmental question, and tough life or

death decisions do not have to be made by the human. The machine could detect all likely

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[48] Axe 2012

[49] Axe 2012

[50] Calo 2012

lawful targets and then alert an operator, thereby keeping the operator from actually seeing

the attack but just approving them. LAWS could help limit the amount of cases of PTSD in all

fields of the military by taking the burden of a mission or killing and by limiting the judgment of

operators who have seen so much that their judgment allows them to make a mistake. The

negative of this, as Calo explains is that operators might become so relaxed that they are too

quick to approve launches with these drones because the blame would go to the bot and not

them.[51] PTSD and human judgment go hand and hand because it is the decisions that make the

human think twice about what he or she did. If the operator makes a decision, whether right or

wrong, that still puts mental stress on him or her. Autonomous weaponry could help lower

PTSD by taking the human out of the judgment with the weapon and by allowing the bot to

take the blame and the mental stress of taking another human beings life.

Conclusion

Human judgment should be a very simple concept, and the truth is that human

judgment with other facets of life is a very black and white debate. In life humans tend to have

control over many things that happen to them or what they do to others. Until 2001, war has

been very human control oriented, from the debates on aircraft to debates on fire bombing in

WWII. There has never been any question that humans had control over the aircraft and over

the weapons they were using. In addition, as their judgment was needed in order to use the

weapons they knew that the blame, whether the outcome was good or bad, would land on

human's shoulders. There was no need to define human judgment with weapons because there

were no debates on whether or not these weapons would do the job themselves. The idea of

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[51] Calo 2012

autonomous weapons is fairly new even after the attacks in 2001 UAVs and drone strikes had a

human controlling them and had some form of judgment in each strike. These strikes

challenged intellectuals and scholars and even the government to try to understand what

human judgment is and what is the difference between that and human control. Critics never

attacked autonomous defense systems until one mistook a civilian airline jet as an incoming

missile and shot it down. This brought into play the idea of control with autonomous weapons

and the need for a human to be in the loop at all times when handling these weapons. Even in

early debates on semi-autonomous weapons the idea of control was pretty strait forward but

the idea of human judgment; when brought up was shoved aside. No one could define it or at

least define it in the case of using drones. In my research I noticed that the idea of judgment

was sidelined during the Obama administration and critics of drones went after the more

humanitarian affects of them and the non combatant killing aspect of semi-autonomous

drones. The US government, taking flack for target killing and the lack of accuracy with its

strikes decided to invest and look into up coming AI and fully autonomous weapon technology.

When the government decided to try to make the shift to fully autonomous weapons like they

are still trying to do the idea of human judgment versus human control was brought back.

During the convention of conventional weapons in Geneva the talk was on changing how LAWS

were looking at instead of through a lens of human control to the idea of "appropriate level of

human judgment" which made everyone at the conference nod their head in agreement and

had countries like Israel behind it 100 percent. Even myself, when reading the briefing from

Geneva, favored it. However, after reading articles from scholars like Paul Scharre and Heather

Roff, I noticed that the DOD and our own government do not even understand what human

judgment with LAWS means. In fact, no one does. The arguments that are for and against LAWS that bring up human judgment are so simple that it takes away arguments that can be explained like blame and accountability and accuracy of these weapons. Still, the debates are centered around human control, and judgment, arguments that I have found through my research have no true definition at all. LAWS are so new to the battlefield but drones and their strikes are not. As a result, scholars and critics of drones are using their debates on semi autonomous drones for fully autonomous drones. This is clouding the already difficult situation of defining judgment and determining what is the best way to go in designing and bringing these weapons to the forefront. The fact is that no one from the DOD to Paul Scharre to Heather Roff knows the true definition of human judgment or the correct amount of it that needs to be used with these weapons. Being very new, fully autonomous weapons have yet to reach their full capability, and by that I mean the lethal side of them and the idea of judgment with these weapons will continue to baffle everyone. When fully autonomous drones are in full production and one is used for lethal strike purposes, then we will see the idea of judgment set in stone. Until then the idea of whether or not fully autonomous weapons should have some form of judgment will continue to be debated, with these debates continuing to end in a stalemate because a definition can not be reached. No one truly understands human control, and no one can define human judgment with LAWS. That is because scholars, and governments all over the world are treating human control and judgment as two separate issues, which to me, is causing all the confusion when relating it to LAWS. To me, human control and human judgment should be seen as one and the same. The fact that they are being treated a separate terms causes arguments to become more complicated then they need to be. When looking at

LAWS, intellects need to create new arguments, not ones that have been recycled from the debates on semi-autonomous weapons. As well as combing the idea of human control and human judgment and make arguments that support the claim that they are similar. If not then we will continue to see the stalemate on the debates on LAWS and the confusion between actors when dealing with these weapons. Through my research I have come to the conclusion that in order for LAWS to progress, the debates around them need to combine judgment and control so that everyone, from the DOD to the military personnel operating them can have a clear understanding of these new weapon systems.

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