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ABSTRACT

The author has structured the essay in five parts. He first defines what Autonomous Weapon Systems (AWS) and Artificial Intelligence (AI) are. He describes the rules that AWS are expected to operate under when dealing with combatants and non-combatants. He then explains why accounting for the actions of a fully AWS, especially when it kills a friendly or non-combatant, is problematic, whereas it is not so with a semi-AWS. He proceeds to discuss that militaries have a legal and moral responsibility to, where possible, protect not only non-combatants, but also its own soldiers from unnecessary harm. He feels that it will be ethical to employ semi-AWS when AI becomes more mature. Fourthly, he goes on to highlight that fully AWS do not have the moral authority to take lives, especially those of friendlies and non-combatants. In fact, the moral authority should lie with a human being when employing a semi-AWS in war, or a fully-AWS in a combatant-only battlefield. The author then concludes that employing a human-approved, fully AWS in a combatant only battlefield would not be unethical.

Keywords: Autonomous, Operator, Lethal, Decision, Morality

INTRODUCTION

Over the past three decades, Unmanned Military Systems (UMS) have increasingly been used to augment operations in war. The United States (US) military alone increased its spending on unmanned aircrafts from $300 million per year in the 1990s to over $6 billion per year by 2011.[1] Other militaries around the world, including China, France, Russia, United Kingdom and Israel are also in the race to develop their own UMS.[2] UMS do not require people to physically inhabit the platform but are still remotely controlled by operators.[3] Thus, the key benefits of employing UMS include taking on more risks and engaging targets, while keeping soldiers out of danger.[4] Most UMS today require the operator to remotely control the system's every move, and decide where to go, whom to track and target, and when to fire. Naturally, the speed of a military unit to observe, orientate, decide, and act would become highly dependent on the speed of authorisation and the UMS operator's decision-making ability. Communication links between the UMS and operator can also be disrupted, and when this happens, the UMS will become directionless.[5]

As such, militaries worldwide have begun exploring the use of AWS in war, including lethal and non-lethal systems. Increasingly, AWS can carry out some assigned tasks by themselves, but require human approval to execute other important ones.[6] These systems will henceforth be referred to as 'semi-AWS'. Notwithstanding, semi-AWS are still susceptible to slow human decision-making and communication disruptions. Through the use of Artificial Intelligence (AI), AWS can overcome these problems by receiving missions and operating fully autonomously without any human intervention.[7] These systems will henceforth be referred to as 'fully AWS'. Some have questioned the morality of employing AWS to kill people.

In this essay, I will argue that there are special ethical problems with allowing fully AWS to independently decide whether to commit fratricide or kill non-combatants, while engaging combatants in war. However, I will also argue that there are no such ethical problems with: (1) employing fully AWS when engaging in a battlefield filled with only combatants; and (2) employing semi-AWS in war as a human operator is involved in determining if a kill is legally or morally justifiable. While AWS can be kinetic or non-kinetic, such as cyber weapons, I will focus only on kinetic, lethal AWS in this essay as it directly impacts humans and the morality of doing so.

This essay is structured in five parts, First, I will define what an AWS and AI is, and articulate the rules that AWS are expected to operate under when dealing with combatants and non-combatants. Second, I will explain why accounting for a fully AWS' actions, especially when it kills a friendly or non-combatant, is problematic, whereas it is not so with a semi-AWS. Third, I will argue that militaries have a legal and moral responsibility to, where possible, protect not only non-combatants, but also its own soldiers from unnecessary harm. As such, it would be ethical to employ semi-AWS when AI becomes more mature. Fourth, I will argue that fully AWS does not have the moral authority to take lives, especially those of friendlies and non-combatants. On the contrary, the moral authority will lie with a human being when employing a semi-AWS in war, or a fully-AWS in a combatant only battlefield. Lastly, I will synthesise the arguments and conclude this essay.

Serbian Land Rover Defender towing trailer with 'Milos' tracked combat robot.

AUTONOMOUS WEAPON SYSTEMS, ARTIFICIAL INTELLIGENCE, AND THE INTERNATIONAL HUMANITARIAN LAW

AWS are 'robotic weapon systems that are able to identify and engage a target without human intervention."[8] These weapon systems are able to do so without the incorporation of AI, which is an artificial system designed to think or act like a human.[9] AI essentially acts as the brains for AWS to function independently. Paul Scharre described four levels of robotic weapon systems.[10] The first level is human operated, which is what we see in UMS today. The second level is semi-autonomous operated, which I refer to as 'semi-AWS', and is able to "sense the environment, recommend a course of action, but cannot carry out the action without human approval."[11] The third is supervised autonomous operated, in which the AWS can sense, decide, and act independently but a human operator can choose to intervene.[12] The fourth level is fully autonomous operated, in which the AWS can "sense, decide, and act entirely without human intervention."[13] For simplicity, I will refer to the third and fourth levels as 'fully AWS'.

Lastly, for clarity, combatants are defined as members of an armed force, militia, or volunteer corps, or civilians who openly carry arms, and belong to a party to the conflict.[14] Non-combatants include medical or religious personnel, civilians who do not carry arms, or combatants who are wounded and out of action. Under the International Humanitarian Law (IHL), AWS would have to: (1) distinguish combatants from non combatants, and do not deliberately target non combatants; (2) ensure that collateral non-combatant causalities must not be disproportionate to the military necessity of attacking a target; and (3) avoid using force that causes unnecessary suffering.[15]

ACCOUNTABILITY OF ACTIONS

Employing fully AWS in war would create an 'accountability gap', but can be addressed by employing semi-AWS when fratricide or killing of non-combatants is imminent. There is a possibility that a fully AWS may kill innocent people but neither the AWS's programmer, the commanding officer, nor the machine itself can justly be held responsible.[16] This is because defence contractors are generally shielded from civil liability.[17] It is also difficult to prove motive as it could be argued that the AWS did not do what it was intended to do and commanders could not have reasonably predicted that the system would act in an atrocious way.[18] Thus, commanders will not be held responsible for the AWS' actions.

Uwe Steinhoff argued that since commanders would not have reasonably predicted how their soldiers would behave, commanders would likewise not be held responsible for their soldiers' actions.[19] Hence, he opined that there was no fundamental moral difference between soldiers' atrocious actions and those of a fully AWS.[20] However, there is no accountability gap in the

Ethics and Care for Soldiers— two of the SAF's Core Values.

case of a soldier as the soldier can be held accountable for his actions, while it is not sensibly possible to do the same to a machine. Therefore, by employing a semi AWS and forcing a commander to give approval before potentially committing fratricide or killing non combatants, the concern of an accountability gap would be addressed.

LEGAL AND MORAL RESPONSIBILITY TO PROTECT ONE'S SOLDIERS AND NON-COMBATANTS

While militaries have a legal responsibility under IHL to, where possible, protect non-combatants from unnecessary harm, militaries also have a moral responsibility to protect its own soldiers from such harm. Thus, it will be a moral duty to employ semi AWS when AI becomes more mature to control such weapon systems. While today's AI may not be ready to fully control an AWS independently, the AWS in the future could allow us to achieve fewer fratricide and collateral damage by providing more accurate targeting. These AWS can also go to places where it will be typically inaccessible or dangerous for soldiers to deploy.[21] Bradley Strawser believed that if a military action was morally justified, military commanders had the moral obligation, under the Principle of Unnecessary Risk (PUR), to protect their people ordered to carry out the action, as far as possible.[22] According to PUR, it would be morally impossible to command someone to undertake unnecessary and potentially lethal risks without any strong countervailing reasons.[23] Hence, if an AWS can accomplish the mission better and safer, militaries have the moral obligation to employ the AWS instead of the soldier.[24]

However, Steinhoff had several disagreements with PUR. Firstly, even if it would be less risky to employ an AWS to accomplish a goal, a person might be willing to undertake the high risk for the sake of retaining his job.[25] Secondly, if soldiers had given consent to undertake these potentially lethal risks, Steinhoff implied that commanders had no obvious obligation to neutralise those risks even if they could.[26] Lastly, Steinhoff argued that if soldiers did not enter into a contract under the conditions of PUR, then PUR cannot be used as a basis to void burdening soldiers with unnecessary risks and thus conveniently justifying the implied duty to employ AWS.[27]

Contrary to Steinhoff's belief, consent to undertake potentially lethal risks does not preclude the need to mitigate those risks. A patient may consent to the possibility of dying during an operation, but it does not preclude doctors from doing their best to minimise that possibility. Steinhoff seems to completely disregard the fact that militaries have core values, which their soldiers, especially commanders, are expected to live by daily. In fact, Robert Sparrow supported the importance of military virtues, such as Honour and Mercy.[29] He believed that such virtues help commanders respect the


António Guterres @antonioguterres · Mar 26, 2019
Autonomous machines with the power and discretion to select targets and take lives without human involvement are politically unacceptable, morally repugnant and should be prohibited by international law. bit.ly/2JGExMD
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UN Secretary General António Guterres' take on AWS.[30]

lives of not only civilians, but also their own soldiers, even in the heat of war.

While it may be true that commanders legally do not need to neutralise risks for their soldiers, they morally ought to. According to Immanuel Kant's first and third categorical imperatives, an act is unethical when it is not possible for everyone to commit it.[31] Thus, as all sensible commanders will not want themselves to receive orders to undertake unnecessary potentially lethal risks, let alone their soldiers, it will be unethical to not apply PUR. Kant's second categorical imperative also demands that people act with respect for others.[32] Hence, it will also be unethical for commanders to commit their soldiers through such risks as it will clearly undermine the importance of their soldiers' lives. Therefore, PUR ought to be used as a basis when deciding the best means to accomplish a mission.

MORAL AUTHORITY TO TAKE LIVES

Even if AWS in future can distinguish between combatants and non-combatants, it will still be immoral to allow a fully AWS to decide independently whether to cause fratricide or kill-non-combatants while engaging combatants. This is because AWS are not legal or moral agents, and they do not understand the ethical reasoning that people experience when making life and death decisions. In war, it may be legally acceptable to kill a civilian child, but it may not be ethically acceptable to do so. As such, semi-AWS ought to, instead, be employed with a human being giving the weapon system approval to inflict friendly or civilian casualties, while engaging combatants.

Some may argue that since AWS are not legal or moral agents, it would be unethical for fully AWS to be employed, regardless of there being only combatants in an area. Peter Asaro argued that it would be a "fundamental violation of human rights and human dignity" for a fully AWS to be given authority to kill a person as an "algorithm would be arbitrarily depriving someone of life."[33] Thus, these weapon systems do not have the moral authority to take lives. However, a fully AWS operating in an area filled with only combatants would be no different from human soldiers, as they would be issued with the same orders from human commanders and would kill according to the same international rules. Thus, the accountability and moral authority would lie with a human being. There are also many other horrible ways to die by human hands in war, but these may not be more dignifying.[34] As such, it is unclear how employing a human-approved, fully AWS in a combatant-only battlefield will be unethical.

CONCLUSION

In essence, I have argued that employing fully AWS in war would create an accountability gap as neither the AWS' programmer, commanding officer, nor the AWS itself could be held responsible for the weapon system's actions. However, the accountability gap could be addressed by employing a semi-AWS, as a human operator would be forced to give approval before potentially committing fratricide or killing non combatants. Additionally, I have argued that militaries not only have a legal responsibility under IHL to protect non-combatants, but also a moral responsibility under PUR to protect its own soldiers from unnecessary potentially lethal risks. As such, militaries have the moral duty to employ AWS instead of the soldier, if the AWS can accomplish the mission better and safer. Furthermore, I explained that since AWS are not legal or moral agents, it would be immoral to allow a fully AWS to decide independently whether to cause fratricide or kill non-combatants. Therefore, a semi-AWS ought to be employed in such scenario. Finally, I argued that employing a human-approved, fully AWS in a combatant only battlefield would not be unethical.

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