Artificial Intelligence in Warfare
Jacob Hans

1 Introduction

Military operations and warfare departments are becoming increasingly closer to integrating more advanced artificial intelligence and robotics into the field. The overall idea revolving around this topic is how should the military integrate robotics and AI into operations in order to introduce a more efficient agent into physical warfare. The main question is how can these agents be applied to these circumstances? This is to include the consideration of both positive and negative consequences of their integration. The main problem surrounding physical warfare with human agents is that humans are emotional which can impede proper action within certain wartime events. Robots can be designed to better adhere to the laws of war which can, in turn, "ultimately reduce non combatant casualties and other forms of collateral damage" [1].

Utilizing robotics and AI in the battlefield also holds an interesting economic benefit as well. Robotics would be able to reduce operating costs, be more precise in missions, faster target engagement, and they have an immunity to chemical and biological weapons [1]. This would indeed be a primary consideration in using AI where reducing operating costs is an integral aspect of decision making at a "corporate" level. However, while reducing costs is a useful consequence of using robotics and AI on the battlefield, the ethical considerations are significant. These considerations start to include the impact of risk-free wars and what such machines would actually be capable of [2].

The artificial intelligence used in this scenario takes the form of a "brain" for a robot. The artificial intelligence would be making decisions based on searching algorithms and evaluation functions in order to determine the best course of action for a certain warfare scenario. Currently humans are primarily used to conduct military operations either physically or through operating a variety of robots including bomb defusal and some armed [2]. There have been countless lives lost to war, including innocent civilian casualties. There is also a consideration of psychological impacts that war has on soldiers that survived. Artificial intelligence, while not the only agent working in wartime procedures, would be used in conjunction with robotics to aid in eliminating the emotional vices that often inhibit soldiers from making swift and optimal choices.

2 Ethical Considerations

Looking at this case from a utilitarian approach, more lives of the innocent will be spared, assuming robot agents are designed to spare those lives. Wars could take less time if there were no issues with conscription and the agents would be able to be more swift as those robots could ingest data and make decisions significantly faster than humans. Reduces risk for the nation that is using these agents as there is no need to send in human agents to be soldiers. However, not every nation will have the same ethical standards. So, it is likely that some nation will opt to use AI in warfare to violate "rules of war" to include killing civilians or cause terrorist attacks when under the guidance of the wrong official [2]. This would cause far more

destruction that any positive impacts. There is also the consideration that these robotic agents would have no moral background but would be completely faithful to whatever instructions given to them. This then puts an immense amount of trust in the leaders making these decisions.

From a human rights perspective, it seems as though some rights such as free will could be violated in the current system of warfare. Although soldiers essentially agree to waive this right by faithfully following orders from higher officials, this right is still being violated since they are expected to act emotionlessly, like a robot. Therefore, utilizing these robots in war could be giving the right of free will back to soldiers to decide how to act instead of being "forced" to act on behalf of a commander. Robots would be designed to do exactly what soldiers now are expected to do, carry out orders without question and act as efficiently as possible when doing so. From a different perspective, it must be made clear to those working on the killing robots what they are going to be used for in order to avoid manipulation. If engineers were creating killing machines without knowledge of how they would be used, this could be violating their rights.

In terms of fairness and justice, there are a couple interesting questions that arise. Is this fair if only one side has these advantages? Will this then make a total global dominant force? Under the lens of fairness from a global perspective, it is not fair for one side of a war to have a significant advantage such as AI driven robots in the field. There also needs to be consideration with the way in which robots discern who is a foe and who is an innocent person. Noel Sharkey brought up an interesting point when suggesting to "think of children being forced to carry empty rifles" [2]. A robot would likely be unable to discern a difference and would only be looking for weapons on a person which would be unfair to kill a child being used as bait instead of a terrorist hiding behind the guise of an innocent person. A human would have a significantly easier time being able to make this distinction.

In terms of the common good, there seems to be only one side that the use of robots in war will benefit. Within that nation, the use of AI in warfare benefits the common good since there will be less body bags coming back home which means war is being conducted without the risk of losing that nation's citizens. However, there is a significantly less benefit to the other side of the war since these robots will be able to carry out military tactics in a more swift manner which would obliterate the opposition without collateral. The use of AI in the military will also be more beneficial to military officials since there can be a transition from highly dangerous jobs to jobs that are much safer and are more technical such as robot maintenance.

In terms of virtue, a soldier would be spared from any personal virtues of compassion or integrity that may be violated by killing another human. A robot would have no such idea of these virtues and would be able to make those difficult choices in nanoseconds and not have any emotional damage from those events. These decisions about who to kill would ultimately fall on the official that ordered the killing by the robots instead of putting an immense amount of responsibility on the soldiers that had to physically kill another. In these terms, it seems as though utilizing

robotics and AI in warfare would be more beneficial to reduce the amount of personal virtues that may be violated in soldiers through war.

3 Implications of Ethical Considerations

There are a considerable amount of ethical considerations for the use of robotics and artificial intelligence in warfare that are brought up by this case study. These considerations are extremely important for the future of the military and warfare operations. If the use of robotics with AI becomes integrated with the military, there could be a considerable amount of lives saved for the side those agents are working for. However, those same agents will be taking a far more significant amount of lives from the opposing force. Is this more ethical in the long run? What would happen if a corrupt official gained total control over a force of robots that would adhere to any action call without question? These are crucial questions that would most likely be debated in future conferences or could even be debated in the present.

This case study is fairly representative of ethics in AI as a whole. When looking at AI under an ethics lens, a common case that is used is military usage with drones, and automated killing machines and their consequences. This case also relates to the common sci-fi trope of a sentient killing robot wreaking havoc in the city. While it is unlikely for robots to gain sentience, in the current state of AI, killing robots would be able to be used for havoc under wrong or misinformed guidance. This case study presents many interesting ideas about how military operations could benefit, but it also brings up many morally intensive considerations that may outweigh the benefits.

4 Conclusion

Robotics and Artificial Intelligence in warfare presents many difficult ethical challenges. The most interesting dilemma is whether or not it would be possible for robots to make a decision about whether or not to kill someone based strictly on imaging. There appears to be no approach in the Markkula framework that completely advocates for the use of AI in the military. If one side gains entirely risk-free warfare, then other nations will want to do the same. In a world of risk-free war, the only way to fight against nations in an impactful manner would be to violate acts of war since no side has any risk to prevent war action. This is the terrifying implication of this case study, what will happen if no nation needs to worry about losing people to a war scenario? It suddenly becomes easier and easier to justify going to war when there is no risk involved, and the innocent population will begin to be the only targets.

References

[1] Ronald C. Arkin. 2009. Ethical Robots in Warfare. IEEE Technology and Society Magazine 28, 1 (Spring 2009), 30-33. DOI: https://doi.org/10.1109/MTS.2009.931858

[2] Noel Sharkey. 2008. Cassandra or False Prophet of Doom: AI Robots and War. IEEE Technology and Society Magazine 23, 4 (July 2008), 14-17. DOI: https://doi.org/10.1109/MIS.2008.60