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Research Article

The Weaponization of Artificial Intelligence in the Military: The Importance of Meaningful Human Control

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Abstract

Artificial Intelligence has become an essential part of our lives. It has without a doubt made life much easier and practical whether on a global scale such as economical and political development or on a smaller scale such as our day to day lives. The last half decade marked the beginning of the development of robots that have the ability to perform human tasks. Originally, it was expected that the main disadvantage of AI technology would be related to the loss of work prospects since humans would be replaced by machines that are able to operate in a more efficient matter. While this concern is certainly valid, there is a far more severe issue at hand which is none other than the military's use of AI. Governments, journalists, and tech leaders argue that developing and using intelligent and autonomous weaponry is unquestionably a fatal mistake that might lead to catastrophic consequences; it is particularly problematic if these technologies end up in the hands of the wrong individuals. These experts and scholars argued that these weapons could eventually lead to more damage and destruction and could possibly result in a third world war. Thus, they attempted to explore the moral and, most significantly, legal ramifications of these autonomous weapons. As a result, a new formula had to be introduced; this formula is Meaningful Human Control. In fact, the ultimate goal is to make Meaningful Human Control a legal requirement under International Law in order to allow it to serve as a potential solution for a number of moral and legal challenges that these fully autonomous weapons raise. This paper seeks to understand and elaborate on the benefits and the challenges that come with the integration of meaningful human control in the use of autonomous weapons systems.

Keywords: Artificial intelligence, autonomous weapons systems, meaningful human control

INTRODUCTION

Almost every home in our age has at least one intelligent machine, whether it is a smart phone, a computer, a smart TV, or even an electronic assistant like Alexa, Google, Siri, Bixby and so on. As a result, practically everyone is affected by Artificial Intelligence. Simply explained, Artificial Intelligence refers to computers or computer-controlled robots that are capable of performing activities that require human-level intelligence; these intelligent systems are speculated to reason, understand, and learn from previous experiences in a manner similar to that of a human (Copeland, 2021). Artificial Intelligence had its beginnings in the twentieth century, though it was only a novel and appealing concept employed in film and television at the time (Anyoha, 2017). However, by the 1950s, scientists and mathematicians were debating whether such intelligent systems may one day become a reality (Anyoha, 2017). Many areas of national and international security, such as intelligence, defense, and cyber security, have been influenced and possibly transformed by AI (Horowitz, 2018). Many militaries around the world are already incorporating more robotic and autonomous weapons into their forces (Roe, 2020). This is primarily owing to the fact that they are considered to be more efficient and effective (Joshi, 2021). AI has proven to be quite productive in the military field, from developing autonomous weaponry to developing sophisticated sensors that aid situational awareness (Horowitz, 2018). Artificial Intelligence (AI) has proved beneficial in many areas; yet, some claim that if AI is utilized in certain "sensitive" fields, it may result in unfavorable results (Slijper, 2019). The military is one of these dangerous fields. Military AI is being developed to help with a variety of tasks, including logistics, command and control, force, and so on (Sisson, 2020). As a result, many concerns have been expressed about the fact that certain authorities and rulers of governments are misled by these perks, and hence ignore all of the safety problems that come with them (Sisson, 2020). Some military advisors even tie the employment of artificial intelligence in the military to the possibility of a nuclear war (Garcia, 2019). They even go so far as to say that the militarization of AI is irrevocable (Garcia, 2019).

The Employment of AI in the Military

One of the most serious concerns of the international community is the weaponization of AI. This rapid advancement indicates that artificial intelligence is already changing warfare, and that states will surely continue to build the automated weapons systems that AI will enable (Pandya, 2019). As a matter of fact, some experts feel that AI will have a favorable impact on warfare. To their credit, the arguments they present are rather persuasive. They think that AI might aid the military just as much as any other field. They claim that AI is an area that is continually evolving, and that its capabilities and efficacy are constantly improving (Maxwell, 2020). They believe that this coming technology would not only reduce workload but also increase productivity, and that its agility and speed will surpass even the most qualified human operators (Maxwell, 2020). Others emphasize the dangers of using these weapons, arguing that while AI may improve the current arsenal by making it faster and more effective, it will most likely be humanity's downfall (O'Hanlon, 2018). Warfare has already been adjusted and transformed as we saw in Libya in the spring of 2021 (O'Hanlon, 2018). What was once just a movie concept to entice

viewers has now become our reality. Dozens of non-human piloted drones utilized their built-in cameras to scan, recognize, and strike their targets and chase away Hifter's forces (Vynck, 2021). As a result, despite its alluring benefits, many states and groups are urging the world not to give in to these technologies (Maxwell, 2020). They warn that entrusting AI systems with significant responsibility and allowing them to make key judgments could lead to devastating effects (Maxwell, 2020). Using these technologies in the military is not a new concept. Indeed, as early as 2010, the arm section of the renowned South Korean tech corporation Samsung invented and built surveillance guns called SGR-A1 robots, which utilize image recognition to find and shoot at humans (BBC News, 2014). These guns can identify North Korean troops crossing the border and, while no such incidents have occurred, these guns are capable of firing without the assistance of a human operator (BBC News, 2014). However, due to the negative press reaction to these weapons and to avoid any mistakes, the autonomous mode on these weapons has been temporarily disabled; hence, instead of shooting immediately, these weapons inform an agent who then makes the decision (BBC News, 2014). By today's standards, the SGR-A1 weapons are no longer viewed as advanced (BBC News, 2014). In fact, considerably more amazing weapon systems have been introduced by the US Navy, such as Northrop Grumman's X-47B, a drone the size of a fighter jet, or the UK's Taranis, an aircraft that can travel at ultrasonic speed and is meant to perform precise and preset strikes (BBC News, 2014). In addition, the Harpy is a powerful "Fire and Forget" missile developed by Israel. Regardless of the weather, this piece of artillery can efficiently complete its duties (IAI, 2015). It's also known for its peculiar properties. It enters the fighting zone from behind; it wanders above enemy territory, which is known as a "Loitering Area" and it scans, detects, and removes any radars or possible dangers (IAI, 2015). It's reasonable to assume that, like many other industries, the military cannot seem to keep clear from AI's breakthrough technology (Maxwell, 2020). As a result, we're seeing a growing competition among states to see who can get the most out of AI. While some countries invest in AI to gain power and "intimidate" potential rivals, others appear to be forced to do so in order to preserve their own safety in the event of an attack (Maxwell, 2020). To put it in another way, these countries acquire these weapons despite their opposition to the militarization of AI because they must be ready to defend their territories if they were to be attacked by a state that utilizes Lethal Autonomous Weapons. Many major AI leaders, such as Steven Hawking, Elon Musk, and Steve Wozniak, are concerned about AI's rapid and constant growth and its implications on future autonomous weaponry (Lee, 2021). These killer robots will become increasingly intelligent, fast, and precise over time, and, most significantly, they will become less expensive (Lee, 2021). Indeed, according to these experts, there will come a time when 10,000 drones capable of destroying half a city will cost no more than $10 million (Lee, 2021). While these analysts accept the benefits of Autonomous Weapons Systems, they argue that the disadvantages outweigh the advantages. One of the most serious worries is that complete autonomy without moral constraints will eventually effect the speed of conflict, while also increasing losses; it would most likely accelerate events and lead to a nuclear war (Lee, 2021). Some may wonder why

these weapons are more lethal than ordinary ones. All weapons are harmful and destructive, but intelligent weapons have the potential to choose and attack a target without the need for human intervention (Horowitz, 2018). This should be utterly unacceptable because these weapons and robots lack any kind of emotional intelligence, and as a result, they could and will eventually lead to humanity's demise (IBM Cloud Education, 2020). The notion that autonomous weapons systems cannot be disciplined or punished is the source of this concern. The enormous benefits that will be gained as a result of Autonomous Weapons Systems' deployment have drawn a lot of attention. The threats that Autonomous Weapons Systems may pose, on the other hand, have received far less. The underlying contrasts between the need for military efficiency and the need to keep crises between large nuclear weapon states stable and avoid aggravation are often too obvious and vital to overlook (Laird, 2020). The progress of Autonomous Weapons Systems may be increasing the likelihood that competing powers such as the United States and Russia will find themselves in a hostile situation in the future (Laird, 2020). Thus, while Autonomous Weapons Systems are still in their early stages of development, policymakers should carefully consider whether their apparent operational benefits are worth the risk of instability and escalation between states (Laird, 2020). Warfare will undoubtedly be changed and transformed as artificially intelligent weapons become available (Frantzman, 2020). Government research institutions throughout the world are collaborating with technological labs to implement AI in the military and disrupt the status quo (Johnson, 2019). Some countries utilize these weapons solely to monitor and patrol their borders, like Turkey did with its quadcopter drones along its border with Syria (Vynck, 2021). In contrast to the remote-controlled drones deployed by the US military in Iraq, these quadcopters explode on impact, destroying the target without the assistance of a human operator (Vynck, 2021). The irony lies in the fact that, despite their reputations for producing and employing Lethal Autonomous Weapons [LAWS], countries like the United States, China, and Russia continue to participate in debates concerning treaties aimed at limiting autonomous weapons (Vynck, 2021).

Meaningful Human Control

Large and well-known organizations have debated an international ban on these weapons, sometimes known as "killer robots" (Wheeler, 2017). Many tech leaders agreed, but they also warned that these weapons could cause greater harm and damage in the long run, possibly leading to a third world war (Johnson, 2019). Indeed, the vice president of research at Thales, a French defense research agency that provides drones to the British army, stated his concern that these hazardous weapons will fall into the hands of terrorist organizations in the near future (Wheeler, 2017). One can't help but imagine the disastrous consequences if this were to happen. As a result, all governments have a responsibility to protect their citizens and ensure their safety from these killer robots. Despite the fact that certain AI-leading countries insist on militarizing AI, others underline the significance of human control in the use of force (Congressional Research Service, 2021). According to military and defense analysts, the militarization of AI's goal is to eventually reduce the number of human soldiers on the battlefield, lowering the number of losses (Joshi,

2021). This also means that humans will play a smaller role in decision-making, as AI weapons were built to "think" like people using preprogrammed software that allows them to make decisions based on pre-registered descriptions and information (Gatopoulos, 2021). As a result, the value of human presence, at least throughout the decision-making process, and how it might help prevent catastrophic damage and destruction is underlined (Roe, 2020). In wars and conflicts, mostly fully or partially supervised weaponry has been utilized (D'Monte, 2014). Drones, canons, machine guns, rockets, and other weapons all require human intervention or, at the very least, human supervision (D'Monte, 2014). While some say that AI is necessary in the military because it is more efficient and supposedly reduces human casualties on the battlefield, others argue that human involvement is critical in the employment of weapons; they argue that the decision to kill should not be left to a robot (D'Monte, 2014). The premise of this argument is that these computers lack the ability to act on principles or based on previous experiences, and hence lack prudential judgment (Human Rights Watch, 2016). As a result, "prudential judgment cannot be translated into algorithms," as emphasized by Holy See at the Convention on Certain Conventional Weapons meeting (See, 2015). Artificially intelligent weaponry should never be coupled with emotions such as remorse, empathy, or psychological hardship (Human Rights Watch, 2016). Many advocates of the total ban on autonomous weapons systems are concerned that the general laws of war will not be able to address the new issues brought by Autonomous Weapons Systems (Scharre M. C., 2015). As a result, the laws of war have to be amended to include a new rule: meaningful human control. In fact, when discussing the relevance of human engagement in the use of weapons, the term "meaningful human control," or MHC for short, is frequently used in CCW meetings (Tamburrini, 2019). Humans should have complete control over when, where, and how these weapons are employed, as well as what or whom they are utilized against, according to the MHC formula (Human Rights Watch, 2016). Several states expressed interest in MHC at the CCW meetings, and the idea of drawing a clear line between autonomy and automation appealed to them (Tamburrini, 2019). However, it is disputed as to what level of human control over weaponry should be applied in order for it to become "meaningful". Some states argue for the employment of autonomous weapons, stating that they are more efficient, reduce human casualties, and make combat safer for civilians, while others respond with three points (Tamburrini, 2019). First, autonomous weapons may have difficulty adhering to international humanitarian law's criteria of distinction and proportionality. While operations with an accurate and precise answer are ideal for automation, some engagement-related tasks, on the other hand, necessitate moral and ethical judgment, which can only be delivered by a human operator (Scharre M. C., 2015). Second, the employment of these weapons could lead to concerns with accountability. As a result, determining who should be held liable in the event of an unfortunate situation will be difficult (Vynck, 2021). Furthermore, the performance of these AWS in the face of unforeseeable and unpredicted developments is a source of concern. Finally, AWS would be in violation of basic human moral values (Tamburrini, 2019). These arguments serve as important guidelines that underline the significance of human

engagement, or as experts call meaningful human control, in the employment of intelligent autonomous weaponry (Tamburrini, 2019). These concerns, interestingly, are similar to the ones presented by those who urge for a complete ban on autonomous weapons (Tamburrini, 2019). As a result, although many countries support the employment of completely autonomous weapons, others ensure that proper human control over weapons is implemented (Scharre M. C., 2015). Many organizations, such as the International Committee of the Red Cross, have recommended technology aspects that could aid in human control (Schwarz, 2018). These characteristics include dependability, predictability, transparency, precision, and so on (Schwarz, 2018).

CONCLUSION

The idea that states are incorporating AI into their defense systems to "strengthen their military" and "improve the security of their nations" is regarded with skepticism (Garcia, 2019). Many analysts feel that the deployment of AI in the military by some AI-leading countries is purely to ensure their position at the top of the power pyramid. As a result, worries about the military's use of artificial intelligence and the future of combat are ignored (Johnson J, 2019). Militaries all over the world are racing to build AI systems that leverage advanced technology to improve command and control, decision support, and intelligence and surveillance (Sisson, 2020). The rapid evolution of these technologies undoubtedly raises questions and worries (Slijper, 2019). As a result, despite the support of many AI-leading states, the militarization of artificial intelligence remains a point of contention for countries in the Global South, who claim that the employment of these weapons raises serious issues about international security (Zafonte, 2018). As a result, they are urging the Convention on Certain Conventional Weapons to enact a total ban on the production and deployment of these Lethal Autonomous Weapons.

REFERENCES

Anyoha, R. 2017. The History of Artificial Intelligence. Harvard University: The Graduate School of Arts and Sciences.

BBC News. 2014. Future Tech? Autonomous Killer Robots Are Already Here. BBC News .

Congressional Research Service. 2021. International Discussions Concerning Lethal Autonomous Weapon Systems. In Focus.

Copeland, B. 2021. Artificial Intelligence. Britannica.

D'Monte, L. 2014. Should Robots Kill Without Human Supervision? Mint .

Frank Slijper, A.B. 2019. State of AI: Artificial Intelligence, the Military and Increasingly Autonomous Weapons. PAX .

Frantzman, S.J. 2020. Israel's Use of Artificial Inteligence Will Change the Future of War. The National Interest .

Garcia, E. 2019. The Militarization of Artificial Intelligence:A Wake-Up Call for the Global South. Research Gate.

Gatopoulos, A. 2021. Project Force: AI and the military- a friend or foe? Aljazzera.

Human Rights Watch. 2016. Killer robots and the concept of meaningful human control. Human Rights Watch.

IAI. 2015. Harpy, Autonomous Weapon for All Weather. Israel Aerospace Industries, 1.

IBM Cloud Education. 2020, June 3). Artificial Intelligence (AI). IBM .

Johnson, J. 2019. Artificial Intelligence & Future Warfare: Implications for International Security.

Joshi, N. 2021. Pros and Cons of Killer Robots. BBN Times .

Laird, B. 2020. The Risks of Autonomous Weapons Systems for Crisis Stability and Conflict Escalation in the Future U.S.-Russia Confrontations. Rand Corperation: Objective Analysis. Effective Solutions.

Lee, F.K. 2021. The Third Revolution in Warfare: First there was gunpowder. Then nuclear weapons. Next: artificially intelligent weapons. The Atlantic.

Maxwell, P. 2020. Artificial Intelligence Is The Future Of Warefare (Just Not In The Way You Think). Modern War Institute At West Point.

Melanie Sisson, J.S. 2020. The Militarization of Artificial Intelligence. Stanly Center, For Peace And Security.

Michael C. Horowitz, G.C. 2018. Artificial Intelligence and International Security. Washington, DC: Bold. Innovativ. Bipartisan.

O'Hanlon, M.E. 2018. The Role of AI in Future Warfare. Brookings.

Pandya, J. 2019. The Weaponization of Artificial Intelligence. Forbes

Roe, D. 2020. A Look at the Downsides of Artificial Intelligence . Reworked.

Scharre, M.C. 2015. Meaningful Human Control in Weapon Systems: A Primer. Center for a New American Security , 5-15.

Schwarz, E. 2018. The (im)possibility of meaningful human control for lethal autonomous weapon systems. Humanitarian Law & Policy .

See, H. 2015. Meeting of experts on lethal autonomous weapons systems. CCW, 4.

Tamburrini, D.A. 2019. What Makes Human Control Over Weapons Systems "Meaningful"? ICRAC: International Committee for Robot Arm Control, Report to the CCW GGE , 1-14.

Vynck, G. D. 2021. The U.S. says humans will always be in control of AI weapons. But the age of autonomous war is already here. The Washington Post .

Wheeler, B. 2017. Terrorists "Certain" to Get Killer Robots, says Defence Giant. . Bbc News .

Zafonte, A. (2018). Weaponized Artificial Intelligence & Stagnation In The Ccw: A North-South Divide. E-International Relations , 1-7.