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ARTIFICIAL INTELLIGENCE AND MODERN SOCIETY: A SOCIOLOGICAL INTERROGATION OF THE SPRAWLING SOCIAL THREATS

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ABSTRACT
Artificial intelligence (AI) is fast becoming the cornerstone of all strands of society: governance, business, banking, weaponry, hi-tech, general manufacturing, etc. With a high guarantee for organisational efficiency across civilian and military industrial complexes, as exemplified by the increased degree of precision and delivery of variants of AI-automated lethal autonomous weapons, among others, artificial intelligence has come to offer the modern society rare services and commodities at the least cost. Despite the gains, there are emerging threats all around the process, and society, as the centre of it all, is increasingly confronted with the glaring absence of comprehensive AI social safeguards against any potential devastation in the event of errors, omissions, or designs in the handling or delivery of variants of AI-automated lethal autonomous weapons. The central question is: how safe is humanity in an AI-dominated world? The paper critically analysed the multi-dimensional threat fronts of artificial intelligence in general and lethal autonomous weapons in particular and found that, though society has indeed a lot to gain from the technology, it is not without safeguards against the threats of its possible devastation, which are becoming more real every day. It is thus recommended that cost-benefit analysis be deeply entrenched into the whole process of development and deployment of lethal autonomous weapons and other forms of artificial intelligence so as to continually increase the gains and contain the excesses that open every aspect of human society to threats.
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Keywords: Artificial intelligence, lethal autonomous weapons, society threats, and social safeguards

1. INTRODUCTION

Artificial intelligence is fast becoming deeply integrated into virtually all sectors and sub-sectors of society, increasingly breaking down erstwhile industrial barriers and fusing many strands of the industry into cohesive functional units, as manifest in the exploits of mechatronics engineering processes. Thus, the social reality of the time is that artificial intelligence has become the epicentre and engine of modern society, from the manufacturing industry to the healthcare system, finance and banking, sports, and indeed most other parts of human endeavours.

No one can be more easily shielded from noise and smoke, and indeed the social reality of artificial intelligence, because they are deeply embedded in various operational units of different aspects of communication, governance, business, transportation, engineering, and the healthcare system, among others.AI has become a cornerstone of society in general and industrial efficiency in particular, being used to save money and simplify complex requirements in manufacturing processes, information and communication dissemination, and other service delivery.

Essentially, the underlying driver of AI is society's desire to maximise the use of available, limited resources, which now leaves no aspect of human society immune to the intense drive for technological exploits. For example, the transportation sector is heavily coming under the control of AI with automated cars, robotic waiters, drone surveillance in space, etc. In the health sector, artificial intelligence is deeply embedded into the diagnostic and care processes, the treatment, and other aspects of

healthcare delivery. The narrative is not different in the security and education sectors, to mention but a few. The emphasis here is that artificial intelligence has become the combustion engine behind the world's self-automated cars and drones, among others, with the banking and finance sectors having their fair share of AI in their operations as automated machines of different sorts are also gradually emerging in the sectors.

In the communication industry, the depth and breadth of AI's use are almost inestimable. There are translators who have the capacity of swiftly moving from one language to another, thus easing linguistics, language translations, and translation studies. Arms production and delivery systems have been boosted as much by AI's lethal autonomous weapons, making for timeliness and high precision in weapon delivery. Chakraborty (2021) simply refers to all these as "artificial solutions." He underscores that "recent results from a large survey of machine learning researchers predict AI will outperform humans in many activities in the next ten years, such as translating languages (by 2024) all the way to working as a surgeon (by 2053). Researchers also believe there is a 50% chance of AI outperforming humans in all tasks in 45 years and of automating all human jobs in 120 years.

Chakraborty (2021) further opines that nearly every aspect of our lives is being affected by artificial intelligence machines in order to boost profitability and enhance our human capabilities, noting as well that AI has become so ingrained in our everyday lives that it is difficult to comprehend life without it, and as a result, humanity will be eternally grateful to those who were the driving force behind this incredible technology and who have contributed to making computer science even more human-like and efficient.

However, amid the innumerable socioeconomic benefits of various sorts of artificial intelligence, worries are fast increasing about its increasing threats to the socioeconomic life of society. Many threats are associated with unmanageable AI development and subsequent innovations, which have a high potential for serious encroachments into various aspects of human lives without consent, ranging from job losses to breaches of privacy, and the concerning rising autonomy of machines over humans, which appears to be driving humanity into greater danger.The fact remains that artificial intelligence and other strands of disruptive technology have changed the way people live and work, and all of those changes are not without immediate or distant consequences.

Fundamentally, artificial intelligence and its ilk have not only changed how we live and work but have also significantly altered "who we are" in terms of what humans do and how they do it on a daily basis, all of which have a greater degree of potency of affecting human identity and all the associated issues, such as human sense of emotions, notion of leisure, nature of relationships, and so on (Klaus Schwab, 2016).

As a result, a slew of new questions are emerging from all directions, including: how safe is man and society in the face of AI's rising tide?What is its true level of effectiveness in changing society's attitude toward negativity? What measures and safeguards are to be taken to address such negative effects on society? For example, how can things like attendant debilitating human emotions and relationships with people and family be handled? Or what harder measures can be put in place to minimise such occurrences or possibly eliminate them completely, knowing that in this case, humanity cannot afford to learn from mistakes but must win this race between the growing powers of technology and human wisdom? (Tegmark 2017:48)

To put it another way, how will society respond to the increasing software disruption in industrial complexes and human organizations? In terms of job security, UBER software is emerging as the world's largest taxi company (wilt drivers job losses), AirBnB is the world's largest hotel company without owning properties (did Hilton hotels see it coming), and we manage computers exponentially better and faster than ever before. This year, a computer defeated every human opponent on the planet—a feat unimaginable even ten years ago.

2. CONCEPTUAL AND THEORETICAL FOUNDATIONS

2.1 Artificial intelligence

As the name implies, artificial intelligence refers to ordinarily human intelligence artificially crafted into machines, which thus capacitates the machines to do things ordinarily possible only through human cognition (Zeide, 2019). Etzioni and Etzion (2017) simply describe AI as software that seeks to reason and form cognitive decisions the way people do, being able to replace humans and thus being called "artificial intelligence minds." To put it another way, AI is defined as any task performed by a programme or machine that, if performed by a human, would be said

to be performed with intelligence if the human applied intelligence. Thus, artificial intelligence systems will typically demonstrate at least one of the following behaviours or tasks associated with human intelligence, such as planning, learning, reasoning, problem solving, knowledge, and manipulations of social intelligence (Fenichet, 2008).

AI is the sum of many technologies used and developed for organisational efficiency (Frey & Osborne, 2017). It is computer-based technology that enables a computer to learn and draw conclusions rather than operate by static rules written by a programmer (Jordan & Mitchell 2015). AI could be traced to machine learning technology, many of whose foundations are commonly associated with artificial intelligence today, though at its inception it was limited to doing static and routine tasks without the ability to alter the calculation process. The technology gradually progressed from the static tasks it was originally associated with to automation technology (Autor, 2015).

Many of the technological abilities of artificial intelligence, which were barely known a decade ago, have been rapidly developed and seen in self-driving cars (Tesla 2016; Uber 2016; WAYMO 2018), voice recognition services that assist the user with information (TechRadar 2017), algorithmic GO players beating word champions (BBC 2016), and many other instances.Basically, the terms "artificial intelligence" and "machine learning" are obviously being applied simultaneously and developed in a wide range of different and possible areas with rising degrees of implementation in pursuit of their better world promise.

2.2 Lethal Autonomous Weapons (LAW)

Lethal autonomous weapons automate weapon delivery processes, which is at the heart of artificial intelligence as it is currently understood. Its descriptions, however, have come to vary from one country's perspective to another. From the Netherlands' perspective, it refers to "a weapon that, without human intervention, selects and engages targets matching certain predetermined criteria, following a human decision to deploy the weapon on the understanding that an attack, once launched, cannot be stopped by human intervention" (Egeland, 2016). This means that there is absolutely no link (in terms of communication or control) with the military chain of command. On the other hand, the US Department of Defense defines "LAW" as a system that is capable, "once activated, of selecting and engaging targets without further intervention by a human operator." The emphasis in the above is that the key characteristic of legal systems is their autonomy, which could be understood as their ability to act independently of human actions (Egeland, 2016).

Another pertinent viewpoint on the subject is that of the Red Cross, which defines it 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, and select) and attack (i.e., use force against, neutralize, damage, or destroy) targets without human intervention. Such weapons are often referred to as "lethal autonomous weapons" or "lethal autonomous armed systems" (International Committee of the Red Cross, 2016). Autonomy can be complete, when the system makes all decisions independently from the moment of launch, or partial, when a human operator takes part in making some decisions in one form or another.

Scholars such as Etzioni and Etzion (2017) define it as software that seeks to reason and form cognitive decisions in the same way that humans do, with the goal of replacing humans and thus being referred to as "artificial intelligence minds." What they imply here is that artificial intelligence can be considered for any task performed by a programme or machine that, if a human carried out the same activity, one would say that the human had to apply intelligence to accomplish the task. Thus, they hold similar views with Fenichet (2008). That artificial intelligence systems will typically demonstrate at least one of the following behaviours or tasks associated with human intelligence, such as planning, learning, reasoning, problem solving, knowledge, representation, and manipulations of social intelligence,

The advent of machine power driven by artificial intelligence has strongly influenced the world in the 21st century. Artificial intelligence is capable of altering every aspect of our social interactions. It has features that could mean great improvements to an organization.

2.3 Organization

Miles et al.'s (1978) exposition on organisation sufficiently describes an organisation as having an "articulated purpose and an established mechanism for achieving it" (Miles et al. 1978, p. 547). It argues that most organisations carry out processes to evaluate their purpose and redefine the operating mechanism

through which they are interacting with their environment. Only efficient organisations understand and define their processes to strengthen their market strategy. Inefficient organisations fail to adapt their processes in a sufficient manner to prevailing circumstances (Miles et al. 1978:547).

2.4 Intelligent Robot:

In general terms, an "intelligent robot" refers to a mechanical creature that has the capacity to function autonomously. The emphasis here is that a robot is mechanical, that is, built and constructed, and that it functions autonomously (Nwaodu, Ijeoma, Odey, and Thakhati, 2018).

3. THEORETICAL FRAMEWORK

The assumptions of scientific management theory are useful in explaining how artificial intelligence can improve organisational efficiency. An assumption of this theory is that management should determine and quantify all factors influencing the production process and use scientific testing to formally arrange the production process in a way that maximises organisational efficiency. Taylor (1970) believes that managers have the responsibility to ensure organisational efficiency by controlling the labour process. They can increase the efficiency of an organisation through scientific management principles applied to maximise worker incentives. The efficiency of an organisation is the extent to which resources are minimised and outputs maximised in pursuit of achieving the desired goals. It focuses on economising the means by which the group achieves its goal. Organizations are made up of individuals working together to accomplish a goal.

Organizations are made up of the necessary human beings, materials, tools, equipment, working space, and appurtenances that are coordinated in a systematic and effective manner to achieve certain goals (Schulze, 1919). All organisations are formed to achieve some objective or goal, but not every need or task results in the formation of a new organization. These objectives serve as guidelines that bring unity of direction to the organisation. It is important to identify the objectives because this will help in choosing methods and materials. Organizing requires coordinating the tasks and activities assigned and the authority delegated to individuals to avoid duplication of efforts while ensuring responsibility.

4. EVOLUTION OF ARTIFICIAL INTELLIGENCE IN MODERN SOCIETY

There are divergent views on the evolution of artificial intelligence, but the claim that John McCarthy is the father of AI is scarcely contested. The evolution of artificial intelligence is commonly traced to John McCarthy, a pioneering American computer scientist and inventor. McCarthy was so named after playing a significant role in defining the area devoted to the creation of intelligent machines. Chakraborty (2021) observed that McCarthy had coined the term in his 1955 proposal for the first conference on artificial intelligence, tagged the 1956 Dartmouth Conference. Basically, McCarthy's intention was to see if there was a way to create a machine that could think abstractly, solve problems, and develop itself like a human because, in his view, "every aspect of learning or any other feature of intelligence can, in principle, be described so precisely that a machine can be made to simulate it" (McCarthy, 1955).

John McCarthy's major achievements in AI include programming languages, the Internet, the web, and robots, to name a few of the world's technological innovations that he paved the way for. Noteworthy is that McCarthy specifically coined the term "artificial intelligence," invented the first programming language for symbolic computation, LISP (which is still used as a preferred language in the field of AI), and invented and established time-sharing. Human-level AI and commonsense reasoning were two of his major contributions (Chakraborty, 2021). In its profile of John McCarthy, the Britannica notes that McCarthy received a doctorate in mathematics from Princeton University in 1951, where he also taught for a period. McCarthy also held professorships at Dartmouth College (1955–58), the Massachusetts Institute of Technology (1958–62), and Stanford University (1953–55 and 1962–2000).

John McCarthy's efforts and contributions in the field of artificial intelligence were widely recognized, earning him numerous awards, including the Turing Award from the Association for Computing Machinery in 1971 and the Kyoto Prize in 1988. In 1990, he was awarded the National Medal of Science in Statistical, Computational, and Mathematical Sciences by the United States of America. In 2003, the Franklin Institute awarded him the Benjamin Franklin Medal in Cognitive Science and Computers. Since that time, AI has become so ingrained in our everyday lives that it's difficult to comprehend life without it. Indeed, Chakraborty (2021) notes that, in general terms, it is undeniable that the technology industry has seen a

wide variety of innovations over the years, but fundamentally, the use of artificial intelligence at any level has proved to be fantastic. It automated a significant number of workers, reducing human effort, and has led everyone to believe that there is even more to come.

On the other hand, the history of AI in warfare is slightly and disputably different. As revealed in the sketches in his notebook, the history of AI in warfare may rather be traced to the development of a variety of AI-coated military techniques seen in lethal autonomous weapons, which themselves can be traced to 1495 when Leonardo da Vinci designed a "mechanical knight" capable of mimicking a range of human motions, including raising its arms, sitting up, and opening and closing its jaw (McCormick, 2014). In order to advance the development of AI in warfare, Nikola Tesla unveiled the first wirelessly remote-controlled vehicle, a small iron-hulled boat, in front of a sceptical audience in New York's Madison Square Garden in 1898. He later tried to sell the device, dubbed "Telautomaton," as well as plans for radio-guided torpedoes, to the U.S. military, despite it not being taken seriously at the time by officials in Washington (McCormick, 2014).

In broad terms, the First World War brought a series of advances in robotic warfare, including the U.S.-made Kettering "Bug" (a gyroscope-guided winged bomb) and the German FL-7 wire-guided motorboat, loaded with hundreds of pounds of explosives. It is remarkable that in 1916, the range of the coastal-patrolling German boats had been doubled when they were outfitted with radio-control systems, and by 1953, the USS Mississippi had test-fired one of the earliest computer-guided missiles, launching a 1,180-pound RIM-2 Terrier off the coast of Cape Cod (McCormick, 2014). It will be recalled that, given the concern that the Soviet Union might technologically outdo the United States, in 1963, the Pentagon's Defense Advanced Research Projects Agency gave the Massachusetts Institute of Technology $2 million to explore "machine-aided cognition." According to Mccormick (2014), the cash infusion accelerated research in artificial intelligence and computer science, and by 1972, the United States Air Force had used laser-guided weapons to destroy the strategic Thanh Hoa Bridge in North Vietnam, marking the first time a so-called "smart bomb" successfully destroyed a major enemy's target.It was further noted that during the Vietnam War, the Air Force also deployed autonomous unmanned surveillance aircraft that fly in circular patterns and shoot film until their fuel runs out (McCormick, 2014).

It can thus be said that artificial intelligence systems have already been applied in almost all parts of our lives, as today autonomous systems compose poems and lyrics, issue loans, diagnose diseases, and teach children. Like any promising technology, artificial intelligence has caught the attention of the armed forces around the globe. Intelligent systems can be used by the armed forces in various applications ranging from the improvement of the effectiveness of military training to the analysis of strategic risks, but the application of artificial intelligence as the "digital brain" of autonomous weapons has attracted the greatest attention of the global community (Asaro, 2012).

5. AI TECHNOLOGY AND THE FUTURE OF WARFARE

Warfare mechanisms are phenomenally revolutionary, as victory depends basically on the degree of efficiency of both the technology and the operation of the technology. Historically, therefore, superiority in weaponry and their delivery systems have remained major determiners of national might and global control. For example, it was during Europe's First Industrial Revolution that the region attained its global superiority status, upon which it exercised global political and economic dominance. The same advantage shifted to the United States and the former Soviet Union as a result of their superiority in military technology over the rest of the world.

Today's revolution is predicated on the incarnation of AI, which has now taken a prime place in motivating global powers to prepare themselves to control and maneuvre the world. In other words, the advancement and superiority of artificial intelligence is the new paradigm of power between superpowers. Thus, on account of an increasing number of microvariables—the foundation of AI—modern warfare has become ever more complex. Those who assert greater control over these changes in any one variable could create an exponential impact on battle outcomes—and even on the war itself. What is AI in the military? Authors decode the complexity and inevitability of AI.

Basically, integration of AI with regular military operations could upgrade logistics, administration, maintenance, training, personal management, and even routine activities or exercises. It has the potential to reduce institutional workload

and allow warriors to focus on core functions.What is more, artificial intelligence could handle the OODA (observe-orient-decide-act) loop faster, create combat intelligent clouds with secure gateways, and upgrade the command-and-control capabilities of the armed forces with the establishment of a resilient, data-oriented, highly automated approach. The military AI ecosystem could support higher formations to design and deploy more effective and efficient battle plans for better control of operations through sharper and deeper insights.

The new intelligent technologies could speed up decision-making capabilities, which would help military leaders take a higher number of offensive or defensive decisions during wars or combat with greater efficacy. Artificial intelligence will accelerate the establishment of a dynamic autonomous system for 360-degree analysis of the environment for better real-time battlefield decision-making. In the words of Xi Jinping (2015), the induction of AI is converting the war from specialized-mechanized war to intelligent-robotized-digitized conflict. Global powers are preparing their military establishments to leverage modern intelligent technologies to optimise war results. Thus, the establishment of PLASSF (the People's Liberation Army Strategic Support Force) by the Xi Jinping government in 2015 is indicative of the seriousness of the Chinese about the induction of technology into the military and in warfare. The main concern is to challenge the United States' supremacy and advance the overall development of military AI technologies. Chinese policymakers released their tenth defence white paper, China's National Defense in the New Era Roadmap, which outlines the entire AI ecosystem for the Chinese Army.

6. ARTIFICIAL INTELLIGENCE AND THE ENHANCEMENT OF MILITARY CAPABILITIES AND SUPERIORITIES IN THE PRESENT AGE OF WARFARE

As indicated above, modern military capabilities have come to be centrally measured by AI compliance. Given the high guarantee of precision and efficiency, great powers are quickly adjusting to AI for maximum efficiency in the development and delivery of weaponry. This is fundamental, as AI technology has become the key driver of the pace of societal evolution and redefines social parameters with unique outputs. Every emerging power's goal is to use AI to prepare for maximum control and dominance of military manoeuvres with the goal of establishing their high level of control in the global power play because artificial intelligence superiority is the new paradigm of power between superpowers.

AI technology is irreversibly becoming the most important actor in determining the effective power of a nation in modern military warfare. It enables the military to encounter complex challenges through effective and innovative methods and will be a key component in future wars. Global military institutions and countries are trying to identify areas where this "metallic intelligence" could plug into regular military operations.

AI-powered weapons have significantly altered the face of modern warfare due to their high-speed delivery efficiency and general military combat readiness capabilities.Drone swarms, IAI-based smart logistics with integrated actions, an IAI-based transportation system for each node of the establishment, and IAI-enabled target recognition capabilities across naval, air, and land attacks are some examples. Unmanned Combat Aerial Vehicle, Unmanned Intelligent Ground Vehicle, IAI-enabled deep analysis of integrated warfare theatres (land, naval, and air), cyber security, cyber warfare, robotic battlefields, advanced war simulators, and AI-based war games for training the forces: I conduct predictive and sequential threat and situation analysis. I use AI techniques for military data processing and analysis. AI-based guided and loitering missile systems, AI-based autonomous weapons systems, etc.

Essentially, AI-driven drones in the sky and their ilk have the potential to unleash unprecedented disasters.Controlled far away from the conventional battle field, these swarms can swoop down over territory across international boundaries and unleash destruction powered by a barrage of cross-spectrum ammunition. Threats of uninhibited intensity—without an actual declaration of war—are what militaries across the world could be left grappling with. The recent drone attack at the IAF base in Jammu is perhaps just the beginning of this covert form of warfare. So are the rest in their respective areas of delivery focus. They all have one thing in common: they have revolutionised modern warfare, taking it hundreds of kilometres away from what it used to be.

7. INTERROGATING THE SOCIAL THREATS OF THE WIDENING APPLICATION OF ARTIFICIAL INTELLIGENCE IN MODERN WARFARE

An examination of AI applications in modern warfare reveals that, despite numerous and rather broad-ranging societal benefits ranging from enhanced multi-layer capabilities of military forces in dealing with a spectrum of undefined war situations or hostile environments to its unprecedented enablement of rapid decision-making capabilities in both a dynamic information dense environment and in information sparse situations (BW, Aug. 2021), there remains a progressive decline.

Restating the gains for emphasis, artificial intelligence easily creates taxonomies of events from available data sets for integration and structuring of data, thus aiding real-time decision support. As wars become more driven by information, AI can provide or recommend valuable options to the commanders that the human brain may not be able to assess on account of the volume or decision-time stress. To that extent, global military powers are smartly working towards modelling a common platform to handle the context-based challenges from the sea floor to space, using the convergence of disruptive technologies combined with different tools enabled by AI.

, This entire process is driven by knowledge rather than numbers.It strengthens the basis for a radical shift from attrition- and destruction-based approaches to ones based on effects and outcomes. This fusion of old war skills with AI technology is driving the evolution of a new doctrinal concept of war that is based on rapid and accurate decisions, deployments, and destruction of the adversary's ability and will to fight instead of one based merely on the targeting of enemy armament and arsenal.

AI-based models are required for each country to demystify and structurally address the enemy's hidden warfare behaviors. There is now a shift from just digital warfare—artificial warfare—to a new level of bravery in cyberspace. With the advent of digitised warfare training, artificial intelligence is the next-generation weapon required to transform the way in which armed forces operate, train, and fight—right from the barracks to the trenches. AI-based models are required for each country to demystify and structurally address the enemy's hidden warfare behaviors. Accurate decisions supported by AI could have an exponential impact on the conduct and outcome of wars.

On the other hand, there are the enormous emerging social challenges. Basically, the AI's dynamic and instantaneity in air warfare situations and split-second responses are like two-edged swords that must be controlled and properly handled in and outside the battlefield. For example, artificial intelligence-based situational responses can provide more accurate context to our pilots in conflict zones but cannot provide a complete solution, and the requisite underlay hardware and the overlays of networks and systems are a necessity. The operational knowledge built into AI can create competencies that can enhance the operational capabilities of submarines on seabeds; cognitive frameworks built on AI can help submarines sense qualitative changes in the environment and respond with more sophisticated options, but there is no absolute guard against their mishap as their complexities are more difficult to control, particularly in emerging state militaries.

Aside from the issues, operational challenges include the general social impact on law and peace around the world.The questions that arise therefore hinge on how to handle this emergent interface of lethal autonomous systems, international law, and society, as the legal implications of existing autonomous weapons systems look very enormous. At first, how will the emergent system meet the operational standards of the military without compromising the legal requirements of international humanitarian law (IHL) and the general norms of global peace and security? There are fears that AI and future technologies may or may not meet these requirements, yet the reality is that autonomous weapons have already been adopted in many countries around the world, and their presence determines the strategic military capacity of these countries (Gill, 2019).

AI, as a software-based revolution, has many advances such as facial recognition and computer vision, autonomous navigation in congested environments, cooperative autonomy or swarming, and is being used in a variety of assets ranging from tanks to ships to small commercial drones (Wang et al. 2020). Lethal autonomous systems interface with a number of human and non-human factors and have become challenging social issues.

The fact is that the AI system has a high fatality potential given that it basically allows highly lethal systems to be deployed on the battlefield that cannot be controlled or recalled once launched. Unlike any weapon seen before, they could also allow for the selective targeting of a particular group based on parameters like age, gender, ethnicity, or political leaning (if such information was available). Although it is accepted that lethal AWS would greatly reduce

personnel costs and could be easily obtained at a low cost (as in the case of small drones), small groups of people could potentially inflict disproportionate harm, thereby making lethal AWS a new class of weapon of mass destruction (Szpak, 2020).

Lethal autonomous systems possess a number of advantages for which societies' military organisations and governments rate them higher even in the midst of their potential threats. At first, they are often more accurate and effective and are not subjected to "the human factor." Thus, they are mostly cheaper to operate and can be easily improved by software updates, and Krishnan (2009) notes they have the opportunity to make war more humane and reduce civilian casualties by being more precise and taking more soldiers off the battlefield. However, there are serious concerns about the non-compliance of such weapons with international law, worries about accidental escalation and global instability, and the risks of seeing these weapons fall into the hands of non-state actors. Thus, over 4500 AI and robotics researchers, 250 organizations, the Secretary General of the UN, and 30 nations in the United Nations have explicitly endorsed the call for a ban on lethal autonomous weapons systems due to ethical concerns, including concerns about operational risk, accountability for use, and compliance with the proportionality and distinction requirements of the law of war. They have been met with resistance from countries developing lethal AWS, fearing the loss of strategic superiority. (Mary, 2020)

The list of fundamental ethical, moral, and operational concerns keeps growing. Delegating life-and-death decisions to machines on the battlefield or in policing, border control, and other circumstances is a step too far. If left unchecked, the move could result in the further dehumanisation of warfare. In 2013, Human Rights Watch and other human rights groups established the Campaign to Stop Killer Robots to provide a coordinated voice on these concerns and work to ban fully autonomous weapons and retain meaningful human control over the use of force (Javorsky et al. 2019). None of the nine United Nations meetings held since 2014 on killer robots have focused at any length on how better programming could be the solution. There remains a lack of interest in discussing whether there are potential benefits or advantages to removing meaningful human control from the use of force. Instead, the legal debate continues over the adequacy of existing law to prevent civilian harm from fully autonomous weapons. There's growing acknowledgement that the laws of war were written for humans and cannot be programmed into machines. Indeed, by 2020, the issue of removing human control through the use of force will be widely regarded as a grave threat to humanity that, like climate change, deserves urgent multilateral action. Political leaders are waking up to this challenge and are working for regulation in the form of an international treaty (Mary, 2020).

8. BASIC SECURITY THREATS OF AI'S LETHAL AUTONOMOUS WEAPONS SYSTEM

The security threats posed to society by lethal autonomous weapons systems are manifestly numerous. They could be seen from the points of view of how they guarantee civilian protections under the principles of international humanitarian law and of the capacity of the system to make distinctions between civilians and combatants, which in that case has been transferred to a machine (Human Rights Watch, 2015). Thus, the degree of threat correlated with civilian protection is couched in the question of how a robot can be effectively programmed to avoid civilian casualties when humans themselves lack the ability to make distinctions in today's inter-state conflict settings without clear boundaries between a variety of armed groups and civilians. Distinguishing an active combatant from a civilian or an injured or surrendering soldier requires more than advanced sensory and processing capabilities, and it would be extremely difficult for a robot to gauge human intention based on the interpretation of subtle clues such as tone of voice or body language (Garcia, 2018).

On the other hand, in certain situations, the proportionality of military attacks that are not conducted due to the risk of causing disproportionally high civilian damages It has been doubted that a robotic system is capable of making such decisions. Again, with an autonomous weapon system, no individual human can be held accountable for his or her actions in an armed conflict. Instead, responsibility is shared by a larger, possibly unidentifiable group of people, including the robot's programmer or manufacturer (Human Rights Watch, 2015).

Lethal autonomous weapons systems are said to have increased the risk of war. As the UN Special Rapporteur on extrajudicial, summary, or arbitrary executions pointed out in his report to the Human Rights Council, the removal of humans from the selection and execution of attacks on targets constitutes a critical moment in the new technology, which is

considered a "revolution in modern warfare." He urged states to think carefully about the implications of such weapon systems, noting that such technology increases the risk that states are more likely to engage in armed conflicts due to a reduced possibility of military casualties. Fully autonomous weapons could lower the threshold of war, especially in situations where the opposing side does not have equivalent systems to deploy in response (Human Rights Watch, 2012).

8.1 Cool calculators or tools of repression?

Supporters of fully autonomous weapons argue that these systems would help overcome human emotions such as panic, fear, or anger, which lead to misjudgement and incorrect choices in stressful situations. However, opponents to the development of these weapon systems point out that this so-called advantage can turn into a massive risk for people who live in repressive state systems. Fully autonomous weapons could be used to oppress opponents without fearing protest, conscientious objection, or insurgency within state security forces. The dehumanisation of targets would be matched by the dehumanisation of attacks. Algorithms would create a perfect killing machine, stripped of the empathy, conscience, or emotion that might hold a human soldier back (Human Rights Watch, 2014). There are also widespread concerns about programming human bias into these machines. A machine could be biassed and programmed with prejudice on the basis of race, sex, gender identity, sexual orientation, socioeconomic status, or ability.

8.2 Proliferation:

Finally, concerns have been expressed that fully autonomous weapon systems could fall into the hands of non-authorised persons. A new international treaty to prohibit and restrict killer robots has been endorsed by dozens of countries, UN Secretary General António Guterres, thousands of artificial intelligence experts and technology sector workers, more than 20 Nobel Peace laureates, and faith and business leaders. In addition, the International Committee of the Red Cross sees an urgent need for internationally agreed-upon limits on autonomy in weapon systems to satisfy ethical concerns (the dictates of the public conscience and principles of humanity) and ensure compliance with international humanitarian law (International Committee of the Red Cross, 2016). In his address to the United Nations last month, Pope Francis commented on killer robots, warning that lethal autonomous weapons systems would "irreversibly alter the nature of warfare, detaching it further from human agency." He urged states to "break with the present climate of distrust" that is leading to "an erosion of multilateralism, which is all the more serious in light of the development of new forms of military technology" (Mary, 2020).

9. THE IMPACT OF AI AND LETHAL AUTONOMOUS WEAPONS ON GLOBAL PEACE

Currently, there are many examples of how the application of autonomous weapons systems has increased the effectiveness of solving combat tasks. For instance, the US and Israel jointly developed and commissioned the Iron Dome system, which protects against ground-to-ground weapons such as mortar mines and rockets fired at Israel. The Iron Dome consists of three subsystems: anti-missile, artillery-mortar, and close-range air defense. The system automatically intercepts up to 90% of all missiles launched from the territories surrounding Israel (Grudo, 2016). The lethal autonomous weapon is actively used to secure borders. Such systems are already deployed in Israel and South Korea. Another example of a promising lethal autonomous weapon is an automated gun turret, the Super Aegis 2. It was developed in South Korea and can detect and lock onto human targets from kilometres away. The turret is able to operate without the intervention of an operator. The weapon is exported to many countries, but with a "human-in-the-loop" regime. The examples above do not raise legal questions because these weapons can only fire on targets that are encroaching on a well-delimited area (Johnson, 2013).

The development of artificial intelligence and its uses for lethal purposes in war will fundamentally change the nature of warfare as well as law enforcement, and thus pose fundamental problems for the stability of the international system. To cope with such changes, states should adopt preventive security governance frameworks based upon the precautionary principle of international law and upon previous cases where prevention brought stability to all countries (Gill, 2019). Such new global governance frameworks should be innovative, as current models will not suffice. Robotics and artificial intelligence, according to the World Economic Forum, will bring the most benefits but also the greatest risks to the future (De Landa, 1991). Additionally, they are also the areas in most urgent need of innovative global governance. Leading scientists working on artificial intelligence

have argued that the militarization and use of lethal artificial intelligence would be highly destabilising (Kelly & Moodie, n.d.).

For years, scientists and roboticists have warned that computers may be better than humans at some tasks, but killing is not one of them. They warned that autonomous weapons systems would be able to process data and operate at a greater speed than those controlled by humans. Complex and unpredictable in their functioning, such systems would have the potential to make armed conflicts spiral rapidly out of control, leading to regional and global instability (Acheson, 2018). Autonomous weapons systems would be more likely to carry out unlawful orders if programmed to do so due to their lack of emotion and the fact that morality cannot be outsourced to machines. With military investments in artificial intelligence and emerging technologies increasing unabated, various organisations are demanding arms control. Yet China, Israel, Russia, South Korea, Britain, the United States, and other military powers have continued their development of air, land, and sea-based autonomous weapons systems (Mary, 2020).

Human Rights Watch took a close look at these investments and the warnings from the scientific community. It didn't take long to see how allowing weapons systems that lack meaningful human control would undermine the basic principles of international humanitarian law and human rights law, including the rights to life and remedy and protecting human dignity. Their use would raise a substantial accountability gap when it comes to removing human control from the use of force, finding that programmers, manufacturers, and military personnel could all escape liability for unlawful deaths and injuries caused by fully autonomous weapons (Human Rights Watch, 2015).

In April 2013, a group of non-governmental organizations, including WILPF, launched the Campaign to Stop Killer Robots in London. The campaign has established a coordinated civil society call for a ban on the development, production, and use of fully autonomous weapon systems and seeks to address the challenges to civilians and international law posed by these weapons. The campaign builds on previous experiences from efforts to ban landmines, cluster munitions, and blinding lasers. The campaign emphasises the ethical implications of empowering machines to decide between the death and life of human beings (Campaign to Kill Robots, 2013). It urges states to negotiate a treaty that preemptively bans the further development and use of fully autonomous weapons. Such a treaty would include the prohibition of the development, production, and deployment of fully autonomous weapons. The campaign emphasises that this matter must be regarded as an urgent concern, especially from a humanitarian perspective. In addition to international treaty prohibition, the campaign advocates for national prohibition through national laws and other policy measures. The campaign has grown into over 100 member organisations calling for a ban on fully autonomous weapon systems and is mobilising an ever-growing number of the public to join the campaign's efforts to retain human control over violence (Campaign to Kill Robots, 2018).

10. SUMMARY OF THE DEBATE

It has been severally underscored in the preceding subsections that lethal autonomous weapons emerged as one of the latest advances in artificial intelligence with the inherent capacity to identify, select, and engage a target without meaningful human control, thus being described as the third revolution in warfare after gunpowder and nuclear weapons. All the above potentials and capacities of the LAW notwithstanding, it has also been underscored as being a great threat to global peace and security. De Landa (1991) specifically notes that lethal autonomous weapons have brought the world to the brink of a new arms race.

Indeed, LAW is in many ways different from the many semi-autonomous weapons preceding it, which rather rely on autonomy for certain parts of their systems but basically have a communication link to a human that will approve or make decisions. In contrast, under LAW, a fully autonomous system could be deployed without any established communication network and would independently respond to a changing environment and decide how to achieve its pre-programmed goals (Kelly & Moodie, n.d.). Given the ethical, political, and legal debates surrounding this level of autonomy, this may be wonderful and good. Mainly because autonomy in the use of force and the decision to take a human life makes lethal autonomous warfare an entirely revolutionary phenomenon, it may create a paradigm shift in how war is waged (Acheson, 2018).

As indicated above, in contrast to semi-autonomous weapons that require human oversight to ensure that each target is validated as ethically and legally legitimate, such fully autonomous weapons

select and engage targets without human intervention, representing complete automation of lethal harm. For example, an autonomous vehicle equipped with a machine gun that is remotely focused on a target by an operator will not be considered to be an autonomous weapon. Complete autonomy is a property characterised by independent functioning and behavior. Despite the fact that such systems are developed by humans, it is quite difficult to predict how they will behave at one point or another. Moreover, some authors suggest that autonomous weapons are guaranteed to behave unpredictably in difficult situations of real combat (Egeland, 2016). Thus, autonomy implies the possibility of action without human participation and a certain degree of unpredictability. Such systems can operate on land (Nguyen et al., 2009), in the air (Wingo, 2018), and at sea (Wirtz, 2020) in conditions that are not suitable for humans (zones of radioactive contamination, high temperatures, overloads, etc.).

This ability to selectively and anonymously target groups of people without human oversight would have dire humanitarian consequences and be highly destabilizing. By nature of being cheap and easy to mass produce, lethal autonomous weapons can fall into the hands of terrorists and despots, lower the barriers to armed conflict, and become weapons of mass destruction, enabling very few to kill very many. Furthermore, analysts have noted that autonomous weapons are morally abhorrent, as the decision to take a human life should not be left in the hands of algorithms (Rosert & Sauer, 2019). Autonomous weapons might include, for example, armed quadcopters that can search for and eliminate people meeting certain predefined criteria but do not include cruise missiles or remotely piloted drones, for which humans make all targeting decisions.

At various levels of international society, discussions are taking place about how to shape the development of lethal AI in general and lethal autonomous weapons in particular, as well as the legal and political boundaries of the use of lethal autonomy. The precedent is thus being set for future discussion around the governance of AI. Indeed, states like China, Germany, India, Israel, the Republic of Korea, Russia, and the United Kingdom support and fund activities targeted at the development and research of fully autonomous weapons. Understandably, at present, robotic systems with a various degree of autonomy and lethality have already been deployed by the United States, the United Kingdom, Israel, and the Republic of Korea (Mary, 2020). In all this, it remains in serious doubt that fully autonomous weapons would be capable of meeting international humanitarian law standards, including the rules of distinction, proportionality, and military necessity, while they would threaten the fundamental right to life and the principle of human dignity. To this extent, Human Rights Watch (2016) calls for a preemptive ban on the development, production, and use of fully autonomous weapons.

In an attempt to resolve the contending issues, there is presently some ongoing research and development in the field to determine whether fully autonomous weapons have reached a critical stage or require in-depth reflection on the technical development of such weapon systems. The debate so far raises the following fundamental ethical and principled questions:

1. Can the decision over life and death be left to a machine?
2. Can fully autonomous weapons function in an ethically "correct" manner?
3. Are machines capable of acting in accordance with international human rights law (IHRL)?
4. Could such weapons increase compliance with international humanitarian laws because they would not rape or commit other war crimes?
5. Are these weapon systems capable of distinguishing between combatants on one side and defenceless and/or uninvolved individuals on the other?
6. Can such systems evaluate the proportionality of attacks?
7. Who can be held accountable?

11. CONCLUSION

Artificial intelligence solutions have optimised material resources in a wide range of fields and sub-fields of human endeavor. This, as noted in this work, is not without costs. For example, despite the fact that autonomous weapon systems demonstrate high performance in testing and operation, there are still open possibilities for social harm from them. For example, there are high concerns that the application of such weapons may violate the norms and principles of international humanitarian law (Garcia, 2018; Egeland, 2016). Some authors argue that the application of autonomous weapons systems in general threatens the world order (Sharkey, 2010; Rosert & Sauer, 2019).

Many arguments have been made for and against autonomous weapons, for example that replacing human soldiers with machines is good because it reduces casualties for the owner but bad because it thereby lowers the threshold for going to battle. The key question for humanity today is whether to start a global AI arms race or to prevent it from starting. If major military powers continue to push ahead with AI weapon development, a global arms race is virtually inevitable, and the endpoint of this technological trajectory is obvious: autonomous weapons will become the Kalashnikovs of tomorrow (Asoro, 2012). Unlike nuclear weapons, they require no costly or hard-to-obtain raw materials, so they will become ubiquitous and cheap for all significant military powers to mass-produce. It will only be a matter of time until they appear on the black market and are in the hands of terrorists, dictators wishing to better control their populace, warlords wishing to perpetrate ethnic cleansing, etc. Autonomous weapons are ideal for tasks such as assassinations, destabilising nations, subduing populations, and selectively killing a particular ethnic group. As a result, some academics believe that a military AI arms race would be detrimental to humanity. There are many ways in which AI can make battlefields safer for humans, especially civilians, without creating new tools for killing people (Dorchety, 2012).

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