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THE IMPACT OF AI IN EVERYDAY LIFE AND IN THE MILITARY SYSTEM

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ABSTRACT

Artificial intelligence (AI) is already present in everything around us, from everyday devices embedded in cars and homes to the most sophisticated systems. AI-controlled weapons are expected to become a common presence on the battlefields of the future. Artificial intelligence in the form of augmented reality is currently present in the training of future military leaders. It is important to recognize that human error plays a significant role in the use of deadly weapons during conflicts. The paradigm of using AI in advanced weapons systems can have the benefit of reducing the loss of human lives and the number of military personnel involved in armed conflicts. AI-based systems have already become an integral part of our daily lives.The world's largest companies – such as Apple, Google, Microsoft, Amazon and Facebook – either rely heavily on AI or are fundamentally built around it. Given the dual-use nature of artificial intelligence, it is no longer feasible to separate military AI research from its civilian counterparts. Virtually all technological advances in this field have applications in various fields, complicating efforts to regulate or restrict AI exclusively in the defense sector.

KEYWORDS: artificial intelligence, weapon, decision, human error, ethical, paradigm of using AI

1. Introduction

In this age of technological progress, yesterday's fiction has become today's consumer product. The emergence of new technologies has created an extremely interconnected present and heralds an even more connected and automated future. At this stage, young people will feel much more comfortable with artificial intelligence, being users, consumers and, equally, beneficiaries of it, which will make it extremely difficult to anticipate the effects of technology on them.

Artificial intelligence (AI) is already present in everything around us, from everyday devices built into cars and homes to the most sophisticated systems. New capabilities are accumulating that are taken for granted as their benefits increase in relation to our daily lives. However, it would sometimes be useful to reflect on the potential harm these technologies could cause, especially when they are out of control and it is impossible to predict where they are and where they are heading.

AI-controlled weapons are expected to become a common presence on future battlefields, offering new ways to enhance the combat effectiveness of military units. Today, the development of low-cost, fully automated systems capable of detecting, tracking, and neutralising individuals with gunfire is no longer limited to military labs – such systems are now being built by amateurs, sometimes even in home garages. This is not science fiction, but a concerning reality.

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Online resources, including detailed guides, video tutorials, and open-source AI software, are widely accessible and can be adapted by hobbyists or individuals with malicious intent to create deadly weapons or modify existing ones. For example, automatic turrets used by paintball and airsoft enthusiasts have achieved very high hit rates against moving targets.

In contrast, military training standards categorise a soldier as a sniper if he can hit at least half of the stationary targets, and as a sniper if he can hit most of the targets. With only basic technical knowledge and readily available components such as zoom cameras and precise pan/tilt mechanisms, it is now possible to build automated turrets that can hold and fire real weapons, raising serious concerns about the misuse of AI in warfare in the future.

2. AI as a Decision-Making Tool

In the short term, AI will be used in most military exercises and applications and will be a handy tool to help decision-makers determine the best courses of action and make decisions. Currently, artificial intelligence in the form of augmented reality is present in the training of future military leaders.

AI is increasingly being integrated into everyday life, particularly in the automotive industry. Modern vehicles and driving simulators now use AI to create and analyse driving scenarios with the help of augmented reality and head-up displays. These systems help drivers build their skills and prevent traffic accidents. They monitor the braking of nearby vehicles, interpret lane markings and use additional sensors to improve navigation in poor visibility conditions such as fog. Some manufacturers have even developed safety technologies that automatically apply the brakes to avoid collisions if the driver does not react in time. The emergence of virtual reality (VR) technology has changed the way we perceive and interact with simulated environments. By combining joystick controllers with VR headsets and motion tracking systems, driving simulators can create completely immersive and realistic experiences, giving users 360-degree visibility, which makes them feel as if they are actually inside the vehicle, Figure no. 1. Similar technology is also being adopted by the military to assist soldiers in making informed decisions on the battlefield. AI systems are used to analyse real-time combat conditions and deliver augmented reality information through head-up displays and integrated weapon control systems.

Figure no. 1: *Dynamic driving simulator*
(Source: Bsimracing, 2020)

These advanced systems can detect and classify potential threats, prioritise targets based on urgency, and display the locations of friendly forces along with designated safe zones. This enhances situational awareness and helps soldiers respond more effectively in high-pressure environments. By collecting data from multiple battlefield sensors, AI can generate a comprehensive, real-time image that goes far beyond what current military personnel are accustomed to. While humans will continue to control most military operations in the near future, AI will play a crucial role by providing clear analyses and strategic recommendations drawn from vast amounts of data – far more than a human could process alone.

3. Artificial Intelligence is Everywhere

AI-based systems are already deeply embedded in our daily lives. Major global companies such as Microsoft, Amazon, Apple, Google, and Facebook either rely heavily on artificial intelligence or are built around it from the ground up. Amazon's Rekognition, for example, offers advanced image and video analytics capabilities that developers can easily integrate into various applications. In parallel, law enforcement agencies are increasingly utilising facial recognition technologies, highlighting the growing role of AI in both the public and private sectors.

The economic significance of artificial intelligence is widely recognized. Beyond its technological applications, AI systems employ predictive analytics to process user data and anticipate preferences, thereby influencing patterns of consumer behaviour. Such capabilities offer valuable opportunities for both governmental and non-governmental actors, while simultaneously raising questions about potential unintended consequences.

Furthermore, AI is no longer limited to expensive, specialised equipment such as fighter jets. Advances in hardware have made it possible to produce compact, affordable and powerful processors that can be widely deployed in military devices. This has laid the foundation for an "Internet of Things" on the battlefield, where a network of interconnected devices increases situational awareness, improves coordination and increases overall operational efficiency.

In the field of infantry weapons, intelligent systems can provide targeting information to increase the combat performance of soldiers when using assault rifles or machine guns. Soldiers will have a display that will help them identify targets, classifying people in their field of vision as threats or non-threats and indicating the relative position of 'friends' and mission objectives.

AI-enabled infantry weapons have the advantage of reducing the physical and cognitive effort of soldiers and allowing them to easily hit moving targets. A good example of this is the Smart Shooter SMASH 2000 automatic aiming system, which can accurately hit moving targets with minimal training of the shooter, Figure no. 2.

Figure no. 2: *Smart Shooter SMASH 2000 – Automatic aiming system integrated into weapons* (Source: Crane, 2021)

Networked military systems will enable automated coordination in combat, allowing targets to be prioritized and assigned efficiently to avoid redundant effort and ensure rapid neutralization. This smart coordination ensures that no time or resources are wasted by having multiple units focus on the same target unnecessarily.

In addition, intelligent weapon systems will support logistics by automatically triggering resupply operations as soon as combat begins. This will enable the timely delivery of supplies to the front line, with transport and supply systems able to dynamically route vehicles to where they are most needed. At the tactical level, small autonomous robots will be capable of delivering ammunition directly to soldiers, ensuring a continuous supply flow. This will allow combat operations to proceed without interruption when weapons run out of their standard ammunition load, significantly enhancing battlefield efficiency and reducing the logistical burden on human personnel.

4. AI and Human Error

It is important to acknowledge that human error plays a significant role in the use of deadly weapons during conflict. The tragic bombing of the Doctors Without Borders hospital in Kunduz, Afghanistan, by U.S. forces in October 2015, as well as the hundreds of thousands of civilian casualties in Iraq and Afghanistan, are stark reminders of this reality. These incidents highlight the grave consequences that can result from mistakes in high-stakes military operations.

A brief analysis reveals a striking contrast: humans remain largely unchanged since our evolutionary emergence around 200,000 years ago, and our capacity for making accurate life-or-death decisions has not significantly improved. Our cognitive and emotional limitations persist, leading to a relatively constant error rate. Meanwhile, machine accuracy – especially in high-stakes tasks like targeting and decision-making – is advancing rapidly. If machine precision eventually surpasses human judgment in combat scenarios, we will be forced to confront a series of profound ethical and philosophical questions:

- What is the optimal configuration for the interaction between human operators and autonomous systems in a combat context characterised by the technological superiority of the latter?
- Does the principle that only humans should decide matters of life and death outweigh the goal of reducing civilian casualties?
- Are we willing to accept preventable deaths simply to preserve full human control over lethal decisions?
- Is our need for accountability, blame, or retribution more important than adopting systems that could minimize suffering – even if those systems are autonomous?

These questions challenge long-held beliefs about morality, justice, and responsibility in warfare and will become increasingly urgent as AI continues to evolve.

Due to the ongoing desire to maintain human oversight and the current lack of trust in fully autonomous systems, the next generation of technologies – likely emerging over the next 30 to 50 years – will remain semi-autonomous. However, the underlying technology will steadily advance, gradually building greater trust among human operators.

As these systems evolve, automated components are expected to become more efficient, and human-machine interfaces will become more intuitive. This progress will enable operators to manage multiple systems simultaneously while reducing the need for direct control over every detail.

Therefore, the desire to implement AI and, at the same time, new technologies raises questions about its control, how

willing society would be to transfer decision-making to it, and whether control could be lost in the event of an evolution of AI that allows it to self-generate, based on ethical or less ethical principles.

5. Controlling Lethality: Levels of Human Oversight

Future developments in semi-autonomous weapon systems are expected to evolve through a structured hierarchy of human control over the application of lethal force (United States Military Academy West Point, n.d.). At present, military systems operate at the most fundamental level of control, where each engagement requires explicit human authorization to fire a weapon.

The second level introduces a model akin to that of a small unit commander. In this configuration, the human operator determines the timing and context of engagement, while the system autonomously selects and attacks specific targets within predefined parameters. The human retains ultimate authority to halt the operation or issue a ceasefire command.

The third and most abstract level mirrors the strategic oversight exercised by high-ranking military officers, such as battalion or brigade commanders. Here, the human defines the mission objectives, engagement zones, operational constraints, and desired outcomes. The AI system then executes these directives autonomously, including target selection and engagement, adapting its behavior in real time as battlefield conditions evolve.

All three levels of control are designed to ensure human involvement in decision-making, though the degree of autonomy and human accountability varies with each level. Whether a specific level of control is deemed acceptable often depends on how broadly we interpret the requirement for humans to select “specific target groups”.

For instance, is it acceptable to define everyone within a particular geographic zone as part of the target group? Does the ethical acceptability change if the human operator has direct visual contact with the area, can assess whether those present are legitimate combatants, and retains the ability to abort the attack if the situation changes? Alternatively, is it sufficient to rely on systems that identify targets based on characteristics like wearing an enemy uniform – provided that the sensors are accurate enough to reliably distinguish between military and civilian attire?

These questions highlight the complexities and ethical dilemmas surrounding human oversight, accountability, and the definition of lawful targets in increasingly automated warfare.

How specific must the description of the target be, given the capabilities of the sensors and automation, in order to meet the standard that allows it to be said that the human operator was in control? How is the distinction between friend and foe made, what are the criteria underlying this dilemma, and how do we know that no errors are being made? These are just a few of the issues that currently distinguish humans from a high-performance AI-based investigation and detection system. For a long time to come, AI and advanced technologies will probably be just tools at the disposal of human operators and decision-makers, helping to simplify and facilitate activities in many sectors, including the military.

6. Changing Attitudes and Generations

As AI systems continue to demonstrate reliability and utility across a growing number of sectors, societal perceptions of their role in critical decision-making are beginning to shift. Current public policy and military doctrine reflect an early phase of adaptation, characterized by cautious integration and skepticism.

However, as these technologies prove themselves in domains ranging from medicine to finance, their acceptance is steadily increasing.

For instance, modern cameras no longer rely solely on manual input to capture a photograph; instead, AI determines the optimal moment to take a picture, often based on factors such as facial expressions. In financial markets, AI algorithms execute complex trades involving vast sums of money, frequently without requiring human intervention. These developments reflect a growing societal trust in autonomous systems to perform functions previously considered exclusively human.

Children today are raised in a technological environment where AI-powered digital assistants can recognize their voices, personalize interactions, and provide accurate responses instantaneously. Within a generation, these same individuals may occupy positions of authority in military and civilian leadership. As a result, a gradual cultural shift in attitudes toward AI and automation is not only likely but inevitable.

At some point, the role of the soldier may shift from actively deciding when to engage a target to merely pressing an "authorize" button based on an AI system's assessment that the target poses a threat. This transition raises profound ethical and operational questions. It implies a growing reliance on machine judgment, where the human's role becomes more about confirming than critically evaluating a decision.

To illustrate the implications, consider a family court judge who refuses a DNA paternity test simply because he believes the child doesn't resemble the alleged father. Such a decision would rightly cause outrage – it disregards objective, reliable evidence in favor of subjective judgment and would likely be overturned swiftly.

In combat, the stakes are just as high, if not higher. Delegating life-and-death decisions to machines, even with human "authorization", risks reducing oversight to a rubber-stamp exercise. It challenges our expectations about accountability, judgment, and the value of human moral reasoning – especially in situations where lives hang in the balance.

Similarly, what happens when our trust in technological systems becomes so absolute that questioning their judgment feels irrational or even unacceptable?

If we reach a stage where soldiers are court-martialed for ignoring weapon systems' recommendations and thereby putting allied forces at risk, we must ask: what purpose does human oversight still serve? At that point, human involvement becomes more symbolic than functional. Society's perception of autonomous systems is bound to evolve, and it is highly probable that we will eventually witness the deployment of fully autonomous weapons on the battlefield.The paradigm of using AI in advanced weapon systems may also have the secondary benefit of reducing the loss of human life and the number of military personnel engaged in armed conflict.

7. Resolving Ethical Issues

All these developments – where AI takes on a governing role across multiple domains – are not distant possibilities but likely realities within the next 10 to 20 years. The core technologies already exist; what remains is primarily a matter of time, further development, and strategic implementation. Realizing this future will require sustained investment, careful planning, and a thorough cost-benefit analysis to ensure that AI systems are integrated responsibly, ethically, and effectively into society.

The trajectory of artificial intelligence development suggests that its application across sectors – including defense – will be unavoidable in the next two decades. The

core technologies already exist; the remaining challenges are primarily ethical, legal, and political.

One possible advancement includes AI systems designed to prevent unauthorized or unethical use of lethal force. For example, a weapon might refuse to fire if the target cannot be verified as a combatant. While such safeguards could reduce collateral damage, they also raise a fundamental question: what defines a "safe" weapon? Is a 99% accuracy rate ethically sufficient, or is complete reliability the only acceptable threshold?

Russell argues for a ban on lethal autonomous weapons systems (AWS), pointing out both the ethical and legal dangers. While this concern is understandable, such arguments often overlook two critical realities: the dual-use nature of AI and the decentralized, global pace of technological development. The tools and knowledge needed to create autonomous weapons are already widely available – even to non-state actors. Simply halting research will not prevent the spread of these technologies; instead, it will hinder responsible governments from developing systems that can effectively distinguish between legitimate military targets and civilians.

The absence of international consensus and enforceable regulation further complicates the issue. Without a clear ethical and legal framework, AI weapon development is likely to occur unevenly across countries, potentially leading to unsafe and unregulated systems. In this context, the appropriate course of action is not prohibition, but rather responsible innovation, transparency, and global cooperation.

A serious, coordinated international effort is needed to determine how AI should be governed, particularly in military applications. This involves clearly defining acceptable levels of risk, establishing binding rules of engagement for autonomous systems, and ensuring that future AI technologies are developed with foresight, accountability, and moral responsibility.

One of the key reasons major militaries have not yet widely adopted autonomous weapons is their current inability to reliably differentiate between lawful and unlawful targets. Progress in this area is still limited and closely tied to political decisions surrounding the legal definition of a legitimate target. Stopping research now won't prevent the emergence of uncontrolled or indiscriminate "killer robots". Instead, it would prevent responsible actors from developing safeguards that could help protect civilian lives in future conflicts.

8. Conclusions

The advancement of technologies capable of enabling AI-powered weapon systems is no longer a theoretical prospect – it is an emerging reality. Many such systems already exist in nascent or experimental forms, awaiting only the political will for large-scale implementation. Given the dual-use nature of artificial intelligence, it is no longer feasible to separate military AI research from its civilian counterparts. Virtually all technological progress in this field has applications across domains, which complicates efforts to regulate or restrict AI exclusively within the defense sector.

Recent conflicts have demonstrated that even with commercially available technology, rudimentary yet functional autonomous weapons can be constructed with minimal expertise. This reality necessitates an urgent reassessment of how societies and governments address the ethical, legal, and strategic dimensions of AI deployment in warfare.

What is required at this juncture is not a halt in innovation, but a comprehensive and sustained dialogue – both at governmental and transnational levels –

about the responsible use of AI. This discourse must begin with an acknowledgment of current technological capabilities and the recognition that, like any powerful tool, AI can be misused. The potential for abuse by malicious actors must be weighed alongside the opportunities to enhance efficiency, accuracy, and the preservation of human life.

Importantly, the ethical and moral frameworks we apply today will serve as the foundation upon which future generations judge our values, character, and foresight. As with every transformative innovation in history, the question is not whether we will use AI, but **how** we will choose to wield its power. Balancing innovation with accountability, technological superiority with moral clarity, and security with humanity will define the legacy of artificial intelligence in the 21st century and beyond.

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