ARTIFICIAL INTELLIGENCE AS A DECISION MAKING TOOL FOR MILITARY LEADERS

Alexandru BABOȘ
“Nicolae Bălcescu” Land Forces Academy, Sibiu, Romania
babos.alexandru@yahoo.com

ABSTRACT
Capable of processing the volume, variety, accuracy and speed of data at rates and precision impossible for humans to achieve, artificial intelligence-enabled systems offer great potential in supporting the decision making. However, the impact of the use of AI will not be solely for future leaders, but will also affect those they lead. This article means to highlight these possible effects on leaders, by presenting some important connections between AI and leadership.

KEYWORDS: artificial intelligence, leadership, military leader, future leadership

1. Introduction
While the concept of leadership has been researched for over 100 years, research in the artificial intelligence (AI) field, and moreover the AI implications on leadership, is quite new. The key terms that associate with artificial intelligence (AI) is: big data, automation, machine learning, and Industry 4.0 (Titareva, 2021). AI is used in a variety of fields, such as entertainment, healthcare, service industry, education, and not the least, military. Given its direct and major implications within the military, I would emphasize AI’s importance into this field.

“Intelligent behavior has long been considered a uniquely human attribute. But as computer science and IT networks progress exponentially, artificial intelligence (AI) is increasingly standing out as the transformational technology of our age. From Industry 4.0 onwards, human and artificial intelligence may compete for jobs. But they will increasingly collaborate and complement each other” (Verhezen, 2018). “It is tempting to regard artificial intelligence as a threat to human leadership. After all, the very purpose of AI is to augment, improve, and ultimately “replace” human intelligence, which is still widely regarded, at least by us humans, as our key competitive advantage” (Chamorro-Premuzic, Wade & Jordan, 2018). AI will also lead to a greater emphasis on the “soft” elements of leadership: the personality traits, attitudes, and behaviours that allow individuals to help others achieve a common goal or shared purpose.

2. Research Methodology
Taking into consideration these preliminary theoretical aspects, the purpose of this study is to determine some potential uses of AI for optimizing decision making in the field of military organizations. The objectives, derived from the purpose of the study, are limited to: identifying the potential for the use of AI in decision making and the AI potential benefits, but also possible risks for military leaders.

This study is focused on the following:
- Investigating and reviewing the appropriate literature to the propose.
- Empirical research based on observation (Tudorache, 2021) – aims to exploit the elements
resulting from the personal experience in the field of military.

- SWOT analysis on the use of AI in the decision making by military leaders – aims to identify all aspects required to support the validation of the formulated hypotheses.

3. Artificial Intelligence and Leadership

Today, artificial intelligence-enabled systems offer opportunities to better exploit information and improve human understanding, decision-making and increase the pace of activity (NATO Allied Command Transformation, 2020).

This particularly applies when artificial intelligence algorithms are used to identify and recognize unusual patterns in immense databases and finding the proverbial ‘needle in the haystack’. In the future, these systems’ support to commander’s decision-making could also enable command and control structures in headquarters to potentially use different hierarchical structures that require fewer personnel. However, although costs might be reduced and better competency could be noticed, the implementation of such technologies can present unforeseen challenges and therefore needs to be thoroughly experimented. Only few human limitations cannot be overcome by AI “If machine learning is designed to imitate the human brain, then it is also prone subject to bias it is likely to overlook the possibility of significant change, operating within the area defined by the data used to adapt it in the first place” (Verhezen, 2018).

3.1. Artificial Intelligence as a Roadblock

Responsibility, transparency, predictability, empathy and compassion are but some of the conscious and unconscious social criteria that apply to human judgement day to day (NATO Allied Command Transformation, 2020). Military leaders involve people in problem solving and decision-making process. This includes responsibility, awareness and ownership of the decisions made to all involved. AI can help in the decision making process and become first choice to support leaders, but can disconnect them from their human team members. Also, the diversity of thinking will be highly affected (Bostrom & Yudkowsky, 2011).

3.2. Ethics and Trust

From an ethical perspective, the primary goal is to develop the AI based capabilities, while conforming to law, policy and ethical principles. To achieve this, the AI design must include safety, security, reliability, predictability and ethical boundaries. A decisive leadership role is needed to ensure a robust and complete ethical system. Ethics require appropriate levels of human judgement in employment of AI (Department of the Navy, United States of America, 2021).

Chiefly within the military environment, the interpersonal trust between a leader and their subordinates/the people under their command acts as a connection that sticks the force together and permits it to function successfully, particularly under combat circumstances. Such trust is based on several aspects such as perceived competence, empathy, clear understandable direction, and if something goes wrong, the extent to which a leader is able to reassert control. Such aspects are also related to trust in artificial intelligence/AI-enabled systems. When the interpersonal trust is broken, the trust in artificial intelligence/AI-enabled systems may become difficult to be re-established. Nevertheless, an individual is more likely to forgive another person’s breach of trust than a machine (NATO Allied Command Transformation, 2020). As far as for institutional trust, new approaches are required to assure safe, secure, reliable and
ethically AI operations. As a rule of thumb, currently for a system to be trusted it must be assessed to be ten times safer than a human.

3.3. Technical Assurance
As artificial intelligence-enabled systems continue to evolve and become more sophisticated, there is a risk that the technology could outpace future leaders’ technical understanding of what decisions artificial intelligence should, and should not, inform or make. When under pressure, a plausible outcome could be for a future leader without suitable access to technical knowledge, and when confronted with a dynamic scenario and time pressures, choosing to ‘believe’ artificial intelligence analysis whose analytical design limitations makes its use inappropriate at that moment. Such over-reliance by leaders or ill-advised usage that sets the wrong precedents, could result in the loss of appropriate leadership control.

The fundamental leadership issue “is whether it can ever be appropriate to cede the decision to kill to an algorithm, and whether the local commander can reasonably allocate tasks within a battle plan to weapons that cannot be overseen” (Walker, 2021). Therefore, the leader must decide whether AI will outperform the training and ingenuity of the human soldier.

3.4. Artificial Intelligence and Leader Development
The anticipated development of prescriptive artificial intelligence-enabled systems to take less controversial decisions could result in experienced leaders getting fewer chances to anchor their judgment in such contexts. High-level strategy is conceived based on the leaders’ ability to build on their decision-making skills from an early stage in their career, when they are typically in charge with implementing uncomplicated and simple tasks.

Throughout the existing literature, the main ideas regarding the necessary skills for a future leader would be emotional intelligence, critical thinking, cultural intelligence, ethical judgement and accountability. Many of them are clearly expressed in the NATO Artificial Intelligence Strategy set of principles, as shown below in Figure no. 1.

![Figure no. 1: NATO principles of responsible use of AI](Source: The NATO principles of responsible use for AI in Defence are based on existing and widely accepted ethical, legal and policy commitments under which NATO has historically operated and will continue to operate under. The figure is adapted to the article context.)
3.5. Potential Risks

All military capabilities, regardless of the branch or service, generate dependencies that can easily turn into vulnerable spots. There have been numerous discussions around the topic of AI and its ability to assist future leaders in circumstances when they need to gain a more comprehensive understanding of the various emerging situations. With the help of AI, leaders should be able to take pertinent decisions and gain advantage over enemies. Nonetheless, complete dependence on AI might weaken some typical elements of leadership, such as value and efficiency. Imagine a case in which the human factor, which has typically relied on AI in the decision-making process, is denied access to such a resource.

Moreover, further research needs to be conducted so as to identify barriers that AI systems might generate between leaders and their subordinates in terms of decision-making. So, we can say that the “leaders who quit thinking” will be a result of the over-reliance on artificial intelligence. Another possible risk will be the diminishing of the emotional intelligence.

Artificial intelligence support to military leaders presents many benefits but may also serve to undermine intrinsic decision-making skills. To ensure force resilience as artificial intelligence-enabled systems becomes more prominent, there is a need to maintain future leaders’ abilities to operate and fight in artificial intelligence denied, reversionary environments (NATO Allied Command Transformation, 2020).

4. Conclusions

AI is here to make the decision-making process on tasks that can be automated much easier for the future workforce. We can suppose this will lead to more available time for the military leaders to focus on higher responsibilities that appertain to the human aspect of innovation, vision and organisational development. AI leadership skills of the future that leaders need are intensely oriented towards integrating employees and technology along with long-term decision making and vision.

While AI enabled-systems become more and more available and accepted, we will see a progressive transition from human augmentation to human replacement. This involves many cultural and moral challenges all needed to be handled in an effective manner by the future leaders. The future operating environment and the adoption of the artificial intelligence enabled systems involves a lot of leadership challenges, which will require military leaders who can perfectly adapt and fight with the required agility to outrun adversaries. Otherwise our adversaries will make better use of this potential revolution than ourselves.
REFERENCES


