

ALGORITHMIC DECISION-MAKING: RESHAPING THE MILITARY PROFESSION

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Abstract: This article argues that artificial intelligence transforms military decision-making by reshaping the epistemic and moral conditions under which judgment is exercised. In contemporary military practice AI-enabled decision-support systems increasingly affect how information is filtered, ranked and acted upon in environments defined by uncertainty, time pressure and responsibility. The article first interprets the military profession as an epistemic profession grounded in disciplined judgment rather than technical efficiency alone. It then examines military judgment through the concept of practical wisdom and analyzes three distortions of the algorithmic decision environment: epistemic, cognitive-temporal and moral. The analysis shows how this structuring takes place through filtering, ranking, temporal compression and the redistribution of epistemic and moral responsibility. Consequently, the integration of artificial intelligence should not be interpreted as a neutral technological development, but rather as a development that redefines the standards of excellence, responsibility and agency within the military profession itself.

Keywords: *military profession; artificial intelligence; military judgment; decision-support systems; practical wisdom*

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Introduction

Artificial intelligence (AI) is increasingly being integrated into military decision-support systems. This technology helps filter information, recognize patterns, prioritize threats and generally facilitate decision-making. This article argues that such systems should not be viewed merely as technical tools that improve the speed or efficiency of military decision-making, but rather as algorithmic decision-making environments. Consequently, they determine what appears as relevant information and which options become visible.

This study main scholarly contribution is that it frames AI-based military decision-making support as a transformation of the epistemic and moral conditions of military judgment and that this also shapes the meaning of the military profession. The research examines whether military decision-makers are still capable of making substantive professional judgments when perception, priority setting and justification are increasingly mediated by algorithmic systems. Therefore, it links debates on military artificial intelligence, human action and responsible artificial intelligence with a virtue-ethical description of military judgment.

The argument proceeds in four steps. First, the article interprets the military profession as an epistemic vocation that depends on decisions and judgments. Second, it examines military judgment through the concept of practical wisdom, or *phronesis*, to show why virtue-ethical categories remain relevant in technology-mediated warfare. Third, it analyzes three distortions caused by algorithmic decision-making environments: epistemic distortion, cognitive-temporal distortion and moral distortion. Finally, it argues that the integration of artificial intelligence into military decision-making not only transforms operational practice but also reshapes the norms of professional excellence, responsibility and agency within the military profession.

The Military Profession as an Epistemic Profession

AI transforms the military profession not by replacing a decision-maker's² agency, but by relocating their professional excellence toward epistemic supervision, contestation and responsibility under conditions of algorithmic mediation.

² By decision-maker I mean the (military) personnel of the armed forces, primarily those in decision-making positions who are involved in the use of modern technologies. This applies increasingly to the entire personnel, but it applies in the greatest number and to the greatest extent to officers.

The military profession is not reducible to technical competence, procedural compliance, or the efficient execution of orders. It claims socially authorized jurisdiction over the organized use of force, where specialized knowledge must be exercised under conditions of trust, responsibility and ethical constraint. Because military action takes place amid uncertainty, organized violence and the possibility of irreversible harm, professional competence depends on discretionary judgment rather than rule-application alone (Swain & Pierce, 2017).

This judgment-centered character is not limited to combat. Military service also functions as a specialized branch of public administration in peacetime: it trains personnel, maintains capabilities, prepares for war and operates through complex bureaucratic procedures. Military judgment is therefore exercised not only in the „fog of war,” but also in what may be called the „fog of administration,” where bureaucratic routines, institutional hierarchies and increasingly algorithmic outputs shape what appears as relevant knowledge and legitimate action.

Recent scholarship on AI and war sharpens this point. Goldfarb and Lindsay argue that machine learning may reduce the cost of prediction, but it does not eliminate the need for judgment about relevance, meaning and action; indeed, prediction technologies can make data and judgment more valuable and more contested (Goldfarb & Lindsay, 2021). Hunter and Bowen similarly emphasize that wartime command often requires abductive reasoning in situations marked by novelty, adversarial adaptation and incomplete information. This contrasts with the inductive logic of many machine-learning systems, which rely on patterns derived from past data (Hunter & Bowen, 2023). Even if future AI capabilities modify this contrast, the central question remains: what forms of judgment are required for responsible military agency? For the present argument, the implication is decisive. If the military profession is based on the practical exercise of judgment, then AI cannot be treated as a merely neutral instrument that accelerates an otherwise unchanged process of decision. It has a great effect on which military professionals perceive, classify, prioritize and justify action. As recent work on AI-enabled decision-support systems has shown, these systems reshape how commanders assess threats, weigh force and respond under pressure, while also creating new pathways for automation bias, anthropomorphism, over-reliance and the erosion of effective moral authorship. The central ethical question is thus not whether a human being formally remains somewhere within the process, but whether the officer still exercises meaningful judgment as the bearer of professional responsibility in an increasingly algorithmically mediated (battle)pace. (Johnson, 2026)

Algorithmic mediation does not abolish military expertise, it redistributes and re-specifies it. As AI becomes increasingly integrated into target acquisition, information gathering and organization, planning and evaluation, the professional compe-

tence of soldiers can no longer be determined solely on the basis of professional and practical experience, knowledge of doctrine and leadership skills, especially demonstrated in stressful situations. Expertise, therefore, is not just a question of the capabilities of technology, but also of human capabilities - albeit from a different perspective than before. An effective decision-maker must increasingly incorporate the ability to understand what system they are relying on, what input data they are using (the type and quality of information source), where potential failures lie and how credible (how relevant) their recommendations are in a given operational context. Accordingly, the latest military literature describes the integration of artificial intelligence not as the automation of the entire professional role, but rather as the automation or supplementation of specific tasks within those roles. (Special Competitive Studies Project, 2026) The consequence of this is not the obsolescence or irrelevance of a decision-maker's knowledge, but rather the transformation of military expertise to focus on supervision, calibration and the disciplined evaluation of machine-generated results.

This also poses a risk, unless we define what kind of expertise is being developed. If algorithmic systems make certain detection, classification and recommendation processes faster and more accessible, they may also shift professional judgment away from primary evaluation toward secondary oversight of systems that are partially opaque. This is where the ethical issue becomes increasingly acute. Recent research on military artificial intelligence decision support systems highlights that AI-based Decision Support Systems (AI-DSS) environments are characterized by complex human-machine interactions and distributed agency, which may narrow the scope for independent and subjective judgment, even if, formally, humans remain the ultimate decision-makers. (Nadibaidze, 2024; Bode, 2025) Under such circumstances, trust (or more precisely the ability to calibrate reliance³) becomes a professional virtue only if it is properly regulated: too little reliance hinders the use of the system, while too much reliance or anthropomorphized "trust" leads to automation bias and a lack of accountability, with no one taking responsibility. The military professional in transition is therefore not a better-informed decision-maker, but a practicing professional whose excellence increasingly depends on whether they can maintain their independent judgment in the face of the temptations of speed, reliability metrics, the authority projected by the interface and the temptations of institutional pressure to rely on the system.

Analytically, it is useful to distinguish between tools, systems and environments. A tool supports a specific task, a system integrates several functions toward a defined operational outcome. An algorithmic decision environment organizes the field in which perception, prioritization and action take place. In military practice this becomes visi-

3 others like O'Neill formulates this with the trustworthiness and trust terms and analyzes the concepts in the context of AI. (O'Neill, 2020)

ble when multiple AI-DSSs operate across different stages of the “kill chain” or dynamic targeting cycle. Such systems aggregate data, filter signals, rank options and create default pathways for action before the commander reaches the formal decision point.

This change is not limited to the experimental environment but is already evident in fundamental areas of military practice. Intelligence, surveillance and reconnaissance (ISR) increasingly rely on automated detection and classification. Intelligence systems prioritize and correlate data from various sources. Target designation processes are supported by pattern recognition and predictive analysis. Planning and staff work involve the AI-assisted development and evaluation of courses of actions (COAs) and training environments integrate adaptive simulations and generative systems. Accordingly, the latest policy frameworks no longer treat artificial intelligence as a standalone capability, but rather as an institutional prerequisite: the emphasis is placed on use cases, the development of an AI-ready workforce, testing, evaluation and verification (TEV&V), review processes and the availability of high-quality data as prerequisites for responsible integration. (U.S. Department of Defense, 2023; North Atlantic Treaty Organization, 2024).

However, the practical appeal of these systems - that is, their ability to speed up processing and reduce cognitive load - must be evaluated alongside their structuring effects on decision-making. Speed is not epistemologically neutral in and of itself. (Renic & Schwarz, 2024) Furthermore, by filtering input data and prioritizing certain output results, artificial intelligence systems implicitly determine what counts as relevant, urgent, or feasible. (Bode & Huelss, 2021) This has two interrelated consequences. *First*, the compression of decision-making cycles over time can reduce the time available for deliberation, thereby steering decision-making toward the rapid acceptance or rejection of options generated by the system. *Second*, the pre-structuring of information can narrow the range of alternatives considered in substance, especially when only a limited number of recommendations are presented. As research on AI-DSS has shown, such environments can subtly reshape human agency: even if the decision-making authority formally remains with the human operator, the practical conditions for judgment are already shaped in advance by algorithmic processes.

The widely used distinction between “human-in-the-loop” and “human-on-the-loop” is insufficient from a normative perspective if treated as a standalone safeguard. The mere presence of a person at a given decision point does not in itself guarantee the quality or independence of the judgment. Instead, what matters is whether the broader decision-making environment preserves the conditions under which substantive military judgment is possible. This includes the decision-maker’s ability to question the system’s outputs, understand their epistemic limitations. For this reason, documents such as NATO’s Principles of Responsible Use (PRUs) principles emphasize the no-

tion of *appropriate human judgment* rather than relying on technical categories such as HITL (human-in-the-loop) or HOTL (human-on-the-loop).

Although the empirical research shows that military leaders do not accept AI uncritically (Lushenko, 2025), but approach it with a pragmatic form of calibrated trust, this operational caution should not be confused with structured skepticism in a deeper, epistemological sense. Operational reliance may develop more quickly than moral or institutional trust. In the context of AI systems, however, what is often described as “calibrated trust” may more accurately refer to calibrated reliance, since trust in the stronger normative sense presupposes intentionality, moral agency, or accountability on the part of the trusted entity. Lushenko’s study highlights that officers insist on human control and legal oversight, but this alone does not guarantee the cognitive capacity required by the critical literature. For meaningful human control, the formal retention of decision-making authority is not sufficient; as critical approaches emphasize, this involves the decision-maker’s ability to question the system’s outputs, understand its epistemological limitations, recognize the hidden assumptions encoded in data and models and resist unwarranted confidence arising under operational pressure.

The problem is not one of control, but also one of the integrity of the judgment conveyed by algorithms. If the military profession is indeed an epistemological profession that - as explained above - is based on the exercise of judgment grounded in deliberation amidst uncertainty and complexity, then the central ethical and professional question becomes whether this judgment remains substantively intact, or whether it is gradually being supplanted by directed, accelerated and partially opaque forms of decision-making. This question forms the transition to the next section, where we examine military judgment not as a residual human function, but as a fundamental professional virtue that must be redefined under the conditions of algorithmic mediation.

Military Judgment as Practical Wisdom

Recent scientific research increasingly views military artificial intelligence not primarily as a matter of fully autonomous weapons, but rather as a problem of AI-enabled decision support systems and human-machine interaction (Dorsey & Bo, 2025). The most important question, therefore, is not simply whether humans remain *in the loop* at some point, but whether decision-makers will still be able to make meaningful decisions as detection, prioritization and recommendations are increasingly mediated by technical systems. According to the latest research, AI-DSS is transforming the way commanders assess threats, weigh the balance of power and respond under

pressure, while simultaneously raising risks of automation bias, anthropomorphism, over-reliance and distributed agency. Therefore, the most important professional issue is not maintaining nominal control but preserving (appropriate) moral military judgment. (Johnson, 2026)

A virtue ethics perspective is an often-neglected dimension of the discussed topic. As Jonathan Askonas and Paul Scherz note in their recent introduction to the special issue on virtue ethics and military AI, current debates are often trapped between consequentialism and deontology, while virtue ethics offers a different angle for understanding what is at stake in military decision-making. This shift in perspective is important because the ethical issue is not simply whether a result is effective or whether a rule has been formally followed. Important question is what kind of decision-makers are being trained in a profession mediated by algorithms and whether the qualities necessary for effective leadership can be developed under such circumstances. (Askonas & Scherz, 2024)

In this context, the key term is *phronesis* or practical wisdom. In the military profession, this does not mean a vague intuition or mere experience. It refers to a disciplined ability to recognize what is practically and morally salient in a particular situation. In Aristotelian terms, practical wisdom is concerned not only with general principles but also with the particulars of action (Aristotle, 2009, 1141b). This is particularly important where information and time is limited, the consequences could be severe and there is no single correct answer. Recent virtue ethics work on military artificial intelligence argues that the widespread use of artificial intelligence may undermine precisely the conditions under which martial virtues are developed and practiced. Hasselberger's analysis, for example, is particularly relevant here: he identifies courage, deep loyalty and prudence or practical wisdom as virtues that come under pressure as artificial intelligence systems increasingly mediate intelligence gathering, targeting and strategic decision-making. The point is not that machines "lack morality" in some abstract sense, but that professional excellence in warfare cannot be reduced to the technically optimized choice among the options generated by the machine. (Hasselberger, 2024)

This is why military decision-making should be viewed as a context-dependent process rather than a rule-based mechanism. While this may seem somewhat closer to how AI operates, it does not in itself mean that it can make better decisions. Research on responsible military artificial intelligence emphasizes that abstract principles alone are insufficient unless they are transformed into context-specific guidelines. According to Meerveld and colleagues, responsible military artificial intelligence cannot be achieved through a universal model, as relevant norms depend on the specific operational environment. (Meerveld et al., 2025) In parallel, Bode and his co-authors argue that high-quality human agency cannot be ensured solely in the final stage of the decision-making process; it must be built into the system's entire lifecycle.

cle, from design and testing through deployment to post-use evaluation. (Bode et al., 2025) This strongly supports the claim that judgment is not a final human “override” function at the end of an otherwise automated chain. It is an ongoing professional skill that enables one to interpret outputs, question frameworks, recognize context and take responsibility within the entire socio-technical environment.

Formal human oversight is therefore insufficient if it means only that a person remains present at a decision point. In decisions of legal and ethical significance, AI-DSS may support but cannot replace human judgment. Preserving such judgment requires that users understand and question system outputs, compare them with other sources and retain sufficient time and space for critical evaluation, especially when systems propose COAs or generate predictions under operational pressure. Explainability may support this process, but it does not by itself guarantee responsible judgment, particularly in the case of opaque systems. What is required is not the ritual presence of a human approver, but a cultivated capacity for deliberation and moral agency (Guiora & Kertzer, 2024).

Distortions of the Algorithmic Decision Environment

Algorithmic decision environments introduce distortions that cannot be reduced to faulty data, model error, or individual automation bias. These problems also arise from the way such environments organize visibility, relevance, timing and available COA. Bias therefore has both a pipeline dimension and a structural dimension: it may emerge from data, models, or user interaction, but also from the architecture of the decision environment itself. This section distinguishes three such distortions: epistemic distortion, cognitive-temporal distortion and moral distortion.

Decision support systems based on artificial intelligence filter, rank and format operational information. In doing so, they can acquire de facto epistemic authority. The problem is not only that the system provides information, but also that it can acquire de facto epistemic authority - that is, the user begins to treat it as a source whose outputs give reason to override their own opinion, because they perceive the system as epistemically superior in a given domain. The danger lies in the fact that the user not only incorporates the system's results into their own judgment, but also treats them as a pre-established argument that supplants and suppresses independent evaluation.

Johnson argues that AI-DSSs transform human-machine relations in warfare by redistributing moral agency across complex socio-technical systems (Johnson, 2026). Dorsey's analysis adds that AI-assisted targeting environments may reshape the cog-

nitive and legal space in which target selection and proportionality assessments are conducted. (Dorsey, 2025) Together, these accounts show that the ethical problem is not confined to individual user bias. It also concerns the institutional and legal architecture within which military judgment is exercised.

The first bias is *epistemic bias*. The system provides not only information but also a framework for interpretation (framing). Epistemic bias is not a distortion of information, but also a shift in epistemic authority: what the system makes measurable, comparable and rankable does not simply become more visible, but is also endowed with authority. This is important because, following Dorsey's quantification logic, it is no longer merely the case that the system frames the decision, but also that this framing gains authority in the eyes of the decision-maker. Epistemic authority is always context-dependent and tied to who or what counts as "the one who knows better" in a given domain, for a given goal and in a given situation. What becomes measurable, comparable and rankable tends to center decision-making; what is more difficult to formalize, is pushed to the periphery. Dorsey articulates this through the concept of *quantification logics*: AI-DSS tends to transform complex legal and moral deliberation into a computational problem, thereby potentially displacing the contextual, qualitative judgment that is indispensable, for example, for the actual assessment of proportionality or civil damages. (Dorsey, 2025) The danger, therefore, is not that the system "calculates incorrectly," but that it gives the impression from the outset that the overwhelming majority of relevant questions are predictable. At this point, Wood's warning becomes particularly important: explainability (xAI) does not in itself solve this problem, because the value of explainability lies more in the areas of design and debugging than in preserving user judgment. (Wood, 2024)

The second distortion is the *cognitive-temporal distortion*. The algorithmic environment accelerates the process and in doing so increases the pressure on the decision-maker to accept the primary interpretation generated by the system. Johnson argues that automation bias, anthropomorphism and over-reliance together can create a psychological pattern in which humans overvalue machine recommendations even when contradictory evidence is available. (Johnson, 2026) User bias is the third step in the bias (pipeline) process, which we call "automation bias". Accepting an automated (or in that sense autonomous) solution can reduce the search for contradictory information, especially in time-critical environments. Acceleration, therefore, is not a neutral increase in efficiency: speed itself becomes an epistemic force because it narrows the space for doubt, double-checking and alternative interpretations. (Kissinger et al., 2021)

The third distortion is *moral distortion*. If the decision-making space is organized around pre-structured options, risks and optimized recommendations, then phronesis does not disappear, but it is narrowed. Phronesis does not cease to exist but rather

narrows in scope: the individual remains formally present, yet increasingly fails to shape the moral horizon of the decision. Hannah Arendt offers a philosophical diagnosis of this: the narrowing is not necessarily malice, but rather a weakening of reflective judgment - that is, what she calls "*thoughtlessness*." For Arendt, this concept signifies precisely that moral failure does not always stem from explicit malicious intent, but from the fact that the agent does not think through what they are doing and does not exercise independent judgment. (Arendt, 1963)

This philosophical diagnosis is reinforced by recent literature on military AI. As Johnson argues with the idea that AI-DSS can lead to the erosion of human moral agency and Dorsey who demonstrates how quantitative logics can normalize civil harms as legal and moral deliberation gradually shifts to the language of cost-benefit analysis. Linked to this is the danger of moral deskilling it is not really a matter of individuals exercising less judgment, but also of institutional norms and routines gradually adapting to machine-generated rationality. (Vallor, 2016) On the issue of responsibility, Oimann and Salatino offer an important correction: while "command responsibility" remains a theoretically appealing response to the "responsibility gap" problem, its practical application faces psychological and empirical obstacles. For example, due to the high speed, it is impossible for a commander to make a decision. (Oimann & Salatino, 2024) This is significant because it shows that the distortion does not stop at the cognitive level but extends to the normative structure of accountability as well.

The Transformation of the Military Profession under Algorithmic Conditions

The preceding analysis has shown how algorithmic mediation affects relevance, alternatives, timing and responsibility. The next step is institutional: if military judgment is increasingly exercised through algorithmically structured environments, then the military profession itself is also transformed. This does not mean that the role of military decision-makers disappears or that military power is simply handed over to machines. Rather, the profession's standards of excellence, operational norms and distribution of responsibility are redefined under new socio-technical conditions. Recent research in military ethics and the philosophy of technology increasingly treats this transformation not as a side effect of innovation, but as one of its central ethical consequences.

We can also approach this by focusing on the concept of institutional transformation rather than the term "AI implementation." According to Sigurd Hovd, technological transformation in the military is not simply an operational or executive issue,

but also an ethical one, as new technologies reshape the norms and practices that define collective institutions (Hovd, 2025). From this perspective, caution is required not only on the battlefield but also in managing technological change itself. This perspective is highly relevant here. If the military profession is defined by the exercise of disciplined judgment amid uncertainty, then a change in the practical environment of that judgment also signifies a change in the institutional form of the profession. This transformation occurs not only when tasks are redistributed, but also when the profession's conception of its own expertise, reliability, responsibility and sound judgment is reorganized around perception and recommendations mediated by machines.

This helps us understand why this issue runs deeper than the well-known dilemma of the human *in the loop*. Professions are not just a set of tasks, they are historically developed practices oriented toward internal goals, standards of excellence and various forms of accountability. Timo Libel argues that AI will influence military capabilities and the expertise, norms and behaviour of the officer profession itself. (Libel, 2025). In other words, the question is not simply what artificial intelligence can do for officers, but what kind of officers will gradually emerge as professional authority becomes inseparable from data infrastructures, recommendation systems and opaque computational filters. As this happens, the scope of the profession transforms. An officer is no longer defined solely by excellent situational awareness, knowledge of doctrine and command presence, but increasingly by the ability to oversee, interpret, debate and responsibly rely on machine-generated results.

I have mentioned that the virtue-ethics approach reinforces the problem identified so far. Hasselberger takes this further by arguing that the central question is not whether artificial intelligence can mimic correct decisions, but what effect it has on the human virtues necessary for war, particularly prudence, courage and loyalty. (Hasselberger, 2024) Under algorithmic conditions, the cultivation of martial virtues increasingly depends on mediated forms of perception, recommendation and justification.

At this point, the broader philosophical literature on artificial intelligence proves useful. Recent works in the philosophy of technology caution against treating artificial intelligence as if it were creating an entirely new moral space that breaks away from the established norms of concrete practices. Mussgnug argues that the ethics of artificial intelligence itself can become part of the problem if it abstracts from the social contexts of technology use, thereby disregarding existing norms and virtues. (Mussgnug, 2025) Hayes and his co-authors make a similar argument when they propose a narrative and virtue-based approach to the practice of artificial intelligence, rather than relying solely on abstract principles. Their shared conclusion is important for the military domain. The ethical integration of artificial intelligence into professional military practice cannot be achieved through general formulas alone, as the military profession already possesses a rich normative tradition like command responsibility,

disciplined obedience, professional honor, role-based self-restraint and the obligation to justify the use of force in the face of extreme uncertainty. These norms may need to be reinterpreted, but they cannot simply be circumvented by a new technological layer. (Hayes, 2025) Take communication, for example. A few centuries ago, the hierarchical structure was of fundamental importance, in part because it ensured that orders and instructions issued by a leader reached all subordinates efficiently (quickly and accurately). This was fundamentally changed by electronic communication, which allows a leader to convey information directly to all subordinates at once. This change occurred at the dawn of the modern era, but even with modern digital systems, it is evident that the military structure and procedures has not adapted to this and in many cases, the written expression of the leader's intent still travels through the levels of the system in a manner that was once efficient but is now considered outdated - slowly and not always in an unaltered form.

This is why the transformation of the military profession should be viewed as a realignment of the power derived from the profession (and position) rather than its disappearance. According to the more traditional view, military power is tied to the soldier's training, which enables him to assess the situation, identify the relevant factors and issue orders based on them. Under algorithmic conditions, this remains fundamentally unchanged, but a new element is added: power becomes increasingly mediated. The decision is still made by the officer, but often through systems that pre-filter relevant information, rank options and limit the time available for deliberation. Filtered information, however, is not unprecedented in history. Precisely because of the chain of command, decision-makers received information that had passed through numerous levels or was mediated in some way, which could have been distorted.

Historical examples show that mediated military judgment is not new. At Midway in 1942, delayed and filtered reconnaissance reporting contributed to Admiral Nagumo's uncertainty at a critical moment (Parshall and Tully, 2005). At Balaklava in 1854, Lord Raglan's order lost its intended meaning as it moved through the chain of command, contributing to the disastrous Charge of the Light Brigade (Figes, 2012). These cases do not suggest that algorithmic mediation is merely another version of older communication failures. Rather, they show that military judgment has always depended on mediated information. What is distinctive today is that algorithmic systems can mediate perception, prioritization and recommendation at greater speed, scale and opacity.

Karen Vold's latest work on artificial intelligence and military decision-making offers useful insights on this issue: in her view, the real question is how artificial intelligence can complement commanders' reasoning and judgment while also keeping the associated risks in mind. This means that professional authority must now also include reflective interaction with technical systems. An excellent military decision-maker is not one who merely accepts computer-assisted support, but one who is able to

judge when that support truly complements deliberation and when it subtly replaces it. (Vold, 2025)

A human-in-the-loop approach is therefore insufficient if human agency is considered only at the final moment of use. As Bode and colleagues argue, meaningful human agency must be supported across the lifecycle of AI-based military systems, including design, testing, deployment, monitoring and evaluation (Bode et al., 2025). Meerveld and colleagues similarly show that responsible military AI cannot be achieved through a purely universal model, because relevant norms depend on the specific operational context (Meerveld et al., 2025). Taken together, these accounts suggest that the core competencies of the military profession now include calibrated reliance, institutional review, contestability and the ability to question the categories through which systems represent the world.

Explainability does not provide comprehensive assurance in the military domain, especially when systems are truly opaque or when explanations arrive too late to restore genuine deliberation. (Wood, 2024). So, it is not whether the system can provide ex post explanations, but whether the profession organizes its workflows, training and command relationships in a way that preserves the capacity for justification. Under algorithmic conditions, oversight must be understood as informed, competent and challenge-ready participation in machine-mediated decision-making. Otherwise, the decision-making soldier risks becoming a mere legitimizing remnant within a process whose epistemic and normative architecture has already been established elsewhere.

Military excellence is increasingly less associated with the direct intuition of a commander and more with the disciplined exercise of mediated judgment. This, however, does not render the principles of virtue ethics obsolete. On the contrary, it makes them all the more necessary. For if professional virtue - as Hovd argues - is institutionally and technologically mediated, then the central ethical task is to protect individual decision-makers from bias, but to establish institutions in which prudence, dissent, an understanding of context and moral self-restraint remain living professional competencies. The military profession can only survive algorithmic transformation if it resists becoming merely a conduit for machine rationality.

Conclusion

This article has argued that AI-enabled military decision-support should be understood through the concept of the algorithmic decision environment. The central issue is not simply whether AI improves speed, accuracy, or efficiency but how it reorganizes perception, prioritization, justification and responsibility within military practice. So, the key question is not whether a human operator is formally involved in the process at any given moment. The deeper question is whether the officer still exercises meaningful judgment, or whether that judgment is gradually being eroded by speed, quantification, the power of the interface and partially opaque recommendation systems.

From this perspective, the transformation of the military profession is both epistemological and ethical in nature. If, historically, professional excellence in military service has depended on prudence, a sense of responsibility, the ability to interpret context and the capacity to justify the use of force even in uncertain situations, then these abilities must continue to play a central role even under algorithmic conditions. At the same time, these can no longer be preserved solely by relying on human oversight. Institutional measures, training practices, testing systems and a command culture are needed that maintain critical distance, measured trust and the ability to question machine-generated results. The future of the military profession therefore does not depend on resisting technological progress, but on ensuring that professional judgment does not become a passive acceptance of machine rationality. The crucial task is to ensure that officers do not remain merely nominal decision-makers within algorithmic systems, but become reflective bearers of military judgment.

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S u m m a r y

This article examines how artificial intelligence is transforming military decision-making and, by extension, the military profession itself. Its main argument is that AI-based decision-support systems should not be viewed merely as technical tools that improve the speed, accuracy, or efficiency of military decision-making. Rather, they function as algorithmic decision-making environments: socio-technical frameworks that determine what appears as relevant information, which options are brought into focus, or what responsibility means under operational pressure.

The primary scholarly contribution of this paper is that it frames the integration of artificial intelligence into military decision-making as a transformation of the epistemological and ethical conditions of professional judgment, which also has implications for the meaning of the military profession. Rather than focusing solely on whether humans are formally involved in decision-making (human-in-the-loop), the author raises the question of the quality of decisions made by decision-makers and the basis on which they are made (meaningful human control), while the determination of priorities and justification are increasingly mediated by algorithmic systems. Thus, the debate shifts from the narrow issue of technical control to the broader question of preserving professional agency, responsibility and judgment.

The first part of the article interprets the military profession as an epistemic vocation. That is, it is not viewed merely as physical fitness, obedience to orders, or technical skill, but as a profession centered on the acquisition of knowledge, continuous learning and a deep understanding of reality. This is therefore not identical to the concept of mission command. Military professionals demonstrate disciplined judgment under uncertain circumstances, within ethical constraints and in the face of the

risk of irreversible harm. This is true not only in the “fog of war” but also in the “fog of administration,” where bureaucratic procedures, institutional routines and increasingly algorithmic outcomes determine what constitutes relevant knowledge and legitimate action. AI, therefore, does not eliminate military expertise, but redistributes and re-defines it. Professional excellence increasingly encompasses the ability to oversee, question, calibrate and responsibly rely on machine-generated results.

The second part elaborates on this argument through the concept of practical wisdom, or *phronesis*. Military decision-making cannot be reduced to simply selecting the technically optimal solution from among the alternatives generated by the system. This requires the ability to recognize the situation’s salient moral and operational characteristics, interpret the context, weigh uncertainties and justify the action. From the perspective of virtue ethics, the question is whether AI systems provide correct recommendations and also what kind of military professionals are formed when decision-making is mediated by algorithmic systems. Training and education are therefore fundamental in shaping the kind of decision-makers we produce.

The third section identifies three biases in algorithmic decision-making environments. *Epistemic bias* occurs when systems filter, rank and format information in such a way that epistemic authority shifts toward machine-generated results. *Cognitive-temporal* bias arises when the acceleration of processes and the shortening of decision cycles reduce the scope for doubt, verification and alternative interpretations. *Moral distortion* occurs when pre-structured options, risk metrics and optimised recommendations narrow the scope within which practical wisdom and accountability can be exercised.

The final section concludes that these developments represent an institutional transformation of the military profession. Artificial intelligence is changing individual tasks, also the standards of professional excellence, the distribution of responsibility and the expectations placed on decision-makers. Human oversight, explainability and formal verification are therefore insufficient if treated as the ultimate safeguards. Responsible integration requires lifecycle management, training, institutional oversight, calibrated trust and a command culture that preserves decision-makers’ ability to question machine-generated results. The future of the military profession does not depend on resistance to AI, but on ensuring that officers remain responsible decision-makers within algorithmic systems, rather than merely nominal approvers.

Keywords: *military profession; artificial intelligence; military judgment; decision-support systems; practical wisdom*

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