

Formation of Terms in the Military Terminological Lexicon Under the Influence of Artificial Intelligence

Формування термінів у військово-термінологічній лексиці під впливом сфери штучного інтелекту

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Purpose. To identify the formation patterns, structural-semantic characteristics, and functional roles of new lexical units emerging in military terminology under the influence of artificial intelligence.

Method. The study employed descriptive, structural-semantic, and comparative analyses to investigate the terms formed under the influence of artificial intelligence.

Theoretical implications. The theoretical findings indicate that the application of artificial intelligence technologies accelerates the process of the emergence of new terms in military terminology. In the context of artificial intelligence, terms related to the military sphere are formed through various structural-semantic methods and contribute to the terminologization of existing linguistic units. This process influences the integration of the military terminological system with other fields of science, as well as with the international terminological fund, and contributes to its overall enrichment.

Practical implications. The continuous and systematic use of terms formed under the influence of artificial intelligence contributes to the enrichment of military terminology with national and international linguistic units, as well as to the development of cross-linguistic relations. This process provides a favorable foundation for the emergence of new terms and the expansion of term-formation mechanisms. Artificial intelligence and AI-generated terms play a significant role in the compilation of terminological dictionaries. Terms formed under the influence of artificial intelligence systems also contribute to the optimization of translation and professional communication processes.

Value. This article identifies the theoretical and practical foundations of the AI-driven transformation of military terminology and presents scholarly approaches to the process of term formation. Furthermore, it analyzes the theoretical basis of the integration of military science, linguistics, and modern technologies, thereby demonstrating the scientific and practical significance of this field.

Paper type. Theoretical.

Мета дослідження. Виявлення закономірностей формування, структурно-семантичних характеристик і функціональних ролей нових лексичних одиниць, що виникають у військовій термінології під впливом штучного інтелекту.

Метод дослідження. У дослідженні використано описовий, структурно-семантичний і порівняльний аналіз для вивчення термінів, сформованих під впливом штучного інтелекту.

Теоретична цінність дослідження. Теоретичні результати свідчать про те, що застосування технологій штучного інтелекту прискорює процес появи нових термінів у військовій термінології. У контексті штучного інтелекту терміни, пов'язані з військовою сферою, формуються різними структурно-семантичними способами та сприяють термінологізації наявних мовних одиниць. Цей процес впливає на інтеграцію військової термінологічної системи з іншими галузями науки, а також із міжнародним термінологічним фондом і сприяє її загальному збагаченню.

Практична цінність дослідження. Безперервне та систематичне використання термінів, сформованих під впливом штучного інтелекту, сприяє збагаченню військової термінології національними та міжнародними мовними одиницями, а також розвитку міжмовних зв'язків. Цей процес створює сприятливе підґрунтя для виникнення нових термінів і розширення механізмів термінотворення. Штучний інтелект і терміни, створені за його допомогою, відіграють важливу роль в укладанні термінологічних словників. Терміни, сформовані під впливом систем штучного інтелекту, також сприяють оптимізації процесів перекладу та професійної комунікації.

Цінність дослідження. У статті визначено теоретичні та практичні засади трансформації військової термінології під впливом штучного інтелекту та представлено наукові підходи до процесу термінотворення. Крім того, проаналізовано теоретичні основи інтеграції військової науки, лінгвістики та сучасних технологій, що демонструє наукову й практичну значущість цього напрямку.

Тип статті. Теоретична

Key words: Military Science, Military Terminology, The Influence of Artificial Intelligence, Terminological Units, Abbreviation-Based Terms

Ключові слова: військова наука, військова термінологія, вплив штучного інтелекту, термінологічні одиниці, терміни-аббревіатури

Introduction

In the modern era, the acceleration of scientific and technological progress, particularly the widespread application of artificial intelligence technologies in the twenty-first century, has led to significant structural and functional transformations in the military sphere, as it has in many other fields. The implementation of artificial intelligence systems in military management, security, intelligence, strategic planning, unmanned systems, and information and communication technologies is not limited to technological innovation alone but also contributes to the renewal and enrichment of specialized terminology. As a result, new terminological units reflecting emerging concepts are formed within the military lexical system, the semantic scope of existing terms is expanded, and international terminological integration is strengthened. The military terminological system of the Azerbaijani language has also been enriched by new terms emerging under the influence of artificial intelligence. These terms are formed through the internal resources of the national language, word-formation models, and the influence of the international terminological system, thereby shaping the development of specialized language.

Military terminology serves not only as a means of expressing operations, strategies, and tactical activities but also as an important communicative mechanism for the systematization, preservation, and transmission of military knowledge. In this regard, the incorporation of new concepts associated with modern technologies into the military lexical system necessitates the updating of the terminological base. Therefore, the study of the structural and semantic characteristics of terms formed under the influence of artificial intelligence, the identification of their functional role within the language system, and the examination of their position within the terminological framework constitute some of the most pressing scientific issues in contemporary linguistics. The relevance of the topic is further determined by the rapid dissemination of new terms in the context of the extensive application of artificial intelligence technologies in the military sphere, the adaptation of international terminological units to the national language, and issues related to terminological standardization.

The main objective of this article is to analyze the lexical units formed under the influence of artificial intelligence in military terminology from structural and semantic perspectives and to identify their formation patterns, functional characteristics, and role within the terminological system. Within the framework of the research, the formation patterns of AI-related terms based on national and international sources are examined, term-formation models are comparatively analyzed, and their frequency and patterns of use in military communication are evaluated. In addition, the article identifies the future directions for the development of military terminology on the basis of modern linguistic theories, international terminological practices, and practical examples.

To achieve the objectives of the study, descriptive, structural-semantic, and comparative analyses were employed. The terms formed under the influence of artificial intelligence were systematized, their semantic characteristics and structural models were analyzed, and terminological units used in different languages were comparatively examined. Furthermore, the functional use of these terms in military discourse, the level of terminological standardization, and their role in professional communication processes were examined. This approach makes it possible to comprehensively investigate the theoretical and practical aspects of the interaction between artificial intelligence and military terminology.

Literature review

Military terminology has traditionally been regarded as a specialized subsystem of language designed to ensure precision, unambiguity, and standardization in professional communication within the fields of defense and security. Its fundamental characteristics include systematic organization, conceptual accuracy, functional stability, and compliance with international standards

of military communication. As noted by Huseynova-Gahramanli (2022, 2025) and Sadigova (2015), the development of national terminology is shaped both by the internal word-formation resources of a language and by the processes of international terminological integration, which have become particularly significant in the context of rapid technological advancement.

In recent years, researchers have increasingly associated the transformation of military terminology with the extensive implementation of artificial intelligence technologies. In particular, *Air Force Doctrine Note 25-1: Artificial Intelligence* (2020) identifies AI as one of the principal drivers of the modernization of military command and control, intelligence, operational planning, autonomous combat platforms, and decision-support systems. Accordingly, the emergence of new technological capabilities has been accompanied by the creation of new terminological units required to describe fundamentally new military concepts and methods of warfare.

Studies examining the relationship between artificial intelligence and linguistics likewise confirm the close interaction between technological innovation and the evolution of specialized vocabulary. Mahmudov (2024) considers artificial intelligence to be a major factor transforming contemporary language systems and highlights linguistic challenges associated with the emergence of new terminology, its semantic interpretation, and its standardization. Similarly, Gasimova (2025) argues that the integration of AI technologies contributes not only to the creation of new concepts but also to the reinterpretation and semantic expansion of existing terminological units.

The literature further indicates that AI-related military terminology exhibits several distinctive structural and semantic characteristics. Newly emerging terms demonstrate a pronounced technological orientation, reflecting automation, autonomous operation, machine learning, big data analytics, and AI-assisted decision-making processes. Typical examples include *autonomous system*, *smart weapon*, *artificial intelligence-based decision system*, and *autonomous combat platform*. Such terminological units are generally realized as complex multi-component lexical constructions that combine technical specifications with functional descriptions, thereby ensuring semantic transparency and conceptual precision.

The development of advanced military technologies has also contributed directly to the emergence of new military terminology. Examples include the Bayraktar KIZILELMA unmanned combat aircraft, the KORAL/NG electronic warfare system, the SPICE™ 2000/1000 precision-guidance kits, and Ukraine's Sea Baby unmanned surface vehicles. These technologies have generated a new layer of terminology associated with autonomous platforms, intelligent weapon control, robotic combat systems, and next-generation unmanned technologies. Consequently, technological innovation has substantially accelerated the renewal of military vocabulary and expanded its conceptual framework.

Another important direction identified in the literature concerns the international standardization of military terminology. Most researchers emphasize that the expansion of multinational military cooperation and digitally integrated command systems requires unified terminological frameworks capable of ensuring interoperability among different armed forces and defense organizations. One example of this tendency is the widespread adoption of the standardized term *unmanned aerial vehicle (UAV)* instead of the more general lexical item *drone*. Such standardization improves the precision of professional communication while minimizing the risk of conceptual ambiguity across different linguistic environments.

The development of military terminology has become particularly significant in Azerbaijan, where national digital transformation policies actively promote the integration of artificial intelligence into various sectors of society. The adoption of the Artificial Intelligence Strategy of the Republic of Azerbaijan for 2025–2028, the Strategy on Information Security and Cybersecurity for 2023–2027, and the establishment of platforms such as ASAN AI HUB and Baku AI Hub demonstrate a systematic governmental approach to AI development, which inevitably influences the formation of new specialized terminology. Moreover, Azerbaijan's participation in international conventions

and cooperation frameworks contributes to the harmonization of national military terminology with international standards.

Despite these developments, the existing literature reveals several unresolved issues. Researchers point to the excessive use of borrowed English terminology, insufficient adaptation of newly introduced concepts to the norms of the Azerbaijani language, inconsistencies in term-formation practices, and the absence of unified approaches to the standardization of newly emerging military terminology (Sadigova, 2015; Huseynova-Gahramanli, 2025; Mahmudov, 2024). Furthermore, different linguistic systems frequently employ divergent translations and interpretations of identical AI-related military concepts, thereby complicating international scientific exchange, professional communication, and cooperation among defense institutions.

Although a considerable body of research has examined military terminology, the linguistic dimensions of artificial intelligence, and the digital transformation of the defense sector (Oz, 2023; Mahmudov, 2024; Gasimova, 2025; Jabrayil, 2025), comprehensive studies integrating the structural and semantic analysis of military terminology with the mechanisms of AI-driven term formation remain limited. In particular, insufficient attention has been paid to the interaction between national word-formation models, international terminological standardization, and the functioning of AI-related terminology within professional military discourse. This research gap highlights the need for a comprehensive linguistic investigation of the formation patterns, semantic organization, functional characteristics, and standardization processes of military terminology emerging under the influence of artificial intelligence technologies.

Materials and Methods

The methodological framework of this study is based on an interdisciplinary approach that integrates the principles of contemporary terminology studies, lexicology, military linguistics, and artificial intelligence research. This approach made it possible to examine the formation of military terminology under the influence of artificial intelligence technologies as the result of the interaction between linguistic, technological, and socio-communicative factors.

The empirical basis of the study consists of international and national regulatory documents, official materials on the development of artificial intelligence technologies, specialized terminological dictionaries, scientific monographs, doctoral research, and publicly available information resources dedicated to modern military technologies. The analyzed sources include *Air Force Doctrine Note 25-1: Artificial Intelligence* (2020), the *Artificial Intelligence Strategy of the Republic of Azerbaijan for 2025–2028*, the *Strategy of the Republic of Azerbaijan on Information Security and Cybersecurity for 2023–2027*, materials published by ASAN AI HUB and Baku AI Hub, the studies of Mahmudov (2024), Sadigova (2015), Huseynova-Gahramanli (2022, 2025), and Rzayeva and Ibrahimova (2021), as well as official technical documentation describing advanced military systems, including Bayraktar KIZILELMA, KORAL/NG, SPICE™ 2000/1000, and the Ukrainian unmanned surface platform Sea Baby.

The study employed a combination of complementary research methods.

The descriptive method was used to systematize military terms formed under the influence of artificial intelligence, identify their fields of application, and determine the principal trends in the development of contemporary military terminology.

Structural-semantic analysis was applied to examine the internal structure of terminological units, identify their formation patterns, analyze the semantic relationships among the components of multi-word terms, and determine the structural characteristics of complex terminological constructions, abbreviations, and borrowed lexical units.

The comparative method was employed to compare English-language international military terminology with its Azerbaijani equivalents, to examine the mechanisms of adapting international

terminology to the national linguistic system, and to evaluate the influence of international terminological standardization on the development of Azerbaijani military terminology.

Content analysis was conducted to examine military doctrine documents, national AI strategies, cybersecurity policies, scientific publications, and specialized terminological dictionaries in order to identify newly emerging military terms, determine their functional characteristics, and analyze their usage in military discourse.

The analysis of the collected terminological material was based on the following criteria: the structural model of the term (simple, compound, multi-component, or abbreviation-based), the method of term formation (compounding, calquing, borrowing, abbreviation, or terminologization), semantic structure, degree of international standardization, functional domain (military management, cybersecurity, unmanned systems, automated combat systems, and analytical decision-support systems), and the level of integration into contemporary military communication.

The findings were synthesized through systematic analysis and logical interpretation, making it possible to identify the principal patterns governing the formation of military terminology under the influence of artificial intelligence technologies, determine the characteristic structural-semantic models of newly emerging terminological units, and outline prospective directions for the further standardization and development of military terminology in the context of the digital transformation of the defense sector.

Results

Theoretical Foundations of AI-Influenced Military Terminology

The integration of artificial intelligence technologies into the military sphere has become a significant factor influencing the development of contemporary military terminology. This process contributes to the formation of new linguistic units in both quantitative and qualitative terms, thereby reshaping the terminological system of military discourse. The emergence of AI-related concepts necessitates the creation of precise and functionally relevant terms capable of reflecting newly introduced technological realities and operational practices.

From a quantitative perspective, the rapid expansion of artificial intelligence applications in defense systems has led to a considerable increase in the number of specialized military terms. The introduction of concepts related to autonomous systems, algorithmic warfare, machine learning-based decision-making, and intelligent surveillance technologies has generated an extensive body of new lexical units. These additions significantly enrich the lexicon of the language and expand the conceptual boundaries of military terminology.

From a qualitative perspective, artificial intelligence contributes to the transformation of the structural and semantic characteristics of military terms. Newly formed terminological units often demonstrate greater conceptual complexity, technical specificity, and interdisciplinary integration, reflecting the convergence of military science with computer science, cybersecurity, robotics, and data analytics. Such terms not only denote technological innovations but also embody shifts in military strategy, operational planning, and defense management.

Furthermore, the development of AI-based military terminology contributes to the advancement of individual branches of military science by enabling the precise conceptualization of emerging technological phenomena. Terminological innovation serves as both a reflection of scientific progress and an essential instrument for effective communication within specialized professional environments.

From a linguistic perspective, the scientifically grounded formation of military terms represents one of the key priorities for future research. The systematic development of terminology based on linguistic principles, conceptual clarity, and terminological standardization is essential for ensuring consistency, reducing ambiguity, and facilitating international professional communication. Therefore, the analysis of AI-based military terminology represents an important

area for future research, as it requires the integration of linguistic, military, and technological perspectives.

Artificial intelligence is a scientific field concerned with systems possessing advanced intellectual capabilities that enable them to perform assigned tasks. It is regarded as a technology that simulates human cognitive processes and encompasses not only comprehension, learning, reasoning, recognition, and similar processes but also decision-making. In general, the application of artificial intelligence in various domains introduces numerous new technical concepts and terminological units.

Terms emerging under the influence of artificial intelligence are widely employed in the following military domains.

1. Terminology in the Field of Military Management Systems

Within the military management terminology of the Azerbaijani language, various terms have emerged under the influence of artificial intelligence. Among these, complex lexical units, particularly multi-word terminological expressions, predominate structurally. This tendency results from the need to express increasingly precise and specialized concepts within the military terminological system.

The term Bayesian network refers to a probabilistic model used for decision-making under conditions of uncertainty, particularly for threat assessment. Structurally, the head component of this term is the word network, which is of Arabic origin in Azerbaijani, whereas the modifier Bayesian is derived etymologically from European languages.

The term expert system refers to an artificial intelligence system designed to emulate the decision-making processes of a human expert. Structurally, it takes the form of a two-component attributive noun phrase. In general, two-component noun+noun constructions constitute the predominant structural pattern among terminological units in this domain.

Particularly noteworthy is the compound term explainable artificial intelligence, which denotes an artificial intelligence system whose decisions can be interpreted and understood by humans. From an etymological perspective, this term entered Azerbaijani through loan translation (calquing) of the English expression *Explainable Artificial Intelligence*. The predominance of terminological units formed through calquing is associated with the advancement of scientific disciplines, increasing interdisciplinary integration, and the expansion of international scientific, political, and economic cooperation (Sadigova, 2015).

Automated decision-making processes play a significant role in contemporary military management systems. Artificial intelligence-based systems operate within digital environments and rely on predefined software architectures. Voice assistants, image analysis systems, search engines, speech recognition technologies, and facial recognition systems play an increasingly important role in both military operations and defense management.

The term facial recognition identification refers to one of the key technologies used for military security, personnel identification, and intelligence purposes. In the context of counterterrorism, facial recognition technologies enable the storage and comparison of habitoscopic characteristics within Interpol databases used by more than 160 countries (Rzayeva et al., 2021).

Another noteworthy term is network-centric warfare, which possesses a distinctive structural configuration and denotes the integration of military forces through unified information and communication networks, such as NATO C4ISR systems. Structurally, this multi-word term consists of three lexical components corresponding to an adjective + adjective + noun construction.

Nuclear lexical units, represented by either individual words or multi-word expressions, play a crucial role in the syntactic formation of military terminology and in the generation of new terms through recurring structural patterns. The semantic potential of these lexical nuclei facilitates the creation of subsequent terminological units belonging to the same conceptual field. In particular, the expression artificial intelligence functions as a common lexical and semantic nucleus in the

formation of numerous related terms, thereby ensuring internal conceptual coherence within the terminological system.

For example, the terms artificial intelligence core, referring to a computational module designed to execute artificial intelligence tasks within a device, and artificial intelligence platform, denoting a software environment for developing, training, and deploying artificial intelligence models, illustrate this pattern. In both cases, the lexical elements modifying the nuclear term perform a specifying function, progressively narrowing and clarifying the semantic scope of the concept regardless of the number of constituent components.

2. Terminology in the Field of Cybersecurity

Various terms have also emerged in the Azerbaijani language within the field of cybersecurity under the influence of artificial intelligence. The application of artificial intelligence enables the processing and utilization of personal data, thereby raising concerns related to privacy, information security, data leakage, and data misuse. These developments have contributed to the emergence and expansion of new terminological concepts within the cybersecurity domain (Gasimova, 2025).

The term DLP system, expressed as an abbreviation, is one of the internationally standardized terminological units used in cybersecurity terminology. It refers to software designed to protect military institutions and organizations from the leakage of confidential data. Originally developed within the field of information technology, this term denotes Data Loss Prevention and is derived directly from the English expression of the same name (Huseynova-Gahramanli, 2022). Structurally, it represents an abbreviation-based terminological unit formed through lexical borrowing and linguistic adaptation.

Another significant term in this field is cloud, which occupies an important place in the discourse of artificial intelligence and cybersecurity. In specialized terminology, cloud denotes a virtualized computing environment that provides remote access to data storage, computing resources, and software services through network infrastructure. From a semantic perspective, the Azerbaijani equivalent bulud constitutes a metaphorical calque derived from the visual analogy between distributed network architecture and the image of a cloud. Within artificial intelligence systems, cloud technologies facilitate large-scale data processing, model training, distributed computing, and secure information exchange. Consequently, the term has acquired a specialized technical meaning that extends beyond its original lexical sense, becoming an integral component of contemporary cybersecurity terminology.

To achieve operational objectives in cyberspace, various software bots and intelligent agents are employed. In Azerbaijani, such systems and software applications are commonly designated by the term artificial intelligence agent. Structurally, this three-component terminological expression functions as a unified lexical unit whose constituent elements are connected through semantic and syntactic relationships.

The term adversarial attacks against artificial intelligence is a complex multi-word terminological unit denoting intentional attempts to manipulate input data in order to deceive artificial intelligence systems. Its semantic scope also includes the deliberate modification of visual or other input data to interfere with target recognition, classification, and guidance processes. The emergence of such structurally complex terminological units demonstrates the important role of morphological, syntactic, and semantic mechanisms in the development of contemporary cybersecurity terminology. Furthermore, it reflects the increasing conceptual complexity of cybersecurity as an interdisciplinary field integrating computer science, artificial intelligence, military technology, and information security.

3. Unmanned Systems

The advancement of technology under the influence of artificial intelligence has contributed significantly to the emergence of new lexical units within military terminology. As demonstrated in

previous studies, the field of robotics is closely associated with artificial intelligence and encompasses the design, development, and operation of intelligent robotic systems. The integration of these two scientific domains represents an important area of artificial intelligence research and application. These systems play a crucial role in tasks such as determining an object's spatial position, analyzing the surrounding environment, and planning movement trajectories, and are represented by a wide range of specialized terminological concepts (Mahmudov, 2024).

Within the field of unmanned systems, the lexical units unmanned and vehicle function as core lexical elements in the formation of a considerable number of terminological expressions. The term unmanned vehicle refers to a vehicle that may be remotely operated, automated, semi-autonomous, or fully autonomous and that is equipped with wheeled, tracked, multi-legged, hybrid locomotion, or crawler mobility mechanisms.

The term unmanned free balloon (or unmanned aerostat) denotes a lighter-than-air aircraft operating in free flight without propulsion and without an onboard human operator. As can be observed, regardless of the number of constituent components, multi-word terminological units concentrate their primary semantic meaning around core lexical elements, whereas the remaining components perform a specifying function by refining and narrowing the conceptual scope of the term.

Linguistic studies indicate that lexical-semantic variation, synonymy, and doublet forms among terminological units may contribute to semantic differentiation (Rzayeva et al., 2021). Within contemporary military terminology, the lexical unit drone is frequently used as a synonym for the standardized term unmanned aerial vehicle (UAV). Etymologically, drone is a borrowed lexical unit originating from the English language. According to Huseynova-Gahramanli (2022), the primary purpose of autonomous flight systems is to perform missions that would otherwise expose human operators to significant risks.

Consequently, both UAV, which has become a widely accepted terminological equivalent in Azerbaijani, and drone are employed to denote systems capable of performing object manipulation, autonomous navigation, localization, spatial positioning, environmental perception, and trajectory planning for movement toward designated target locations. These technologies have become particularly significant in modern military operations, where unmanned systems are increasingly used for reconnaissance, surveillance, precision strikes, logistics, and maritime operations.

Among the lexical units formed under the influence of artificial intelligence, abbreviation-based terminological units also occupy an important place. The term UAS (Unmanned Aircraft System) denotes a comprehensive system consisting of an unmanned aerial vehicle, its payload, control station, communication infrastructure, and supporting equipment required for mission execution. As a military terminological unit, UAS is classified as an acronym and functions as an internationally standardized abbreviation widely used in defense documentation and military communication.

Another important concept is swarm intelligence, which refers to the coordinated collective behavior of multiple autonomous drones or robotic systems operating as an integrated network. Primarily applied in drone swarm technologies, this concept is expressed through a two-component attributive terminological construction. From a semantic perspective, the term illustrates the transfer of concepts from artificial intelligence and computational sciences into military terminology, reflecting the increasing integration of autonomous decision-making algorithms into contemporary unmanned combat systems.

4. Automated Combat Systems

The development of artificial intelligence has significantly contributed to the formation of terminological units in the field of automated combat systems, where lexical innovations reflect both technological advancement and the increasing integration of military science, computer science, and engineering disciplines.

The term autonomous weapon denotes a weapon system capable of selecting, tracking, and engaging targets without direct human intervention. Structurally, this terminological unit takes the

form of a two-component attributive construction. From an etymological perspective, it consists of lexical elements of different origins, with the first component performing a specifying function by narrowing and further defining the semantic scope of the second component.

The term autonomous system refers to systems, including unmanned aerial vehicles, robotic platforms, and intelligent combat technologies, that are capable of performing assigned tasks without continuous human supervision. The formation of this terminological unit does not involve explicit grammatical markers; rather, it has emerged through a lexical-syntactic process in which semantic cohesion between the constituent elements serves as the principal mechanism for creating the terminological expression.

The concept of the automatic detection and classification of objects, patterns, and events within data is represented by the term pattern recognition. This two-component terminological unit constitutes one of the fundamental concepts underlying automated target identification, surveillance, and data-processing systems used in contemporary combat technologies. Structurally, it functions as a noun-based attributive construction characterized by a high degree of semantic compactness and conceptual precision.

It should also be emphasized that the integration of artificial intelligence into modern combat aircraft, autonomous weapons, and intelligent command-and-control systems has contributed to the formation and expansion of terminological units across adjacent scientific and technological domains. In this context, numerous studies highlight the growing application of neural network algorithms, machine learning techniques, and deep learning architectures in military technologies.

The term neural network refers to a computational model inspired by the structure and functioning of biological neural systems and serving as the foundation of modern deep-learning technologies. The incorporation of this term into military discourse illustrates the phenomenon of terminological transfer, whereby a lexical unit originally associated with one scientific discipline becomes integrated into another domain as a result of technological convergence (Mahmudov, 2024).

From a linguistic perspective, this phenomenon reflects the process of transterminologization, whereby terminological units cross disciplinary boundaries and acquire specialized meanings within new conceptual frameworks. As noted by Sadigova (2015), this characteristic feature of terminology is associated with the processes of scientific development, integration, and differentiation. During the initial stages of differentiation, terms originating in one field are frequently adopted by newly emerging disciplines in order to designate novel concepts and phenomena.

A clear example of transterminologization can be observed in terms such as neural network, deep learning, machine learning, and autonomous decision-making, which originated primarily in computer science and artificial intelligence research but have subsequently become integral components of military terminology. Their widespread adoption reflects the growing dependence of contemporary armed forces on intelligent systems capable of processing large volumes of information, supporting operational planning, and enhancing battlefield decision-making.

Thus, the influence of artificial intelligence on automated combat systems demonstrates not only technological transformation but also significant lexical-semantic expansion within military terminology. The emergence and dissemination of new terminological units reveal the dynamic interaction between linguistic innovation, scientific progress, and military modernization, highlighting the increasingly interdisciplinary nature of contemporary military discourse.

5. Analytical and Decision-Support Systems

It should be emphasized that the analysis of these terminological units is not limited solely to examining the relationship between linguistics and artificial intelligence within the broader framework of military science. It also encompasses interdisciplinary integration with the exact sciences, including mathematics, statistics, computer science, and data analytics. In this context, language reflects a complex system of interconnected concepts, objects, and phenomena that evolve alongside scientific and technological progress (Mahmudov, 2024).

In contemporary Azerbaijani military terminology, calquing plays a significant role in the formation of new terms and multi-word terminological expressions. Technological advancement and innovation necessitate the accurate and effective representation of newly emerging military concepts through the national lexical resources of the language. As a result, numerous artificial intelligence-related terms have entered Azerbaijani terminology through semantic and structural adaptation.

The term deep learning represents a fully calqued terminological expression corresponding directly to the English term *Deep Learning*. Through the process of loan translation, this concept has been successfully integrated into Azerbaijani terminology. It denotes a branch of machine learning that employs multi-layered neural networks to process and analyze complex forms of data, including speech, images, video streams, and other multidimensional information. Within military analytical systems, deep learning technologies are increasingly applied to target recognition, intelligence analysis, predictive modeling, and automated decision-support processes.

The term big data constitutes another example of a terminological unit introduced through loan translation. It refers to large volumes of structured and unstructured data processed by artificial intelligence systems to identify patterns, correlations, and operational trends. Within military analytical environments, this concept plays a crucial role in data-driven forecasting, strategic planning, operational modeling, and decision-support activities (The Strategy of the Republic of Azerbaijan on Information Security and Cybersecurity for 2023–2027).

In terminological expressions formed through calquing, several linguistic mechanisms can be observed. These include the assignment of specialized semantic meanings to commonly used lexical units, the addition of derivational affixes to native and borrowed lexical elements, and the combination of multiple lexical units to adapt foreign conceptual structures to the Azerbaijani linguistic system (Sadigova, 2015). Such processes contribute to the preservation of national linguistic identity while simultaneously facilitating the incorporation of internationally recognized scientific concepts.

The term dataset belongs to the category of international terminological units and denotes a structured collection of data used for the training, validation, and testing of artificial intelligence models. Although the constituent elements data and set do not originate from the grammatical structure of the Azerbaijani language, they have been adopted as components of international scientific terminology and retain many of their semantic and structural characteristics from the source language following their integration into Azerbaijani (Huseynova-Gahramanli, 2025).

In military terminology, abbreviations are widely employed to express artificial intelligence-related concepts in a concise, precise, and operationally efficient manner. The abbreviation NLP (Natural Language Processing) represents an international terminological unit referring to technologies that enable the analysis, interpretation, and generation of human language. In military applications, NLP technologies are used in intelligence processing, automated translation, radio communication analysis, speech recognition, and information extraction systems. Formed from the initial letters of its constituent lexical elements, NLP belongs to the category of letter initialisms and has become a widely recognized component of contemporary military and technological terminology (Air Force, 2020).

Similarly, RNN (Recurrent Neural Network) is another internationally standardized abbreviated term, represented in Azerbaijani as *rekurrent neyron şəbəkəsi*. This term denotes a neural network architecture specifically designed for processing sequential data and identifying temporal relationships within information streams. Such architectures are widely applied in speech processing, predictive analytics, signal interpretation, and military intelligence systems that rely on time-series data. As can be observed, the majority of artificial intelligence-related abbreviations incorporated into military terminology function as letter initialisms and facilitate efficient professional communication.

From a linguistic perspective, the widespread adoption of terms such as deep learning, big data, dataset, NLP, and RNN illustrates the growing influence of artificial intelligence on the

development of military terminology. These terms not only designate new technological concepts but also demonstrate the processes of internationalization, standardization, and terminological convergence that characterize contemporary scientific and military discourse.

Overall, terms formed under the influence of artificial intelligence have become active lexical units within military terminology. These terms are realized in the form of compound words, multi-word terminological expressions, abbreviations, acronyms, and other structural formations, serving to ensure the precise and comprehensive representation of specialized concepts. The continuing development of military science and its integration with related disciplines, particularly artificial intelligence, necessitate the expression of increasingly complex conceptual structures. Consequently, multi-component terminological units have come to occupy a dominant position within contemporary military terminology, reflecting the ongoing transformation of military knowledge in the digital era.

Suggestions and Development Prospects

Although the analysis of terms formed under the influence of artificial intelligence in Azerbaijani military terminology has yielded significant findings regarding the emergence, structural characteristics, and functional roles of new terminological units, this field still requires a more comprehensive and systematic approach to ensure greater effectiveness, terminological consistency, and alignment with international standards. The rapid development of artificial intelligence technologies, the increasing complexity of military systems, and the expansion of international defense cooperation necessitate continuous monitoring and refinement of military terminology. In light of the findings obtained and the challenges identified during the research, the following directions for future development may be proposed:

1. The establishment of a unified national terminological database containing artificial intelligence-related military terms in Azerbaijani. Such a resource would facilitate the systematization, standardization, and dissemination of terminological units used across military, scientific, and educational institutions.

2. The strengthening of national term-formation principles in order to preserve linguistic integrity while adapting international concepts and technological innovations. Particular attention should be paid to balancing the adoption of internationally recognized terminology with the productive use of the internal lexical and word-formation resources of the Azerbaijani language.

3. The further development of multilingual terminological dictionaries and digital lexicographic resources to ensure conceptual accuracy, semantic equivalence, and cross-linguistic consistency. Such resources would support translation activities, professional communication, and international military cooperation.

4. The enhancement of terminological cooperation between scientific, educational, and military institutions with the aim of standardizing newly emerging terms and facilitating their practical implementation within military doctrine, training, and operational documentation.

5. The development of artificial intelligence-assisted terminological management systems capable of automatically identifying, classifying, and updating newly emerging military terms. The application of such technologies could significantly improve the efficiency of terminological monitoring and standardization processes.

6. The promotion of interdisciplinary research involving linguists, military specialists, computer scientists, and cybersecurity experts. Such collaboration would contribute to the development of scientifically grounded approaches to military term formation and terminological standardization.

7. The harmonization of Azerbaijani military terminology with international terminological frameworks and NATO standards, while preserving national linguistic characteristics. This process would facilitate interoperability, improve professional communication, and strengthen Azerbaijan's participation in multinational defense initiatives.

The implementation of these measures would contribute not only to the further development of Azerbaijani military terminology but also to the enhancement of its scientific consistency, practical applicability, and international compatibility. Given the continuing expansion of artificial intelligence technologies within the military domain, the systematic study and standardization of related terminology will remain an important area of linguistic and military research in the coming years.

Discussion

The findings of this study demonstrate that artificial intelligence has become one of the principal drivers of terminological transformation within contemporary military discourse. Unlike previous stages in the evolution of military terminology, which were primarily associated with the emergence of new weapons or operational concepts, the current stage is characterized by the convergence of military science, artificial intelligence, cybersecurity, robotics, and data analytics. As a result, military terminology is increasingly expanding through interdisciplinary interaction, leading to the formation of structurally complex and semantically specialized terminological units.

The results obtained are generally consistent with previous studies emphasizing the influence of scientific and technological progress on the evolution of specialized vocabulary (Sadıgova, 2015; Huseynova-Gahramanli, 2022, 2025; Mahmudov, 2024). However, the present study extends existing research by demonstrating that the impact of artificial intelligence is not confined to the introduction of isolated lexical innovations. Rather, AI has become a systematic factor affecting the mechanisms of term formation, semantic development, terminological standardization, and conceptual organization of military discourse. This finding supports the proposition that linguistic change increasingly reflects the technological transformation of contemporary defense systems.

One of the most significant findings concerns the predominance of multi-component terminological expressions and abbreviation-based units. The analysis indicates that concepts associated with artificial intelligence frequently require complex lexical structures capable of representing highly specialized technological processes. Terms such as *explainable artificial intelligence*, *adversarial attacks against artificial intelligence*, *autonomous weapon*, *deep learning*, and *natural language processing* illustrate the tendency toward greater conceptual specificity and structural complexity. This observation corresponds to international trends in military terminology, where lexical precision is regarded as a prerequisite for interoperability and professional communication.

The study also demonstrates the growing importance of international terminological standardization. The widespread adoption of internationally recognized terms, including *UAV*, *UAS*, *NLP*, *RNN*, and *DLP*, confirms that military terminology is developing within a globalized scientific and technological environment. Nevertheless, the findings also reveal the necessity of balancing international harmonization with the preservation of national linguistic identity. Processes such as calquing, semantic adaptation, and the productive use of native word-formation resources remain essential for maintaining the internal consistency of the Azerbaijani terminological system while ensuring compatibility with international military communication.

Another important finding concerns the phenomenon of transterminologization. The results indicate that numerous terms originally belonging to computer science, artificial intelligence, statistics, and information technology have become integral components of military terminology. This process reflects not only lexical borrowing but also the conceptual integration of previously independent scientific domains. Consequently, contemporary military terminology increasingly functions as an interdisciplinary knowledge system rather than as an isolated branch of specialized vocabulary.

The classification proposed in this study—covering military management systems, cybersecurity, unmanned systems, automated combat systems, and analytical decision-support

systems—provides a structured framework for examining AI-related military terminology. Unlike previous studies, which have generally focused on individual technological domains, this research integrates multiple functional areas within a unified linguistic model. Such an approach facilitates a more comprehensive understanding of the structural organization and semantic development of military terminology influenced by artificial intelligence.

Despite these contributions, several limitations should be acknowledged. The analysis is primarily based on Azerbaijani military terminology and selected English-language equivalents; therefore, the findings cannot automatically be generalized to other national military terminological systems. Furthermore, the study focuses mainly on structural-semantic characteristics and mechanisms of term formation rather than on quantitative corpus-based analyses or empirical investigations of terminology usage within operational military communication. Future research could expand the comparative analysis to additional languages, employ corpus-linguistic methods to investigate the frequency and contextual use of AI-related military terms, and examine the influence of NATO terminology and international military standards on the evolution of national military lexicons.

Overall, the findings indicate that the continuing integration of artificial intelligence into defense technologies will further accelerate terminological innovation and increase the need for internationally coordinated terminology management. Consequently, systematic linguistic research, interdisciplinary cooperation, and terminological standardization should be regarded as essential prerequisites for the effective development of military communication in the digital era.

Conclusion

In conclusion, the integration of military terminology and artificial intelligence has been comprehensively examined within the framework of this study. The findings demonstrate that the application of artificial intelligence technologies in the military sphere has become a significant factor in the formation and development of contemporary military terminology. The rapid advancement of artificial intelligence, autonomous systems, cybersecurity technologies, and intelligent decision-support mechanisms has created favorable conditions for the emergence of numerous new terminological units reflecting modern technological and operational realities.

The analysis conducted in this research confirms that AI-related military terminology performs not only a nominative function but also serves as an important instrument for the systematization, transmission, and standardization of specialized military knowledge. The growing integration of military science with computer science, robotics, cybersecurity, data analytics, and information technologies has substantially expanded the conceptual boundaries of military terminology and contributed to the emergence of new lexical-semantic structures.

The study has demonstrated that terms formed under the influence of artificial intelligence are realized through various structural models, including compound terms, multi-word terminological expressions, abbreviations, acronyms, and terminological units created through borrowing and calquing. The research has further identified the principal mechanisms of term formation and revealed the interaction between national linguistic resources and international terminological standards in the development of Azerbaijani military terminology.

The findings indicate that artificial intelligence has significantly influenced Azerbaijani military terminology by accelerating the emergence of new terms, facilitating semantic transformations of existing terminological units, and strengthening integration with the international terminological system. Particular attention has been devoted to the analysis of terminology related to military management systems, cybersecurity, unmanned systems, automated combat systems, and analytical decision-support technologies, all of which represent key domains of contemporary military innovation.

The results of the study confirm that the continued implementation of artificial intelligence technologies in the military sphere will further stimulate both the quantitative expansion and qualitative transformation of the Azerbaijani military terminological system. At the same time, the increasing complexity of military technologies will require ongoing terminological standardization, conceptual clarification, and the development of scientifically grounded approaches to military term formation.

Overall, the study demonstrates that the integration of artificial intelligence into military discourse plays a crucial role in the enrichment, modernization, and conceptual development of Azerbaijani military terminology. The research also highlights the importance of further interdisciplinary investigations aimed at examining the linguistic, technological, and military dimensions of terminological change in the context of digital transformation and the growing application of artificial intelligence in defense and security systems.

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Competing interests

The authors declare that they have no competing interests.

Use of Artificial Intelligence

Artificial intelligence was used for language editing, translation, and technical verification of the manuscript.

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