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Algoritmik Bipolarite:

Neoklasik Realizm Çerçevesinde ABD ve Çin Arasında Askerî Yapay Zekâ Rekabeti

Algorithmic Bipolarity:

A Neoclassical Realist Analysis of Military Artificial Intelligence Competition between the United States and China

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Özet

Bu çalışma, yapay zekâyı uluslararası güvenlik ortamında askerî kapasitenin üretim mantığını, karar süreçlerinin organizasyonunu ve operasyonel uygulama biçimlerini yeniden yapılandıran temel bir dönüşüm dinamiği olarak ele almaktadır. Veri işleme, algoritmik analiz ve gerçek zamanlı karar üretim kapasitesindeki ilerleme, askerî etkinliğin bilgi üstünlüğü, sistem entegrasyonu ve karar hızı ekseninde yeniden tanımlanmasına yol açmaktadır. Çalışma, bu dönüşümü algoritmik bipolarite kavramı üzerinden analiz etmektedir. Algoritmik bipolarite, veri üretimi, algoritmik inovasyon ve hesaplama kapasitesinin iki ana tekno-politik merkez etrafında yoğunlaşması küresel yapay zekâ ekosisteminin bu merkezlerin kurumsal örgütlenme mantıkları doğrultusunda şekillenmesiyle karakterize edilen bir güç dağılımını ifade etmektedir. Neoklasik realizm çerçevesinde yapılandırılan analiz, sistemik düzeyde yoğunlaşan algoritmik rekabetin büyük güçleri benzer teknolojik ve askerî yönelimlere sevk ettiğini, bu baskıların içsel siyasal ve kurumsal yapılar aracılığıyla farklı kapasite üretim modelleri içinde işlendiğini ileri sürmektedir. Bu bağlamda çalışma, yapay zekâ alanındaki yakınsama dinamiklerinin ortak yönelimler ürettiğini, ayrışma dinamiklerinin ise bu kapasitenin hangi kurumsal mantık içinde üretileceğini belirlediğini savunmaktadır. Bu süreç, ABD örneğinde Ağ Temelli Yapay Zekâ Yönetişimi, Çin örneğinde ise Devlet Merkezli Yapay Zekâ Yönetişimi olarak kavramsallaştırılan iki ayrı teknopolitik model üretmektedir. Ağ Temelli model, dağıtık ve çok aktörlü bir ekosistem içinde kapasite üretimini mümkün kılarken, Devlet Merkezli model merkezî koordinasyon ve sivil-askerî entegrasyon temelinde bütünleşik bir yapı sunmaktadır. Algoritmik bipolarite, bu iki teknopolitik model üzerinden üçüncü devletlerin yönelimlerini etkileyen iki ayrı çekim merkezi üretmektedir. Teknik standartlar, veri yönetişimi pratikleri, altyapı mimarileri, donanım ve altyapı bağımlılığı, birlikte çalışabilirlik gereksinimleri ve normatif ayrışma, üçüncü devletler için referans çerçeveleri ve yönelim kanalları üretmektedir. Bu yapısal dinamikler, üçüncü devletlerin savunma planlamasını, teknoloji tedarik tercihlerini, veri yönetişimi modellerini ve dijital altyapı yatırımlarını söz konusu prototiplerle kurdukları ilişkilere bağlı olarak şekillendirebilmektedir. Bu çalışma, yapay zekânın uluslararası güvenlikteki rolünü, kapasitenin üretildiği kurumsal yapılar ile bu yapıların ortaya çıkardığı yönelimler arasındaki ilişki üzerinden kavramsallaştırmaktadır.

Anahtar Kelimeler: *Yapay Zekâ, Algoritmik Bipolarite, Amerika Birleşik Devletleri, Çin Halk Cumhuriyeti, ABD-Çin Yapay Zekâ Rekabeti.*

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Abstract

This study considers artificial intelligence as a fundamental transformational dynamic that is restructuring the logic of production, organization of decision processes, and operational application of military capability in the international security environment. Advances in data processing, algorithmic analysis and real-time decision-making capabilities are leading to a redefinition of military effectiveness in terms of information superiority, system integration and decision speed. The study analyzes this transformation through the concept of algorithmic bipolarity. Algorithmic bipolarity refers to a distribution of power characterized by the concentration of data production, algorithmic innovation and computational capacity around two main techno-political centers, shaping the global artificial intelligence ecosystem in line with the institutional organizational logics of these centers. Structured within the framework of neoclassical realism, the analysis argues that systemically intensifying algorithmic competition drives great powers towards similar technological and military orientations, and that these pressures are processed through internal political and institutional structures in different models of capacity production. In this context, the study argues that convergence dynamics in the field of artificial intelligence produce common orientations, while divergence dynamics determine the institutional logic within which this capacity is produced. This process produces two distinct technopolitical models, conceptualized as Network-Based AI Governance in the case of the US and State-Centered AI Governance in the case of China. While the Network-Based model enables capacity generation within a distributed and multi-actor ecosystem, the State-Centric model offers an integrated structure based on centralized coordination and civil-military integration. Algorithmic bipolarity produces two distinct centers of gravity that influence the orientations of third states through these two technopolitical models. Technical standards, data governance practices, infrastructure architectures, hardware and infrastructure dependency, interoperability requirements and normative divergence produce frames of reference and channels of orientation for third states. These structural dynamics can shape third states' defense planning, technology procurement choices, data governance models and digital infrastructure investments depending on their relationship with these prototypes. This study conceptualizes the role of artificial intelligence in international security through the relationship between the institutional structures that produce the capacity and the orientations that these structures generate.

Keywords: *Artificial Intelligence, Algorithmic Bipolarity, United States of America, People's Republic of China, US-China Artificial Intelligence Competition.*

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1. INTRODUCTION

Historically, technology has been one of the main factors affecting the course of geopolitical competition and power relations. Although the tools used by states and the material forms of these tools have changed over time, technological innovations have been closely linked to the processes of positioning, gaining superiority and building security capacity in the international system (Fricke, 2020). The industrial revolution, mechanized warfare, nuclear deterrence, space technologies and information communication networks have represented different phases of this transformation. Today, artificial intelligence is taking a central position among the strategic priorities of states and is being incorporated into a wide range of institutional structures ranging from economic production to public administration, from infrastructure systems to security. This diffusion triggers a transformation process that reorganizes the logic of state functioning and creates a rupture in the functioning of the international system. This rupture can be considered as the reflection of what Klaus Schwab (2016) calls the “Fourth Industrial Revolution” in the field of security. This transformation produces an environment in which security becomes dependent on information density, continuity of data flow and speed of decision-making through developments in computing power, data processing capacity and automation. In this context, emerging technologies are among the constituent components of the process of restructuring security understandings and state behavior (Schrodt, 2019). Within this transformation, AI has gained an expanding range of applications in both civilian and military contexts as a capacity area that responds to the technological needs of the military field, which is increasingly accelerating, performance-oriented and requires continuous improvement (Shkurti Özdemir, 2019).

The decisive point at this point is that artificial intelligence is considered as a capacity that redefines the logic of security production. Therefore, rather than its technical characteristics, the question of what kind of technology AI is and in which analytical category it should be placed within the international security architecture gains central importance. Artificial intelligence, as a set of technologies that operate through functions such as learning from data, pattern recognition and decision-making, offers a general-purpose capacity that can be integrated into different systems and transform the logic of their functioning (Horowitz, 2017). This capacity is embodied in the integrated structure of modern military systems built on sensors, software architectures and network connections. Artificial intelligence increases operational effectiveness by increasing data processing speed and decision-making capacity within this structure and creates a functioning in which military capacity is shaped through information production and decision processes. The transformation in the fields of intelligence production, target detection, data processing and operational coordination reinforces the power-enabling nature of artificial intelligence that directly shapes military capacity (Horowitz, 2017). This transformation also produces a structural change in the organizational logic of great power competition. During the Cold War, competition was structured around ideological blocs, nuclear deterrence and geographical spheres of influence (Stoff, 2021). In today’s security environment, competition is based on data processing capacity, algorithmic coordination and multi-domain integration. This change brings the question of the capacity level of competition to the center of the analysis, as well as the production logics, institutional arrangements and technological architectures in which this capacity emerges.

In this context, this process is often discussed in the literature within the frameworks of great power competition, technological race, digital dominance and geotechnology (Crawford, 2021; Schrodt, 2019). These approaches center on capacity accumulation and technological superiority. However, the intense interaction of AI-based capacity generation with economic performance, civil infrastructure, defense planning, data governance, semiconductor production, cloud systems, and command and control architectures makes it analytically insufficient to address this process only at the capacity level. The

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Third Offset* discourse and similar debates, especially in the defense literature, tend to position artificial intelligence within a new category of weapon (Hoehn, 2022; Allen, 2023). This approach offers a limited perspective that reduces the technology to the platform level. In this study, artificial intelligence is not considered as a weapon category, but as a force enabler that reorganizes the production logic of military capacity, decision processes and operational coordination. In this context, within the transforming structure of the international security environment, power is shaped by the capacity of actors to influence the behavior and outcome production processes of other actors (Özdemir, 2008); this capacity is directly related to the level of data production, processing and integration into decision processes. This transformation shows that power has gained a new dimension based on data and algorithms. In this context, artificial intelligence is positioned as a power enabler that reorganizes the production logic of military capacity (Horowitz, 2017). The study focuses on the institutional logic within which this capacity is produced, the political priorities through which it is guided, and the decision architectures within which it is transformed into military effectiveness.

This paper proposes the concept of algorithmic bipolarity to explain this transformation. *Algorithmic bipolarity refers to a form of power distribution that has emerged as data generation, algorithmic innovation, and high-performance computing infrastructures have become the primary determinants of strategic capacity in the international system, shaped by the concentration of this capacity around two main technopolitical centers.* The starting point of this conceptualization is that AI competition generates different dynamics of concentration across domains. As a general-purpose technology, AI constitutes a broad field of competition involving multiple actors at the level of economic production, civil infrastructures and digital platforms (Heeks & He, 2024). In contrast, capacity generation in the military context is centered around a more limited number of actors due to the requirements of high-scale data processing, advanced computing infrastructure and multi-domain integration. Within this structure, the United States of America (USA) and the People's Republic of China (People's Republic of China) occupy a decisive position in the production, integration and implementation of military artificial intelligence capacity (NSCAI, 2021). This shows that the emerging dual structure cannot be explained by a classification based solely on the number of actors. What is decisive is the capacity of these two actors to influence global technology standards, produce frames of reference in the field of data governance, steer computing infrastructures, and pull the institutional preferences of other states into their orbit. In this context, the emerging structure has a different organizational logic from classical bipolar models. During the Cold War, the bipolar structure was shaped around ideological blocs, military alliances and nuclear deterrence (Johnson, 2021). In the age of artificial intelligence, competition operates through data flows, platform ecosystems, cloud infrastructures, chip supply chains and the level of algorithmic integration. Therefore, algorithmic bipolarity refers to a concentration of power shaped by the production and governance modes of technological capacity rather than a blocking based on ideological divergence.

This study does not conceptualize algorithmic bipolarity by grounding it in neoclassical realism. Neoclassical realism argues that state behavior is shaped not only by the structural pressures of the international system, but that these pressures are filtered by domestic political and institutional variables and translated into preferences (Rose, 1998; Lobell, Ripsman & Taliaferro, 2009). In this context, military AI is not conceived as an autonomous field of technology that produces results on its own. The

* The "offset" framework in U.S. defense thinking refers to a strategic logic whereby unfavorable or converging military balances are compensated through qualitative technological innovation. In this context, the First Offset centered on nuclear weapons, while the Second Offset was shaped by precision-guided munitions, advanced ISR capabilities, and low-observability technologies. The Third Offset discourse extends this logic to artificial intelligence, autonomous systems, and data-driven decision architectures, premised on their potential to generate comparable compensatory effects; however, this framing often encourages the treatment of AI as a discrete military capability rather than as a cross-cutting enabling technology.

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decisive issue is how the pressures generated by international competition are processed by the internal structures of states and what kind of capacity production logic emerges in this process. Increasing algorithmic competition in the international system, the acceleration of decision-making cycles and the rise in data density are generating common and directive pressures on great powers (Shahrukh, 2025). In this context, convergence and divergence dynamics are emerging in algorithmic bipolarity.

This situation reveals the dynamics of convergence. Convergence is seen in the US and China's orientation towards similar operational requirements in the field of military AI. Both actors are driven by similar needs in terms of multi-domain data fusion, sensor shooter integration, autonomous systems, decision support mechanisms, intelligence processing capacity and acceleration of command-and-control processes (Stokes et al., 2023). Artificial intelligence is positioned as a priority strategic area at the state policy level in both countries. This priority is shaped by the integrated relationship between military modernization, economic capacity building, technological leadership, industrial policy, national security and political influence (Allen, 2023). For this reason, the powers that can develop artificial intelligence capacity at an advanced level stand out as the main centers that provide production and innovation superiority at the economic level and gain the capacity to set standards and influence international trends at the political level. In the current structure, the two main powers capable of developing capacities on this scale are the US and China. While the US remains the current leader, China stands out as the main challenger to this leadership (Oxford Insights, 2025). Therefore, algorithmic bipolarity defines a competitive structure in which the struggle for global leadership in the age of artificial intelligence is mainly concentrated between these two actors.

This common orientation produces different outcomes at the institutional level. The neoclassical realist approach shows that systemic pressures operate differently through states' domestic political structures, bureaucratic organizations and state-industry relations. Convergence occurs when great powers develop similar technological orientations in the face of similar security challenges. Divergence, on the other hand, is shaped by the institutional logics within which this capacity is produced, how it is coordinated, and through which organizational apparatuses it is integrated into military structures. In this context, in the US, the pluralist political structure, the decisive role of the private sector and institutional control mechanisms enable the development of artificial intelligence capacity within a distributed and network-based organization (NSCAI, 2021; The White House, 2019). In China, the centralized party-state structure, high coordination capacity and civilian military fusion strategy pave the way for the organization of the same capacity within an integrated and centralized model (State Council, 2017; Central Military Commission, 2017). Thus, military AI competition gains meaning through the political codes, institutional architectures and governance mechanisms through which these goals are achieved, rather than the existence of common goals.

This is where the main claim of the study emerges. Algorithmic bipolarity is shaped at the intersection of convergence produced by systemic pressures and divergence produced by internal political and institutional filters. This bidirectional dynamic paves the way for two distinct technopolitical prototypes of military AI capacity: Networked AI Governance and State-Centric AI Governance.The first of these, Networked AI Governance, which represents the United States, refers to a governance model in which artificial intelligence capacity is produced through network-based relationships established between the private sector, academia and government institutions and integrated into the military structure in a modular manner (U.S. Department of Defense, 2018). In this model, coordination, standardization, interoperability and distributed innovation are among the determining elements. The second, State-Centric AI Governance, which represents China, describes a structure in which capacity is produced under centralized planning, civil-military integration and direct state direction. In this model, data access, technology development processes and military applications are organized within an integrated institutional architecture (Central Military Commission, 2017; State

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Council, 2017). The distinction between the two prototypes is informed by centralized and decentralized forms of institutional integration, the political codes that accompany these integrations, and the modes of social organization on which capacity production is based. Therefore, the impact of artificial intelligence in the military sphere is directly related to the political and institutional logics within which this technology is processed, as much as its technical qualities.

In terms of the international system, these prototypes are not merely categories that explain the internal organizational forms of the US and China. At a broader level, they translate into two distinct technopolitical axes that influence the orientations of third states and create centers of gravity for them. Algorithmic bipolarity creates an international structure in which the US and China become two separate centers of gravity for third states, generating orientations through their military AI approaches, implementation models and institutional integration logics. Since the development of AI capacity depends on costly computational infrastructures, advanced chip supply chains, cloud systems, big data repositories, advanced software ecosystems and technical standards, many states lack the financial and institutional means to build autonomous capacity in all of these areas (Scharre, 2018; Johson, 2021). This structural limitation shapes third states' technology choices, data governance models, defense modernization programs, and digital infrastructure investments through their relationships with the two main centers of gravity.

Networked and State-Centric models produce frames of reference for other states through technical standards, data governance practices, infrastructure architectures and enterprise integration patterns. Hardware and infrastructure dependency, interoperability requirements, model and standard exports, data governance norms, security-oriented technology constraints and platform ecosystems are among the main mechanisms that reinforce this orientation. Data and command integration, common standards and network-based defense cooperation forms that the US has developed with its allies constitute the outward carriers of the Networked model (North Atlantic Treaty Organization, 2021; DoD, 2022). The infrastructure, platform, surveillance technologies and state-sponsored technology transfer offered by China within the scope of the Digital Silk Road strengthen the global circulation channels of the State Centric model (State Council Information Office, 2019). Thus, technological articulation turns into a ground that produces strategic alignment over time. While centralized and hierarchical structures exhibit a stronger alignment with the State-Centric model, pluralistic and market-based systems produce an orientation closer to the Networked model. Third states' preferences may gravitate towards prototypes that are more compatible with their domestic political structures, institutional capacities and state-society relations.

Algorithmic bipolarity makes it possible to address military AI competition through the political and institutional forms of organization of capacity production, without compressing it on the axis of the search for technological superiority. This structure points to a logic of international order in which systemic pressures drive great powers towards similar goals, while internal political and institutional filters operate these goals within different organizational logics. The competition between the US and China is shaped not only by the size of their capacities, but also by the institutional architectures within which these capacities are produced, how they are coordinated, through which norms and standards they are circulated, and what kind of effects they have on the orientations of third states. Therefore, algorithmic bipolarity constitutes a conceptual ground that explains the new organizational logic of great power competition, the technopolitical centers of gravity formed around military artificial intelligence, and their repercussions on the international order.

This study focuses on the following research question: Why are the US and China's military AI capabilities shaped by different logics of organization and forms of doctrinal integration, despite similar structural pressures created by algorithmic competition in the international system? The paper is based on a hypothesis developed within the framework of neoclassical realism. The intensifying algorithmic

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competition in the international system, the increase in data generation and the acceleration of decision-making cycles generate a systemic pressure that drives great powers to develop military AI capabilities. This pressure generates a convergence that leads states to exhibit similar technological orientations. However, the structure within which this capacity is produced and how it is coordinated varies depending on the intrinsic characteristics of states. Political regime structures, the nature of civil-military relations and the organization of data regimes cause military artificial intelligence capacity to take shape under different architectures. In this process, there is a divergence between a network-based and multi-actor structure and a centralized and state-oriented structure.

In this context, the independent variable of the study is systemic pressure, defined by the intensity of algorithmic competition in the international system, the increase in data production and the acceleration of decision-making cycles. The dependent variable is the military model of artificial intelligence adopted by states. This model refers to the institutional structure within which AI capacity is produced and how it is coordinated (centralized coordination/distributed-network-based structure). The relationship between these two variables is shaped by intermediate variables defined by neoclassical realism. These intermediate variables are political regime type, the way the state industrial ecosystem is organized, strategic culture and leadership perceptions, and data ownership and legal regime. These elements function as the main filters explaining why states acting under the same systemic pressure develop different models. Methodologically, the study is based on a case study structured around qualitative research methods. The unit of analysis is the United States and China, with the focus of scrutiny on the logic of production and integration of military AI capacity. In this context, the two cases are considered as evolving under similar systemic pressures but producing different capability architectures. Through official strategy documents, defense policies, institutional structures and operational practices, the analysis evaluates the AI approaches of the two actors in an analytical context. This analysis does not aim to produce a hierarchical ranking of superiority. The analysis aims to explain the political and institutional logic of different capacity architectures emerging under the same structural conditions. The article consists of three main parts. The first section analyzes the US military AI doctrine and capability architecture. The second section analyzes China's party-state based AI approach and military doctrine. In the third part, these two models are discussed together and the conceptualization of algorithmic bipolarity is explained.

2. U.S. Military Artificial Intelligence Doctrine and Institutional Framework

The international security order is undergoing a transformation process in which technological competence is identified with strategic superiority. In this process, artificial intelligence has become central to defense strategies, redefining the parameters of international competition (Kissinger, Schmidt, & Huttenlocher, 2021). Integrating technological adaptation with an institutional vision has become a structural necessity for states to maintain their global position; this necessity has led to the systematic revision of defense doctrines (CRS, 2023). Maintaining its global leadership in the field of artificial intelligence, the US supports research and development activities in this field through multi-layered institutional mechanisms (NATO, 2025). In the US defense approach, artificial intelligence is defined as a strategic capability that improves the speed, accuracy and continuity of decision-making and is integrated into command and control, intelligence production and operational coordination processes (Department of Defense, 2018). The US and China are addressing similar military challenges, such as generating data-driven situational awareness, accelerating sensor shooter integration, and optimizing the decision cycle in a multi-domain combat environment. Therefore, the analytical focus in this chapter is to examine the institutional mechanisms, governance mechanisms, and ethical standards through which AI capability in the US context is transformed into a lasting decision advantage. In this context, the US approach to military AI can be considered in a three-tiered structure consisting of capability generation, decision architecture and operational implementation.

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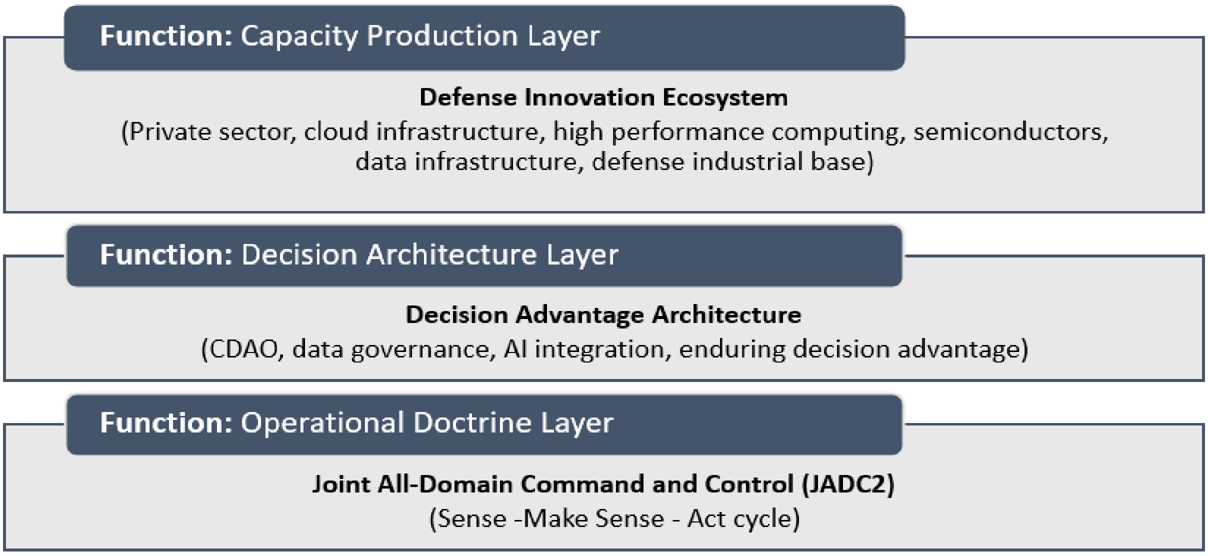
Figure 1. Three Structural Layers of the U.S. Military Artificial Intelligence Approach



Source: Created by the author.

The institutional background of this transformation can be traced back to the Third Offset orientation that took shape in the 2013-2014 period. Third Offset put forward a modernization perspective that aims to sustain operational effectiveness through autonomous systems, human-machine cooperation and advanced algorithmic capabilities (Fiott, 2016). In the same period, China's acceleration of military modernization and its declaration of artificial intelligence as a strategic priority in its 2017 Next Generation Artificial Intelligence Development Plan produced parallel positioning between the two actors, shaped by the dynamics of mutual observation and competition. This doctrinal orientation was institutionalized in the 2018 US Department of Defense Artificial Intelligence Strategy. In the strategy, artificial intelligence is treated as a structural element affecting the nature of military competition and the global balance of power (DoD, 2018). In particular, China and Russia's investments in military artificial intelligence have been considered as a source of systemic pressure for the United States (Department of Defense, 2018). In this context, artificial intelligence is considered as a comprehensive competence area that penetrates different layers of the defense mechanism, from logistics to force protection, from training to decision-making processes. This approach, which supports military effectiveness through knowledge generation, data processing and coordination capacity, directly links the depth of integration of AI-enabled systems to success in future operational environments (Hoadley & Lucas, 2018).

The institutional dimension of the strategy is based on supporting the development of decentralized development processes with common data infrastructures, standardized tool sets and interoperability principles. This approach aims to scale AI applications across the Department of Defense, increase technical and operational cohesion across force components, and holistically restructure the decision chain (DoD, 2018). The institutional basis of this transformation is the inclusion of qualified human resources, collaborations with the private sector and academia, and coordination with allies. In this context, DoD is building its AI capacity within an expanding defense innovation ecosystem through partnerships with commercial technology companies, cloud providers and semiconductor manufacturers (DoD, 2018; CRS, 2023). Cloud computing infrastructure and high-performance computing capacity are among the key components that enable the scalability of this

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ecosystem. This model points to a hybrid public-private sector structure where data access, computational power and algorithmic development capacity are managed in an integrated manner with the defense industry base. The 2018 Strategy places AI at the center of the production of lasting decision advantage and links this capacity with an institutional orientation. This orientation has been given a normative framework with the 2020 AI Ethical Principles. The principles of responsibility, fairness, traceability, reliability and governability have produced binding standards for the development and use of systems (DoD, 2020). Thus, military AI capability is considered within an integrated governance approach that is built between technical performance, legal oversight and human judgment (Defense Innovation Board, 2021). This approach establishes a simultaneous relationship between speed and operational effectiveness and institutional legitimacy and international norm production.

This institutional and normative structure found its first concrete counterpart in the field in the Project Maven initiative. Structured as the Algorithmic Warfare Cross-Functional Team, Maven produced capacity for processing high volumes of intelligence data and adapted decision support processes to operational time pressures (Work, 2017). The analysis of high-volume image data obtained from unmanned aerial vehicles and intelligence platforms has been considered a critical competency area for the defense bureaucracy. Computer vision, machine learning and deep learning algorithms have accelerated the analysis process by detecting objects from moving and static images, and created a structure that supports the reasoning capacity of human decision makers (Pellerin, 2017). Maven's development model progressed in a structure based on data preparation, labeling, model training and continuous optimization cycles; this process was carried out through collaborations established between the private sector, academia and government institutions (CRS, 2020). Thus, artificial intelligence has been structured as a capacity area based on continuous learning and updating rather than a ready-made product supply approach. This approach involves considering operational data as a strategic resource and conducting data tagging, model training and feedback loops in an integrated manner with the defense industry (CRS, 2020). The quality and accessibility of data is placed at the center of corporate planning as a determinant input of military AI performance.

Maven's operational contribution has been tested in different operational environments. In the 2021 Kabul evacuation operation, the system produced integrated situational awareness in crisis conditions by analyzing air traffic, logistics flows and potential threat elements simultaneously (Lubold, 2021). After 2022, it contributed to the processing of satellite data and refining target analysis in the context of Ukraine. The sensitivity of the platform in target identification processes reached a new dimension in operations in Iraq and Syria as of February 2024. This competence in narrowing and prioritizing the target pool was also used in the detection of rocket launcher systems in Yemen and surface threats in the Red Sea. According to US Central Command (CENTCOM) data, these activities, which resulted in the neutralization of some threat elements, symbolize Maven's flexibility in different operational areas such as counterterrorism and maritime security (Turak, 2024). These examples show that by integrating artificial intelligence into the intelligence architecture, the decision chain is restructured on the basis of speed, continuity and accuracy. Beyond its technical outputs, the importance of Maven stems from the fact that it produces a model for the scalable and institutionalized integration of artificial intelligence into military activities.

The field experience gained with Maven revealed the necessity of a centralized structure to ensure the coordinated management of artificial intelligence capacity. Accordingly, the Chief Digital and Artificial Intelligence Office was designed as an institutional structure that integrates data, analytics and artificial intelligence capacity from the management level to the operational field (CDAO, 2022). CDAO's core mission is to generate lasting decision advantage through AI-enabled mechanisms and to extend this capacity to all layers of the defense system. The CDAO model is shaped around three complementary axes: Enablement, acceleration and scale. The enablement dimension aims to establish

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standards for the use of data and artificial intelligence across the MoD and to ensure institutional consistency. The acceleration axis envisages producing solutions to cross-operational needs in a short time and testing prototypes in the field. The scaling approach aims to build secure, interoperable and sustainable enterprise platforms (CDAO, 2022). Thus, artificial intelligence applications are no longer fragmented initiatives, but are integrated into an ecosystem that generates operational value.

Figure 2. The CDAO Framework for Generating Decision Advantage

Source: Created by the author.

The role of CDAO is not limited to capacity generation; it functions as a central structure that coordinates the institutionalization of governance, risk management and transparency mechanisms. In this context, establishing data inventories, setting data sharing standards and securely structuring corporate data infrastructures are among the main priorities for the sustainability of military artificial intelligence capacity (GAO, 2022). Data sovereignty and access control are positioned among the critical elements defined in the context of national security. CDAO serves as the interface between the defense bureaucracy and commercial technology providers, ensuring that algorithmic capacity is developed in coordination with the industrial base.

One of the most critical components of this institutional effort is the establishment of a "Responsible AI" (RAI) approach. The publication of the AI Code of Ethics, the implementation of the RAI Strategy and Implementation Roadmap, and the development of operational tools such as the RAI Toolkit reinforce CDAO's normative leadership in this area. In addition, the Joint AI Test Infrastructure Capability (JATIC) program, developed to test and assure systems, plays a key role in building institutional trust in AI technologies (Department of Defense, 2022). In this respect, CDAO considers AI as an area of strategic capability integrated with military decision-making processes, governance principles and norms of responsible use. Within the framework of this vision, the US Department of Defense displays a holistic model that combines technical innovation with institutional transformation (Office of the Chief Digital and Artificial Intelligence Officer, 2022).

This approach, institutionalized with the CDAO, was transformed into an integrated model with the Data, Analytics, and Artificial Intelligence Adoption Strategy of 2023. The strategy defines AI as an ecosystem linked to data management, advanced analytics, and corporate governance, and organizes this structure around the concept of "enduring decision advantage" (DoD, 2023). The operational logic of strategy is to establish a seamless decision chain from "boardroom to battlefield". In this context, artificial intelligence can be used as a "force multiplier" in a wide range of areas, from investment priorities to logistics planning, from goal setting to organizational resource management. (Harper, 2023). This model is structured on three complementary pillars. The first pillar is based on a data-first architecture and bases AI capabilities on high-quality and standardized data infrastructures. Data centers, cloud systems and high-performance computing infrastructures form the basis of the decision-making chain (DoD, 2023). The second pillar focuses on agile and iterative adoption processes, enabling systems to be adapted to the field and continuously optimized through feedback mechanisms. The third pillar is based on a hybrid governance model that combines centralized standard-setting capacity with flexibility of implementation in the field. Ethical principles and data governance are coordinated at the central level, while implementation processes are carried out by force components (DoD, 2023).

This integrated structure makes AI a key component of organizational adaptation and produces an architecture that connects different stages of the decision chain. In this context, the conduct of war is

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shaped by the capacity to generate, process and transform information into timely decisions (Clark et al., 2021). This institutional ground enables the development of AI-supported command and control architectures. The policy documents published by the Department of Defense define the military use of artificial intelligence within ethical and legal boundaries, while at the same time structuring it as an institutional capacity that serves to generate decision advantage in a multi-domain warfare environment (CRS, 2023). The normative and governance basis of the US military AI approach was institutionalized in the Responsible AI Strategy and Implementation Pathway of 2022. This strategy clearly defines the use of artificial intelligence systems in combat and non-combat areas, and makes the criteria of reliability, traceability, auditability and manageability binding standards in the combat environment (DoD, 2022). Continuous testing, verification and feedback mechanisms against the risks that algorithmic decision processes may produce in complex operational conditions are defined as institutional obligations. The same framework associates the use of autonomous and semi-autonomous systems with the principle of human responsibility and chain of command under DoD Directive 3000.09 (U.S. Department of Defense, 2023). This structure ensures that autonomous capacity is positioned within an organizational architecture integrated with human judgment.

This conceptual framework corresponds to the current global security environment in which symmetric and asymmetric forms of threat exist simultaneously. In this environment, information is not only an element that supports military activities, but also one of the areas where direct conflict is carried out. In this context, the use of military power is shaped by the nature and timing of decision-making processes. In this context, the Joint All-Domain Command and Control approach emerges as a structure that integrates decision-making processes into the multi-domain operational environment (Hoehn, 2022). The aim is to integrate force elements distributed across land, air, sea, space and cyber domains into a joint command and control architecture supported by artificial intelligence. JADC2 focuses on the coordination of data, analysis and execution processes rather than platform-based capacity increase (DoD, 2022). The goal is to ensure that information is transferred to the decision chain without delay and that the operational environment is managed through an integrated picture. Operational logic is shaped in three functional phases: Sense, Make Sense and Act.

The Sense phase enables the collection of data from multiple domains through distributed sensor networks. The Make Sense phase involves transforming this data into meaningful information and producing decision support outputs. The Act phase involves the transfer and execution of decisions to force elements. This structure brings together the different stages of the decision chain into an integrated operational cycle. The realization of this transformation is carried out through five main *Line of Effort* (LOE) defined within DoD: *Data Enterprise*, *Human Enterprise*, *Technical Enterprise*, *Nuclear C2/NC3 Integration* and *Mission Partner Information Sharing*. This approach, which is an*overlay* on top of existing *Service-based* and duplicative capability development processes, is a joint capability building model targeting resource optimization and*cross-domain* synergy. These lines represent a complementary transformation architecture led by senior officials who interact directly with the *Joint Requirements Oversight Committee* and the *Joint Capability Board* (DoD, 2022).

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Figure 3. JADC2 Lines of Effort Framework

Source: Created by the author.

Data Enterprise, the founding pillar, positions data as a strategic asset on a par with logistics and ammunition, and emphasizes that decision superiority depends on managing data to visible, accessible, understandable, connected, reliable, interoperable and secure standards (DoD, 2022). The Human Enterprise aims to manage the cognitive burden created by the increasing volume of data; in this direction, it emphasizes the distribution of authority that enables rapid decision-making with artificial intelligence-supported processes, and professional development and doctrine adaptations that strengthen leadership competencies (DoD, 2022). The Technical Enterprise aims to ensure the cyber resilience of secure, global communications networks and transportation infrastructure to meet the needs of national command authority and combatant commands; it aims to ensure command and control continuity even in a contested electromagnetic environment by reducing single points of failure. Nuclear C2/NC3 Integration involves the harmonization of nuclear command and control arrangements with JADC2 for strategic deterrence. Mission Partner Information Sharing aims to strengthen coalition situational awareness and combined operational capability by reducing the interoperability barrier in information sharing with allies (DoD, 2022).

The implementation of JADC2 relies on a scalable and enterprise-level information sharing regime. This architecture requires an *interoperability* ecosystem built on multiple enterprise*nodes* and standardized data architectures to ensure global connectivity to deliver critical data to *the Joint Force Commander* (Hoehn, 2022). While the ontological security of the system is fortified with a *layered defense* strategy against cyber threats, it requires the personnel and leadership to adopt a *wartime mindset* even in peacetime and be subject to the "*train as we fight*" doctrine. In terms of operational sustainability, the strategy requires a *resilience* capability that can function with minimal guidance even in *degraded* or contested electromagnetic spectrum environments. On the corporate governance side, *unity of effort* in capability development processes is aimed at eliminating bureaucratic cumbersomeness and evolving *acquisition* methodologies to field technological solutions with a *speed-oriented* approach (DoD, 2022; Hoehn, 2022).

This institutional architecture is described in the 2024 *Artificial Intelligence in Defense: A Roadmap for the Future of the Defense Industrial Base* document dated 2024. The roadmap envisages the integration of artificial intelligence systems into defense planning through prototyping, testing and rapid scaling processes (U.S. Department of Defense, 2024, pp. 8-9). One of the reflections of this approach at the operational level is the air combat test conducted in April 2024, in which VISTA, an autonomous fighter jet powered by artificial intelligence, faced off against a manned F-16. In this

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practice, which is recorded as the first AI-powered air combat, it is stated that VISTA performed nose-to-nose passes and vertical maneuvers at speeds of up to 1,200 miles per hour, approaching the manned F-16 to a distance of 2,000 feet. This application shows that artificial intelligence covers autonomous and semi-autonomous capabilities that are directly integrated into execution processes (U.S. Department of Defense, 2024, p. 8). These processes are carried out with the oversight and accountability mechanisms defined in DoD Directive 3000.09, and the transition from prototype to operational use is accelerated through programs such as Tradewinds and AI Rapid Capabilities Cell (U.S. Department of Defense, 2024, pp. 17-18; 22). In this context, the industrial base is positioned as one of the institutional components of the decision-making architecture.

This approach, shaped through defense and military applications, is placed in the context of national and global competition with *America's AI Action Plan* dated July 2025 (The White House, 2025, pp. 1-2). The strategy positions artificial intelligence at the intersection of economic competition, technological capacity and national security, and envisages that state capacity will be directed accordingly (The White House, 2025, pp. 1-2). The political framework of this approach is clearly seen in Donald J. Trump's assessments. Trump emphasizes that transformative technologies such as artificial intelligence have the potential to reshape the global balance of power and describes this process as a race in which other states try to use these technologies for their own interests. In Trump's words, "*As our global competitors race to exploit these technologies, it is a national security imperative for the United States to achieve and maintain unquestioned and unchallenged global technological dominance. To secure our future, we must harness the full power of American innovation*" (The White House, 2025, p. ii). This statement reveals that the competition in the field of artificial intelligence is addressed in a context where other actors are explicitly positioned as global competitors and where leaving these competitors behind is deemed necessary in the context of national security. Within this national interest-centered approach, artificial intelligence is considered as a structural element that affects the decision-making capacity, speed and scale of the state. Regulations for the Department of Defense and the intelligence community include battlefield applications as well as the automation of corporate workflows and the redesign of operational processes (The White House, 2025, pp. 11-12). Supporting priority military functions with AI-based systems is associated with maintaining decision continuity in crisis and conflict scenarios. In this context, superiority in the field of artificial intelligence is considered in conjunction with the goal of narrowing the field of action of rival actors (The White House, 2025, pp. 20-21).

Defense policies and infrastructure policy are handled in an integrated manner. The establishment of high-security data centers for systems that will operate on sensitive and classified data; the development of technical standards that are resilient to state-sponsored cyber threats; and the protection of operational security as well as national artificial intelligence capacity (The White House, 2025, pp. 16-17). Export controls and allied technology policies directly link defense to global technology governance. The goal of making artificial intelligence hardware, software and security standards the international frame of reference is oriented towards maintaining an order shaped around the American technology ecosystem (The White House, 2025, pp. 20-22). In this context, the protection of semiconductor production chains, advanced chip export controls and allied technology restrictions are directly linked to the long-term sustainability of military AI capacity. The coordination between private sector R&D investments and defense needs ensures the integration of the national innovation base into the security strategy. Thus, the US military AI approach presents a multidimensional capability model in which doctrine, data governance, computing infrastructure and the defense industrial base are organized in an integrated manner. In this model, the private sector, data ecosystem and high-performance computing infrastructure are structured as integral components of the operational decision-making chain.

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3. China's Military Artificial Intelligence Doctrine and Party-State Governance Framework

The People's Republic of China positions AI within a long-term strategic framework that is coordinated with the goals of economic modernization, global influence, and domestic governance. Interconnected sets of policies such as the Next Generation Artificial Intelligence Development Plan, the Digital China vision and the cyber sovereignty doctrine place AI at the center of the Chinese Communist Party's understanding of technological autonomy and state security (National Security Data and Policy Institute, 2025). In this context, artificial intelligence becomes a field of political regulation where state authority is reproduced, ideological continuity is reinforced through institutional tools, and central governance principles are systematized through digital infrastructures (Heeks, 2024). In the Chinese context, artificial intelligence gains meaning within the framework of its structural relationship with the state's political organization model and its understanding of security. This field of technology, which has been positioned as part of a macro-level state-building framework since the early period, has been addressed together with military capacity building, political stability and national security goals (State Council, 2017; Marvin, 2020; Roberts, 2018). This orientation shows that artificial intelligence policy is shaped within a state-building practice that spans over time rather than reactions to short-term developments. The gradual construction of ideological frameworks together with institutional arrangements and infrastructure investments has produced a governance logic that determines in which areas and in line with which priorities AI will be used (State Council of the People's Republic of China, 2017; Xi, 2014).

This institutional and ideological background constitutes the analytical ground that makes it possible to analyze China's approach to military artificial intelligence through three structural levels. At the first level, capacity generation is built through Military Civilian Fusion within centralized state-party coordination. At the second level, this capacity is embedded into the decision architecture through the process of intelligentization. At the third level, System Destruction Warfare defines the operational implementation logic of this architecture. This tripartite structure situates AI as an integrated strategic capability space established between the production regime, decision architecture and doctrinal implementation. This structural framework shows that China's military AI approach cannot be considered as a process limited to technical capacity building. In this context, China's military AI approach faces the same structural pressures as the United States on the fundamental problems generated by contemporary warfare. Multi-domain integration, data-driven situational awareness and acceleration of the decision cycle are among the prioritized objectives for both actors (Pesapane, 2024). The distinction is not in the nature of these goals, but in the institutional and political architecture within which they are operationalized. While a more decentralized and network-based innovation ecosystem is prominent in the US, in China, artificial intelligence is structured through centralized coordination mechanisms within the party-state. Therefore, the Chinese model produces a unique technopolitical prototype that integrates military objectives around centralized planning, data governance and political control. This differentiation is read through the difference in institutional architecture between centralized and hierarchical forms of integration and relatively decentralized integration mechanisms.

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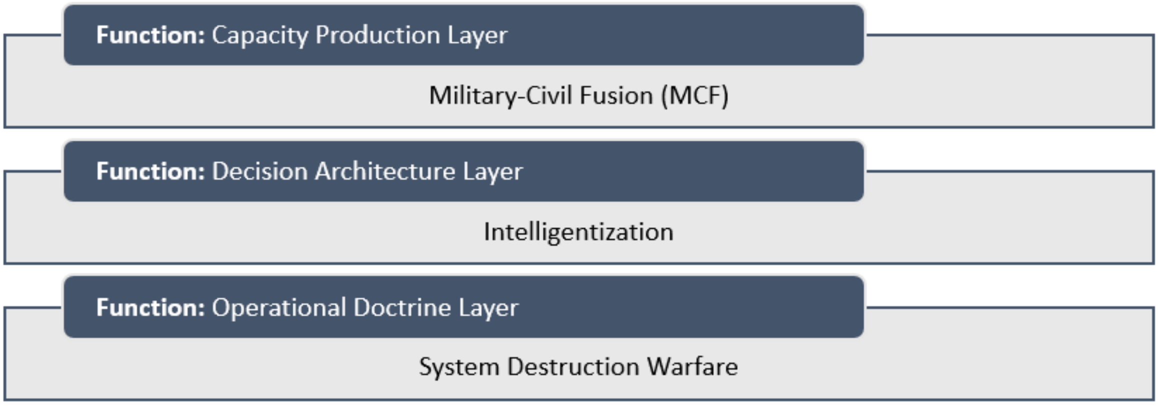
Figure 4. Three Structural Layers of China's Military Artificial Intelligence Approach



Source: Created by the author.

The constitutive logic of this model is that innovation production is not left to market processes; data access, standardization, certification, security oversight and procurement priorities are directed by the central authority. This form of governance situates China's centrality in the field of artificial intelligence within the historical continuum. The state-building logic shaped since the 1990s has been more intensively integrated with the goals of technological self-sufficiency, digital capacity, and military modernization under Xi Jinping (Marvin, 2020; Roberts, 2018). Accordingly, AI governance is structured within a political logic based on the continuity of party-state rationality and institutionalized through regulatory instruments. In this context, China's AI governance is structured within a political logic that is based on the historical continuity of party-state rationality rather than conjunctural policy preferences or reactive moves imposed by global technological competition.

This continuity takes institutional form through the layered ideological architecture constructed by the Chinese Communist Party. The leadership variable assumes a directive function within this continuum (Marvin, 2020). Especially during the Xi Jinping era, technology policies have been integrated in line with the goals of self-sufficiency, national security and military modernization, and artificial intelligence has taken its place among strategic priorities (Roberts, 2018). This orientation has found a concrete response in the administrative structure with the reorganization of bureaucratic structures and resource allocation in line with strategic priorities. Artificial intelligence has been functionalized as a governance tool compatible with party legitimacy, state capacity and the continuity of central authority. Ideological layers were redefined in line with new political priorities and a continuity-based state-building practice was reinforced (Roberts, 2018). Table 1 shows the continuity relationship of this layered ideological logic with AI governance since the 1990s.

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Table 1. The Layered Ideological Construction of Artificial Intelligence Governance in China

Period	Ideological Layer	Core Thematic Axis
1990-2000	Technological Modernization and Political Legitimacy	Reconstitution of political legitimacy through economic growth, scientific progress, and technological development.
2006-2012	Technology and National Power	Integration of technological development into national power and security frameworks.
2012-2017	Digital Governance and Social Ordering	Use of digital technologies for societal monitoring, classification, and administrative control.
2017-2023	Operationalization of Ideological Frameworks	Translation of ideological and institutional foundations into scalable and operational AI-based governance systems.

Source: Created by the author.

In the founding layer of the process (1990-2000), the main axis was the redefinition of political legitimacy through technological modernization. After the 1989 Tiananmen events, international isolation, the dissolution of the Soviet Union, and the military-technological capacity displayed by the US during the Gulf War made the sustainability of the existing ideological framework questionable for the Chinese Communist Party (Şahin, 2024). In this context, class-based revolutionary discourse was replaced by a conception of performance legitimacy based on economic performance and technological progress (Zheng, 2004). The Chinese formulation of socialism embraced market mechanisms while maintaining Party control. Advanced technologies were positioned as strategic elements supporting regime stability and national sovereignty; while artificial intelligence did not yet constitute a separate policy area, the doctrinal basis for the development of technology under political control was established during this period (Roberts, 2018).

In the second layer (2006-2012), technology was integrated into a national comprehensive ontology of power and security. The local and sectoral competition generated by rapid economic growth initially produced a decentralized structure, but was directed towards centralized strategic goals within the framework of the Scientific Development Approach (Hu, 2006). In this period, technological development was considered not only as a means of economic efficiency but also as a key component of international competitiveness and national security (Segal, 2010). The 2006 Science and Technology Medium- and Long-Term Development Plan integrated indigenous innovation and dual-use technologies into state capacity, with data, processing power and early algorithmic systems becoming part of security-centered strategic thinking (Roberts, 2018). This plan linked indigenous innovation (zizhu chuangxin) with central planning, making technological capacity a structural component of industrial policy and state capacity building (Kania, 2017).

In the third layer (2012-2017), digital technologies were institutionalized as instruments of social governance and political regulation. "Sharp Eye" projects, smart city applications and social credit system experiments were implemented as a governance paradigm before technical capacity was fully mature, thus building the institutional basis for algorithmic control (Xi, 2014; State Council, 2014). In this period, technological capacity building deepened at the level of industrial policy; with the Made in China 2025 strategy announced in 2015, a hardware and industrial foundation was created in the fields of robotics, semiconductors and smart manufacturing, and in the 13th Five-Year Plan in 2016, artificial intelligence was designated as a "strategic emerging industry", institutionalizing a hybrid development model that combines state guidance and market mechanisms (Central Committee of the Communist Party of China, 2016). At this stage, AI is more explicitly embedded in the framework of internal governance, which is shaped around industrial policy, ideological control and data-driven central planning.

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In the final layer (2017-2023), this ideological and institutional accumulation is transformed into operational and scalable AI systems. With the Next Generation Artificial Intelligence Development Plan, AI has moved from being an abstract goal to being integrated into state functioning, industrial systems and social governance practices (Roberts, 2018). This plan defined AI as a holistic state project that simultaneously pursued the goals of economic modernization, national competitiveness, digital sovereignty and military modernization. It crystallized the accumulation of industrial policy and central planning built up in previous layers at the doctrinal level (State Council of the People's Republic of China, 2017). Thus, artificial intelligence emerged not as a sudden technological leap, but as the institutional outcome of the technopolitical orientation gradually built since the 1990s. The data infrastructures, regulatory mechanisms, and political narratives established in previous periods made it possible to apply AI in a wide range of fields, from surveillance networks to public services, from industrial optimization to predictive governance models. Through regulatory oversight and algorithmic governance, AI has become a functioning governance mechanism that is guided by Party doctrine and supports central authority (Marvin, 2020; Roberts, 2018). This layered process of ideological construction positions China's approach to AI as a holistic techno-political transformation that is the product of a temporal and feedback relationship between ideology, institutions and infrastructure. This historical and ideological accumulation became a policy framework with the Next Generation Artificial Intelligence Development Plan announced in 2017 (Lee, 2018).

Figure 5. China's Strategic Goals in Artificial Intelligence (2020-2030)

Source: State Council of the People's Republic of China, 2017.

China's State Council's 2017 Next Generation Artificial Intelligence Development Plan defines AI as the "new focus of national power" and sets out a three-stage roadmap covering 2020, 2025 and 2030 (State Council, 2017). In the first phase, AI is defined as an area of capacity that supports economic growth and social welfare; in the second phase, it is defined as an element of restructuring that transforms the industrial structure. In the third stage, it is aimed for China to become an innovation center capable of producing norms on a global scale and a leading actor in line with the "smart society" vision. Especially under the title of "Artificial Intelligence + National Defense", AI-based optimization of the defense industry and military logistics is coded as a strategic imperative (State Council, 2017). This framework points to an order in which four complementary functional components operate together in China's AI governance: (i) state-sponsored mobilization and coordination in line with central goals, (ii) expansion of human resources and academic capacity, (iii) opening up based on global knowledge

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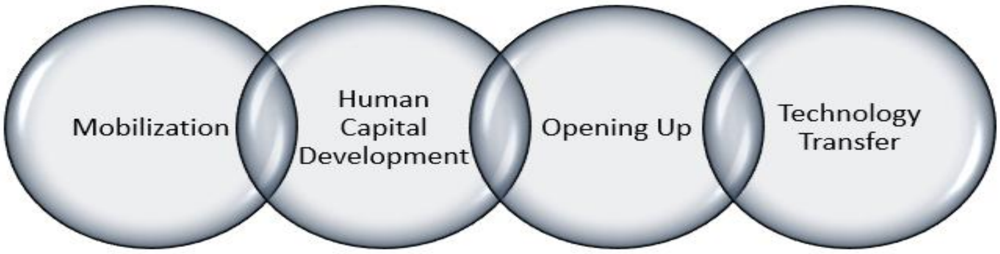
circulation, and (iv) the use of technology transfer as an institutional tool. The simultaneous operation of these four components creates a planned and coordinated pattern of progress rather than a disorganized and market-based development (State Council, 2017). It also becomes part of a broader strategic orientation, complementing domestic innovation capacity (State Council, 2017). The simultaneous functioning of these elements is directly related to China's centralized decision-making capacity, the relative permeability of public-private boundaries, and its vast human and data resources.

Figure 6. China's Governance Framework for Artificial Intelligence Development



Source: Created by the author.

This strategic and ideological framework points to an integrated production regime that constitutes the first structural level in China's approach to military AI. State Council documents and guidance from the party leadership have produced a holistic governance logic that determines the areas and priorities in which AI will be used (State Council of the People's Republic of China, 2017). This governance logic has created a broad institutional space encompassing government agency and the industrial ecosystem, and has organized the relations between the state and industry in an analytically permeable structure. In this context, artificial intelligence capacity in China is being built through an integrated innovation space where public and private actors operate in coordination under centralized direction (Conroy & Mallapaty, 2025). The Military Civilian Fusion strategy is at the center of this production regime. The Central Commission for the Development of Military Civilian Fusion, established under the Central Committee of the Communist Party of China, is defined as the main institutional mechanism that provides strategic guidance for the integration process (Xi, 2017).

This strategy brings together private sector firms, research institutes and the defense industry in an institutionalized integration mechanism. In this context, artificial intelligence is a dual-use technology, scaling through military research and development activities and civilian data production infrastructures, commercial algorithms and digital platform ecosystems. Big data infrastructures, cloud computing systems and smart platform architectures are among the strategic infrastructures that enable artificial intelligence capacity to be fed with large-scale data pools (State Council of the People's Republic of China, 2017). Within this institutional structure, the private sector is positioned as a production actor that integrates with the security architecture through data access, model training, test environments and the development of technical standards. Joint research platforms and defense innovation centers established between the People's Liberation Army and technology companies are among the institutional tools of this integration (Central Commission for Integrated Military and Civilian Development, 2018).

The analytical weight of military-civilian fusion lies less in increased inter-institutional contact than in the design of mechanisms that enable innovation to scale. In this context, the role of the private sector is shaped by big data infrastructures, cloud computing capacity, algorithmic model development processes, and application testing environments in a production chain linked to defense priorities. Key components of this chain include data sharing mechanisms in central planning documents, common standards development processes, and institutional channels that facilitate the participation of civilian

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technology companies in defense projects (Xi, 2017; State Council of the People's Republic of China, 2017). Therefore, the role of the private sector is institutionally embedded in an innovation ecosystem aligned with defence priorities through data access, model training infrastructures, application test environments and standardization processes. Thus, the transfer of dual-use technologies to the military operates within a mechanism structured around certification, compatibility, security audit and procurement priorities (Conroy & Mallapaty, 2025).

In this context, dual-use technology is not a market-driven by-product, but a structural feature produced through institutional guidance. The standardization and security certification mechanisms developed within the scope of Military Civilian Fusion are among the main tools regulating the transfer of technology from the civilian innovation system to military projects (Central Commission for Integrated Military and Civilian Development, 2017). This institutionalization process operates through security audits, standard-setting mechanisms and planned resource allocation to strategic sectors. The national defense science and technology system is structured through joint laboratories and technology transfer platforms established between civilian research institutions and defense research networks (State Council of the People's Republic of China, 2017). At this level, it reorganizes private sector competition within a coordination framework aligned with national security priorities.

This planning logic suggests that AI is positioned within the institutional link between economic modernization and military transformation. In the 14th Five-Year Plan, AI is identified as a strategic frontier technology, along with quantum computing and semiconductors, and linked to national security and industrial development goals (National Development and Reform Commission, 2021). This approach reveals that AI is considered a critical infrastructure area for strengthening state capacity, maintaining centralized control mechanisms, and supporting long-term military modernization programs. The goals of technological self-sufficiency and high-quality development emphasized by Xi Jinping express the strategic orientation of developing advanced technologies in tandem with the national security architecture (Xi, 2020). In this context, the Chinese model produces a large-scale innovation ecosystem that operates under centralized direction between state institutions and market actors. AI capacity is built within an institutional continuum between civilian development goals and defense modernization. This continuum operates by scaling up data-driven capacity in the areas of governance and development and then linking it to military decision-making through institutional integration mechanisms (State Council of the People's Republic of China, 2017). In this context, military transformation is shaped by channeling the capacity accumulated at the ideological, institutional and economic levels into the security domain.

This production regime constitutes the material and institutional basis for the redesign of the central decision architecture in the process of intelligentization. The capacity built within the integrated production regime produces a transformation that is not reduced to technology transfer but is directly related to the restructuring of the decision architecture. At this point, intelligentization constitutes the decisive conceptual framework in China's understanding of military modernization. The 2019 National Defense White Paper of the People's Republic of China emphasizes that warfare is evolving from information-based competition to intelligence-based competition and states that artificial intelligence technologies will bring about comprehensive transformations in military organization and command structures (State Council Information Office, 2019). This transformation is defined as an integrated process that includes technical modernization and organizational restructuring.

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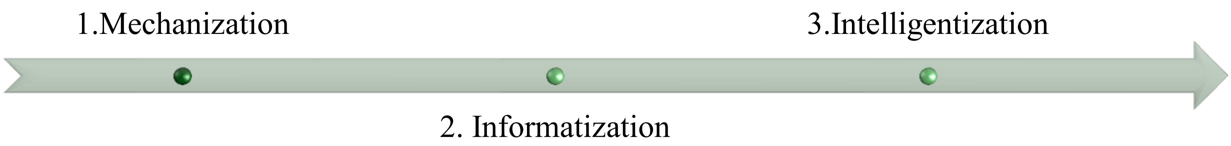
Figure 7. The Logic of Modernization in Chinese Military Doctrine: Mechanization, Informatization, and Intelligentization



Source: Created by the author.

Intelligentization refers to the transition from a platform-centric modernization approach to a decision-centric architecture. Mechanization refers to the physical capability of weapon systems, informatization to network-based command and control integration, and intelligentization to the reorganization of the joint force structure through algorithmic analysis and autonomous decision support mechanisms. In the military doctrine of the People's Liberation Army of China, mechanization, informatization and intelligentization are considered as the conceptual framework for the developmental stages of modern warfare, and it is emphasized that these processes should be advanced simultaneously (PLA Academy of Military Science, 2020). This approach envisages the integration of emerging technologies into the force structure with the logic of "inter-system warfare". In this context, technologies such as artificial intelligence, big data and quantum computing are considered as strategic components that increase the cognitive capacity of the joint force structure (PLA Daily, 2025).

In this context, artificial intelligence is not limited to the expansion of autonomous systems. Data fusion, multi-domain situational awareness generation and real-time data analysis are defined as the core operational capabilities of the intelligentized warfare environment (PLA Academy of Military Science, 2020). This process enables the fusion of data streams from different force elements into a single operational decision system and the redistribution of information burden across command echelons. This is referred to in Chinese military doctrine as "multi-domain data fusion" and "intelligent command platforms" (PLA Daily, 2021). This transformation strengthens the operational applicability of the multi-domain operational concept. Simultaneous processing of data from land, air, sea, space and cyber domains increases operational awareness and deepens cross-domain integration. The 2023 "General Order Plan for Building Digital China" provides a governance framework that aims to integrate data sources on a national scale and integrate digital infrastructure across the military-government-society axis (CCCPC & State Council, 2023). This digital integration expands the data-driven decision-making capacity of the smartened force structure.

The institutional level reflection of this restructuring is the abolition of the Strategic Support Force and the establishment of the Information Support Force directly under the Central Military Commission. Announced in 2024, this reform is described as a structural transformation aimed at coordinating information, network and data infrastructures at the central command level (Xinhua, 2024). This arrangement centralizes the flow of data at the high command level and extends algorithmic decision processes to the entire force structure. Thus, a direct operational link is established between civilian digital infrastructures and military decision architecture. Data infrastructures, smart network systems and big data platforms developed within the scope of the Digital China strategy form the institutional basis of this link (Cyberspace Administration of China, 2021). This integration shows that artificial intelligence is positioned as an infrastructure area related to the continuity of state capacity along with battlefield technology. In this context, the Information Support Force is designed as a centralized structure that coordinates inter-force data sharing and algorithmic decision processes, and functions as a core institutional component that manages the information infrastructure of the intelligentized force architecture (PLA Daily, 2024).

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The process of intelligentization brings with it a redefinition of command-and-control relationships. The expanding role of algorithmic analysis and automation contributes to the reorganization of the interaction between central command and subordinate units within a data-driven organizational model. In Chinese military doctrine, "intelligent command" and "data-driven operations management" are among the key concepts that describe a hybrid decision architecture based on the interaction between human judgment and algorithmic analysis (PLA Daily, 2021). Delegation of authority, responsibility sharing and information flow are restructured through the interaction between human judgment and algorithmic evaluation. This hybrid structure is important for increasing the pace of decision-making and strengthening operational mobility under uncertainty. In this context, Chinese doctrine is shifting to a "software-defined" warfare approach. This transformation is shaped at the intersection of macro-level systemic competitive pressures and micro-level leadership preferences and bureaucratic adaptation processes. Algorithm capacity is placed in a more central position than physical platforms, and software architecture is considered as the key element that defines the effectiveness of weapon systems. Thus, military effectiveness is measured in terms of data processing capacity, level of integration and decision-making tempo rather than the number of platforms. The operational logic of this decision architecture is embodied at the next level, in the System Disruption Warfare approach. While intelligentization produces the cognitive infrastructure that enables the detection and targeting of inter-system dependencies, the system-oriented warfare approach defines the application framework of this infrastructure.

At the operational level, the decision architecture redesigned through the process of intelligentization gains meaning within the approach defined by Chinese military thinkers as "System Disruption Warfare". This doctrinal framework defines military superiority not through the destruction of individual platforms, but through the disruption of the holistic systems that enable the functioning of opposing forces (PLA Academy of Military Science, 2020). System Disruption Warfare conceptualizes the battlefield not as a confrontation of independent forces, but as the interaction of networked structures woven with interdependencies. In this approach, the goal is to render the command-and-control chain, sensor-shooter integration, logistics networks and information production processes dysfunctional. Thus, the central axis of warfare shifts from platform capacity to system integrity (State Council Information Office, 2019). At this point, artificial intelligence produces the cognitive infrastructure that makes the doctrine feasible. The simultaneous processing of large data sets, the detection of inter-system dependency points and the creation of vulnerability maps are realized through algorithmic analysis capacity. The integration of data from different operational domains into a single operational picture within the framework of a multi-domain operational approach constitutes the technical prerequisite for system disruption logic (PLA Academy of Military Science, 2020). The interdependencies between sensor networks, data centers, and communication infrastructures create strategic vulnerability points, and AI-supported analysis systems prioritize these nodes, adding speed and scale to targeting processes.

The PLA's procurement activities for AI applications demonstrate how this doctrinal transformation is being realized at the practical level. Artificial intelligence-related tenders published in the 2023-2024 period reveal that a wide range of technological fields, from image and language models to autonomous systems, are being integrated into military modernization (Center for Security and Emerging Technology, 2024). These procurement activities show that autonomous systems, swarm intelligence and decision support architectures are among the priority areas in the modernization process. In this context, the determining factor is not the existence of these systems, but the decision infrastructure that enables them to work in an algorithmically coordinated manner (State Council, 2017). Intelligentized force structure is defined by the capacity to coordinate a large number of heterogeneous platforms within a single cognitive architecture. China's unmanned system production capacity supports this transformation in the areas of data collection and operational awareness generation (Stokes, 2024). In this context, superiority is established through the ability to disrupt system integrity and disrupt

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operational synchronization. Artificial intelligence assumes a central role thanks to its capacity to slow down the opponent's decision cycle and increase its own decision tempo. In China's AI strategy, increasing the speed of decision-making is defined as a critical objective in the context of military competition (DoD, 2023).

This doctrine transforms military effectiveness from a phenomenon limited to the battlefield into a continuous capacity area that includes preparation, simulation and training processes. Simulation environments fed with real-time data make it possible to model different conflict scenarios and test decision processes in advance (McCauley, 2024). Such systems produce learning environments that strengthen the command's capacity to make decisions under uncertainty. This process demonstrates the restructuring of military readiness into a data-driven learning cycle (State Council Information Office, 2019). The institutional reflection of this transformation is embodied in the reorganization of information and data infrastructures at the central command level. In 2024, the restructuring of the Strategic Support Force and the creation of new information-driven force structures aim to centralize the flow of data and spread algorithmic decision processes throughout the force structure (Xinhua, 2024). The data infrastructures and big data platforms developed under the Digital China strategy form the institutional foundation of this decision architecture (Cyberspace Administration of China, 2021).

Within this totality, the Chinese model exhibits a three-layered structure: the integrated production regime generates capability, intelligentization embeds this capability into the decision architecture, and System Destruction Warfare defines the strategic implementation logic of this architecture. This structure shows that artificial intelligence is positioned as a central capacity field that redefines the way war is organized, the pace of decision-making and the interaction between systems. Accordingly, artificial intelligence is at the center of China's long-term strategic orientations in a military competitive environment shaped by data generation, decision-making tempo and multi-domain integration (State Council, 2017; PLA Academy of Military Science, 2020). In this context, China's artificial intelligence strategy is positioned as one of the early examples of a new order of military competition shaped around speed, data processing capacity and cognitive superiority (Mayer, 2025; Stokes, 2024; Zeng, 2025).

4. Algorithmic Bipolarity: The Changing Logic of Power

Artificial intelligence today refers to a comprehensive integration process that is embedded in all layers of national capacity in a wide spectrum ranging from economic models of states to social governance practices, from education and health infrastructures to security architectures, and restructures the functioning of these layers through data-based decision mechanisms (Meleouni, & Efthymiou, 2023). This process involves the redefinition of decision-making rationality, forms of institutional coordination and the organizational logic of state capacity along with technological modernization. In this sense, artificial intelligence is positioned as a general-purpose capacity field that holistically affects the administrative, economic and military functioning of the state, rather than an instrumental innovation specific to a particular sector.

The intersection of artificial intelligence with the structural dynamics of international security emerges in the field of defense policies. The algorithmicization of the character of warfare is reorganizing military planning and execution processes around data-intensive, speed-oriented and highly autonomous systems by pushing decision-making and reaction times beyond the limits of human cognitive capacity (Schrodt, 2019). Deepening sensor-shooter integration, coordinated operation of multi-domain operational structures, and command and control architectures based on real-time data fusion have become the defining parameters of contemporary military power (Shkurti-Özdemir, 2019). This transformation produces an instrumental convergence in the defense approaches of great powers, as the quest for algorithmic decision superiority emerges as a common strategic imperative in a systemic

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competitive environment. This strategic imperative is not limited to the doctrinal level, but is also clearly expressed at the level of political leadership. Indeed, the reflections of this imperative at the political level are clearly observed in the discourse of leaders:

> "*From this day forward it'll be a policy of the United States to do whatever it takes to lead the world in artificial intelligence*." - Donald Trump, President of the United States

> "*We must have complete self-reliance, and comprehensively advance technological innovation, industrial development, and all AI-empowered applications, with mastery across all core AI technologies*." - Xi Jinping, President of China

> "*Whoever becomes the leader in this [AI] sphere will become the ruler of the world.* -Vladimir Putin, President of Russia.

These statements, coming from different political contexts, point to a common perception: Algorithmic capacity is the defining domain of contemporary power competition. In this context, artificial intelligence is becoming a constitutive component of states' national security and long-term strategic orientations (Chen et al., 2020). From a neoclassical realist perspective, these discourses reveal how the structural pressures generated by the international system are made sense of at the leadership level. While the competitive dynamics emerging at the systemic level drive great powers towards similar goals, how these goals are embedded in military architectures and through which institutional instruments they are implemented are shaped by the internal political structures and institutional filters of states. While this situation produces an instrumental convergence in defense approaches, it brings institutional differentiations in the process of integrating artificial intelligence into military capacity.

The dual-use nature of AI technologies pushes the production of military capacity beyond the boundaries of defense bureaucracies (Schrodt, 2019). Big data infrastructures, semiconductor production capacity, high-performance computing systems and communication networks form the common infrastructure of economic productivity and military effectiveness. This situation reveals that military AI capacity cannot be considered as the sum of technical components, and that the institutional architectures through which this capacity is generated, coordinated and directed should be at the center of the analysis. In the age of artificial intelligence, superiority is increasingly concentrated in technology-intensive areas such as data generation, algorithmic innovation capacity, advanced semiconductor production, high-performance computing infrastructures, cloud architectures and digital platform ecosystems (Bode, 2024). This trend indicates a restructuring of the logic of measuring the distribution of power in the international system. While in the industrial age, the relative power of states was assessed in terms of material indicators such as production capacity, size of military forces and trade volume, in the age of artificial intelligence, superiority is concentrated in technology-intensive capacities such as data generation, algorithmic innovation, computing infrastructures and digital platform networks.

These developments create the need for different conceptual tools to explain the emerging distribution of technological power in the international system. This is because technological competition in the international system is no longer a phenomenon that can be fully explained through classical indicators such as military capacity, industrial production or trade volume. Concepts such as great power rivalry, technological competition, digital sovereignty or geotechnology used in the existing literature offer the opportunity to explain various dimensions of this transformation (De Spiegeleire et al., 2018; Schrodt, 2019). However, they are limited in holistically capturing the specific nature of AI-based technological capacity that is reshaping the international distribution of power. The main reason for this is that AI competition produces a multi-layered technology field that encompasses economic

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and military capacities, civil infrastructure and security architecture, state strategies and private sector ecosystems simultaneously. In this context, the dynamics imposed by the international system, such as the acceleration of decision cycles, the need for multi-domain operational integration and the proliferation of autonomous systems (Bode, 2024), confront great powers with similar operational requirements. However, the transformation of these requirements into military doctrines and capacity-building processes produces different orientations through leadership perceptions, state capacity, the level of bureaucratic coordination and the nature of civil-military relations. Therefore, instead of producing a uniform output, the common pressure emerging at the system level is embodied through different models of institutional organization.

At this point, the AI-based military transformation process paves the way for the emergence of a new structural divergence in the international system. This divergence brings the global order into a dual structure shaped around the organizational forms of algorithmic capacity. This paper proposes the concept of algorithmic bipolarity to explain this transformation. *Algorithmic bipolarity refers to a form of power distribution* that emerged as a result of data generation, algorithmic innovation and high-performance computing infrastructures becoming the main determinants of strategic capacity in the international system, characterized by the concentration of this capacity around two main technological centers. This concept focuses on the institutional arrangements and decision architectures through which algorithmic capacity is generated and directed, rather than quantitative differences in the distribution of power.

While economic and technological capacity can be spread across a wider range of actors in industrial-based production systems, the development of AI technologies requires high levels of capital accumulation, advanced research infrastructures, large-scale data sources and advanced semiconductor production capacity (Heeks & He, 2024). These structural requirements lead to the concentration of technological capacity in a limited number of actors in the international system. This leads to global technological competition producing a distribution of power shaped around the centers where technological infrastructures are concentrated, rather than a symmetrical race in which a large number of states participate. This concentration trend shows that AI competition is increasingly centered around two main technological powers.

The goals set by the US and China in the field of artificial intelligence point to a new distribution of power in the international system shaped around algorithmic capacity, data processing power and computational infrastructures. In this context, algorithmic bipolarity provides a proposed analytical framework to explain the dynamics of a new international order in which global AI competition is organized around two distinct technopolitical centers of gravity. AI competition has a different organizational logic than classical bipolar structures defined through ideological blocs or military alliance systems. Competition is concentrated in technology-intensive areas such as data governance, platform dominance, semiconductor supply chains, standard-setting capacity and algorithmic integration. This indicates the emergence of a new order of competition in the international system based on the way technology infrastructures are organized.

In this context, global AI competition is shaped around the concentrated technological capacity of certain actors, rather than a capacity race evenly distributed among all states. The concentration of AI ecosystems around certain centers on a global scale result in data generation, algorithmic innovation and high-performance computing infrastructures being controlled by a limited number of actors. When global artificial intelligence ecosystems are analyzed, it is seen that the US and China are particularly decisive in critical areas such as research capacity, data production volume, high-performance computing infrastructures, semiconductor technologies and digital platform ecosystems (Oxford Insights, 2025). Thanks to its research infrastructure, global technology companies and digital platform ecosystem, the US has long maintained its leading position in the field of artificial intelligence.

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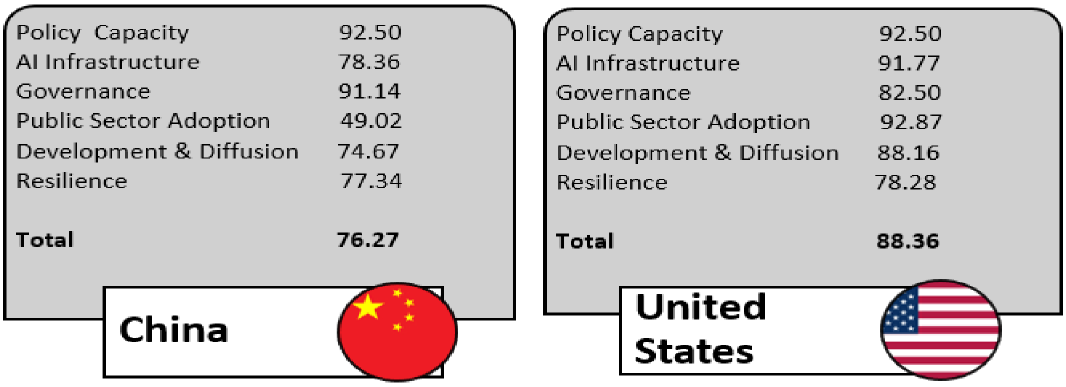
According to the Government AI Readiness Index (2025) published by Oxford Insights, the US maintains its global leadership with 88.36 points, while China lags behind with 76.27 points.

Figure 8. Artificial Intelligence Capacities of the United States and China



Source: Government AI Readiness Index, 2025.

However, international reports emphasize that China's real capacity is not fully reflected in statistics due to its data policies that are far from transparency (Oxford Insights, 2025). It is assessed that the Beijing administration tends to draw a lower profile than it actually is by hiding its capabilities, so the country's actual artificial intelligence power may be beyond the current indices. Despite these data limitations, China stands out as the only rival actor that can challenge the US on a global scale, thanks to its state-led long-term investment model and its capacity to cover the entire AI ecosystem (Oxford Insights, 2025). Therefore, the analysis focuses on two main technopolitical centers with system-building capacity rather than a diffuse competition involving multiple actors. Considering the existing technological infrastructure, research capacity and global digital ecosystems, these centers are the United States and China. This trend is shaped by the distribution of technological capacity as well as the global leadership goals and policy preferences of the great powers in the field of artificial intelligence. The US's Artificial Intelligence Action Plan identifies the establishment of global technological superiority in artificial intelligence as one of the main strategic goals. In the document, AI leadership is associated with economic competitiveness and positioned as a key element of national security (White House, 2025). Similarly, China's New Generation Artificial Intelligence Development Plan places AI at the center of its national development strategy.

It aims for China to become a global leader in artificial intelligence by 2030 and a major center of innovation production worldwide (State Council, 2017). These policy documents show that AI is considered by the great powers as a critical technology area that shapes their capacity for global leadership. The United States and China are pursuing the goal of global leadership in the field of artificial intelligence (Heeks & He, 2024). In the context of the same goal, the policy preferences of both actors differ in line with their cultural codes, strategic cultures, institutional structures and understanding of technology governance. Thus, the US and China exhibit two distinct technopolitical approaches that aim for the same goal of global leadership but present different models of AI development and implementation. These models produce reference prototypes that other states can adopt and adapt to their own institutional structures. This situation points to a structure in which the global AI ecosystem is oriented around two different centers of gravity and explains the emergence of the power distribution dynamic conceptualized as algorithmic bipolarity.

In this context, algorithmic bipolarity is conceptualized as a form of power distribution that refers to the concentration of technological power shaped around artificial intelligence, data and computational

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capacity in two main centers and the orientation of the global artificial intelligence ecosystem by two major actors. The situation is not limited to the existence of two great powers. The decisive factor is the capacity of these actors to set global technology standards, direct data flows, control computational infrastructures and pull other states into their technological orbit. Algorithmic bipolarity therefore provides an analytical framework that argues that the distribution of power in the international system is reshaped through data production, algorithmic innovation and the organization of computational infrastructures. During the Cold War, bipolarity was shaped by ideological blocs, military alliance systems and nuclear deterrence (Heeks & He, 2024). The competition emerging in the age of artificial intelligence operates through technopolitical architectures organized around data infrastructures, computational capacity, platform ecosystems and technology standards. Therefore, algorithmic bipolarity expresses a new dynamic of competition in the international system based on the way technological infrastructures are organized.

4. 1. Algorithmic Bipolarity: Convergence and Divergence Dynamics in a Neoclassical Realist Framework

This paper conceptualizes algorithmic bipolarity through the analytical framework of neoclassical realism. Neoclassical realism argues that state behavior is shaped not only by the structural pressures of the international system, but that these pressures are filtered by domestic political and institutional variables and translated into preferences (Rose, 1998; Lobell, Ripsman & Taliaferro, 2009). In this context, military artificial intelligence is not considered as an autonomous field of technology that produces decisive results on its own. Rather, it is considered as a process of adaptation and capacity building shaped by the processing of the pressures generated by international competition by the internal structures of states. At the systemic level, the international security environment produces common and directive pressures on great powers (Ripsman, 2011).

In the contemporary security environment, the acceleration of decision-making cycles, the institutionalization of multi-domain operations, the deepening of sensor-sensor integration, and the placement of data-driven autonomous systems at the center of military power point to a transformation in the character of warfare (Schrodt, 2019; Johnson, 2021). This transformation moves military effectiveness from the limits of human cognitive capacity to a plane based on data processing speed, algorithmic coordination and inter-system integration. Thus, the capacity to produce algorithmic decision superiority becomes one of the determinants of relative power (Scharre, 2018). Under these conditions, the orientation towards artificial intelligence emerges as a reflection of the structural imperatives produced by international competition rather than a technology policy based on preference. The distribution of power that emerges in this context does not exhibit a single-layered structure. In the economic and commercial fields, the artificial intelligence ecosystem spreads to a relatively wider group of actors and produces a polycentric outlook (Hagiu&Wright, 2025). On the other hand, military AI capacity is concentrated in a limited number of actors, as it requires high-cost infrastructures, advanced research systems and integrated command and control architectures. While a polycentric structure persists in the international system at the economic level, a concentration dynamic emerges in the field of military artificial intelligence, which is shaped around two main capacity foci.

The neoclassical realist perspective addresses this transformation within a systematic causal framework. The emergence of algorithmic competition in the international system, increasing data density, and the rise in the speed of decision-making generate common directive pressures on great powers. These pressures create a security environment in which military effectiveness is increasingly defined by data processing capacity, algorithmic coordination and systems integration (Horowitz, 2018; Johnson, 2021). In this context, the orientation towards military artificial intelligence is considered as a strategic adaptation process that emerges as a result of the processing of systemic pressures through internal institutional structures (Rose, 1998; Lobell, Ripsman, & Taliaferro, 2009). These systemic

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pressures materialize around the core components of military AI capacity. Data generation and access, algorithm development capacity, and high-performance computing infrastructures are among the defining elements of contemporary military power (Kitchin, 2014; Brynjolfsson & McAfee, 2017). While these elements enable states to increase their operational effectiveness, they produce a common competitive ground that encourages them to focus on similar capability areas (Scharre, 2018; Cummings, 2020). This common orientation is processed differently by the internal political and institutional structures of states, as predicted by neoclassical realism. Leadership perceptions, state capacity, and the nature of state-industry relations determine how systemic pressures are interpreted and translated into strategic choices (Taliaferro, Lobell, & Ripsman, 2009). This process leads to different institutional outputs for states that are oriented towards similar areas of capacity, and in an environment of algorithmic competition, convergence tendencies and divergence patterns emerge together.

Figure 9. Algorithmic Bipolarity as a Neoclassical Filtering Process

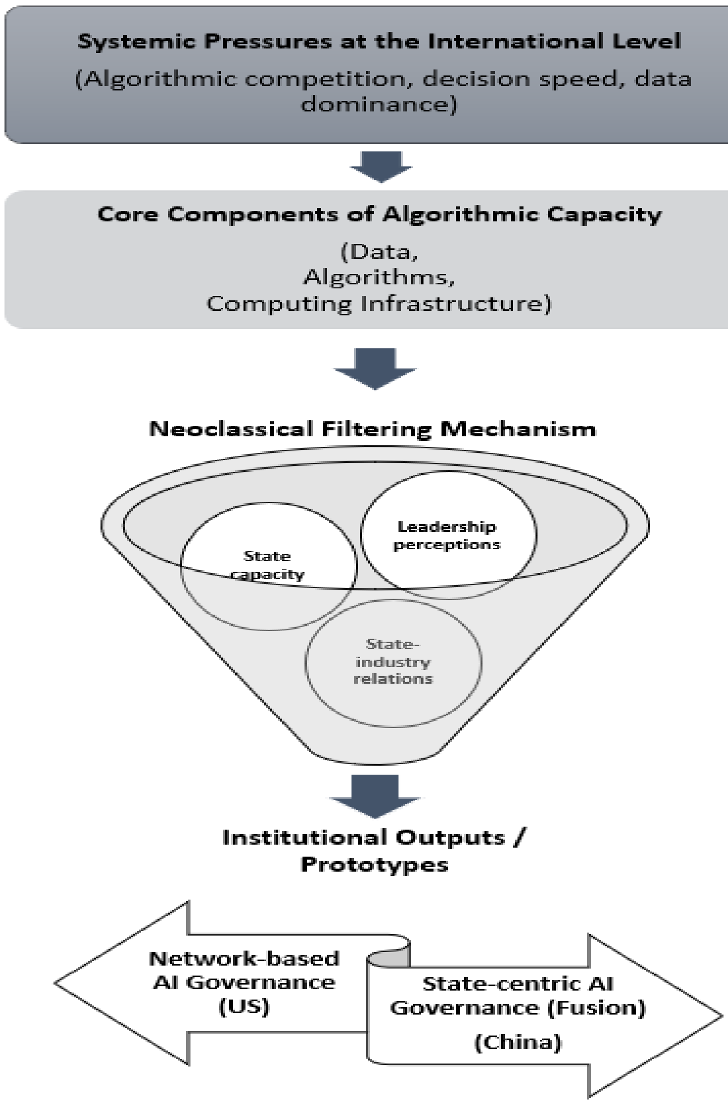

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Figure 9 reveals causal workings of how algorithmic bipolarity is produced in the international system. At the highest level, the intensified algorithmic competition, increased speed of decision-making and data density in the international system confronts both actors with similar strategic imperatives. In this context, artificial intelligence is becoming one of the key capability areas that are at the center of military effectiveness and determining relative power. These systemic pressures lead to the concentration of military AI capacity around specific technical components. Data generation and access, algorithmic innovation, and high-performance computing infrastructures are becoming central to both US and Chinese military planning (Allen, 2023). In the US, large technology companies, cloud infrastructures and advanced model development capacity are the key enablers of this area, while in China, large data repositories, state-backed technology companies and strategic investments in semiconductors support the development of this capacity (Heeks & He, 2024). The parallelism observed in areas such as autonomous systems, decision support mechanisms and sensor-driver integration shows that the parties are developing similar technological solutions to similar operational problems.

The leadership variable functions as an intermediate mechanism that determines how the orientations regarding artificial intelligence will be embodied at the institutional level. In the case of the US, the Executive Order on Maintaining American Leadership in Artificial Intelligence (2019), the DoD AI Strategy (2018), the JAIC, and the subsequent creation of the CDAO reveal that the priorities defined at the leadership level are transformed into a distributed but coordinated institutional architecture (The White House, 2019; DoD, 2018; DoD 2022). In the case of China, the New Generation Artificial Intelligence Development Plan (2017), the Military-Civilian Fusion strategy and the PLA's restructuring towards intelligentization show that the strategic goals set by the leadership are being implemented within a more centralized and integrated institutional structure (State Council of the People's Republic of China, 2017; Central Committee of the Communist Party of China, 2017; State Council Information Office, 2019). In this context, leadership determines how systemic pressures are interpreted and through which model of institutional integration these pressures are translated into military AI capacity. Besides being an area of capacity that operates within existing institutional structures, artificial intelligence produces an effect that reshapes the way these structures are organized. In the case of the US, the establishment of the CDAO and the gathering of data, analytics and artificial intelligence functions under a single institutional roof points to a restructuring process aimed at reducing bureaucratic fragmentation (DoD, 2022). In China, PLA reorganizations and new institutional arrangements such as the Information Support Force reflect transformations to increase the central coordination capacity required for data-driven warfare (Ministry of National Defense of the People's Republic of China, 2024; Xinhua, 2024). This process demonstrates that artificial intelligence creates a dynamic that transforms preferences and institutional structures.

However, these capacities do not directly produce similar institutional outcomes. The neoclassical realist filtering mechanism causes systemic pressures to operate in different political and institutional contexts in both countries. In the case of the US, perceptions of leadership, pluralist political structure, strong civilian oversight mechanisms and the private sector lead to the development of military AI capacity within a distributed and network-based governance model. For example, the involvement of the private sector in the Project Maven process through ethical debates is a concrete indicator of this filtering (Shane & Wakabayashi, 2020). In contrast, in China, the centralized party-state structure, high coordination capacity and civil-military fusion strategy make it possible to organize the same capacity through a more integrated and state-centric model. This makes it possible to transfer technological capacity to the military under direct state coordination. The positioning of companies such as Alibaba, Huawei and Baidu in line with state strategies are typical examples of this structure (Shen, 2020). These different filtering processes lead to the emergence of two distinct models of corporate governance at the lower level. In the US, AI capacity is generated within a network-based model characterized by a distributed innovation structure, private sector participation and institutional oversight mechanisms. In

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China, on the other hand, this capacity is organized through a fusion-based model in which the state's directive role is prominent and the civilian and military spheres are integrated. This mechanism shows that although the same systemic pressures produce similar strategic orientations among great powers, these orientations are differentiated through different institutional filters. While AI capacity at the economic and commercial level is spread across a wider set of actors, military AI capacity is concentrated in a limited number of actors. The fact that the US and China are in a decisive position in this field reveals that algorithmic capacity is organized around two main institutional models. This structure explains the dynamics of power distribution conceptualized as algorithmic bipolarity.

These findings suggest that algorithmic bipolarity should be considered as a bidirectional process that operates through convergence and divergence dynamics. While military artificial intelligence capacity shaped under the same systemic pressures drives great powers towards similar orientations in certain technological fields, the processing of these orientations in political and institutional contexts produces divergent outcomes (Ripsman, 2011). Algorithmic bipolarity therefore provides an analytical framework in which common capacity orientations and the institutional differentiation that emerges in the ways in which this capacity is organized are evaluated together. In this context, there is a tendency for convergence between strategic orientations, technological priorities and military practices. The US and China position AI as a technology that determines the course of national security and future wars, and consider leadership in this field as central to the global hierarchy of power. In its America's AI Action Plan (2025), the US defines its strategic goal as establishing unquestionable and unchallengeable global technological dominance in the field of artificial intelligence. China, on the other hand, aims to achieve global leadership in AI by 2030 in line with the New Generation Artificial Intelligence Development Plan (2017). Both approaches show that AI is attributed a decisive position in the global power hierarchy and the orientation is centered around the goal of global leadership. This orientation is also seen in the forms of integration of military AI. The data-driven command structures developed within the framework of JADC2 in the US and China's military transformation based on the smartization process (Hoehn, 2022) are shaped around common operational priorities such as data fusion on the battlefield, real-time situation awareness and accelerated decision-making. In this context, artificial intelligence is considered as an architectural element that enables inter-system coordination.

There is also a common framework at the level of motivations. The US and China operate from the assumption that artificial intelligence transforms the character of warfare, extends operational speed beyond human cognitive capacity, and redefines military effectiveness through data processing capacity and inter-system coordination (NSCAI, 2021). In this context, artificial intelligence is considered as a capacity that reduces the burden of the human element, supports operational continuity and increases military effectiveness. Mutual threat perceptions produce a competitive environment that ensures the continuity of this orientation. Autonomous and semi-autonomous systems, swarm technologies, unmanned aerial and naval platforms, and systems based on human-machine cooperation are among the priority investment areas of both actors (State Council of the PRC, 2017; DoD, 2023). This parallelism shows that technical solutions to similar operational problems overlap to a large extent. The capacity developed by one actor becomes a reference point for both threat perception and technology orientation for the other actor. This situation shows that military AI competition constitutes a field of interaction that progresses through mutual observation and reaction production. These elements suggest that great power competition is shaped by common strategic imperatives rather than different goals.

These common trends do not produce findings that undermine the concept of algorithmic bipolarity. On the contrary, they strengthen its analytical value. This is because the picture that emerges here points to a systemic pressure field where similar strategic imperatives drive the two great powers towards common technological priorities, rather than a competitive structure fueled by opposing objectives. Although structural pressures produce convergence, how these pressures translate into

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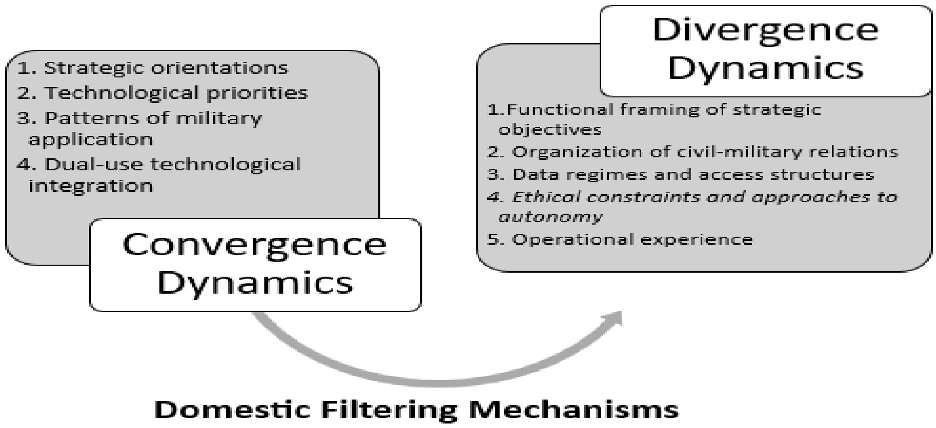
military doctrines, institutional preferences and capacity building processes varies depending on the domestic political and institutional characteristics of states. The dynamics of divergence emerge in this filtering process. According to the basic assumption of neoclassical realism, external threat and competition conditions do not produce uniform strategic outcomes. Perceptions of leadership, state capacity, bureaucratic structures, civil-military relations, state-industry ecosystems, data regimes and understandings of legitimacy determine how structural pressures are interpreted and by which means they are realized. This is where algorithmic bipolarity becomes visible, as common systemic imperatives translate into different military orientations in different political and institutional contexts.

Figure 10. Convergence and Divergence Dynamics in Algorithmic Bipolarity



Source: Created by the author.

First, there is a divergence in the functional framework of strategic objectives. The US considers AI as part of its Third Balancing Strategy and positions it as a tool to maintain its existing military and technological superiority. This approach is based on a strategic framework that focuses on limiting the ability of rival actors to close the capacity gap and maintaining the existing superiority (Heeks & He, 2024). China, on the other hand, sees AI as an opportunity to transform the historical power hierarchy and adopts a long-term orientation to overcome US military superiority in this field. In this context, the Chinese strategy puts forward a more comprehensive transformation perspective centered on achieving global leadership in the field of artificial intelligence, with the goal of closing the existing capacity gap (Heeks & He, 2024).

Secondly, the way civil-military relations are organized constitutes one of the main areas that determine how systemic pressures are processed and transformed into military AI capacity. In the case of the US, increasing systemic competition with China is filtered through pluralistic political institutions, strong civilian oversight mechanisms and a relatively autonomous private sector structure (Morgen et al., 2022). This institutional structure leads the military AI strategy to be shaped around decision supremacy, human-machine cooperation, and autonomy surrounded by ethical boundaries. Institutional arrangements such as DIU, JAIC and CDAO reflect a governance logic that seeks to bridge the gap between market-based innovation and military needs (DoD, 2023). In this model, the private sector is one of the key producers of military AI capacity, but not fully subordinated to the state hierarchy. The ability of companies to raise ethical objections, distance or withdraw from military projects creates institutional frictions in the transformation of systemic pressures into military capacity. Thus, legitimacy concerns, democratic oversight and institutional accountability become key intermediate variables affecting the pace and shape of the US military AI strategy (Morgen et al., 2022).

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In the Chinese case, similar systemic pressures are filtered through a centralized party-state structure, a high level of coordination capacity, and more limited internal institutional constraints. Leadership perceptions position AI not only as a technology that provides military superiority, but also as a tool to intensify state capacity, consolidate political control, and unify national development and defense modernization (State Council of the PRC, 2017). The Civil-Military Fusion strategy enables the transfer of civilian technological capacity to defense modernization with low institutional friction. This structure facilitates the translation of systemic competitive pressures into faster, more centralized and more scalable military AI doctrines (Central Military Commission, 2017; PRC Ministry of National Defense, 2019). More integrated and centralized access to the data regime, a large population base and state coordination capacity contribute to China's speed and scale advantage in AI development processes. This difference also manifests itself in innovation and financing models. While the development of artificial intelligence in the US relies heavily on private venture capital and market-based innovation dynamics, state-sponsored financing and central planning play a more effective role in China. This creates different models of capacity generation in terms of resource allocation, pace of technology development and implementation of strategic priorities.

Third, there is a divergence in data regimes. China gains a scale advantage in AI development processes thanks to its large data repositories, flexible data regulations and centralized data management approach. The state's comprehensive control over data expands data access for security and military applications (State Council of the PRC, 2017; PRC Ministry of Industry and Information Technology, 2021). In the US, on the other hand, data use is shaped by privacy regulations, legal oversight mechanisms and institutional limitations, and data access is more fragmented and multi-actor. This creates different conditions in terms of speed and scale in the development of AI systems. Fourth, there is both a common discourse and differentiation in practice in the area of ethical boundaries and approaches to autonomy (DoD, 2023). The US and China produce a similar rhetoric on the responsible use of AI in international platforms, but the content and emphases of this discourse differ. While the US emphasizes that AI systems should be reliable, traceable and controllable, China emphasizes caution and responsibility in the use of military AI (Stokes et al., 2023). This different emphasis points to a difference in approach between the two actors on how to limit and manage the technology. This difference is more evident in military applications. The US defines human supervision as a fundamental principle in lethal autonomous systems and tries to secure this approach through institutional documents. The human-in-the-loop principle provides a normative structure to protect the human element in the decision chain (U.S. Department of Defense, 2023, Directive 3000.09). China, on the other hand, maintains its emphasis on responsible use at the international level, but adopts a more flexible approach to increasing the level of autonomy in military modernization practices. This shows that a focus on speed and scale has an impact on the way ethical boundaries are applied (Stokes et al., 2023). In this context, the two actors' balance between risk, responsibility and military effectiveness differs.

Finally, operational experience and learning processes differ. Thanks to recent military operations, the US has the opportunity to test AI-enabled systems in real combat environments and continuously adapt them with feedback from the field (Stokes et al., 2023). This experience, especially in the field of intelligence analysis and unmanned systems, contributes to the shaping of technology directly in line with operational needs. The Chinese military, on the other hand, does not have a similar level of actual combat experience, and therefore relies more on simulations, war games and virtual training environments in its artificial intelligence development processes (Academy of Military Sciences, 2022). This generates different learning paths in the development of military artificial intelligence capacity, creating a distinction between field-based adaptation and simulation-based development. This difference generates different learning logics in the development of military AI capacity. When ethical and operational preferences are evaluated together, it is seen that the balance between risk, responsibility and military effectiveness of the two actors differs.

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This picture reveals that algorithmic bipolarity is shaped by the means of achieving these goals rather than the end goals. Great powers share a common orientation towards achieving military superiority in an algorithmically transforming war environment. The divergence emerges in the institutional, political and doctrinal mechanisms through which this orientation is realized. This divergence is particularly concentrated in the organizational logic of capacity building. It produces a differentiation between a centralized, hierarchical and integrated coordination model and a distributed, multi-actor and network-based ecosystem model. In this context, algorithmic bipolarity refers to a competitive order produced by common structural imperatives and different institutional and doctrinal responses to these imperatives. The conditions of systemic competition produce a convergence in terms of military AI objectives and basic technological priorities. The diversity of domestic political and institutional structures leads to the concretization of this orientation in different forms at the doctrinal and institutional levels. The interaction of these two dynamics reveals a structure of competition shaped by the organizational forms of algorithmic power. When these two dynamics are considered together, the military competition for artificial intelligence shows a structure that is directed towards similar goals but proceeds through different paths.

4. 2. Technopolitical Models of Algorithmic Bipolarity: Networked and State-Centric AI Governance

Algorithmic bipolarity is not a distribution of power that can be reduced to the existence of two great powers. This structure points to a divergence in which military artificial intelligence capacity is produced through different institutional logics and these forms of production have begun to take shape around two distinct technopolitical models in the international system. These models tend to concentrate around certain principles in areas such as the organization of capacity production, data governance and the logic of military application, and tend to create reference points and centers of attraction at the global level. In this context, competition is shaped not only by the accumulation of technological capacity, but also by how this capacity is produced, how it is coordinated and through which institutional arrangements it is integrated into the military structure. This process generates international trends through the diffusion of technology standards, data governance arrangements and innovation ecosystems.

This dynamic is historically related to the order-building practices discussed in the framework of Pax orders. The international order shaped under the Pax Americana ensured the establishment of certain norms and standards on a global scale through institutional structures such as the United Nations, the IMF and the World Bank (Layne, 2011). Pax Sinica, which is increasingly discussed in the literature, points to China's capacity to develop an alternative order-building capacity through economic networks, infrastructure investments and digital connectivity (Kueh, 2012; Johnson, 2021). These two orientations reveal a transformation in the tools through which order-building processes proceed. In the contemporary context, this transformation is shaped around a standard-setting and standard-disseminating capacity that operates through artificial intelligence. Through the production of technical standards, data processing regimes and system architectures, artificial intelligence creates the capacity to generate cohesion, dependency and orientation on an international scale. Therefore, the process of order-building moves beyond institutional structures and gains a character that progresses through the determination of technological standards and the dissemination of these standards. In this context, algorithmic bipolarity constitutes the concrete expression of this transformation in the field of military and security. Military artificial intelligence applications are concentrated around a limited number of actors due to the need for high-cost infrastructure (Gökçe&Aksu, 2025), advanced algorithmic capacity and intensive technical knowledge (Johnson, 2021). This concentration produces a dual structure at the military level and paves the way for order-building capacity to be shaped by the technical standards set by these actors. Therefore, the emerging order is defined through the international diffusion of technical

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standards, data governance approaches and system architectures developed in the field of artificial intelligence, departing from the axis of ideological blocs. Algorithmic bipolarity provides a framework to explain this process and reveals that military AI competition has a character that goes beyond capacity differences. This competition points to a process of order production shaped by the standards, data regimes and institutional logics through which capacity is produced.

Institutional structures in this context serve a function that goes beyond national capacity production and produce model sets that are referenced by other states. Therefore, AI competition gains meaning through the diffusion of governance models along with capacity accumulation. The geopolitical outcome of this competition is a dual order in which military-technological capacity is further concentrated. While medium-sized technology powers such as France, Israel and Singapore can produce a multipolar outlook in the field of commercial AI (Xu & Lee, 2024), the concentration of capacity at the strategic level is shaped in favor of the US and China, as military AI applications require specialized hardware, complex algorithms and extensive technical tacit knowledge. Therefore, commercial plurality and military duality coexist. The international system is becoming plural in economic terms and increasingly bipolar in military-technological terms. Unlike classical bipolar systems, this structure is shaped by technology production, data governance and institutional forms of organization rather than ideological blocs. Thus, military AI competition produces a structural divergence defined by how this capacity is organized and within which institutional logic it operates, rather than differences in technological capacity

This paper conceptualizes the differentiation between the US and China on the basis of the organization of AI capacity through centralized and decentralized institutional integration logics. In this context, algorithmic bipolarity refers to two distinct technopolitical centers of gravity that emerge through the processing of military AI capacity shaped under similar systemic pressures within different institutional integration logics. The US approach is conceptualized as *the Network-Based AI Governance Model, while* the Chinese approach is conceptualized as *the State-Centered AI Governance Model*. The network-based model refers to an institutional logic in which artificial intelligence capacity is produced through distributed relationships between the private sector, academia and defense institutions, and this capacity is integrated into the military structure in a modular manner. The state assumes a directive and coordinating role within this structure. The state-centered model, on the other hand, defines a structure in which artificial intelligence capacity is produced through central planning and civilian-military integration mechanisms, and data, technology development processes and military applications are organized in an integrated manner.

The US and China exhibit partial doctrinal similarities in the field of military AI, which are directed towards specific operational outcomes. However, these doctrines differ in terms of content and scope, and the distinction is particularly evident in the institutional roadmaps and integration logics pursued to achieve these goals. In this context, military AI competition is understood through institutionally organized responses to common operational problems. Accelerating the decision cycle, managing multi-domain data flows, coordination of sensor and command systems, and rapid decision-making under uncertainty are the key requirements facing both actors (Hine et al., 2024). This partnership points to the existence of similar strategic pressures. The responses to these problems are shaped on different institutional grounds. The US prototype is based on modular integration of capacity through a distributed innovation structure and institutional coordination mechanisms. The Chinese prototype refers to an integrated and highly coordinated organization of capacity through central planning and civil-military fusion. These prototypes differ along four main analytical axes:

(i) AI governance and enterprise architecture,

(ii) the government-industry ecosystem,

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(iii) military AI integration and doctrine,

(iv) data regime and technological infrastructure.

Table 2. Technopolitical Prototypes of Algorithmic Bipolarity: A Four-Dimensional Comparative Framework

Analytical Dimension	*Networked AI Governance (U.S.)*	*State-Centric AI Governance (China)*
AI Governance & Institutional Architecture	Decentralized, networked coordination across state, market, and knowledge institutions, mediated through inter-agency structures (e.g. CDAO)	Centralized and hierarchical coordination under party-state authority, structured through institutionalized civil–military fusion (e.g. MCF)
State-Industry Ecosystem	Market-driven innovation anchored in a competitive and pluralistic ecosystem, with selective and negotiated pathways of defense integration (e.g. Project Maven tensions)	State-directed innovation embedded in strategic alignment between firms and national objectives, enabling direct incorporation of commercial capacity into the military domain
Military AI Integration & Doctrine	Optimization-oriented logic emphasizing decision advantage, human–machine teaming, and modular adaptation within existing force structures (e.g. JADC2)	Transformation-oriented logic centered on intelligentization, systemic reconfiguration of warfare, and data-driven command architectures
Data Regime & Technological Infrastructure	Fragmented and regulated data environment shaped by platform capitalism, with ongoing efforts toward interoperability and cross-domain integration	Centralized data governance enabling large-scale aggregation, state-facilitated access, and integrated infrastructural coordination for data fusion

Source: Created by the author.

The US and China are pursuing similar operational requirements in the field of military artificial intelligence. There are certain overlaps at the doctrinal level, but these orientations are organized differently within decentralized and centralized institutional structures. This divergence extends from governance architecture to state-industry relations, from military integration to the data regime, and the distinction is particularly evident in the institutional roadmaps to achieve these goals. In terms of the first axis, governance and institutional architecture, the US is characterized by a network-based and multi-actor structure. Relationships between federal agencies, universities and the private sector constitute the main basis for innovation production (NSCAI, 2021). The state assumes a directive and regulatory role within this structure. In contrast, China has a centralized and integrated institutional architecture under the party-state structure. Technology policies, economic development goals and security priorities are organized within a single strategic framework (State Council of the PRC, 2017). This structure reduces the institutional separation between the civilian and military spheres, allowing for tighter coordination of capacity development. The main distinction in this axis is between the generation of capacities in decentralized networks and their integration in a centralized structure.

On the state-industry ecosystem axis, the US model is based on a private sector-led innovation structure. Large technology companies, venture ecosystems and research universities are at the center of innovation capacity, enabling technological innovation to be fed from different sources and generate high flexibility (DoD, 2023). However, the relationship between the private sector and defense agencies is not always smooth. Google's withdrawal from Project Maven following employee backlash shows that technology companies are not automatically integrated into military projects (Shahrukh, 2025). In China, on the other hand, technology companies are directly related to and positioned in line with the strategic goals of the state. Civil-Military Fusion mechanisms create an institutional pipeline between commercial innovation and military capacity, reducing barriers between companies, universities and government agencies and enabling the direct transfer of AI innovations to the People's Liberation Army

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(Steff and Abbasi, 2020). This structure ensures a high level of coordination between technology production and strategic objectives. The most obvious distinction along this axis is in the way commercial innovation is transferred to the military sphere. While in the US there are ethical, cultural and institutional tensions between the private sector and the Pentagon (DoD, 2020), in China this transition is institutionally structured and accelerated. The balance between state investment and market dynamics also reinforces this distinction. While China is expanding its technological capacity through long-term planning and large-scale public direction (PRC Ministry of National Defense, 2019), innovation in the US is shaped more by market dynamics. This offers advantages in terms of flexibility and the production of high-quality research, but slow defense procurement processes and limitations in long-term public funding can create institutional challenges. The distinction along this axis is between a market-based and negotiated innovation structure and a state-led and integrated ecosystem.

The distinction becomes clearer along the axis of military integration and doctrine. The US and China are positioning AI in line with common requirements such as managing multi-domain data flows, coordinating sensor and command systems, and enhancing operational awareness (Stokes et al., 2023). This orientation suggests that both actors are responding to a similar problem set in an algorithmic warfare environment. However, these requirements are not processed within the same institutional and doctrinal framework. The US approach treats AI as a capability that is gradually and modularly integrated within existing military structures, strengthening human-machine cooperation and supporting operational processes (Shahrukh, 2025). In this context, artificial intelligence is positioned as a force multiplier that functions in harmony with existing force structures. The Chinese approach, on the other hand, considers AI as a capacity that restructures the entire military organization. Intelligentization refers to the reorganization of warfare through data processing capacity, autonomous systems and real-time coordination between systems (Shahrukh, 2025; Stokes et al., 2023). Instead of limited integration within existing military structures, this approach produces a framework in which command structures, operational processes and forms of coordination are transformed together. Civil-military fusion mechanisms support this transformation by integrating the relationship between technology production and defense modernization at the institutional level. Therefore, in the Chinese prototype, artificial intelligence is positioned as an element that reestablishes the tempo of war and the logic of command. The "Sputnik moment" in US defense circles autonomous systems and drone swarms as asymmetric threats also reveals the perceptual dimension of the competition in this field (Johnson, 2019). On this axis, the distinction emerges between optimizing the existing military structure and the organizational reconstruction of warfare. The data regime and technological infrastructure constitute the last axis that reinforces this distinction. In the US, data production is largely driven by the platform economy and the private sector.

This generates innovation diversity and competitive dynamism (Shahrukh, 2025). However, data access is shaped by institutional and legal boundaries. The US's "Build, Baby, Build!" approach reflects a strategy that aims to expand AI capacity through material foundations such as data centers, energy supply and computing infrastructure (The White House, 2024). This approach is based on the assumption that AI superiority is built within a structure supported by large-scale computing capacity and sustainable infrastructure investments (U.S. Department of Energy, 2023). In China, data production and access are centrally coordinated. Large-scale data repositories and integrated infrastructures provide high-speed learning and application capacity. This transformation, emphasized by Xi Jinping, points to a warfare environment where data processing capacity, autonomous decision-making mechanisms and coordination between systems are decisive. 5G networks and Internet of Things-based sensor systems are among the infrastructural elements that enable the deepening of military cognition within this approach (State Council of the PRC, 2017). In this context, artificial intelligence is considered as an element that not only supports operational processes but also rebuilds the overall functioning of the military organization. Along this axis, the distinction emerges between fragmented and regulated data

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structures and centralized and integrated data regimes. This differentiation raises the question of how this capacity is positioned in the international system and what frame of reference it provides for other states.

These dynamics create the capacity for algorithmic bipolarity to create a space of reference models that shape the institutional and technological orientations of third states. In this process, the United States and China are able to establish a field of orientation that operates through technical standards, data governance practices and infrastructure architectures that other states tend to adapt to. The process of developing AI capacity is shaped within a structure that requires high-cost computational infrastructures, sustainable energy supply, broad data access and advanced technical expertise (Larson, 2021). These requirements create structural conditions that limit direct and independent capacity generation for many states. Therefore, instead of developing unique models that involve high uncertainty and cost, states may tend to turn to existing logics of institutional integration. This preference is associated with the search for lower risk, faster implementation and predictable results. The fundamental dynamics that enable these actors to become "technopolitical centers of gravity" crystallize along four main axes.

Algorithmic Bipolarity → Structurally Generative Dynamics of Technopolitical Attraction	1. Hardware and Infrastructure Dependence
	2. Interoperability Requirements
	3. Model Export Mechanisms
	4. Normative and Regulatory Polarization

First, hardware and infrastructure dependency act as hegemonic filters. AI requires massive data centers, undersea cables and high processing power because it requires a physical infrastructure. The fact that the US (Amazon AWS, Microsoft Azure, Google Cloud) and China (Alibaba, Tencent, Huawei) own more than 80% of the global cloud computing market and data storage infrastructure creates a "cloud oligopoly" (Department of Commerce, 2024; BIS, 2023). Moreover, the US advanced chip export restrictions on China (CHIPS Act) (U.S. Congress, 2022; BIS, 2023) effectively divide the world into two hardware camps: "those who follow US standards" and "those who turn to Chinese alternatives". Second, military interoperability constitutes the operational dimension of algorithmic bipolarity. With concepts such as JADC2, the US aims to integrate all its allies into a single data network; actors such as NATO or members of the AUCUS are joining this center of gravity by adopting Washington's artificial intelligence standards and command and control algorithms in order to conduct joint operations with US platforms (Department of Defense, 2024). On the other hand, China exports its military-technological ecosystem through autonomous systems (Wing Loong or CH-4 UCAVs), especially to the Middle East, Africa and Southeast Asia, and draws the recipient countries into its technological orbit (PRC Ministry of Commerce, 2021).

The third dynamic is the export of models through the Digital Silk Road. China's "Safe City" projects offer a "state-centric" governance model as a ready-made package through facial recognition and data centralization technologies in more than 80 countries (Feldstein, 2019). For countries such as Zimbabwe, Ecuador or Serbia, this makes entering China's center of gravity a rational and inexpensive choice. Finally, normative and legal polarization emerges in the struggle to set global standards for AI. While the US rallies its allies around the discourse of "Democratic AI" and the principle of "human-in-the-loop" (The White House, 2023), China creates an alternative center around the concept of "cyber

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sovereignty" that legitimizes the state's absolute control over data and is accepted in the Shanghai Cooperation Organization (SCO) or BRICS platforms (State Council of the PRC, 2022).

In the context of the gravitational pull created by these dynamics, the Network-Based AI Governance Model and the State-Centered AI Governance Model offer viable institutional reference sets for different states. States with a centralized decision-making structure, strong bureaucratic coordination and aiming for rapid capacity building may be more compatible with the State-Centered AI Governance Model. China's 5G infrastructures (Şahin, 2025), surveillance systems and data networks in Africa and Southeast Asia as part of the Digital Silk Road constitute concrete implementation channels of this model. These projects carry data governance and security architecture along with technology transfer, providing a framework that strengthens the logic of centralized coordination and integrated control. In contrast, states with a well-developed private sector ecosystem, research capacity and institutional diversity may be better aligned with the Networked AI Governance Model. Actors such as the European Union, Japan and South Korea could align with the US through data protection standards, technology regulations and security cooperation. In particular, access to semiconductor supply chains, advanced chip technologies and alliance-based technology coordination are among the structural elements that strengthen this orientation.

These preferences cannot be explained by economic capacity alone. States' political structures, decision-making styles and institutional organization also play a decisive role. While centralized and hierarchical governance structures are more easily adapted to integrated and state-led models, pluralistic and market-based structures are closer to the logic of distributed innovation and network-based coordination. This reveals a harmonious relationship between technological orientations and political structure. The dual-use nature of artificial intelligence technologies plays an important role in understanding these trends (Shkurti Özdemir, 2019). The same data infrastructures, algorithmic models and computational capacity provide a common ground that supports both economic productivity and military effectiveness. This structure makes the production of military capacity directly linked to state-industry relations, data governance and the way digital infrastructures are organized. In this context, the integration logics developed by the US and China present holistic sets of models that organize civilian and military capacity building together. This increases the referentiality of these approaches by other states.

This process is based on technical dependence and standard harmonization. Cloud infrastructures, data processing systems, digital platforms and software ecosystems bind states to specific technology trajectories. States that adapt to these infrastructures are not merely technology users, but are integrated into systems that operate within a certain institutional logic. This increases the cost of transition to alternative institutional models and leads to long-term fixation of technological orientations. Another determinant dimension of these orientations emerges in the relationship between the production cost of technological capacity and institutional coordination capacity. Artificial intelligence development processes require large-scale resource mobilization (Hunter et al., 2021). States with high central coordination capacity can quickly channel these resources and implement large-scale projects in a short time. This feature offers a viable way of generating capacity in systems with limited institutional diversity. On the other hand, systems where resource allocation is realized through market mechanisms and multi-actor structures produce greater innovation diversity and technological depth. This structure allows for long-term capacity accumulation and flexible adaptation.

In this context, the preferences of third states are not limited to external pressures or alliance relations. The compatibility between internal institutional structure and technological requirements also plays a decisive role. States adapt more easily to models that are compatible with their bureaucratic organization, speed of decision-making and state-society relations. This shows that technopolitical prototypes are not limited to external directives, but are also adopted as structures that coincide with

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internal institutional logics. In this totality, algorithmic bipolarity provides a framework to explain how the competition between the two great powers reshapes the institutional structures, technology policies and security strategies of third states. This construct provides a framework that explains how this capacity is generated and through which lines of orientation it diffuses within the international system.

CONCLUSION

In the contemporary international security environment, artificial intelligence is positioned as a fundamental transformation dynamic that restructures the production logic of military capacity, the functioning of decision processes and operational execution. This technology, which is integrated into intelligence production, target identification and multi-domain coordination processes thanks to its capacity to learn from data, pattern recognition and real-time analysis, is shifting the character of warfare to a data-intensive, speed-oriented and algorithmic plane. This transformation produces a security environment where platform-centric criteria are replaced by factors such as data processing capacity, system integration and decision-making tempo in the evaluation of military effectiveness. In this context, the dual-use nature of artificial intelligence offers a dimension that expands the scope of this transformation. Big data infrastructures, semiconductor manufacturing, cloud systems and high-performance computing architectures form a common technological ground that simultaneously feeds economic productivity and military effectiveness. This integrated structure makes it insufficient to address military artificial intelligence capacity only within defense institutions. This places state-industry relations, data governance mechanisms and the way digital infrastructures are organized at the center of the analysis. In this context, artificial intelligence creates a systemic rupture in international security that goes beyond capacity growth and transforms the logic of production and functioning of state capacity.

This rupture makes visible the limits of existing tools for conceptualizing the distribution of power in the international system. The structure of artificial intelligence, which encompasses economic, military and administrative domains simultaneously, reveals the need for a more holistic analytical framework. At this point, the concept of algorithmic bipolarity aims to provide a definition that directly targets this transformation. Algorithmic bipolarity is a form of power distribution characterized by the concentration of data production, algorithmic innovation capacity and high-performance computing infrastructures as the determinants of strategic capacity in the international system, the concentration of this capacity around two main technopolitical centers and the organization of the global artificial intelligence ecosystem through the institutional governance models of these centers. This structure produces an order-making effect through the production of normative, legal and technical standards that accompany the concentration of capacity. This definition addresses power relations through quantitative capacity differences as well as the institutional architectures and decision processes through which capacity is produced. In this respect, algorithmic bipolarity points to a different organizational logic than the Cold War-era bipolar structure. During the Cold War, polarization was shaped by ideological blocs, military alliance systems and nuclear deterrence. In the current structure, competition is based on technopolitical architectures organized around data infrastructures, platform ecosystems, semiconductor supply chains and technology standards. In this context, the main axis of competition is shifting from the comparison of military platforms to the structures governing data flows, algorithmic processing capacity and institutional control of these processes. This differentiation reveals that the divide in the international system is based on modes of capacity production and logics of institutional organization rather than ideological antagonisms.

When this transformation is evaluated within the framework of neoclassical realism, the interaction of systemic pressures and internal institutional filters plays a decisive role. Increasing algorithmic competition in the international system, acceleration of decision cycles, and the rise in data intensity drive great powers towards similar strategic orientations. This leads to convergence dynamics. The United States and China have similar operational requirements in areas such as multi-domain data

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fusion, sensor-shooter integration, autonomous systems and decision support mechanisms. For both actors, artificial intelligence is positioned as a central capability that increases the speed of decision-making and supports operational effectiveness. The neoclassical realist framework reveals that systemic pressures operate in different ways through states' internal political structures, bureaucratic organizations and state-industry relations. This common orientation produces different institutional outcomes and dynamics of divergence emerge. In the US, the pluralist political structure, the determining role of the private sector and institutional control mechanisms enable the development of artificial intelligence capacity within a distributed and network-based organization. In China, the centralized party-state structure, high coordination capacity and civil-military fusion strategy enable the same capacity to be organized in an integrated and centralized model. This divergence shows that political codes and institutional architectures directly permeate the processes of technological capacity generation.

As a result of this process, algorithmic bipolarity materializes through two different technopolitical prototypes: Networked AI Governance and State-Centric AI Governance. Networked AI Governance refers to a governance model in which artificial intelligence capacity is produced and integrated in a modular manner through network-based relationships established between the private sector, academia and state institutions. In this model, coordination is achieved through standardization and interoperability; innovation is shaped within a multi-actor ecosystem. State-Centric AI Governance, on the other hand, defines a structure in which capacity is produced under central planning, civil-military integration and state guidance. In this model, data access, technology development processes and military applications are organized within an integrated institutional architecture. The distinction between these two prototypes is shaped by centralized and decentralized forms of institutional integration and the political codes that accompany these structures. While the Networked model offers a flexible capacity generation process through distributed innovation and institutional plurality, the State-Centric model provides high-scale capacity generation through centralized direction and integrated coordination. This differentiation is related to the political and institutional logics within which this technology is processed, rather than the technical characteristics of artificial intelligence.

The effects of algorithmic bipolarity on the international system gain a clearer picture through the orientations of third states. Networked and State-Centric prototypes produce frames of reference for other states through technical standards, data governance practices and infrastructure architectures. High-cost computing infrastructures, semiconductor supply chains and cloud systems create structural conditions that limit independent capacity generation. Under these conditions, states are turning to models that are compatible with their existing organizational integration logics. Dynamics such as hardware and infrastructure dependency, interoperability requirements, model exports and normative-legal decoupling are among the main mechanisms that reinforce this orientation. The data and command integration that the US has established with its allies and the infrastructure and surveillance technologies offered by China within the scope of the Digital Silk Road show how these two models have found a response on a global scale. The dependency relations that emerge in this process pave the way for technological articulation to turn into alignment in the long run. In addition to external pressures, the preferences of states are also compatible with their internal institutional structures, decision-making styles and political organization. Centralized and hierarchical structures produce an orientation closer to the State-Centric model, while pluralistic and market-based systems are more in line with the Networked model.

This pattern of orientation requires situating the role of AI in international security within a broader analytical framework. AI stands out as an area of capacity that reorganizes the material and institutional foundations on which power production rests. Military competition is shaped as much by which technologies are developed as by the institutional logic within which these technologies are produced and how they are transformed into operational output. Algorithmic bipolarity offers a framework that expresses the concentration of power in the international system around two different

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forms of technopolitical organization rather than the division of power between two actors. Networked AI Governance and State-Centric AI Governance models form the counterparts of these forms of organization and determine the orientation lines of the global artificial intelligence ecosystem. Within this structure, competition is based on the way in which capacity is circulated, standardized and adopted by other actors, as well as its production. Thus, the international system is being restructured within a multidimensional and technopolitical order of competition organized around data processing capacity, algorithmic coordination and decision-making tempo.

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