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CMSI Translations #29: Can “Armchair Strategizing” Secure Victory from a Thousand Miles Away?

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翻译

TRANSLATIONS

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Can "Armchair Strategizing" Secure Victory from a Thousand Miles Away?

A Brief Analysis of the Practical Operational Characteristics and Influence of U.S. Military Wargames[1]

By Huang Lin, Xu Ting, and Deng Xiaotu

In 440 BC, Mozi and Lu Ban—using a belt to represent a city wall and wooden tablets as weaponry—launched a "paper confrontation" in front of the palace of the King of Chu that changed the trajectory of warfare. This simulation of nine victorious battles not only neutralized the power of the State of Chu's siege ladders in an abstract strategic contest, but also revealed the ultimate value of wargaming: utilizing simulated combat to anticipate the realities of the battlefield and employing logical deduction to avert the calamities of war.

However, we must recognize that while Mozi— using a belt to represent city walls and wooden tablets for weaponry—was demonstrating the principles of siege warfare within the Chu palace, the Greek city-states across the Mediterranean Sea were using backgammon as a metaphor for the siege of Troy, a moment during which the wisdom of the East and the West quietly resonated in the realm of "virtual warfare." The Romans also combined Egyptian sand tables with geometric tactics, giving birth to the prototype of Western military simulations. In the modern era, the Prussian aristocracy used ivory chess pieces and probability theory to reconstruct the battle of Waterloo, thereby elevating the practice of wargaming to "a science of war." By World War II, the RAND Corporation in the U.S. was using the Monte Carlo algorithm to simulate nuclear deterrence, tempering the Eastern wargame philosophy of "subduing the enemy without fighting" into a precise paradigm for modern strategic wargaming. History, it seems, has once again come full circle: from Mozi's strategic simulation of "halting Chu's aggression against Song" in ancient China to the modern-day American Pentagon's usage of supercomputers to simulate all-domain warfare,

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[1] 黄林 [Huang Lin], 许婷 [Xu Ting], and 邓小兔 [Deng Xiaotu], "纸上谈兵"能否决胜千里—浅析美军兵棋推演的实践操作特点及影响 ["Can 'Armchair Strategizing' Secure Victory from a Thousand Miles Away? A Brief Analysis of the Practical Operational Characteristics and Influence of U.S. Military Wargames"], 当代海军 [*Navy Today*], no. 5 (May 2025), pp. 70-73.

Translator's Note: *Navy Today* is an official magazine published by the PLA Navy.

humanity has continuously looked to chessboards and algorithms for the keys to "securing victory from a thousand miles away."

The Basic Characteristics of American Wargames

As a global frontrunner in military science and technology, the United States has elevated wargames from teaching aids in traditional military academies to strategic

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decision-making centers covering multiple fields of study and levels of hierarchy. Its simulation system spans many emerging fields such as nuclear deterrence, space warfare, and cyber operations, and it is deeply embedded in asymmetric warfare scenarios such as alliance coordination and the manipulation of public opinion, becoming an "invisible hand" shaping the global military order.

Image text: In 2024, Then-U.S. Chief of Naval Operations Lisa Franchetti Organizing a Wargame at the U.S. Naval War College

Domain penetration: a "full-dimension battlefield" from space to the cognitive domain. The reach of American wargames has extended to the very nerve endings of modern warfare. The U.S. military's *Operational Manual* identifies wargames as an indispensable link in the "seven stages of command and decision-making," emphasizing the use of wargames to analyze future combat scenarios and promote decision making and the formulation plans. Regarding the space domain, since 2001 the U.S. "Shriever" series of wargames has continued to validate the U.S. military's

operational capabilities in space and has driven the implementation of the concept of "Responsive Space." Its 2025 exercises went even further, incorporating commercial satellites in defense simulations. In the cyberspace domain, the Cyber Combat Readiness Assessment (CORA) Program, launched in 2024, simulates red-blue confrontations in order to optimize the active defense mechanisms of the Department of Defense's information networks. The results have directly driven the Pentagon to increase its budget for cyber forces. In the logistics domain, the U.S. Marine Corps' 2023 "Adversarial Logistics Wargame" simulated the complex challenges of resupply within a distributed operations framework and proposed "drone swarm + 3D printing" as a solution, which increased the efficiency of frontline ammunition replenishment by 40 percent.

To broaden these efforts, the collaborative "iron triangle" system was established, encompassing military, government, industry, and academia. The United States has created a wargaming ecosystem with the Department of Defense at its core and think tanks and commercial companies acting as its two wings. The Department of Defense's Modeling and Simulation Coordination Office, in collaboration with think tanks such as the RAND Corporation and the Center for Strategic and International Studies, conducts more than 200 strategic-level wargames every year, and its "Global War" series of wargames explored projections for troop restructuring after 2030. In the commercial sector, the Hermes large-language model, developed jointly by the Scale AI company and the U.S. Marine Corps University, has already enabled AI-assisted decision making for war planning at the campaign level. In the realm of education, institutions such as the U.S. Naval War College and the Naval Postgraduate School have incorporated wargaming into their compulsory curricula. For example, the Naval War College organizes students into red and blue teams to engage in adversarial exercises. Through these dynamic simulations, students gain an understanding of the interrelationships among specialized technical details—such as the range of the "standard"-2 missile and the performance of the E-2D early warning aircraft—and apply that knowledge within operational contexts. This closed-loop model of "government, industry, academia, and research" enables the United States to consistently occupy the commanding heights of iterative advancement and strategic innovation in wargaming technology.

The results have been striking, demonstrating a synergistic resonance between technological breakthroughs and strategic deterrence. At the level of technological validation, wargames have become the U.S. military's "digital testing ground" for the iterative development of equipment. The 2024 "Virtual Black Flag" exercise marked the first time that live-fire flight data and hypersonic missile test results were integrated into simulations. That success validated the concept of distributed kill chain and directly drove software upgrades for the F-35 fighter jet. At the level of strategic deterrence, the results of military simulations have become the "data armor" for the United Staes' diplomatic and military maneuvers. In 2023, the U.S. Center for Strategic and International Studies released a report on the development of military

conflicts in the Asia-Pacific region with a “costly U.S. victory” as its premise. That report successfully spurred the Japan Self-Defense Forces to strengthen their military presence in Japan’s southwestern islands. In the logistics domain, the "modular prepositioned warehouse" plan proposed by the U.S. in 2023 during a "contested logistics wargame" enabled the U.S. military to reduce the time needed to deliver supplies to the Arctic region by 60 percent.

The Advantages of Current U.S. Military Wargaming Compared to Traditional Wargames and Commercial Games

In the field of military decision making, current wargames in the United States have broken through the boundaries between traditional sand tables and commercial games by evolving into "war laboratories" that integrate artificial intelligence, quantum computing, and cross-domain collaboration. Compared to traditional wargames and commercial games, these modern systems are a generation ahead in terms of core technology, application scenarios, and strategic value.

The core technology has moved from a "rule-driven" to a "data intelligence” paradigm. Traditional wargames relied on manual calculations and pre-established rules. For example, the "Midway Wargame" used by the U.S. military during World War II simulated carrier-based

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aircraft attacks by rolling dice, the results of which were subject to human manipulation. In contrast, the U.S. military’s current system leverages artificial intelligence and quantum computing to build a closed-loop framework encompassing "all-domain sensing, intelligent simulation, and real-time decision making." In the aforementioned 2024 "Virtual Black Flag" exercise, the Hermes large language model integrated satellite images, electromagnetic spectrum data, and open-source intelligence to generate 28 combat plans for an Arctic conflict within 15 minutes. This level of efficiency in generating plans is 200 times higher than traditional human-led simulations and, furthermore, is capable of dynamically simulating changes in the deployment of Russian nuclear submarines.

The application of quantum computing in wargames has been even more disruptive—DARPA's "Quantum Wargaming" project can simulate a 100,000-node global conflict network in just 0.3 seconds, which amounts to a speed one billion times faster than that of traditional supercomputers. This generational technological difference allows the U.S. military to adjust the simulation variables in real time, whereas traditional deduction-based games take months to complete a single simulation of a global conflict. Although war-themed commercial games such as *Hearts of Iron* have also incorporated AI technology, their data sources are limited to public historical archives, and they cannot access real-time satellite intelligence or allied combat systems.

Application scenarios: from "tactical drills" to "strategic deception." Traditionally, wargaming was primarily employed for tactical-level training. For example, in the 1980s, the U.S. military utilized the "Firepower" wargame to train junior officers. However, the results of such simulations rarely exerted a direct influence on policy. Current U.S. military wargames have evolved to permeate the field of strategic deception—for instance, by artificially engineering favorable outcomes by manipulating the simulation parameters and leaking the resulting conclusions to the media, or exaggerating the effectiveness of the opponent's weapons (or, alternately, fabricating a narrative of "U.S. military superiority") with the goal of influencing both domestic and foreign policymaking, as well as the policies of allied nations. This model of "simulation-as-propaganda" has transcended the original function of "simulating warfare," becoming a "cognitive weapon" designed to manufacture war-related anxiety and hold allies' policies hostage. While commercial video games are capable of simulating historical battles, their algorithms remain incapable of predicting an adversary's decision-making. For example, the *Total War* game series cannot accurately simulate Russia's "hybrid warfare" strategy as used during the conflict in Ukraine.

Collaborative networks: from "closed sand tables" to a "global war cloud." Traditionally, wargames have largely been unilateral simulations—such as Prussian "Kriegsspiel" in which victory and defeat were determined through adjudication—and have lacked any element of multinational coordination. Current U.S. military wargames are actively driving the construction of a "global war cloud" network. For example, within the NATO framework, the 2024 "Locked Shields" cyber warfare exercise mobilized 32 participating nations and incorporated models of real infrastructure—such as the Russian power grid and German industrial control systems—into its attack simulations. The outcomes of these games directly translated into NATO's updated "Cyberspace Operations Concept," which prompted Estonia, Lithuania, and other countries to incorporate "critical infrastructure defense" into their collective security treaties.

Image text: The U.S. Military Conducting Wargaming Exercise Interactions

Image text: The Scene at a U.S. Military Wargame

The Practical Directions and Shortcomings of U.S. Wargaming

Amidst the wave of military intelligentization,[2] the U.S. military continues to accelerate the intelligent upgrading of its wargaming exercises. Practical

[2] **Translator's Note:** "Intelligentization" (智能化) is PLA jargon for the process of becoming more reliant on intelligent systems.

implementation focuses on enhancing wargaming capabilities through the two key dimensions of technological integration and application expansion.

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Image text: U.S. Government Personnel Participating in Wargame Training

Image text: The U.S. Military Conducting a Tabletop AI Wargame

In May 2024, the U.S. Marine Corps announced the activation of a high-tech wargaming center, with plans for it to become fully operational in 2025. Centered on AI-driven simulations, predictive analytics, and a secure environment for joint force training, the facility designs scenarios through data-driven iteration to enhance conflict readiness in line with the Marine Corps' "Force Design 2030" restructuring initiative.

This is not an isolated event. The U.S. Naval War College has developed a "real-time wargaming system" that utilizes reinforcement learning techniques to simulate the behavior of enemy commanders. The U.S. Navy aircraft carrier USS *Lincoln* has deployed a "digital twin model" capable of synchronizing with real-world battlefield data, which enables dynamic interaction between simulated wargames and actual combat operations. Furthermore, in terms of application expansion, the "Copernicus" wargaming system—developed by the U.S. company Palantir—has been sold in customized versions to nations such as Saudi Arabia and India. By utilizing pre-configured "regional conflict" scenarios, it serves to encourage clients to purchase U.S.-manufactured weaponry.

Although U.S. wargaming has become deeply integrated with artificial intelligence, quantum computing, and digital twin technologies, does this imply that simulations alone can serve as a panacea capable of singlehandedly resolving all challenges and predicting the ultimate outcome of future battlefield engagements? Evidently, the answer is no.

From "digital sand tables" to "algorithmic cages." While digital technologies such as artificial intelligence and advanced algorithms can vastly enhance the efficiency of wargaming, an over-reliance on technology risks "data domestication," a process that weakens and erodes human battlefield intuition. In reality, a battlefield is in constant flux, and even a minor unforeseen contingency can alter the entire course of a conflict. Wargame designs often simplify geopolitical, social, and psychological factors by reducing them to quantifiable metrics, inevitably resulting in simulation outcomes that may be distorted and inaccurate.

From "decision support" to "deception and cheating." The current U.S. system of wargaming has degenerated into a tool for strategic deception. By deliberately exaggerating military risks in specific domains or concealing certain simulation results, as well as by artificially manufacturing anxiety and panic through media propaganda, U.S. think tanks seek to advance ulterior military objectives and intentions. Fundamentally, this practice amounts to "cloaking lies with data in order to legitimize hegemony through simulation."

When facing the strengths and weaknesses inherent in U.S. wargaming systems, what countermeasures can we adopt?

Achieve technological autonomy to break the "quantum hegemony" and algorithmic monopoly. Accelerate research and development of post-quantum cryptography and cross-domain data fusion technologies to thwart data infiltration by the U.S. military's "quantum simulation" systems. Undertake cognitive demystification and expose the "lies cloaked in data." Advocate for the international community to establish independent third-party auditing bodies and mechanisms for auditing simulation algorithms, thereby exposing the "data biases" and "algorithmic black boxes" inherent in U.S. military simulation systems. Construct a network of counter-narratives to dismantle the U.S. military's cognitive hegemony—specifically, the notion that "simulation equals propaganda." Leverage international think tanks, media outlets, and social media platforms to expose the U.S. military's strategy of "selective data disclosure" in simulations while simultaneously promoting the open-source sharing of simulation technologies among nations around the world to foster diverse strategic narratives.

True strategic wisdom will always belong to those countries that remain clear-headed at the boundary between the virtual and the real and defend their fundamental demands (底线) amidst the fog of data. As wargaming simulations mutate from decision-making tools to instruments of hegemony, global military security stands at a crossroads: will we continue to indulge in the illusion of "algorithmic victory," or will we confront the brutal reality of the actual battlefield? The answer may lie in the epitaph of the Prussian soldier: "Here lies the general tamed by data."
