THE ANTAL PAPERS LEADERSHIP • WARFARE • ADAPTATION

NAMING THE COGNOROBOTIC AGE

Why a New Era of Warfare Requires a New Name

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Central Argument

The next transformation of warfare is not the drone or artificial intelligence alone. It is the integration of human judgment, machine intelligence, robotic action, networks, and military organizations into an adaptive fighting system. That system must not only sense and strike; it must contest the enemy's ability to understand, decide, act, and sustain combat. I propose CognoRobotic Age as the name for this emerging transformation.

Executive Assessment

The CognoRobotic Age is emerging, not yet fully formed. Remotely operated machines already shape combat; reliable one-to-many control of heterogeneous autonomous formations under sustained attack remains an objective, not a universal reality. PLA writers of "intelligentized warfare" offer a useful challenge: intelligence transforms the entire operational system, including data, decision processes, deception, sustainment, and attacks on the enemy's system.[1] The proposed CognoRobotic framework must meet that challenge while preserving human command. It is an analytical term, not adopted U.S. or NATO doctrine.

1. Historical Continuity—and the Emerging Break

A new weapon does not automatically create a new age. Industrial power, nuclear deterrence, information networks, and automation coexist. Sullivan and Dubik anticipated speed and integration in War in the Information Age.[2] The CognoRobotic Age therefore builds on the Information Age. The proposed break is not faster data alone but the integration of human and machine intelligence with physical action into competing operational systems.

The military contest is system against system. Data, algorithms, communications, sensors, weapons, robotic platforms, logistics, and trained people must function together under attack. Intelligent systems increasingly help interpret information, recommend action, navigate, coordinate, and execute bounded tasks. Equally important, they can help deceive or disrupt the enemy's information and decision processes. The transition remains uneven; autonomy, trustworthiness, and resilience vary by mission and system.

2. Why This Name?

"Robotic Age" points to machines. "AI Age" points to software. "Autonomous Age" may confuse delegated execution with command authority. PLA "intelligentized warfare" usefully describes intelligence spreading across the entire military system.[3] CognoRobotic must therefore signify more than robots with AI. It names the convergence of human judgment, machine intelligence, robotic action, networks, and the organization required to turn them into combat power. "Robotic" signals physical agency, not a boundary that excludes cyber, electromagnetic, cognitive, or space operations.

Intelligent Systems Warfare is another plausible term. It emphasizes competition between integrated military systems rather than individual platforms. Yet it does not clearly distinguish itself from CognoRobotic Warfare when the latter is understood as a contest between human-commanded, intelligent fighting systems. Adopting ISW as a separate term risks adding vocabulary without adding doctrinal precision.

The internal capital R is deliberate: CognoRobotic identifies the fusion of cognition and robotic action. The larger claim must rest on military evidence, not typography. The proposed terminology is "CognoRobotic Age" for the emerging historical era and "CognoRobotic Warfare" for the conduct of operations in it.

3. The Commander's Test

A battalion commander should explain both sides of the fight: build a system that can sense, understand, decide, act, and sustain; then disrupt those same functions in the enemy. The commander must blind hostile sensors, protect friendly data and networks, integrate manned and unmanned forces, mass effects without massing targets, sustain dispersed formations, and adapt under attack. This test establishes operational meaning—not historical proof. That requires enduring changes in force design, doctrine, fielding, and employment.

4. Definition and Progression of Warfare

Working definition: The CognoRobotic Age is the emerging era of warfare in which human judgment, machine intelligence, robotic systems, and resilient networks are integrated into adaptive fighting systems. Under human command, these systems connect sensing, understanding, decisions, robotic action, and sustainment across domains while contesting the enemy's ability to perform those same functions. Commanders retain authority and responsibility for the lawful employment of force.

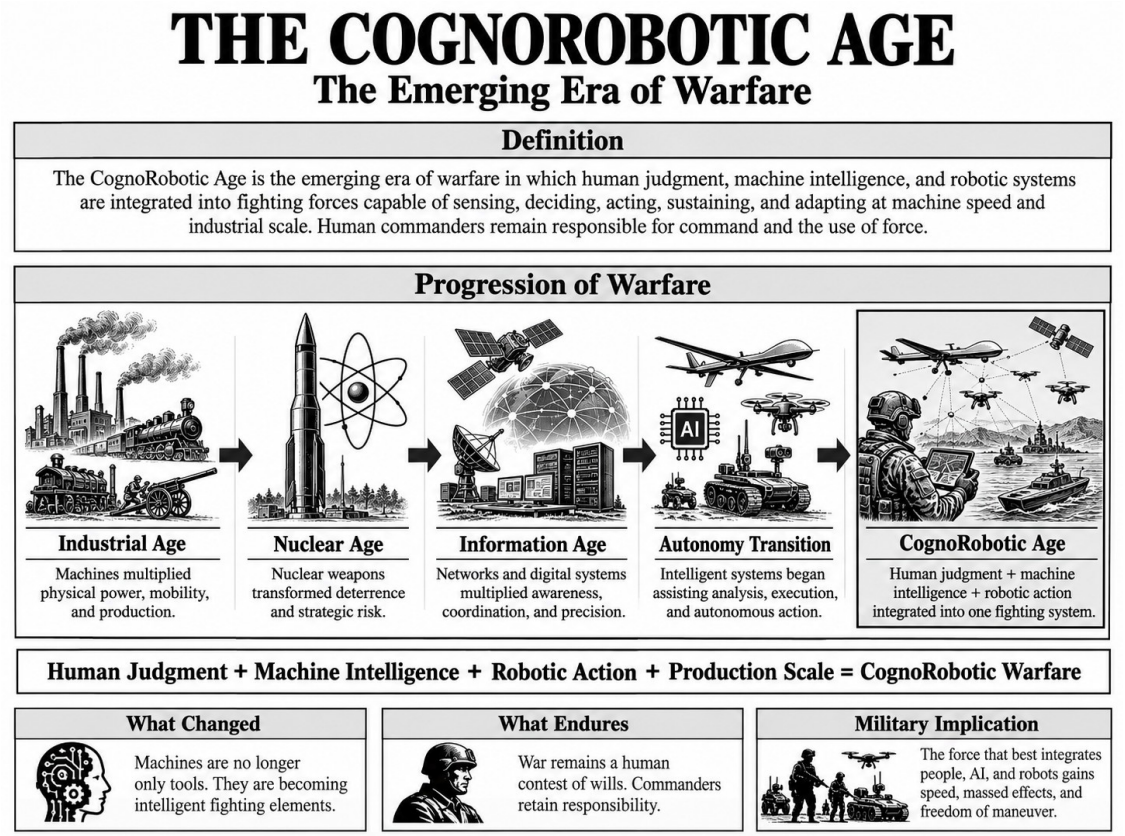

Figure 1. Historical progression, not discrete eras. The original illustration emphasizes the human–AI–robotic fusion; the revised definition above extends this to resilient networks and contesting the enemy's entire operational system. Concept by John Antal.

5. Command, Control, and Accountability

CognoRobotic Warfare extends the means of mission command; it does not replace mission command. ADP 6-0 assigns human commanders responsibility for command.[4] Soldiers exercise disciplined initiative as accountable subordinates. Machines execute authorized functions according to design, programming, operational limits, and supervision. They do not inherit the moral or legal authority of commanders.

Autonomous execution is not independent command authority. DoD Directive 3000.09 requires appropriate levels of human judgment over the use of force.[5] Human intent, engagement authorities, constraints, testing, and safeguards remain essential. Continuous manual control of every machine is neither the sole model of human judgment nor an adequate substitute for responsible command.

6. What Has Been Demonstrated—and What Remains Emerging

Ukraine's unmanned forces and integration of ground robots into brigades demonstrate organizational change and new ways of allocating risk.[6] [7] Remote operation, reconnaissance, robotic logistics, and selected automation are real. They do not prove that most fielded robots reason independently or that large mixed swarms can survive heavy electronic and kinetic interference with minimal supervision.

Remote control is not autonomy; autonomy is not necessarily AI. The unit of analysis is the fighting system, not whether every platform is intelligent. A formation can combine remotely operated machines, AI-assisted analysis, autonomous functions, and human-led maneuver into one effective combat organization.

7. An Enemy Can Break the System

The enemy attacks the system, not just its platforms. Corrupted data, spoofed sensors, cognitive deception, electronic warfare, cyber intrusion, attacks on relays, navigation denial, and interrupted sustainment can fracture the link between understanding and action. PLA analysis of multi-domain precision warfare explicitly emphasizes finding and exploiting weak points in opposing operational systems.[8] Resilience therefore demands masking, deception, trusted data, redundant communications, dispersed logistics, degraded-mode training, and replacement capacity.

A fleet count is not combat power. The advantage belongs to a force that can employ and defend its own system while disrupting the enemy's—without allowing machine-generated speed to outrun sound judgment.

8. Military Implications

The operational expression is All-Arms Combat: human-led formations integrate maneuver, fires, engineers, intelligence, electronic warfare, air defense, robotics, and sustainment. The strategic dimension includes research, production, energy, data infrastructure, and force development. The operational dimension integrates joint effects and attacks enemy command and sustainment. The tactical dimension converts openings into maneuver and control. Drone Dominance is strategic capacity; Drone Superiority is an operational condition; Fighting in Real-Time connects awareness to action; Distributed Mission Command and Distributed Logistics preserve initiative and endurance. These are author-proposed relationships, not promulgated doctrine.

CognoRobotic Age — The emerging historical era, defined by the integration of human judgment, machine intelligence, and robotic systems.

CognoRobotic Warfare — The conduct of operations by human-commanded, intelligent fighting systems contesting opposing systems.

All-Arms Combat — The integration of human and robotic forces with maneuver, fires, protection, command, and sustainment as a method of fighting.

One-to-many control is a force-design goal, not a purchase specification. The system must join human leadership, trusted information, AI, robotic effectors, communications, protection, logistics, maintenance, training, and scalable production. Industrial scale matters; integration determines whether that scale becomes combat power.

Conclusion: Name the Change, Not the Gadget

The CognoRobotic Age is emerging, not yet fully formed. Its defining feature is not the intelligent machine alone, but the integration of human judgment, machine intelligence, robotic action, networks, and military organizations into adaptive fighting systems. These systems must continue functioning under enemy attack while contesting the opponent's ability to sense, understand, decide, act, and sustain combat. The PLA's intelligentized-warfare argument underscores that the decisive contest is between fighting systems, not inventories of robots. Intelligent Systems Warfare describes this competition, but it does not establish a distinct doctrinal requirement that justifies another formal term. CognoRobotic Warfare includes the larger systems contest while identifying the emerging integration of cognition and robotic action.

The Industrial Age multiplied physical power. The Information Age multiplied awareness. The CognoRobotic Age is beginning to integrate human judgment, machine intelligence, and robotic action into a new system of combat power. The commander's task is to make our system fight—and the enemy's system fail.

Notes and Sources

1. Kevin Pollpeter and Amanda Kerrigan, with Andrew Ilachinski, The PLA and Intelligent Warfare: A Preliminary Analysis (CNA, October 2021), https://www.cna.org/analyses/2021/10/the-pla-and-intelligent-warfare-preliminary-analysis.

2. Gordon R. Sullivan and James M. Dubik, War in the Information Age (U.S. Army War College, 1994), https://press.armywarcollege.edu/monographs/266/.

3. Pollpeter and Kerrigan, The PLA and Intelligent Warfare (2021).

4. Headquarters, Department of the Army, ADP 6-0, Mission Command: Command and Control of Army Forces (2019), https://rdl.train.army.mil/catalog-ws/view/100.ATSC/1FE33715-CFD1-4614-A489-B3E0480C3F80-1428688882108/adp6_0.pdf.

5. Department of Defense, DoD Directive 3000.09, Autonomy in Weapon Systems (25 January 2023), https://media.defense.gov/2023/Jan/25/2003149928/-1/-1/0/DOD-DIRECTIVE-3000.09-AUTONOMY-IN-WEAPON-SYSTEMS.PDF.

6. Ministry of Defence of Ukraine, "Unmanned Systems Forces," https://mod.gov.ua/en/about-us/unmanned-systems-forces.

7. Ministry of Defence of Ukraine, "The Armed Forces of Ukraine Are Forming Military Units Focused on Robotic Equipment" (5 February 2025), https://mod.gov.ua/en/news/the-armed-forces-of-ukraine-are-forming-military-units-focused-on-robotic-equipment-unmanned-ground-systems-will-be-integrated-into-combat-brigades.

8. U.S. Department of the Army, TRADOC G-2, How China Fights in Large-Scale Combat Operations (April 2025), https://api.army.mil/e2/c/downloads/2025/05/08/1888a601/tradoc-g2-how-china-fights-in-lsco-apr-25-public.pdf; Department of Defense, Military and Security Developments Involving the People's Republic of China 2025 (2025), https://media.defense.gov/2025/Dec/23/2003849070/-1/-1/1/ANNUAL-REPORT-TO-CONGRESS-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA-2025.PDF.