**Intelligent Algorithms: A Winning Weapon in Cognitive Domain Warfare**

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**In the era of intelligence, intelligent algorithms serve as the foundational logic and operational tool behind the generation, distribution, transmission, and reception of information. These algorithms determine how information is formed and presented. In future warfare, as the application boundaries and scenarios for intelligent algorithms expand, cognitive domain warfare tactics will continue to evolve. Understanding the mechanisms and pathways through which intelligent algorithms influence cognitive confrontation is crucial to innovating cognitive warfare strategies.  
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Mechanisms by Which Intelligent Algorithms Influence Cognitive Confrontation**

Intelligent algorithms analyze and calculate a user’s identity, psychological traits, behavior patterns, and preferences to generate optimal information delivery strategies. These strategies influence a target’s cognition and ultimately affect their real-world behavior.

**1. Constructing Target User Profiles**   
User profiling involves labeling users to define specific identities—these labels function like "pixels" in a digital image. The more comprehensive the data, the more detailed and accurate the label, and the more realistically it reflects user behavior. Foreign militaries believe that, in cognitive domain warfare, technologies like web crawlers and log mining can collect basic data, financial records, and communication logs. Intelligent algorithms can then deeply mine this data to analyze interests, behavior, and relationships, determining the target’s value orientation. Multidimensional label vectors can be created, and similar individuals clustered into groups, forming group-level profiles to serve as the foundation for cognitive shaping.

**2. Enabling Personalized Information Delivery** A key strength of intelligent algorithms lies in their ability to "divide and conquer," tailoring content to individuals and groups. Using social media and search engines, personalized content can be pushed to targets to maximize reception and minimize wasted effort. This creates an "information cocoon," narrowing the target’s perception and keeping them in an echo chamber of biased content. Over time, repeated exposure to homogenous information weakens the target’s logical thinking and judgment, allowing external actors to subtly shape their cognition according to a predetermined agenda.

**3. Manifesting Specific Real-World Behaviors**   
Cognition shapes behavior, and behavior, in turn, influences cognition. Intelligent algorithms can guide a target’s stance on political, military, or societal issues, thereby steering their real-world actions.

Foreign militaries suggest that spreading specific ideas among the public can disrupt societal order. For key individuals, strategies like brain manipulation and psychological attacks can lead to strategic misjudgments, doubt in military decisions, and pessimism about the war’s trajectory—achieving “victory without combat.” In practice, changes in cognition lead to observable behavioral shifts, which then feed back into user profiles, prompting algorithmic updates—forming a closed-loop system.

**Implementation Pathways for Intelligent Algorithms in Cognitive Confrontation**

Intelligent algorithms naturally align with cognitive confrontation due to features such as portability, data sharing, rapid computation, and autonomous learning.

**1. Integrating Peacetime and Wartime Confrontation**Information spreads continuously, causing cognitive conflict across timeframes—ranging from seconds to decades. In peacetime, cognitive warfare is covert and prolonged; in wartime, it is urgent and aggressive. Algorithms can integrate peacetime data and wartime intelligence for comprehensive assessments of enemy status, our own capabilities, and the battlefield environment. Using mathematical modeling and machine learning, they can synthesize previous confrontation outcomes with real-time data to propose optimal strategies.

**2. Combining Overt and Covert Tactics**Cognitive warfare involves a flood of diverse, often low-quality information, making it both challenging for one's own side and advantageous for deceiving opponents. Only by fusing information cognitively can one gain a timely and accurate understanding of the battlefield, translating perception into decision-making and operational advantages.   
  
Algorithms can analyze multi-source data to filter out misinformation and provide decision-making support. This enables overt actions such as deterrence or psychological breakdown, covert actions like deception or manipulation, or hybrid tactics like confusion and misdirection.

**3. Achieving Full-Domain Integration in the Cognitive Space**   
Cognitive confrontation spans all domains—land, sea, air, space, the electromagnetic spectrum, cyberspace, and the cognitive domain itself. The high speed and massive volume of battlefield data demand rapid and accurate computation.

Traditional manual or assisted computing can no longer meet integration needs. Intelligent algorithms, with their efficiency and power, can achieve semi- or fully-automated fusion computing. Vertically, this allows full-process integration from cognitive perception to analysis and decision-making. Horizontally, it enables cross-domain fusion of situational awareness, forces, decisions, and actions across the physical, informational, and cognitive domains.

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