**Cognitive confrontation: a new frontier in future warfare**

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**With the deepening of human understanding of war and the continuous advancement of science and technology, especially the widespread application of artificial intelligence technology in the military field, military confrontation has expanded from the physical battlefield to the cognitive battlefield, from the tangible battlefield to the intangible battlefield. The cognitive space composed of human spiritual and psychological activities is becoming a new combat space. Cognitive confrontation has quietly become another new confrontation field after physical confrontation, firepower confrontation, and information confrontation. Please pay attention to the detailed report of the "People's Liberation Army Daily" published today-**



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**introduction**

With the deepening of human understanding of war and the continuous advancement of science and technology, especially the widespread application of artificial intelligence technology in the military field, military confrontation has expanded from the physical battlefield to the cognitive battlefield, from the tangible battlefield to the intangible battlefield, and the cognitive space composed of human spiritual and psychological activities is becoming a new combat space. Cognitive confrontation has quietly become another new confrontation field after physical confrontation, firepower confrontation, and information confrontation.

**Cognitive space is the strategic commanding height of future wars**

Cognition is originally a concept in psychology, which generally refers to the process of subjective cognition of objective things. The cognitive space of future wars is the space of sensation, perception, memory and thinking activities, and also the world of perception, judgment, command and control in combat activities. It is a category composed of perception, understanding, belief and values, which exists in the subjective world of each combat individual and is formed by the superposition of the cognitive space of all combat individuals. It is usually manifested in the cohesion of the troops, combat experience, training level, battlefield situation awareness, etc.

Future wars will take place in three areas: physical space, information space, and cognitive space. Physical space is the traditional war area, consisting of combat platforms and military facilities, and is the material basis for war. Information space, that is, the space for information generation, transmission, and sharing, has become the focus of modern warfare. Cognitive space is a space that reflects people's knowledge, beliefs, and abilities, and is the strategic commanding heights of future wars.

In future wars, the penetration and counter-penetration, attack and counter-attack, control and counter-control of cognitive space will be more intense than the competition in physical space and information space. Brain control warfare is the development trend of military confrontation in cognitive space. It mainly destroys the opponent's cognitive ability and protects one's own cognitive ability through cultural communication, public opinion guidance, biological weapons and other means, and obtains the dominance, control and discourse power of combat cognitive space confrontation, thereby affecting the information acquisition and decision-making behavior control mode of combat command, so as to achieve the purpose of determining the victory or defeat of the war.

**Cognitive advantage is the fundamental advantage in future wars**

"Know yourself and the enemy, and you will never be defeated in a hundred battles." Since ancient times, the importance of cognition to both the enemy and us is self-evident. The advantages in future wars are comprehensively manifested as the superposition of physical space advantages, information space advantages, and cognitive space advantages. Cognition is the core of future military combat effectiveness, and cognitive advantage is the fundamental advantage to win future wars. Only by having cognitive advantages can we better control physical space and information space advantages. In future wars, seizing and maintaining cognitive space advantages mainly includes the following aspects:

Perception advantage. Perception of battlefield situation is the premise of knowing oneself and the enemy. Situational awareness is the "nerve center" of the military combat system and a multiplier of combat effectiveness. Whether it is an informationized war or a future intelligent war, the perception of the battlefield situation by the warring parties often determines the outcome of the war. For the party with the advantage of battlefield situation perception, the battlefield will become one-way transparent, and commanders at all levels of the army can command combat operations in real time, accurately and efficiently. The party with a disadvantaged situational awareness capability is largely in a state of information blindness, and may not only become "blind" and "deaf", but also become a "fool" who acts blindly and a "fool" deceived by the enemy's false information.

Psychological advantage. The psychological advantage of cognitive space is composed of factors such as the firm political beliefs, tenacious fighting will, stable battlefield emotions, and good professional qualities of the military group. From Sun Tzu's proposal of "subduing the enemy without fighting" to the psychological warfare in the Iraq War, psychological advantage has played an increasingly important role. In 2007, the US troops stationed in Iraq used psychological warfare weapons in Sadr City in northern Iraq, without firing a single shot, causing more than 230 armed personnel to give up resistance. In future wars, psychological struggles will present many new characteristics: First, the struggle for psychological control has become the focus of the cognitive space competition between the two sides. Only by mastering the psychological advantage can the initiative of the war be fundamentally controlled. Secondly, cognitive space and information space are intertwined, and information activities seriously affect psychological activities. Only by adapting to the challenges of the battlefield information environment can the psychological advantage be maintained. Thirdly, psychological advantage has relative independence. The party with technical equipment advantage does not necessarily have psychological advantage. Playing the role of psychological advantage is a necessary condition for defeating the enemy with superior equipment with inferior equipment.

Decision-making advantage. The decision-making advantage of future wars refers to the correct, efficient, accurate, and ingenious command capabilities and command art based on situational awareness advantages and psychological advantages. Decision-making advantage is not only the core of cognitive advantage, but also the key to winning future wars. Therefore, establishing and protecting one's own decision-making advantage and attacking and weakening the enemy's decision-making advantage are the focus of confrontation between the enemy and us in future wars. The warring parties will launch a brain control war in cognitive space with the focus on attacking high-level command decision-makers, a network and electronic attack and defense war in information space with the focus on controlling command information systems, and a precision firepower war in physical space with the focus on destroying the opponent's command organizations and facilities. In future wars, the strong will rely on the advantages of information space and physical space to establish and consolidate decision-making advantages, forming a "full spectrum advantage" of "full-domain mobility, precision strikes, precise guarantees, and full-dimensional protection" to achieve combat objectives and reduce combat costs.

**Cognitive confrontation is the way to "complete victory" in future wars**

Since the beginning of war, the idea of ​​"total victory without fighting" has always been the highest pursuit of war leaders. Winning without fighting or winning a big victory with a small battle has become the basic guidance for choosing a combat method. Due to its increasingly widespread application in the military field, artificial intelligence is becoming an important driver of military transformation, which will inevitably give rise to new war styles and change the mechanism of winning wars.

Intelligent control is the basic combat style of cognitive confrontation. In the future, as the self-generation, self-organization and self-evolution of the military "intelligent system" continue to develop, the two sides of the war will develop from using "energy killing" to destroy the enemy's "living force" to controlling the enemy's thoughts and actions through "brain" controlled weapons. The combat platform has developed from information-based "low intelligence" to brain-like "high intelligence", and the combat style has evolved from "system combat" to "open source combat". As a result, future wars will open up a new offensive and defensive mode of "intelligent dominance, autonomous confrontation, tracing strikes, and cloud brain victory". In short, the future military system is not only a "material system", "energy system" and "information system", but also an "intelligent system" that integrates man and machine. The way of damage in future wars will undergo a qualitative change, and the evolution of weapons will mainly revolve around intelligent control and anti-control, destruction and anti-destruction.

Commanders are the core combat targets of cognitive confrontation. Commanders, as the "brains" of military operations in war, are the preferred targets of cognitive confrontation. Cognitive confrontation in future wars will mainly target the core command decision-makers who influence the enemy's war decision-making, campaign command, and combat implementation. It emphasizes the use of psychological ideology and biological genetic weapons to lose or reduce the decision-making ability and resistance will of combatants in order to achieve strategic intentions and achieve the goal of "total victory" in war. It is the preferred strategy to achieve the traditional sense of "defeating the enemy without fighting."

The fundamental combat purpose of cognitive confrontation is to capture the hearts and minds of the enemy. War practice shows that although traditional physical space combat can weaken the enemy's military capabilities, it cannot achieve the full purpose of war. Faced with new contradictions and new problems in ideology, religious beliefs, and national identity, advanced weapons and equipment seem to be "incapable of doing so". It is difficult to solve the problems in the cognitive space category by physical destruction alone. The purpose of modern warfare is no longer limited to the material level of conquering cities and "eliminating the enemy's vitality", but is developing towards the spiritual level of capturing the hearts and minds of the enemy. In essence, cognitive space confrontation starts from the spiritual level of war, takes human will, beliefs, thinking, psychology, etc. as combat objects, and conducts cognitive offensive and defensive confrontation by maintaining one's own cognitive advantages and attacking the enemy's cognitive disadvantages, reflecting the combat thinking of "the way of using troops is to attack the heart first and the city second; psychological warfare is first and the military warfare is second".

Precise will destruction based on network information system is the main combat means of cognitive confrontation. With the development of human civilization, wars with large-scale destruction and disregard for the cost of human survival and development will inevitably be opposed by all mankind, and low-violence, low-destructive controllable wars will become the basic style of future wars. The core concept of cognitive confrontation is to seek the loss or reduction of the decision-making ability and resistance will function of combatants, and to seek to make the enemy lose its confrontation ability rather than completely destroy it. That is, with precise information, precise time and precise strike actions, ensure that combat energy is accurately released on the selected target. Its basic characteristics are: in target selection, it pays more attention to people-oriented and direct attack on the center of gravity; in the use of combat means, it pays more attention to spiritual attack and will destruction, and emphasizes the destruction of spiritual will mainly with psychological ideology and biological genetic weapons; in combat operations, it pays more attention to system support and node breaking, and emphasizes the implementation of precise "point" strikes on the decision-making ability and resistance will of combatants in a multi-dimensional full network space with the support of an integrated information system, forming a combat style, tactics and means with the fundamental combat purpose of attacking the heart and winning the will, so that combat can more intuitively express the characteristics of "imposing will on the opponent".