**How to achieve precision strikes in cognitive domain warfare?**

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**introduction**At present, driven by intelligent technology, cognitive domain operations are showing new features such as precise perception, precise prediction and precise calculation. Studying and grasping the connotation and mechanism of precise strikes in cognitive domain operations, so as to ensure the clarity of combat objectives, personalized information generation and precise information delivery, will be more conducive to seizing the commanding heights and initiative in future cognitive domain operations.

**Accurately determine combat objectives**

The establishment of combat objectives is often the primary concern of cognitive domain operations. With the continuous application of technologies such as artificial intelligence and big data, the party with technological advantages can often quickly and efficiently collect cognitive data of different dimensions, levels, and modalities, and then discover the weaknesses, sensitive points, and flash points of the opponent's cognitive system.

**Massive "data sources" refine the clarity of the target.**  
 With the widespread use of the Internet today, cognitive data is growing exponentially. Supported by technologies such as big data and psychometrics, target portraits are gradually evolving rapidly towards accurate and intelligent portraits. According to foreign statistics, as of July 2022, the global Internet penetration rate reached 69%, and the Internet has become an essential platform for users' daily lives. With the help of the Internet, both sides of the war can widely and quickly realize the cognitive data collection and cognitive situation awareness of the target objects, and provide support for analyzing the political beliefs, values, national sentiments, and public opinion positions of the target objects. It is reported that in recent foreign elections, foreign data analysis companies have captured social media user data, established character analysis models, and accurately portrayed voters' personalities and cognitive characteristics. On this basis, they pushed suggestive campaign ads to swing voters, thereby influencing their election decisions.

**The dynamic "label pool" improves target recognition.** Labeling usually refers to the abstract classification and generalization of a certain feature of a certain type of specific group or object. In cognitive domain operations, labeling is an important process to achieve cognitive data classification and visualization. Faced with massive amounts of user data, establishing a mature and reliable labeling system is a prerequisite for sorting out and analyzing cognitive data and making good use of it. Using the labeling system to filter useless data and tap into potential valuable information can provide a direct reference framework for cognitive domain combat scenario presets. The development of the labeling system should be based on the logical starting point of cognitive domain operations and ultimately come down to cognitive domain combat applications. For the target object, the migration of interests, changes in personality, and changes in emotions are real-time and dynamic. The establishment of a "label pool" can perceive the cognitive dynamics of the target object in real time and accurately improve the target recognition rate.

**The intelligent "algorithm library" shows the relevance of the target.**   
If data is compared to the "fuel" of cognitive domain operations, the algorithm is the "engine", which is an important source of power for cognitive precision strikes. In a sense, cognitive domain operations are "a confrontation between data or algorithms." Through intelligent algorithms, we can deeply mine the multi-dimensional correlation data of the target object's behavior, build a precise target portrait, and then combine machine learning algorithms to build a prediction model, automatically match and associate cognitive information with the target object, and deliver cognitive information at the right time, in the right place, and in the right way, thereby changing the target object's cognition. As some foreign research institutions have found, with 10 likes, the algorithm can understand you better than your colleagues; with 150 likes, the algorithm will understand you better than your parents; with 300 likes, the algorithm will understand you better than your closest partner.

**Accurately generate information "ammunition"**

Designing information "ammunition" that conforms to the thinking habits and perception style of the target object is the key to improving the killing effect in the cognitive domain. The development and application of intelligent science and technology provide a convenient means to achieve "private customization" of cognitive information themes, content and forms, making it possible to change the decision-making and actions of the target object instantly and compulsorily.

**Information theme planning based on target value orientation.** The cognitive information theme is the central idea expressed by the information and the core of the information content. From legal advice, military deterrence, contradiction alienation, emotional appeal, to moral guidance, war mobilization, behavioral instructions, and motivation incentives, different information themes play different roles. Practice has shown that the theme of cognitive information must be planned closely around the target object. According to different combat phases and different value orientations expressed by different target objects, the information theme must be optimized in a timely manner to maximize the needs of the target object. According to analysis by foreign research institutions, in recent years, foreign election campaign advertisements are often inseparable from the support of big data. Accurately designing different advertising themes for voters with different values ​​can resonate with voters' values.

**Information content design based on the target's way of thinking.**In the Internet age, the target's life trajectory, geographical location, hobbies, social relationships, etc. are all recorded by the network, making it possible to accurately create an "information cocoon" that caters to the target's way of thinking. Driven by big data technology, the target's interactive trajectory in the virtual world can also be easily captured, perceived and calculated. With the assistance of multimedia content intelligent generation systems, information similar to the target's thinking habits can be generated in batches, causing them to be trapped in the "information cocoon", with a narrow range of information acceptance, and a gradually reduced perception of the outside world, thus falling into a cognitive trap. In recent years, many "color revolutions" that have occurred around the world are inseparable from the support of cognitive control. Some Western countries use "deep fake" technology to instill false information that conforms to their way of thinking into the target, creating an anti-intellectual and foolish information environment, forming cognitive biases, and inducing them to deny their own national cultural values ​​and concepts, thereby generating anti-government sentiments.

**Selection of information form based on the perceptual characteristics of the target.**  
 Psychology believes that the formation and change of the attitude of the cognitive subject needs to go through the three processes of "attention-understanding-acceptance". Whether the target object can be affected by the dissemination of information, attracting attention is the first step. As an important carrier to attract the attention of the target object, the form design of information is crucial to improving the acceptance, dissemination and infectiousness of information "ammunition". Through big data technology, we can explore the characteristics of the target object's national emotions, customs, religious beliefs, personal preferences, etc., scientifically judge the perceptual characteristics such as information acceptance habits, and on this basis, comprehensively use information carriers such as text, language, video, and images, and integrate elements such as color and layout to cause strong stimulation to the target object's senses. Since 2011, some Syrian anti-war activists have produced a number of anti-war propaganda short films from the perspectives of children and women, which have been circulated on the international Internet, causing strong reactions from the international community. This internationally universal information carrier meets the public's aesthetic needs, avoids different interpretations by the audience, and often achieves unexpected results.

**Accurately deliver information**

The delivery of cognitive information follows the laws of information dissemination. In order to achieve the effect of cognitive precision strike, it is necessary to properly handle issues such as the delivery object, delivery channel, and delivery timing.

**Extract cognitive features and screen the objects of information delivery.**The portrait technology supported by big data makes it possible to extract the cognitive features of the target object. Through the cognitive feature library, objects with similar features can be screened out from groups of different races, different parties, different occupations, etc., thereby upgrading the traditional extensive screening method and making the information "ammunition" more compatible with the target object, thereby improving the pertinence and accuracy of cognitive attacks. In recent years, Cambridge Analytica has used machine learning methods to classify Facebook users according to five personality types: open to experience, conscientious, extrovert, agreeable, and emotionally unstable. It has established a linear regression model of the five personality traits and set up a "target" for the precise delivery of campaign ads. This move has many implications for the world. In the future, cognitive domain operations will place more emphasis on the precise division of groups based on the extensive collection of user cognitive features, and will conduct targeted information delivery and behavior prediction based on the differences in values ​​and behavior habits of different groups.

**Follow social habits and match information delivery channels.**  
 The deep popularization of the Internet has led to a huge change in the way information is disseminated, and people's ways of receiving information have become more diverse and diversified. According to data from foreign research institutions, there are currently more than 4.62 billion social media users worldwide, and social media platforms have become the main battlefield for cognitive domain operations. In many "color revolutions" that have occurred in recent years, social media such as Facebook, Twitter, and YouTube, under the manipulation of Western countries, have played an important role in public opinion dissemination, organizing protests, and mobilizing the public. It is reported that in similar actions, Facebook is often used to determine the schedule, Twitter is used to coordinate actions, and YouTube is used for wide dissemination. In the future cognitive domain operations, great emphasis will be placed on focusing on the social habits and characteristics of the target object, fully grasping the social circle and life circle of the target object, and selecting information delivery methods from multiple channels such as online and offline, military and civilian, so as to ensure the delivery rate of cognitive information.

**Track cognitive dynamics and grasp the timing of information delivery.**   
Cognitive change is not achieved overnight. Blindly pursuing a high pace and achieving goals instantly will have the opposite effect. Therefore, cognitive domain operations must grasp the rhythm and intensity of "time immersion", select the delivery time according to the cognitive dynamics of the target object, and gradually seek to expand the effect advantage. Before the target object has formed a preliminary understanding of an event, it is necessary to actively seize the priority of information release, "bomb" information at the first time, and strive to "strike first and get first impressions". In addition, during the stage of public opinion fermentation of the event, the subject's cognition has not yet been completely solidified. At this time, by repeatedly disseminating a certain information, the purpose of subtly reconstructing the subject's cognition can also be achieved.

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