**Computational Propaganda: A New Weapon for Cognitive Domain Warfare**

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Computational propaganda is a new means of controlling public opinion in the intelligent era. It is to achieve specific political or social goals by using computing tools and intelligent algorithms to manipulate the network information ecosystem, thereby influencing the beliefs, attitudes and preferences of the target group. In the eyes of foreign militaries, as a "combination of social media platforms, automatic agents, algorithms and big data designed to manipulate public opinion", computational propaganda means control information more covertly, disseminate content more accurately, guide deception more quickly, and make action agents more intelligent. Once applied to cognitive domain operations, it will become a weapon of war for deterrence, induction, confusion, deception and even cognitive suppression.

Full-time public opinion leadership and implementation of cognitive deterrence. Cognitive domain operations mainly act on people's cognitive space, transcending the boundaries between peacetime and wartime, emphasizing the integration of peacetime and wartime and full-time release of energy. Foreign military practices have shown that computational propaganda methods are applied to cognitive domain warfare. In peacetime, they can be used to "defeate the enemy without fighting" - by building an international strategic propaganda system, it aims to establish the concept of all-time offense and defense, global action, full-domain coverage, and full-process shaping, and to promote advanced weapons and equipment on all-media platforms for a long time, publicize high military morale, demonstrate firm determination and will, and continuously demonstrate comprehensive strength in politics, economy, society, culture and other aspects, so as to form a strong deterrent to the target group, shake its beliefs, disintegrate its will, and disperse its military morale, thereby firmly grasping the initiative in cognitive domain warfare; in wartime, they can be used to "defeate the enemy while fighting" - incorporating computational propaganda methods into the entire process of pre-war planning, combat implementation, and post-war evaluation of joint operations, promote the integrated planning and synchronous implementation of "psychological warfare" and "military warfare", promptly use the results of military operations, or construct the results of military operations at critical moments, exaggerate and spread them through news propaganda media and social media platforms, create hot topics, promote public opinion fermentation, and shape battlefield cognition in a way that is beneficial to oneself, continuously expand the deterrent effect, disintegrate the opponent's will to fight, and achieve the strategic goal of "winning all battles with fewer battles".

Focused media attacks the hearts and minds of the audience and implements cognitive induction. Focused media is to segment the target group by stratification and grouping, while targeted media is to attack the hearts and minds of the target group by targeting and fixed investment. Both of them calculate the communication goals and communication paths to achieve more accurate and efficient cognitive attacks. Foreign military practices have shown that the premise of targeted attacks is the "cognitive portrait" of the target - collecting data such as the target group's social footprints, consumption records, and topics of concern through public networks and other channels; using technologies such as big data analysis to create a cognitive portrait of the target from cognitive dimensions such as political attitudes, religious beliefs, and cultural traditions; using theories such as cognitive maps, based on cognitive tendencies such as values, thinking patterns, and decision-making habits, the target group is segmented to establish a cognitive domain precision strike target library; the key to targeted attacks is customized "cognitive ammunition" - based on the "cognitive portrait" of the target group, their cognitive patterns are analyzed, their cognitive tendencies are parsed, their cognitive needs are obtained, and the information content, information structure, and information flow that have the greatest impact on them are customized in a "different way to suit the person", producing cognitive domain "precision-guided munitions", and then organizing targeted distribution and delivery, so that the target group falls into secondary cognitive spaces such as "information cocoons" and "echo chambers", constantly strengthening cognitive biases and achieving cognitive induction.

Multi-directional rational division and cognitive confusion. Computational propaganda can not only induce rational thinking through guiding propaganda, but also interfere with rational judgment through destructive propaganda. Foreign military practices have shown that in cognitive domain operations, when it is impossible to obtain overwhelming opinions or implement blocking suppression, using destructive computational propaganda to confuse cognition and cause the enemy to have rational division has become an important attack method. For example, some Western countries often use sustainable cultural infiltration and conflicting religious beliefs to provoke value conflicts involving multiple parties and create widespread and long-term confusion about core values; by increasing confusing opinions and speeches, injecting ambiguous political attitudes, and expanding the dimensions of disagreement on hot issues, they create short-term or temporary social and psychological turmoil; by distributing military intelligence reports that are difficult to distinguish between true and false, constructing false and customized battlefield dynamics, mixing intelligence information from multiple sources, creating and spreading a "fog" of battlefield cognition, thereby shaking the value identification of the target group, impacting their logical thinking, making their rationality confused and at a loss, and falling into a cognitive space of multiple mixing and continuous entropy increase, inducing the leadership group to waver, and even argue and split; the public is divided, and even conflict and unrest; the combat forces fall into confusion and mistakes, ultimately leading to failure.

Deep situation shaping and implementation of cognitive deception. Cognitive situation shaping is the structural design and dynamic organization of information content. Deep situation shaping is to promote the maximum match between cognitive situation and cognitive mode of target group, so as to achieve the most efficient cognitive deception. Foreign military practice shows that cognitive situation shaping is the basis of cognitive deception. In recent local wars, some countries have adopted methods such as agenda setting and filtering grafting to piece together and provide "carefully selected truths" and design information combinations and delivery processes that are beneficial to themselves and harmful to the enemy. By creating false information, using false words, deceptive narratives and other methods, targeted fabrication of negative news about the opponent; or using AI face-changing, false audio and video production and other technologies to "deeply forge" the opponent's negative videos, false remarks and other deceptive information at critical moments. Among them, cognitive mode matching is the key to deep shaping. For example, some Western countries often customize their information reception structure, information reception scope and information reception degree according to the cognitive portrait of the target group, so that the opponent falls into a carefully designed false cognitive space such as "public opinion" and "democracy". During this process, it uses complex network and other technologies to analyze the key paths, key nodes and characteristic thresholds of information dissemination, and then determine the best delivery time and optimal propagation path, greatly improving the efficiency and benefits of cognitive deception.

Wide-area information coverage and cognitive suppression. Cognitive suppression is the use of powerful media discourse power and propaganda mobilization power, and the use of asymmetric combat advantages to implement cognitive domain "firepower coverage" and "saturation attack". Foreign military ideas use the mixed participation of human intelligence and artificial intelligence as action forces, use news propaganda platforms to set the public opinion agenda, check media speech, and form a strong propaganda momentum for specific topics; use online social media to promote the formation of super topics and quickly promote them, so as to promote the directional and deep fermentation of public opinion; use "online water army" and "puppet accounts" to widely spread specific information in the media space and social platforms to achieve speech coverage; develop and use cognitive domain combat robots, that is, "running in the network information space, automatically generating customized content, participating in human cognitive activities such as obtaining information and socializing, aiming to intervene, manipulate, and block cognition. Automatic program intelligent body", deliver and distribute super-order information content to the target group, so that the amount of information obtained by them far exceeds the computing processing capacity, and drowns the opponent's voice, narrative, and opinions. In this way, it can develop from "I talk more, you talk less" to "I can talk, you can't", and achieve repressive cognitive blocking in the implementation of information coverage bombing and denial of service attacks.