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Issue Brief

China and Cognitive Warfare: An Overview

Abhishek Kumar Darbey

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Summary

The Chinese leadership has been wary of possible social and political disturbances as a result of the exposure of the Chinese netizens to digital platforms. Externally, the Chinese government has robustly opposed the alleged 'anti-China' narratives espoused by the West. The People's Liberation Army (PLA) is also using virtual reality (VR) simulated technology in military training to strengthen cognitive thinking and physical training of its soldiers.

Cognitive warfare is the most advanced non-kinetic form of warfare in the 21st century. This warfare can be initiated from any part of the world by means of digital platforms. Major global powers such as the US and Russia use cognitive warfare capabilities extensively. China is also investing substantial resources in the development of AI-related technologies to support cognitive operations.

Academic/Military Writings on Cognitive Warfare

In 2013, the term 'national cognitive security' was coined by Zeng Huafeng of the National University of Defense and Technology (NUDT). In 2014, China's Academy of Military Sciences (AMS) published a book on 'mind superiority'[1] that spoke about the PLA's strategy to conduct 'cognitive warfare'.[2] 'Mind superiority' (制脑权, zhinaoquan) is the goal of the PLA's cognitive domain operations by means of psychological warfare to shape or even control the enemy's cognitive thinking and decision-making.[3] The main strategy of 'mind superiority' is to gain advantage in cognitive domain. The strategy focuses on attacking, weakening, and disintegrating the enemy's will to fight, creating decision-making doubts by using psychological warfare operations. The ultimate goal in the strategy is to 'win without fighting'.[4]

Ceng Qingxiang (曾庆香), researcher at the Institute of Journalism and Communication of Chinese Academy of Social Sciences, distinguishes cognitive warfare from other forms of non-kinetic warfare. He argues that future wars will extend from the five combat fields associated with land, sea, air, space and network, to the cognitive field. The author notes that cognitive warfare is often confused with propaganda warfare, psychological warfare, public opinion warfare, information warfare or cyber warfare.[5]

Propaganda warfare and information warfare only control the flow of information and its target is limited to the soldiers of the enemy state. In the case of cognitive warfare, it also regulates the people's interpretation and response to information, and its targets also include the public of the enemy state. Cyber warfare mainly refers to the attack on the computer or information system by using viruses or malware, whereas, cognitive warfare uses social media networks to spread information to create perceptions among the enemy's population.

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[1] Nathan Beauchamp-Mustafaga, **"Cognitive Domain Operations: The PLA's New Holistic Concept for Influence Operations"**, *China Brief*, Vol. 19, No. 16, 6 September 2019.

[2] Zhao Xuebo (赵雪波) and Liu Xiaoyan (刘晓琰), **"军事传播研究诸论 (Military Communication Research)"**, *PLA Daily*, 2020.

[3] Ibid.

[4] Zhang Guangsheng (张广胜), Li Yongli (李永立) and Wang Haoxian (王浩先), **"浅析认知域作战的基本要义 (A Brief Analysis of the Basic Essentials of Cognitive Domain Warfare)"**, Ministry of National Defense (国防部网), PRC, 8 September 2022.

[5] Zeng Qingxiang (曾庆香), **"Cognitive Warfare is the 'Brain Battle' of Global Digital Communication"**, China Social Sciences Network-*China Social Sciences Daily*, July 2023, Beijing.

Psychological warfare seeks to change and disintegrate the psychology of soldiers whereas cognitive warfare seeks to change the cognition of everyone in the entire country. Public opinion warfare uses the means of mass communication to guide the public opinion whereas cognitive warfare uses the means of interpersonal communication and group communication to shape the cognition of the target population.[6]

In early 2023, Meng Haohan, Lan Peixuan from National University of Defense Technology proposed suggestions that focused on improving China's ability to mould public opinion in the cognitive domain by extending strategic communication (using propaganda narratives and communication strategies to shape cognitive trends), rejecting cognitive offensives (by regularly implementing external propaganda management), and deepening integration of cognitive, physical and information domains.

Meng notes that China's concept of 'national cognitive security' is the security of its cognitive domain, i.e., the social cognition of the Chinese population against the forces that aims to interfere with and control cognition by using artificial intelligence, technologies such as deep fakes, social media robots and precise algorithm. China's national cognitive security is based on an ideological defence line that protects the Chinese establishment as well as the citizens against any propaganda narratives or public opinion warfare in the cognitive domain. Second, he calls for building a firewall for information security to consolidate the tangible defence line of cognitive security. Third, he flags the need to propagate the Chinese propaganda narrative and strengthen cooperation and exchanges and build a new world order, so that China and the new players will have larger role to play.[7]

Zeng Huafeng, Professor at National University of Defense and Technology (NUDT), says seizing the control of the brain in the cognitive space and 'defeating the enemy without fighting' is the highest realm of information warfare. He notes that public opinion and ideology are main areas of cognitive space competition, and information is the main weapon. It can be manipulated by processing and producing information and can have an impact on specific targets. The strategic confrontation of the national cognitive space is persistent.

For China's national cognitive security, Zeng Huafeng suggests major precautionary measures. First, China must strengthen its ideals and beliefs, and stick to its ideological position. In this regard, since 2013, besides party-building, the ideological campaigns under Xi Jinping's leadership also aims to crowd out competing narratives, both within the party and in broader society, to maintain its authority and influence.

[6] Ibid.

[7] Wang Gaoyang, **"认知域下的国家安全 (National Security in the Cognitive Domain)"**, China Social Sciences Network - *China Social Sciences Daily*, 11 July 2024.

Second, China must be vigilant against the origin of historical nihilism, and enhance the self-esteem and self-confidence of the Chinese nation. Since Xi Jinping came into power in November 2012, he has repeatedly emphasised that China must "resist historical nihilism".[8] The Chinese Communist Party (CCP) insists that the spiritual core of the Chinese people must never change, and ideological infiltration of the West into China must be resisted.

Third, China must seek national cultural identity in the collision between Chinese and Western cultures. The Chinese leadership believes that culture is fundamental to a nation's foundation and future. Fourth, China must actively participate in the global governance of cyberspace security, and build a network security system that meets the requirements of country's informatization. Fifth, China must build a system that can ensure basic and applied research on cognitive defence and security domain, and promote the development of related technologies and organisational leadership.

Metaverse is identified as a new frontier of future cognitive warfare. Chen Dongheng (陈东恒), Zhai Chan (翟婵), Feng Yaru (冯亚茹), from Military Political Research Institute of the Chinese Academy of Military Sciences (AMS) note that the essence of the metaverse is a highly developed virtual world that exists in parallel with the real world. The authors note that when virtual technologies such as digital, the Internet, augmented reality and modern communications, blockchain, artificial intelligence, and other technologies develop to a certain stage, metaverse will emerge.

Metaverse can shape human cognitive thinking more comprehensively. They highlight that the important fulcrum of cognitive warfare is strategy and technology. The proportion of technology in cognitive warfare is increasing and its role is becoming prominent. As a complex system integrating multiple cutting-edge technologies, the metaverse has a natural advantage in the use of cognitive warfare.[9] The metaverse constructs a new battlefield space with virtual and real integration and parallel interaction.[10]

Cognitive Threats and Policy Responses

In the 2010s, with the increasing use of the Internet and digital platforms, Chinese citizens were exposed to the ideas and narratives from outside of the mainland. The Chinese leadership felt the need to safeguard the social cognition of its population.

[8] Ding Jinqing, **"'Uncovering' Historical Nihilism, (起底"历史虚无主义)"**, *Guangming Daily*, 6 August 2018.

[9] Chen Dongheng (陈东恒), Zhai Chan (翟婵) and Feng Yaru (冯亚茹), **"元宇宙：未来认知战的新高地 (Metaverse: A New Frontier for Future Cognitive Warfare)"**, Ministry of National Defense Network, PRC, 3 March 2022.

[10] Hou Chunmu (侯春牧) and Wang Yong (王勇), **"元宇宙赋能军事训练方兴未艾 (Metaverse Empowers Military Training in the Ascendant)"**, *PLA Daily*, 16 January 2024.

President Xi Jinping and the CCP were wary of 'Color Revolution'[11] that can be triggered by means of cognitive warfare[12] by targeting the social cognition of the Chinese netizens through digital platforms. In March 2024, Chinese Ministry of Foreign Affairs spokesperson Wang Wenbin stated that "the US has been spreading false information about China in an organized and planned manner for many years, which has become an important means of the United States' cognitive warfare against China."[13]

It is flagged that social media platforms, particularly Weibo and Bilibili, have become important platforms to influence, guide, and even induce and manipulate domestic public opinion and public sentiment among the youth of China.[14] Other analysts flag the dangers associated with the 'Weaponization of Think Tanks'. The need for China to continue to promote the construction of new think tanks with Chinese characteristics, and enhance China's international discourse communication, is flagged.[15] The 20th National Congress of the Communist Party of China in 2022 proposed to strengthen the construction of the all-media communication system and shape a new pattern of mainstream public opinion.[16]

China, therefore, seeks to use its 'public opinion warfare' capabilities and mechanism to counter the anti-China narrative[17] that can interfere with and dominate the social cognition of the Chinese people. The Chinese government is working on building advanced network information systems[18] that can store, process and disseminate data and information to the given target population. China seeks to ensure control on the perceptions created among its citizens on any subject or issues through the control of the information and data disseminated through digital platforms.[19]

The People's Liberation Army (PLA) is also using the virtual reality (VR) simulated technology in military training to strengthen cognitive thinking and physical training of its soldiers.[20] The VR-simulated environment creates various situations for the

[11] Jayadeva Ranade, **"Xi Jinping and CCP Leadership Wary of Colour Revolution before 20th Party Congress"**, Vivekananda International Foundation, 11 June 2021.

[12] Jānis Bērziņš, **"The Cognitive Battlefeld: Exploring the Western and Russian Views"**, Centre for Security and Strategic Research, Paper No. 05/2023, September 2023.

[13] **"特朗普曾授权 CIA 抹黑中国？外交部回应 (Did Trump Authorize the CIA to Discredit China? Foreign Ministry Responds)"**, *Political Affairs*, 15 March 2024.

[14] Sun Jiashan, **"Expert: Cognitive Warfare Has Begun in China's Cyberspace"**, *Global Times*, 28 February 2022.

[15] Wang Wen (王文), **"认知战！智库武器化！中国不可小觑这些新趋势 (Cognitive Warfare! Weaponization of Think Tanks! China Should Not Underestimate These New Trends)"**, *PLA Daily*, 4 July 2024.

[16] Huang Chunyi(姜兴华), **"不断创新：为未来战争中的认知对抗做好准备——全媒体时代的认知对抗与军事传播的责任论析 (Continuous Innovation: Prepare for Cognitive Confrontation in Future Wars - Cognitive Confrontation and Military Communication Responsibility Analysis in the Era of All-Media)"**, *PLA Daily*, 2023.

[17] Dean Cheng, **"Winning Without Fighting: Chinese Public Opinion Warfare and the Need for a Robust American Response"**, The Heritage Foundation, 26 November 2012.

[18] Meia Nouwens, **"China's New Information Support Force"**, IISS, 3 May 2024.

[19] **"How Does Information Flow from the World into China?"**, Centre for China's Economy and Institution, Stanford University, 15 July 2023.

[20] Liu Xuanzun , **"PLA Deploys VR Tech for More Efficient Training"**, *Global Times,* 22 March 2021.

participating troops to think and act accordingly without any risk of physical damage. Such VR military training stimulates participating solder's cognition to respond according to the virtual scenarios and helps develop abilities to face actual combat situation.

Two separate bureaucratic systems—the 'propaganda system', i.e., the Publicity or Propaganda Department of the Chinese Communist Party (中国共产党中央委员会宣传部) established in May 1924, and the 'foreign affairs system', i.e., the Foreign Affairs Commission of the Chinese Communist Party (中国共产党中央委员会外事工作委员会) upgraded in March 2018 from former Central Foreign Affairs Leading Group founded in 1958—manage China's external propaganda.[21]

The Publicity or Propaganda Department of the CCP Central Committee is a comprehensive functional department in charge of ideological work of the CCP Central Committee, and some of its functions include coordinating the work of various central news units and proposing guidelines for the development of propaganda, ideology and culture.[22] The Foreign Affairs Commission exercises general oversight on matters related to foreign affairs.[23] China also announced the setting up of a discourse management system of the CCP in June 2021.[24]

In order to create an ecosystem to support China's research and development in cognitive domain, the Chinese government organises competition in cognitive technology looking for young talents. In 2005, Tsinghua University established the Department of Education's Cognitive Science Innovation Base. Similarly, Peking University and Guizhou University have established disciplines in cognitive sciences at different levels of undergraduate, master and doctoral degrees.

The government has also encouraged Chinese private companies such as Tencent, Baidu and Alibaba to promote research and development of cognitive technology. For the advanced research and development on cognitive sciences, China's National Natural Science Foundation and the National Social Science Foundation are conducting research on cognitive sciences at the government level. The key areas of research include brain-computer interfaces, cognitive science, AI, social computing, among others.[25]

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[21] Clyde Yicheng Wang, **"Changing Strategies and Mixed Agendas: Contradiction and Fragmentation within China's External Propaganda"**, *Journal of Contemporary China*, Vol. 32, No. 142, 2023, 7 August 2022.

[22] **"Propaganda Department of the Central Committee of the Communist Party of China, (中共中央宣传部)"**, Baidu, 2024.

[23] **"Observation on the Organizational System of the Chinese Communist Party's Foreign Affairs System (中共外事系統組織體系觀察)"**, Republic of China, October 2009.

[24] Ryan Ho Kilpatrick, **"Chinese Discourse and Narrative System (中国话语和中国叙事体系)"**, China Media Project, 23 August 2023.

[25] Jiang Minghu (江铭虎), **"Changes in Cognitive Technology and Prospects"**, People's Forum Academic Frontiers (认知技术的变革及前景展望), June 2023.

At the government-level, the Natural Language Processing (NLP) Research Group of the Institute of Computing Technology of the Chinese Academy of Sciences established in 1987[26] is mainly engaged in research related to machine translation, human-computer dialogue, etc.[27] Chinese private companies are also independently developing NLP algorithms. Baidu's NLP algorithm research covers a wide range, involving NLP sub-fields such as deep question and answer, reading comprehension, intelligent writing, dialogue systems, machine translation, semantic computing, language analysis and knowledge mining.[28]

It is recognised that ChatGPT, an artificially intelligent bot powered by NLP, can be applied to the military field. In peacetime, the intelligence compilation system based on ChatGPT technology can serve as a virtual assistant to help analysts conduct data analysis for the massive information on the Internet, so as to improve the efficiency of intelligence analysis and tap into potential high-value intelligence. In wartime, the intelligence compilation system based on ChatGPT technology can automatically integrate a large amount of battlefield intelligence into a comprehensive report on the battlefield situation, so as to reduce the workload of intelligence personnel and improve the intelligence analysis and program planning capabilities of combat personnel in fast-paced battlefields.[29]

PLA writings suggest that China should continuously expand the military application of NLP in machine translation, public opinion monitoring, voice recognition and other fields, develop intelligent mobile terminals and 'language intelligence' battlefield robots suitable for operations of different scales, and help front-line commanders to grasp the ever-changing battlefield information in a timely manner.[30]

Conclusion

China began to identify cognitive attacks as a serious security challenge after the emergence of Color Revolutions in the 21st century. Chinese military strategists recognise that national interests exist not only in physical form but also in the cognitive space. PLA writings reflect that China intends to build its cognitive offence as well as defence capabilities to be at par with its competitors and rivals. 'Mind Superiority' is the goal of the PLA in cognitive domain warfare, based on the principle of 'winning without fighting'.

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[26] **"Building the Chinese Version of ChatGPT, this is the most powerful group of NLP teams and talents in China, (打造中国版 ChatGPT，这是国内最有实力的一批 NLP 团队与人才机器之心)"**, *Tencent News*, 22 February 2023.

[27] **"The Natural Language Processing Research Group"**, Chinese Academy of Sciences.

[28] **"2023 China Natural Language Processing Industry Research Report"**, Qianji Investment Bank, 2 November 2023.

[29] Mao Weihao (毛炜豪), **"人工智能会取代人类主宰战场吗？从 ChatGPT 看人工智能的军事应用 (Will Artificial Intelligence Replace Humans to Dominate the Battlefield? Looking at the Military Application of Artificial Intelligence from ChatGPT)"**, *PLA Daily*, 13 April 2023.

[30] Wu Xiaojian Liang Xiaobo, **"为国防语言打造"智慧大脑", (Building a "Smart Brain" for National Defense Language)"**, China Military Network, Ministry of National Defense Network, 5 October 2021.

About the Author

Dr. Abhishek Kumar Darbey is Associate Fellow at the Manohar Parrikar Institute for Defence Studies and Analyses, New Delhi.

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Manohar Parrikar Institute for Defence Studies and Analyses
1, Development Enclave, Rao Tula Ram Marg
New Delhi 110 010 India
T +91-11-2671 7983 F +91-11-2615 4191
www.idsa.in
Twitter @IDSAIndia
www.facebook.com/ManoharParrikarInstituteforDefenceStudiesAnalyses