COGNITIVE WARFARE: CHINA'S EFFORT TO ENSURE INFORMATION ADVANTAGE

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In the "post-truth era," people are guided more by emotions than truth.

—People's Liberation Army Daily, July 7, 2022

Introduction

Cognitive warfare is not a new concept; the United States and its allies use the term loosely to discuss information and cyberspace operations. However, China's views on the significance of cognitive warfare to future operations, as well as recent publications by the People's Liberation Army (PLA) regarding its application, provide perspective on China's expectations for success.

Taiwanese researchers Tzu-Chieh Hung of the Institute for National Defense and Security Research and Tzu-Wei Hung of the Institute of European and American Studies describe cognitive warfare as activities undertaken to manipulate environmental stimuli to control the mental states and behaviors of enemies as well as followers in both hot and cold wars.[1] They further contend that there is one key and distinct difference between cognitive warfare and cyberspace or information warfare—while each may produce effects on human cognition, only cognitive warfare weaponizes neuroscience and targets brain control. Figure 1, on the next page, is an illustration of this conceptual relationship between cognitive warfare and other types of warfare.

Weaponizing Brain Science

The idea of brain control may conjure images of Star Trek's Mr. Spock performing his telepathic "mind meld" to gain information; however, it is a growing concern for the Department of Defense. As early as 2008, the National Research Council of the National Academies of Science reported that brain sciences showed potential for military and warfare applications.[2] A 2017 Joint Chiefs of Staff white paper includes the following observation from Georgetown University's Dr. James Giordano: "Brain sciences can also be employed to mitigate or prevent aggression, violence, and warfare by supplementing HUMINT [human intelligence], SIGINT [signals intelligence], and COMINT [communications intelligence] (in an approach termed "neuro-cognitive intel": NEURINT)."[3] Some of the world's largest corporations, use the term "brain hacking" to refer to their ability to compel a user of digital media to return over and over again. Hacking a mental state is easier when the information or disinformation appeals to existing fears and anxieties.[4]

In Giordano's chapter of the Joint Chiefs of Staff white paper, he suggests brain science can be both a soft and hard weapon.

> *As a "soft" weapon, brain science can be used to foster power, which can be variously leveraged: from economic fortitude through exertion of effects upon global markets to impact nation states and peoples, to providing information and tools to more capably affect human psychology in engagements of and between agents and actors. Brain science can also be (dually or directly) developed and utilized as "hard" (e.g., chemical, biological and/or technological) weapons. These include pharmacological and microbiological agents, organic toxins, and devices capable of altering functions of the nervous system to affect thought, emotion, and behaviors.*[5]

Reporting from academia suggests Russia, Iran, and North Korea have all been researching similar applications as far back as 2010, with little to no restriction on development. Current data suggests, of all our adversaries, China may be leading the way in theory and practice. [6]

The Jamestown Foundation reports that PLA theorist Zeng Huafeng defines cognitive space as "the area in which feelings, perception, understanding, beliefs, and values exist, and is the field of decision-making through reasoning."[7] He further identifies four tactics to win the cognitive fight:

1. *"perception manipulation" through propaganda narratives.*
2. *"cutting off historical memory" so that targets will be open to new values.*
3. *"changing the paradigm of thinking" by targeting elites to change their ideology.*
4. *"deconstructing symbols" to challenge national identity.*[8]

In March 2022, Colonel Li Minghai of the PLA National Defense University (NDU), National Security College War and Crisis Response Training Center authored an article discussing cognitive warfare as it applies to the conflict in Ukraine. Li describes Russia's use of neuroscience, new information technologies (such as big data and artificial intelligence), mass communication channels, as well as platforms to execute cyberspace, psychological, public opinion, legal, and other forms of information warfare. Li's article highlights the level of interest these activities are generating within the PLA. He is particularly interested in Russia's effectiveness at influencing adversary thought processes and ideology through propaganda dissemination, population indoctrination, and adversary culture and value system infiltration.[9]

Cognitive warfare is also gaining senior level attention within the Chinese Communist Party. There discussions center around the use of artificial intelligence to secure an information advantage. "Qi Jianguo, former Deputy Chief of Staff of the PLA, has stated that those who gain the upper hand in developing new-generation artificial intelligence technologies will be able to control the lifeline of national security: human cognition."[10] Influencing human cognition and the will of the opponent will create a strategically favorable environment or subdue the opponent without a fight.[11]

Members of the Chinese Academy of Military Sciences share Jianguo's belief that it is possible to influence an adversary's will. Chen Dongheng, a researcher at the academy, wrote cognition is based on "perceptions, identification, analysis, judgment, decision-making, and the selection of objective things, . . . the facts fully show that data can be manipulated, information can be mixed with water, 'truth' can be shaped, and human hearts can be influenced."[12] The idea of breaking an adversary's will without fighting is nested in the teachings of Sun Tzu, reinforcing the conviction in committing resources towards this end state.

Competition of Truths

In July 2022, the Center for Naval Analyses provided assessments of two pieces published by the *PLA Daily*, a Chinese military publication. The PLA believes the effectiveness of cognitive warfare relies on telling partial truths, which create a misleading picture, allowing the targets to draw inaccurate or inconsistent conclusions. This will drive conflict over what American media frames as personal truths. The PLA sees three strategies for winning the "competition of truths." They include:

- **Focus on positive outcomes:** Because the human brain pays attention to results and ignores background information, messaging should focus on a positive result rather than the difficulties or errors made in the process of getting to that result.[13]
- **Focus on numbers:** The human brain finds it easier to accept facts based on numbers. Using numbers and statistics, regardless of the accuracy or context, supports the narrative.[14]
- **Focus on the characterization of the issue:** Justify actions by characterizing them in a positive light that hides their true nature. Ends justify means.[15]

Other contributors to the *PLA Daily* suggest that the best way to view success in the domains is to apply the physical domain to the destruction of the enemy forces, use the information domain to secure advantage, and employ the cognitive domain as the means for achieving all out victory.[16]

The PLA approach to cognitive warfare tends to follow several key concepts:

- Effects of cognitive warfare are directed at and measured by human emotion.
- Success requires a variety of levels and types of professional experience applied against a common goal.

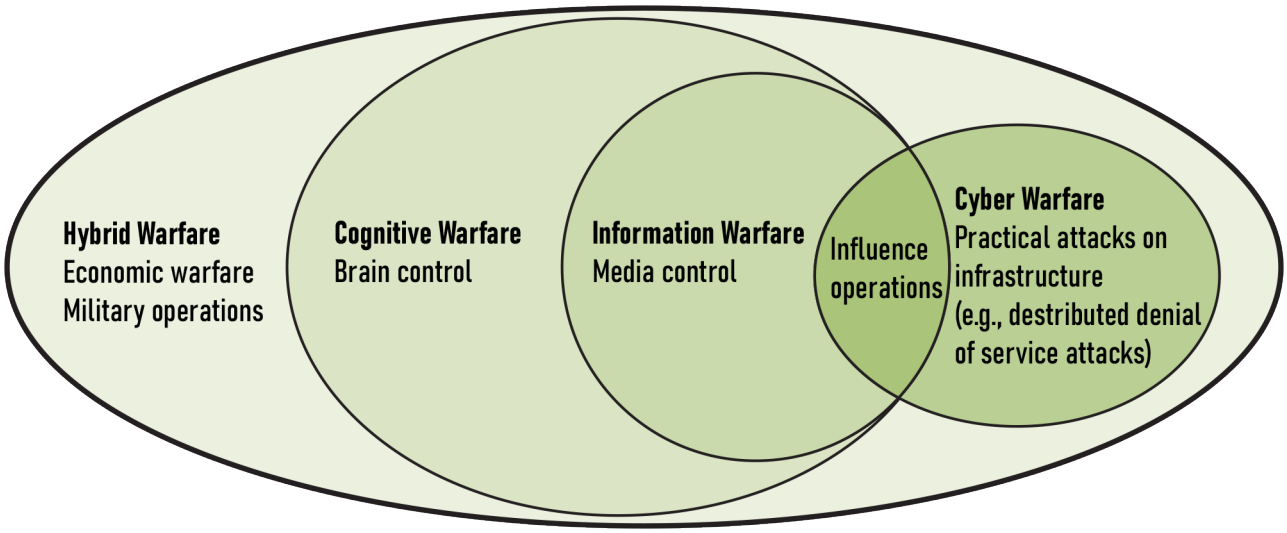


Figure 1. Cognitive Warfare Conceptual Relationships[17]

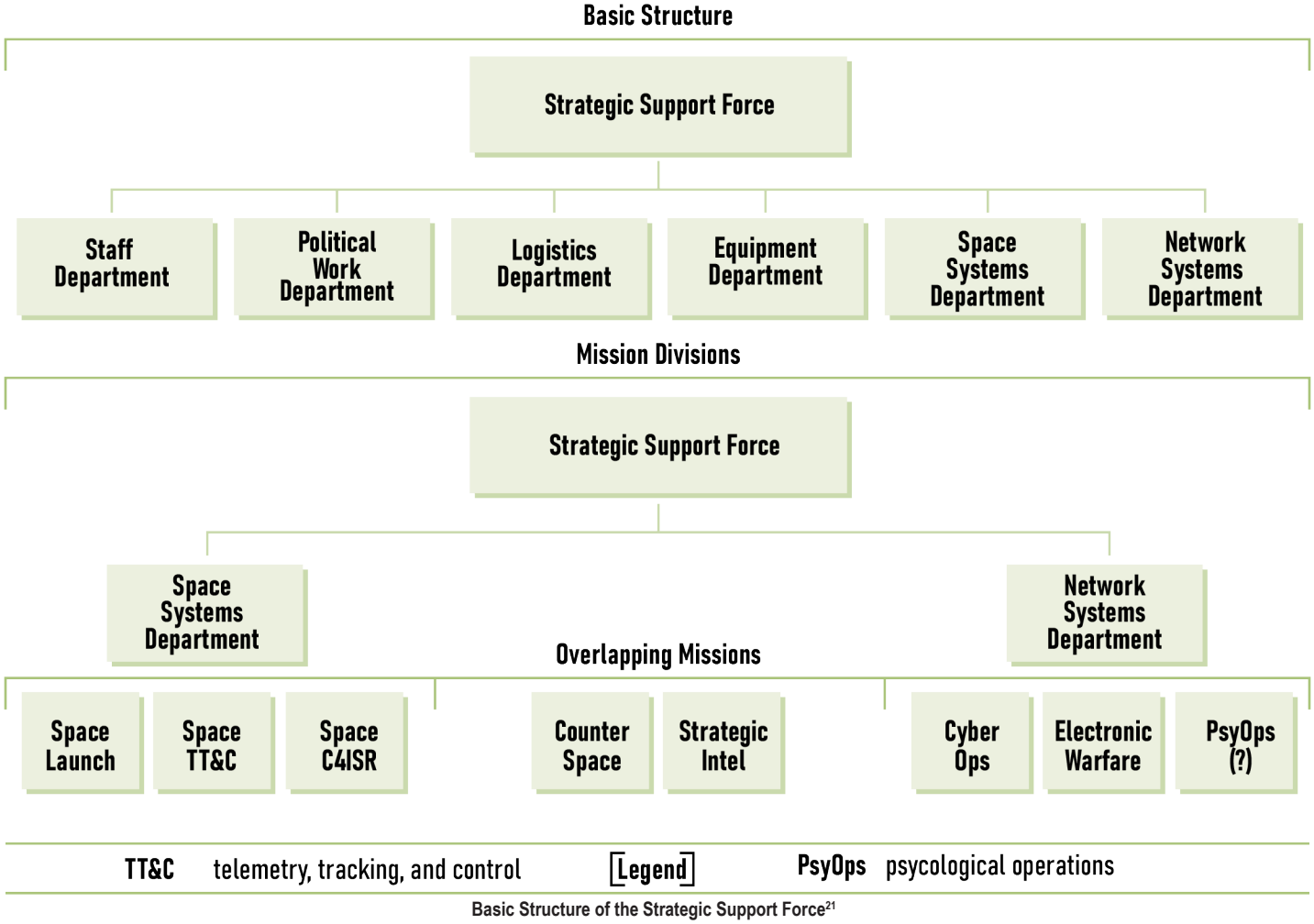
- ✦ Media and psychology professionals along with intelligence and cyber experts will collaborate with educators, researchers, and big business.
- ✦ Value is placed on decentralized lines of effort on a unified message or objective.

Other foundational concepts for the PLA include shaping the situation through unified messaging along with deterring the adversary and controlling the tempo and scale of warfare. Leaders must seize the initiative in defining the narrative, shaping legal issues to their advantage, and securing the moral high ground before conflict starts. Cognitive warfare should complement and support conventional strikes against command and control, reconnaissance, and early warning systems. The PLA anticipates this unified effort and focus will hasten political disintegrations and reduce military and civil will, defeating an adversary without a fight.[18]

Strategic Support Forces

Given the Chinese Communist Party's commitment to applying cognitive warfare in conjunction with artificial intelligence development at a strategic level, it is not surprising that the PLA has experienced significant restructuring as it establishes a higher headquarters and operational organizations to support the transition. A Brookings Institute report on the PLA Strategic Support Forces (SSF) indicates "of the 12 major military applications of artificial intelligence that China is developing, at least five are integral to the SSF's mission: intelligent satellites; intelligence, surveillance, and reconnaissance (ISR) software; automated cyberspace attack software; cognitive electronic software; and possibly autonomous vehicles."[19]

Created in 2015, the PLA SSF's structure offers some insight into the scale of investment China is making at the national level because they are integrating multiple organizations and strategic functions under one command. The SSF is comprised of two divisions that encompass the Space Systems Department, home to all space-related missions, and the Network Systems Department, which houses the PLA's information warfare activities. The 311 Base is a prime example of this restructuring. It previously belonged to the General Political Department and focused directly on political and psychological warfare. A special report from the NDU asserts, "Integrating the 311 Base's operational forces with the SSF's space, cyber, and electronic missions empowers psychological operations forces with cross-domain intelligence and helps maximize the impact of information operations on an adversary's psychology."[20]



Basic Structure of the Strategic Support Force[21]

The NDU report also discusses the broader level of influence and operational control of the SSF compared to U.S. Cyber Command. "The SSF's Network Systems Department…is responsible for a much broader range of operations, including kinetic, cyberspace, space, electromagnetic, and psychological operation."[22] "The SSF's structure is first and foremost intended to create synergies between disparate information warfare capabilities to execute specific types of strategic missions that Chinese leaders believe will be decisive in future warfare."[23] This unity of command, planning, and force development provides significant inroads in coordinating complex cognitive warfare campaigns. Command and control is critical when considering that, in addition to its strategic information support role, the SSF is the primary force for information warfare within the Chinese military. They have responsibility for achieving information dominance across the competition continuum, from competition to crisis to armed conflict. "Under its pre-reform organizational structure, the PLA would have been required to transition to a wartime posture just prior to the outbreak of war (or immediately following it, if China were taken by surprise)."[24]

The Question of Taiwan

Taiwan provides the most insightful example for evaluating China's cognitive warfare operations. In 2017, the Global Taiwan Institute reported on the role of Base 311 (also called 311 Base) operations directed against Taiwan. The work points towards employment of three types of warfare (public opinion, legal, and psychological) and uses China's Huayi Broadcasting Corporation (CHBC) to explain. CHBC focuses on content related to Taiwan, including the Voice of the Taiwan Strait. CHBC identifies as seeking to "promote Chinese culture" and emphasizes that "cohering compatriots' feelings" is the company's abiding purpose. Assessments of reporting suggest coverage of Taiwan is routinely negative, often highlighting political contention and social issues.[25]

The messaging campaign, "Independence means war for Taiwan," is another example of China's cognitive warfare. This consistent and unified campaign has influenced public perception over the last 5 years. According to polls conducted by the Taiwan National Security Survey, in 2017, only 41.3 percent (23 percent agree, 18.3 percent definitely agree) of Taiwanese respondents believed that China would attack if Taiwan declared independence. However, at the end of 2020, as many as 61.8 percent (28.6 percent agree, 33.2 percent definitely agree) of people believed that China would attack if Taiwan declared independence.[26]

Editorial and opinion pieces from Chinese-controlled media, such as the *Global Times*, reinforce this message in English as well. Clearly, this is directed at U.S. public opinion and is intended to stir divisiveness in U.S. politics. A July 2022 piece by Yu Ning went as far as to claim the United States was using cognitive warfare:

> *The US has defined China as a strategic competitor and the Taiwan question is only a card used by the US to suppress China. The biggest thorn in the US' side is the great rejuvenation of the Chinese nation and China's rise, which may make the country replace the US as the leading global power. Therefore, launching a cognitive warfare campaign to hollow out the one-China policy is one of the US strategies.*[27]

Content farms on the internet complement this type of disinformation, reinforcing and unifying the message across domains. From 2017 to 2018 Huawei targeted the Taiwanese public with many misleading messages. They disseminated fake news on social media websites that was subsequently commented on and forwarded by large numbers of Kuomintang party supporters in Taiwan. The China-friendly information space affects Taiwan's readers without their awareness. Google's search engine optimization in traditional Chinese is also managed. Search results send readers to posts and sites that reinforce the China-friendly messaging.[28] By delivering information with the greatest breadth and depth possible, it increases the chance of creating the sensory effect either consciously or unconsciously. This could affect audiences' cognitive space in the long term. Similar techniques are common in commercial advertising, especially through digital mediums.

Conclusion

China is continuously testing and enhancing cognitive warfare across all domains. The PLA has developed strategic oversight and implemented tactics and techniques that allow measurement of success. It plans to continue to evaluate adversary capabilities, strengths, and weaknesses and will seize opportunities to exploit vulnerabilities. This is apparent from an August 2022 comment in *PLA Daily*: "By integrating national resources, strengthening strategic communication, using cognitive momentum to amplify the effects of political disintegration, economic sanctions, diplomatic offensives, and cooperation with the target object by multi-dimensional pressure of military action, we strive to defeat the enemy without fighting."[29]

Epigraph

"叙事较量: '后真相时代' 的认知战" [Narrative Contest: The Cognitive Battle in the 'Post-Truth Era'], *PLA Daily*, 7 July 2022, http://www.81.cn/jfjbmap/content/2022-08/23/content_322554.html, trans. and quoted in Kevin Pollpeter and Amanda Kerrigan, "Intelligent Warfare," *The China AI and Autonomy Report*, no. 19 (July 28, 2022): 3, https://www.cna.org/our-media/newsletters/china-ai-and-autonomy-report/issue-19 (hereafter cited as Narrative Contest).

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