

A War by Words

Language and Cultural Understanding in the Age of Information Warfare

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“General, we’ve lost access to China’s strategic surface-to-air missile network,” reports an Air Force Cyber colonel.

“How bad is it?” she asks.

“Game changing,” he responds sullenly. “They switched to a new Chinese-based programming language. We don’t have enough experts in the language, much less the code. Machine translation only takes us so far.”

“Well . . . that’s not the antiaccess problem I thought I’d be facing.”

The fictional account above illustrates where the Department of the Air Force (DAF) could find itself in this new decade. It is possible that the DAF will develop the technical ability to exploit enemy systems but not possess the language expertise to make use of the information. More than a theoretical possibility, the People’s Liberation Army (PLA) started developing a Chinese-based operating system in 2019.¹ The PLA’s knowledge of US systems, language, and culture gives it asymmetric leverage against the United States. The USAF has responded to the situation by establishing the 16th Air Force to lead operations in the information environment. In the future, the DAF must also increase its linguistic and cultural competency to ensure the service is eliminating vulnerabilities.

This article will analyze the historical role of language in China’s interactions with the outside world and the role language plays in modern US–China competition. We will also explain how the Air Force can use the Language Enabled Airman Program (LEAP) to bolster the ability of the 16th Air Force and Pacific Air Forces to dominate in the information domain, thereby playing an important role in countering China’s whole-of-society approach to great-power competition.

Language Is the Source Code

Language comprehension is essential to understanding how societies function, and Chinese society is no exception to this rule. Chinese language competency is

the *sin qua non* for developing an intimate grasp of the Chinese people's extensive history, culture, and way of life. The policies various emperors have held toward foreigners learning Chinese demonstrates this fact. An incident from the reign of the Qianlong Emperor provides an excellent example.

Following the arrival of Western merchants in China, Qing dynasty officials sought to prevent Europeans and Americans from expanding their trading missions in China by keeping foreign trade relegated to Canton (Guangzhou). In 1759, the British merchant James Flint challenged this policy by traveling to Tianjin to argue for the enforcement of customs laws in Canton and to petition for a new trade port in Zhejiang Province. Although Flint had learned Chinese during his many years in China and earned a living from interpreting for the British East India Company, he solicited assistance in drafting a formal written petition to the Qing court. A Sichuanese businessman named Liu Yabian helped Flint write the petition, and a Fujianese merchant named Lin Huan provided editing services. Although the Qianlong Emperor found Flint's complaints valid, what he found most abhorrent was that two of his subjects had aided a foreigner in writing a petition in Chinese. The emperor sentenced Flint to three years in prison in Macau and had both Liu and Lin executed. Following the "Flint Incident," the Qing court implemented the "Precautionary Regulations against Foreign Barbarians" (防范外夷规条) to further control trade with the outside world.²

The prohibition against teaching Chinese to foreigners would last until 1844, when the United States compelled the Daoguang Emperor to sign the Treaty of Wangxia (one of the "Unequal Treaties"), following the First Opium War.³ Article 18 of the treaty states, "It shall be lawful for officers or citizens of the United States to employ scholars and people of any part of China . . . to teach any of the languages of the Empire, and to assist in literary labors . . . and it shall in like manner be law-ful for citizens of the United States to purchase all manner of books in China." Americans could now access the Chinese language, the source code to the Celestial Empire. However, in the 176 years since the Treaty of Wangxia was signed, the United States has failed to institutionalize the instruction of Chinese in our educa-tion system. This has left us at a strategic disadvantage.

This is ironic, because unlike the harsh protocols of the Qianlong Emperor, Chinese president Xi Jinping has adopted policies to make it easier than ever for foreigners to learn Chinese. Today, Beijing funds Confucius Institutes to teach the Chinese language abroad and spends millions of dollars for foreigners to study in the People's Republic of China (PRC). In 2018 alone, the Chinese government spent 469 million USD providing scholarships for foreigners to study in China.⁴ Although the US government has made many efforts to incentivize Americans to learn this strategic language, little progress has been made.⁵

An Educational Imbalance

Because the Chinese education system places great importance on learning English, the PRC is at a distinct advantage when it comes to information warfare with the United States. In 2015, it was estimated that only 200,000 Americans (of a population of 328 million) were studying Chinese, while between 300 and 400 million Chinese (of a population of 1.4 billion) were studying English.⁶ Of all Chinese citizens who learn a second language, over 90 percent studied English.⁷ Moreover, each year, more than 300,000 Chinese students study at American universities, some learning from our top digital experts.⁸ In comparison, the number of Americans studying abroad in China has remained relatively flat over the last decade, only rising from 11,064 in 2007 to 11,910 in 2017.⁹ When it comes to developing linguistic talent, it is clear that the PRC is developing more talent in English than the United States is in Chinese.

The Chinese Communist Party exploits this imbalance to compete in the information space, supporting hard-, soft-, and sharp-power strategies that are enabled by a large pool of individuals with English language proficiency.¹⁰ This is especially prevalent in economic competition and enables the exploitation of sensitive business information of American companies. Overtly, foreign firms are often required to partner with a local Chinese company for market access.¹¹ Technology transfers are frequently required as well, which has expedited China's industrial development in many sectors. Covertly, China has used its espionage apparatus to target American firms, stealing billions of dollars in intellectual property to benefit Chinese companies. The 2017 Intellectual Property Commission Report states that trade secret theft costs the US economy between 180 billion and 540 billion USD (1–3 percent of GDP) annually and labels China as the principal violator.¹² This state-backed theft of sensitive data led to US Department of Justice (DOJ) indictments against Chinese hackers in 2014, 2018, and 2020.¹³ It is important to note that in many of these cases, some degree of English language proficiency is required to exploit the acquired trade secrets. What is being stolen is not a physical item—it is information that must be interpreted, contextualized, and utilized for gain. While economic competition might not necessarily be an area in which Western militaries frequently operate, Beijing employs a whole-of-society approach to competition, utilizing PLA hackers to steal American trade secrets and intellectual property.¹⁴

This competition also extends to the American healthcare sector, where Chinese researchers frequently collaborate with American counterparts on sensitive projects. In August 2018, the National Institute of Health (NIH) started a broad investigation into fraudulent grant applications. According to the *The Economist*,

as of January 2020, “The National Institute of Health says that it has identified 180 researchers to whom it has provided grants who may not have disclosed payments from, or other affiliations with, Chinese institutions—including some who appear to have established ‘shadow labs’ in China mirroring their NIH-funded ones in America.”¹⁵ As of June 2020, the American Association for the Advancement of Science says that 54 scientists have been fired or have resigned as a result of an investigation by the NIH into grantees failing to disclose financial ties to foreign governments.¹⁶ Of this group, 93 percent received hidden funding from Chinese institutions. The investigation has targeted 189 scientists at 87 institution, with another 399 individuals being listed as “persons of concern.” One of the most notable figures to fall was Dr. Charles Lieber, the chairman of Harvard’s Department of Chemistry and Chemical Biology. In January, Lieber was arrested on a criminal complaint for not disclosing payments made to him as part of China’s “Thousand Talents” program. According to the DOJ, the Wuhan University of Technology (WUT) “paid Lieber \$50,000 USD per month, living expenses of up to \$158,000 USD at a time, and awarded him more than \$1.5 million USD to establish a research lab at WUT.”¹⁷

The NIH probe indicates systemic Chinese exploitation of the American healthcare research sector at a time when COVID-19 has placed medical research at the center of US–China geopolitical competition. However, Chinese competition with the United States permeates many other aspects of the bilateral relationship as well. In 2018, FBI Director Christopher Wray stated that China poses a “whole-of-society threat,” and that counteracting such efforts would require a respective whole-of-society response from the United States.¹⁸ To be successful, the United States will need a larger pool of Chinese speakers to compete effectively. Below, we will explain how the DAF can contribute to this effort.

The Air Force Responds

The 2018 US *National Defense Strategy (NDS)* argues that the US Department of Defense (DOD) must develop a competitive mind-set that allows us to “counter coercion and subversion” and “out-partner” our competition.¹⁹ The document clearly defines China, Russia, North Korea, Iran, and nonstate actors as Washington’s primary competitors. In terms of economic weight, population, and technical capabilities, the PRC is the United States’ most capable challenger. Although military hardware—such as aircraft carriers, satellites, and infantry fighting vehicles—still have their place in great-power competition, we currently remain below the threshold of armed conflict. We find ourselves in what appears to be a nascent cold war, with nonkinetic skirmishes already being fought through the medium of information warfare.

Information warfare is a broad field, encompassing the generation, use, manipulation, and elimination of data at the tactical, operational, and strategic levels of competition and conflict. Off the battlefield, information warfare includes efforts such as research, the protection of national security information, countering disinformation, and building an educated population less susceptible to adversary information operations. Governments will also utilize radio, newspaper, the Internet, and other mediums of communication to disseminate disinformation, thereby distracting competitors. On the battlefield, information warfare includes secure communications, jamming, military deception, intelligence collection, and cyberoperations. Success in information warfare depends heavily on language competency and cultural understanding.

To be effective in this rapidly changing information environment requires a coordinated effort and a range of skills. In 2019, the USAF established the 16th Air Force to adapt to this reality, conscientiously constructing a force for information warfare competition.²⁰ The 16th Air Force unites numerous career fields that operate in the information environment under a single operational commander. These specialties include intelligence, electronic warfare, information operations, cyberoperations, information technology, and meteorology. This structure allows a broad array of capabilities to converge on a given problem set. For example, linguists are now working alongside cyberoperators and information operations specialists to solve difficult problems.

No matter how well-structured, the DAF requires linguistic and cultural expertise to succeed in information warfare. A first step in the right direction came in 2005, when the DOD directed the USAF to establish the Air Force Culture and Language Center (AFCLC) to meet the demand for linguistic and cultural competency in the Middle East.²¹ The USAF recognized that the ability to understand, show respect to, and operate with our partners in the Middle East and Europe is key to successful operations in those theaters. The same principle applies to the US Indo-Pacific Command's (USINDOPACOM) area of responsibility. As Chief of Staff of the Air Force General C.Q. Brown stated in the DAF's *Journal of Indo-Pacific Affairs*, "Strengthening alliances and partnerships is the first line of effort in PACAF [Pacific Air Forces] for two reasons. Relationships provide the United States with a distinct asymmetric advantage over our adversaries and directly contributes to the collective ability to deter aggressive actions."²² Language skills are more important than ever in today's great-power competition with China. The AFCLC is a key player in equipping the Air Force for great-power competition by improving the service's linguistic and cultural competencies, which will allow us to survive and thrive in the Pacific century.

The AFCLC's flagship training initiative, known as the Language Enabled Airman Program, or LEAP, is a career-long program open to those who apply with a rudimentary understanding of a foreign language. LEAP includes college-level language courses and language immersions that typically range from 24 to 28 days. If Airmen complete the required courses and achieve high enough scores on the standard language tests, they can receive up to 500 USD per month for a single language, and up to 1,000 USD per month if the individual is proficient in more than one language.²³ Currently, 3,235 DAF service members (approximately 1 percent of the active duty force) are members of the LEAP.²⁴

The LEAP has been very successful, but it must grow to adapt to new challenges. It is open to enlisted members and officers alike, providing a meaningful learning opportunity. DAF leaders of all ranks should seek ways to get more "information warriors" involved in the program. As the home of information warfare Airmen, the 16th Air Force should be a key recruitment priority for the LEAP. DAF service members serving in USINDOPACOM should be a priority as well. Additionally, the AFCLC should take steps to increase participation more broadly. One key initiative should be to develop a college credit system that provides a path to an associate's or bachelor's degree in a foreign language. Degree programs offer prestige, recognition outside the DOD, and durable benefits to the member. As a program designed around personal initiative, the LEAP competes with required professional military training and degree programs for resources and members' time. Providing a route to college credit will further incentivize participation.

Language Skills Enable More Effective Competition

In this new era of great-power competition, we must learn from past lessons by developing a language-enabled information warfare force for the future. The DAF should increase its use of the LEAP to ensure we succeed in this objective today and in the coming decades. If the DAF thinks strategically and provides greater resources for developing language-enabled service members, the opening scene in this article will remain fiction and not an operational reality. ✪

Acknowledgment

The authors would also like to thank Maj Charlynn McGinnis (LEAP-Tagalog); Maj Brian Thorn (LEAP-Spanish); Capt Nancy C. Chavez (LEAP-Spanish & French); and Capt Sarah "FIGHT" Broadbent (LEAP-Arabic) for their significant contributions to this article.

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Notes

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