Intelligence in Public Media

Chinese Industrial Espionage: Technology Acquisition and Military Modernization
William C. Hannas, James Mulvenon, and Anna B. Puglisi. (Routledge, 2013), 378 pp.

Reviewed by Arturo G. Munoz

Chinese Industrial Espionage: Technology Acquisition and Military Modernization provides the most thorough and insightful review to date of the covert and overt mechanisms China uses to acquire foreign technology. Delving into China's "elaborate, comprehensive system for spotting foreign technologies, acquiring them by every means imaginable and converting them into weapons and competitive goods," the book concludes that "there is nothing like it in the world." (2-3) The People's Republic of China (PRC) is implementing "a deliberate, state-sponsored project to circumvent the costs of research, overcome cultural disadvantages and 'leapfrog' to the forefront by leveraging the creativity of other nations," thereby achieving "the greatest transfer of wealth in history." (78, 216)

Although PRC espionage is global in scope, the most important target is the United States. Relying primarily on Chinese-language government and non-government sources, the coauthors intend to raise awareness of the threat nationally and alert decisionmakers to the gravity of the problem. Trained as Chinese linguists, with considerable experience dealing with Chinese affairs, they are uniquely qualified for the task. William C. Hannas has a Ph.D. in Asian languages, published two books on Asian orthography and served in various US government posts, including at the Joint Special Operations Command. James Mulvenon is a leading expert on Chinese cyber issues and has published widely on China's military affairs and communist party-army relations. Senior analyst Anna B. Puglisi studied in Beijing and subsequently was a visiting scholar at Nankai University, where she studied China's science and technology (S&T) policies and infrastructure development.

The main topics are human intelligence (HUMINT) and open source intelligence (OSINT), but cyber espionage is defined briefly as "the latest and perhaps most devastating form of Chinese espionage," with the potential to "erode the United States' long term position as world leader in S&T innovation and competitiveness." (216–17) To begin its HUMINT review, the book reviews and debunks commonly-held assumptions about Chinese clandestine tradecraft put forth in previous works such as *The Tiger Trap: America's Secret Spy War with China*: [a]

- The "thousand grains of sand" approach relying on large numbers of amateur collectors

- Preference for elicitation of secrets or "inducing people to give them away" rather than paying for them as part of a traditional agent-case officer relationship

- Preference for ethnic Chinese agents

- Preference for using "good" or normal people without flawed or vulnerable personalities

- Eschewing traditional tradecraft (188)

The authors conclude that Chinese case officers employ the same methods as other nations, including paying for information. They also argue that the prevalence of ethnic Chinese agents does not mean that they are always preferred. China wants to recruit many more non-Chinese agents, but simply has failed to do so. However, *Chinese Industrial Espionage* is so eager to discredit "urban myths" that the book downplays a significant caveat: China does complement standard tradecraft with non-traditional techniques. Citing senior FBI counterintelligence officers, *Tiger Trap* insists that "China has a different approach to intelligence," which helps explain why Chinese case officers are rarely caught spying.[b] Instead, China "co-opts some of the thousands of students, tourists, business travelers, trade delegations, and scientists who visit the United States every year" and manipulates visitors to

a.David Wise, *Tiger Trap: America's Secret Spy War with China* (Houghton Mifflin Harcourt, 2011)
b.Ibid, 12.

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China to reveal secrets inadvertently in meetings ostensibly intended to "exchange ideas and solve problems."[a]

Despite the damage done by the Chinese efforts, *Chinese Industrial Espionage* emphasizes that little of the technology transfer program is secret. On the contrary, "the projects are laid out in policy documents, discussed in the media, and implemented through venues whose general features are open to inspection." (2) In this sense the book's title is misleading. A large part of it does not deal with espionage per se, but with overt mechanisms, according to the six categories set out in the book:

1. International research and development (R&D) in China

Beijing encourages multinational corporations to conduct R&D in China as a means to promote domestic technological innovation. Increasingly, key firms are complying for their own self-interest; Microsoft's Chinese R&D center produces many patents.

2. National technology transfer centers

Led by the China Association for Science and Technology (CAST), these centers link prioritized industries and companies to "a three way alliance of business, universities and research institutes." (93–94) The US chapter of CAST works "to establish cooperative relations with American corporations, enterprises, institutions and organizations…in seeking funds, market development, technology transfer and investment opportunities." (111)

3. Advocacy groups based in the United States

Supported by Chinese diplomats, advocacy groups arrange for American delegations to visit China to market technology or engage in joint ventures. The Washington DC Center for US-China Technology Innovation and Development and its affiliates "spot new US technology, find PRC customers for it, determine how to pass the technology to China in a cost-effective way and help the projects get off the ground." (116–17) Groups in California predominate. Silicon Valley Chinese-American Computer Association members have brought computer technology to Taiwan and China and produced hardware exported back to the United States. (128) Silicon Valley Chinese Overseas Business Association members advise national, provincial and municipal governments in China, where

"they assist and participate in planning and policymaking for the development of China's high-tech industry," while the Silicon Valley Chinese Engineers Association aims to establish "channels to allow members to engage in China's rapid economic development." (122–26)

4. Employment of foreign subject matter experts in China

The China Association for the International Exchange of Personnel "invites experienced foreign specialists to China to solve technical and management problems for Chinese industry" through symposiums held in the United States and other venues. To that end, the State Administration of Foreign Experts Affairs maintains a data base to identify and contact appropriate experts. As a result, about 440,000 foreign experts work in China annually, half from the West and Japan. (79, 80, 95)

5. Monitoring and use of "returning" Chinese students and scholars

Numerous organizations provide assistance for foreign study, followed by practical exploitation of the acquired knowledge. The North American Chinese Scholars International Exchange Center, based in McLean, Virginia, maintains a "database of talented personnel" to select US-based Chinese scholars whose skills match the "concrete personnel needs" of industries in China. (115) The ethnic nationalist appeal is so strong that some respond to it even though they have not lived in China. The PRC declares that "Chinese students overseas have strong patriotic feelings and a fervent desire to serve their country.... The way in which they can do this includes holding concurrent posts or part-time positions in China, carrying out cooperative research projects with scientists or institutes in China, traveling to China to give lectures, participating in academic and technical exchanges, establishing companies in China, providing consulting services, acting as intermediaries." (97–99, 155) *Chinese Industrial Espionage* points out that many returning students do not adjust well to Chinese bureaucracy, rampant academic plagiarism, inadequate health insurance, pollution and high rents.

6. Contributions of "overseas Chinese" professionals

According to a senior Chinese engineer in the Silicon Valley: "I think if we quit America and went entirely back to China, China's development would halt… America is the base that will allow China to develop." He adds that

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a. Ibid, 13

"China regards those of us living overseas as essential. It extends a hand to us, encourages us to make the results of our research blossom on Chinese soil. It also asks us for know-how to develop its market." (125–26) Surpassing that advisory role, the Union of Chinese American Professional Organizations relocates enterprises to China. Chinese university alumni associations with many thousands of members in the US constitute another important venue. An Overseas Chinese Affairs Office gathering in Los Angeles described such attendees as "people who live abroad but whose hearts and minds belong to China." (108–10, 113)

7. Open source collection (OSINT)

The PRC reorganized the entire system to achieve greater efficiency in "collecting, transmitting and managing foreign languages, text, voice, images, tables and data," keyed to intelligence requirements. (23) Dissemination of technological information is augmented by profiles of foreign organizations and persons with access to that information. China's "spy manual," *Sources and Methods of Obtaining National Defense Science and Technology Intelligence,[a]* stresses that OSINT should be

carefully targeted, metrics-based on customer feedback, and include all types of media. Extraordinary attention is devoted to cataloging and indexing data to provide it to users in industrial, commercial, scientific or military sectors via a vast system of libraries, Internet web sites and national and local level S&T organizations.[b] *Sources and Methods* compares the advantages of openly available materials in the United States from corporate, civilian government and military sources. Readers are made aware of possible declassification errors by US agencies, which in the past have yielded highly useful data. Regarding classified data, *Sources and Methods* counsels:

> *A common saying has it that there are no walls that completely block the wind, nor is absolute secrecy achievable, and invariably there will be numerous open situations in which things are revealed, either in a tangible or intangible form. By picking here and there among the vast amount of public materials and accumulating information a drop at a time, often it is possible to basically reveal the outlines of some secret intelligence. (28)*

As the authors of this impressive work have shown, in Chinese industrial espionage, overt and covert collection meld.

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a. *Sources and Methods* was published in 1991 in Beijing by Kexue Jishu Wenxuan Publishing Company and sold to the public. A US government English-language translation was completed in 2000 and is posted at www.fas.org/irp/world/china/docs/sources.html. The authors, Hou Zhongwen and Wang Zongxiao, belonged to a government S&T Intelligence Bureau and compiled the material as part of a graduate course at the China Defense Science and Technology Information Center. They intended the book to be read by "each respective intelligence organization," but apparently felt no compunction about ordinary citizens, or even foreigners reading it. According to *Chinese Industrial Espionage*, "the use of foreign models to guide S&T development is so pervasive in China that no one imagined any comeback." (25–26)

b. The National Science and Technology library runs an online retrieval service of the holdings of member libraries offering access to 4.9 million foreign journals, 1.8 million foreign S&T conference papers, 900,000 foreign dissertations, reports and standards and about 11 million foreign patents. Foreign S&T journals are especially prized as a source of useful information (24, 35).

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