

Chinese Encounters with Foreign Ideas in the
Self-Strengthening Movement (1861-1895)

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Introduction

Any consideration of China, whether by Chinese or Western writers, invariably begins with reference to China's long history, and Chinese national security questions are no exception. A comprehensive review of 4000 years of Chinese security would no doubt focus on the pressures emanating from the Chinese periphery, from Tibetan populations to the West, Mongol and Uyghur populations to the Northwest and Manchus to the North, Burmese and Vietnamese in the South, alongside the ongoing potential for regional conflicts, often connected to internal rebellion or civil war.

Modern scholars of Chinese national security questions would do well to offer attention to a hundred-year period that marked a truly pivotal moment within that 4000-year span. The nineteenth century marks a significant turning point in the history of Chinese security, requiring as it does serious attention to the regime's dealings with the great powers of Europe, the United States, and Japan. The Qing Dynasty, in control, more or less, of the Empire since 1644, found itself at mid-century unable to avoid dealing with the foreign barbarians, and requiring wholesale reconsideration of its economic, diplomatic and military policies and procedures.¹ The effort to bring change to these areas and modernize Chinese armed forces in particular is remembered as the Self-Strengthening Movement (洋務運動).

Typically dated 1861-1894, the Self-Strengthening Movement is summarized in the U.S. Government's *Country Study* of China as “[t]he effort to graft Western technology onto Chinese institutions” and led by administrators acutely aware of the regime's military weakness due to

¹ The author opts for Pinyin spellings for Chinese names throughout. Many sources cited will use Wade-Giles.

their engagements with Taiping forces.² Support for the movement waxed and waned within the imperial court during these decades, depending on the economic and political views of particular emperors, and as such the Self-Strengthening Movement was as multi-faceted as any political trend within China in our time.³

While the Self-Strengthening Movement is generally regarded as a failure—indeed, China’s security situation improved only marginally in the short term, and the country suffered defeat in the 1894-95 Sino-Japanese War—it certainly can be said to have forced a reconsideration of long-held assumptions among Chinese intellectuals. One can also say that it represents at least a milestone era in the larger story of a great civilization commencing interaction with the West. Taking place as it does well prior to the ideological struggles of the 20th century, it is an occasion to consider traditional Chinese modes of thinking insofar as they inform present-day security problems, and the meaning and promise of Chinese interaction with the world’s other powers.

The details of the Self-Strengthening Movement have received serious analysis, chiefly among scholars of Chinese history.⁴ But it well behooves contemporary students of 21st century Chinese security questions to familiarize themselves with the essentials. In this chapter we offer an overview of the Self-Strengthening Movement, its accomplishments and failures, the nature of

² Robert L. Worden, Andrea Matles Savada and Ronald E. Dolan, Eds., *China: A Country Study* (Washington, D.C.: Federal Research Division, Library of Congress, 1988), 25.

³ It is noteworthy that webpages at the People’s Republic of China Ministry of Foreign Affairs site devoted to Chinese History, Modern Period—which are, to be sure, quite brief—include no reference to the Movement: “When, in an effort to protect its opium trade, Britain initiated the First Opium War in 1840, the Chinese people rose in armed struggle against the invaders under the leadership of Lin Zexu and other patriotic generals. But the corrupt and incompetent Qing government capitulated to the foreign invaders time and again, and finally signed the Treaty of Nanjing with Britain, a treaty of national betrayal and humiliation. From then on, China was reduced to a semi-colonial and semi-feudal country.” Presumably inclusion of the Movement in this narrative would put the Qing regime in a somewhat more favorable light. See “Peoples’ Republic of China Ministry of Foreign Affairs, History, Modern Period”, <http://www.fmprc.gov.cn/eng/ljzg/zgjk/3576/t17830.htm> [accessed May 15, 2012].

⁴ The most thorough-going account remains the relevant chapters in Denis Twitchett and John K. Fairbank, eds., *The Cambridge History of China*, vols. 10 and 11, (Cambridge: Cambridge University Press, 1978).

the opposition to it, and what lessons the Movement might have for students of Chinese security issues today.

Political Context and Setting

China had been ruled since 1644 by the Qing Dynasty, a Manchu-ethnicity population from the North, resented by much of the Han Chinese population. The second half of the nineteenth century saw China ruled by three Qing emperors, but essential to understanding the politics of the era is the role of the Empress Dowager Cixi, a figure who wielded significant influence with all three emperors, from 1861 to her death in 1908, and wielded enormous power for much of this period. She had arrived at the imperial court as a concubine for Xianfeng Emperor (r. 1850-61), supporting her young son, Tongzhi Emperor (r. 1861-75) during his years on the throne, and upon his death—and in clear violation of the ordinary rules of succession—saw to it that her young nephew took the throne as Guangxu Emperor (r. 1875-1908).

China during the nineteenth century would experience a series of revolutionary horrors that can only be described as cataclysmic in scope, unmatched in sheer numbers of dead until the First World War. Alongside the two Opium Wars, the regime would deal during the mid-nineteenth century with three significant internal threats: the Taiping Heavenly Kingdom Revolt (1851-1864), primarily in the South, the Nian Rebellion in the North (1851-1868), as well as the Miao Rebellion in the central regions (1854 to 1873). The Taiping Rebellion alone is estimated to have resulted in at least 20 million deaths due to violence or starvation.⁵ Meanwhile Imperial Russia aimed to acquire portions of Chinese-controlled Manchuria.

⁵ John Meskill, *An Introduction to Chinese Civilization* (Lexington, Massachusetts: D.C. Heath and Company, 1973), 212.

Trade between China and the West had been taking place for centuries by means of overland routes, supplemented by short sea-travel. But with advances in shipbuilding and navigation, Portuguese explorers followed their sea connections with India by establishing contact with Chinese at the mouth of the Pearl River near Guangdong in 1517. These would be followed by Spanish, Dutch and English traders, accompanied by Jesuit, and later Protestant, missionaries. These Europeans' relationships with the Chinese population would be intentionally and strictly limited in scope by the Imperial Court. In general, Chinese political figures loathed and feared the disruption that accompanied the foreign ideas and products, opium in particular, and aimed to minimize public contact with foreigners.⁶

With the British victory in the First Opium War (1839-1842), however, and the 1842 Treaty with Britain at Nanjing, followed by separate treaties two years later with the U.S. at Macau and with France at Whampoa, outside traders suddenly enjoyed far greater access through “concessions”, territories at the 14 treaty port cities set aside for foreigners to conduct commerce.⁷

Finally, it is important to recall that Chinese political theory had rested for centuries on the idea that a government's legitimacy depended on the “mandate of heaven” (天命). Bountiful harvests, prosperity and good political order were signs of heaven's approval, while natural disasters and political upheaval reflected the opposite. Alongside this, the Confucian ethic held that good government consisted in the emperor and political class ruling on the basis of their moral authority rather than force. Indeed, their use of force was, in effect, an admission of

⁶ For example, Chinese law forbade teaching the Chinese language to foreigners.

⁷ On the dramatic changes that result from the 1842 Treaty, see John K. Fairbank, *Trade and Diplomacy on the China Coast: The Opening of the Treaty Ports, 1842-1854*. 2 vols. (Cambridge, MA: Harvard University Press, 1953).

failure.⁸ Given the terrible aspects of the period sketched above, the vulnerability of the Qing regime in the public consciousness, and the regime's need to consider reform, become clear.

Early Recognition of Western Advantages

The traditional Chinese attitude toward the “outer barbarians” and their ways was one of keeping distance, and rejection of their technologies. But in 1841, with the conclusion of the First Opium War and the dramatic fights near Guangdong and on the Chinese coast, this policy was no longer feasible. A new policy, cautiously stated within Qing Imperial circles, and known as the “loose rein” [松弛控制] or “conciliation” was announced. Qing emperors and their court, of course, had a clear interest in continuation of the dynastic line, and to the extent the policy appeared necessary to this end, it had the regime's support. On the other hand, it was politically dangerous if popularly interpreted by the majority Han population as a sign of Qing weakness.⁹

Charged in 1838 with keeping British vessels out of Guangdong and the Pearl River, Commissioner Lin Zexu (1785-1850) had set about collecting, translating and summarizing as many western documents as he could gather, and later purchasing 200 cannon of foreign manufacture.¹⁰ Despite his effort, Britain's victory in the First Opium War effectively meant that Lin was understood to have failed in his assignment, and was demoted and exiled. Nevertheless, he had recognized the size and scope of the technical advantages enjoyed by the British naval vessels, and, more importantly, appreciated the political obstacles to reform. In a series of letters

⁸ David B. Ralston, *Importing the European Army: The Introduction of European Military Techniques and Institutions Into the Extra-European World, 1600-1914*. (Chicago: University of Chicago Press, 1990), 108.

⁹ Ssu-Yu Teng and John K. Fairbank, *China's Response to the West: A Documentary Survey 1839-1923* (New York: Atheneum, 1963), 37.

¹⁰ Frederick Wakeman, Jr., “The Canton Trade and the Opium War,” in Denis Twitchett and John Fairbank, eds., *The Cambridge History of China*, vol. 10, (Cambridge: Cambridge University Press, 1978), 178-194, and Yen P'ing Hao and Erh-min Wang, “Changing Chinese Views of Western Relations, 1840-95,” in Twitchett and Fairbank, eds., *The Cambridge History of China*, vol. 11, 149.

after the conflict he described how enemy vessels “on the open sea came and went as they pleased, now in the south and now suddenly in the north, changing successively between morning and evening.”¹¹ Noteworthy in the same correspondence is his recognition of the political restrictions that stood in the way of significant reform:

I recall that after I had been punished two years ago, I still took the risk of calling the Emperor’s attention to two things: ships and guns. At that time, if these things could have been made and prepared, they still could have been used with effect to fight against the enemy last fall [1841]. Now it is even more difficult to check the wildfire. . . . But at this time I must strictly observe the advice to seal my lips as one corks the mouth of a bottle.¹²

Several years later Lin’s collected documents would be published by the respected Chinese scholar Wei Yuan (1794-1856), who himself produced in 1842 a document aiming toward a new policy for national defense—a deliberate process of learning from the recently concluded war followed by appropriate recommendations, including new arms purchases and changes in the way Chinese thought about the outside world. He begins with an appeal to his readers to think innovatively, arguing that it’s time for Chinese to get ahead of the foreign policy curve: “Ever since the barbarian incident [i.e., the First Opium War], the strategy which has been contrived in the generals’ tents and which has been carried out in the field has been, if not war, then peace; if not peace, then war. No one has yet devoted himself to the discussion of defensive measures.”¹³

Reviewing specific military problems experienced by Chinese defenses in the recent war, Wei continues with a survey of the major powers of the world, and a summary of the European empires’ conflicts over the past two centuries. The fact that so much of this document would have been news to his imperial court readership is striking. His urgent message: that China is

¹¹ Letter of Lin Tse-Hsu, 1842, as reprinted in Ssu-Yu Teng and John K. Fairbank, *China’s Response to the West*, 29.

¹² Ibid.

¹³ Wei Yuan, “Statement of a Policy for Maritime Defense” (1842), in Teng and Fairbank, 30.

effectively isolating and imposing limitations on herself in failing to learn about the outside world. Also striking is Wei's willingness to offer a frank critique of the regime's tendency to make excuses:

If there is a discussion about building ships, making weapons, and learning the superior techniques of the barbarians, they say it is too expensive. . . . If there is a discussion about the translation of barbarian books and prying into barbarian affairs, they are sure to say it would cause trouble. . . .

Wei continues with a rousing condemnation of his countrymen's lack of geographic knowledge and the current state of international relations:

Regarding [the European powers], with which we have had trade relations for two hundred years, we indeed know neither their locations nor their interrelations of friendship or enmity. . . . he who wishes to control the outer barbarians must begin by understanding their circumstances, and he who wishes to understand their circumstances must begin by establishing a bureau for the translation of barbarian books.

Before the peace settlement, it behooves us to use barbarians against barbarians. After the peace, it is proper for us to learn their superior techniques in order to control them. The superior techniques of the barbarians are three: (1) warships, (2) firearms, and (3) methods of maintaining and training soldiers.¹⁴

Wei concludes by proposing a program of construction of shipyards and arsenals, with the hiring of one Frenchman and one American to recruit and bring to Guangdong shipbuilders and armaments designers and manufacturers. If some of his specific proposals were not feasible, his frank observations remain significant as an eloquent restatement of the problem by a distinguished figure.

During the same time period, governor of Fujian province Xu Jiyu (1795-1873) served in various political positions, witnessing directly China's weakness with respect to the foreign

¹⁴ Ibid., 30-35. Wei's comment about Chinese not knowing the status of relations among their trade partners and using "barbarians against barbarians" is significant in that French and American governments were indeed quite concerned about the extent of British control and access to Chinese traders. Such knowledge in itself would offer the Chinese significant leverage. On this see William J. Donohue, "The Caleb Cushing Mission," *Modern Asian Studies*, 16: 2 (1982), 193-216.

powers. During the summer of 1840, newly arrived in the coastal province, he could see firsthand the success of British vessels in forcing their presence along the Chinese coastline, and felt, as many Chinese intellectuals did, a powerful animosity toward the foreigners. But by 1842, writes China scholar Fred Drake, “he at last appears to have reconciled his view of China’s fundamental weakness with a pragmatic position concerning future policies toward the maritime non-Chinese.”¹⁵ Xu accepted the idea of the “loose rein” policy, and at the request of the Manchu statesman Keying commenced work on a cultural geography of the non-Chinese world, published in 1848 as *A Short Account of the Maritime Circuit* (瀛環志略). The book, writes Drake, was “an informational time bomb” that would expose Chinese intellectuals to a whole universe of outside facts and ideas, and would, over time, help spell the end of the Qing regime.¹⁶ Indeed, Xu’s work includes reference to “self-strengthening” by the inhabitants of the Sulu islands in the Philippines as they resisted Spanish explorers, the earliest use of the term identified with reference to an Asian population resisting European pressure.¹⁷

Alongside these figures, over 60 other Chinese authors during the years prior to 1860 published books and memoranda on Western armaments, including mining and metallurgy, gunpowder production, firearms and cannon, and fortifications and tactics.¹⁸ Most of that writing and publication was done prior to 1850, because the political winds in China that year would shift strongly against it.

¹⁵ Fred W. Drake, “A Mid-Nineteenth-century Discovery of the Non-Chinese World,” *Modern Asian Studies*, 6, 2, (1972), 209.

¹⁶ Drake, 224.

¹⁷ *Ibid.*, 223.

¹⁸ Yen P’ing Hao and Erh-min Wang, 149.

The Self-Strengthening Movement Emerges

With the ascension to the Imperial throne of Xianfeng Emperor in 1850, the pragmatism and conciliation policy of Xu Jiyu and his sponsor Keying led to their dismissal from office. Ignorant of the world outside China, the Xianfeng Emperor's reign of eleven years would be characterized by complete intransigence in dealing with foreigners.¹⁹ This refusal to negotiate or in any way adjust the existing treaties led directly to the Second Opium War beginning in 1856, with British and French forces joining together in alliance to force the issue.²⁰ Anglo-French forces 18,000 strong in 1860 dramatically marched to Beijing, and on arrival simply dictated terms to the Emperor's younger half-brother, Prince Gong, who had been given the task of dealing with the foreigners.

Also in 1860, Taiping rebels had defeated imperial forces at Nanjing, an event that forced the Beijing government to cease attempting to direct military affairs from the Imperial City and grant authority to three governors general, Zeng Guofan, Zuo Zongtang, and Li Hongzhang, well-aware that doing so might loosen the generals' ties to the Imperial City, and opening up the prospect of their soldiers and subordinates developing stronger regional loyalties, a situation that had led to the downfall of previous dynasties.

In dealing directly with the victorious British and French officers, Prince Gong and his close ally, Imperial court advisor Wen Hsiang (1818-1876), recognized an opportunity. While "both the Taiping and Nian bandits are gaining victories" and are like an organic disease, and while Russia aims "to nibble away our territory like a silkworm", the British and French, while

¹⁹ Ting-yee Kuo, "Self-strengthening: the pursuit of Western technology" in John K. Fairbank, ed., *The Cambridge History of China*, vol. 10 (Cambridge: Cambridge University Press, 1978), 244.

²⁰ While it is tempting for both Chinese and Western scholars to remember this conflict in the worst possible light--as western powers imposing their will on a weakened China-- Ssu-yu Teng and John Fairbank argue that the fact that British and French forces sought not territory but trade, and Chinese appreciation for that fact, would make possible the opening that would follow. See Teng and Fairbank, 46.

violent and rude, wish only to trade.²¹ Accordingly, the latter three (unpleasant as they might be) could be utilized to help resolve the more immediate Taiping and Nian problems.

This could be accomplished by collecting tariffs at treaty ports and the Russian frontier for improved government funding, a newly designed office for foreign relations entitled the “Office in Charge of the Affairs of All Nations” (*Zongli Yamen*, 總理衙門), and encouraging Chinese interaction and learning from British, French, American and Russian foreigners—learning about military technology, in particular. Prince Gong and Wen Hsiang had already noted the willingness of the French and British to share their technological expertise in munitions and shipbuilding.²² The death of Xiangfeng Emperor in August 1861, and the ascension to the throne of Tongzhi Emperor that same year would solidify this new attitude toward the outside world, and it was not long before the phrase “self-strengthening” began to appear prominently in state publications and edicts, and in the work of court intellectuals.²³

The best known of these was Feng Guifen (1809-1874) who decried the minimal effort to translate the outside world’s books into Chinese, noting that over several centuries no more than a few dozen translations had been completed, and these limited to books from Italy or England. He argued forcefully for the translation and study of Western books on math, natural sciences, mechanics, optics and light, and the establishment of “official translation offices” at Guangzhou and Shanghai.²⁴

²¹ Imperial Memorial, January 13, 1861, “The New Foreign Policy of January 1861” as reprinted in Teng and Fairbank, 47-49.

²² Ting-yee Kuo, 493. See also Ralston, 116.

²³ Ralston, 116.

²⁴ Feng Guifen, “On the Adoption of Western Knowledge” (1861), as reprinted in Teng and Fairbank, 51.

In his 1861 essay, “On the Manufacture of Foreign Weapons” Feng argues against the view of Wei Yuan that China should “use barbarians to attack barbarians”. Instead, China should open itself to technology as a means to beat the foreigners at their own game:

. . . we are shamefully humiliated by those four nations in the recent treaties—not because our climate, soil, or resources are inferior to theirs, but because our people are really inferior . . . Why are they small and yet strong? Why are we large and yet weak? We must try to discover some means to become their equal, and that also depends upon human effort. . . . What we then have to learn from the barbarians is only the one thing, solid ships and effective guns.²⁵

Feng goes on to recommend ordering half the most talented young scholars to set aside Confucian theory and “apply themselves to the pursuit of manufacturing weapons and instruments and imitating foreign crafts.”²⁶ Shipyards and arsenals should be established in each port city with Chinese working alongside barbarian mechanics and metalworkers, with rewards for the most talented Chinese students, and double pay to ensure their enthusiasm. A strong advocate for domestic production, Feng wrote that “eventually we must consider manufacturing, repairing, and using weapons by ourselves. . . . Only thus will we be able to pacify the empire; only thus can we play a leading role on the globe; and only thus shall we restore our original strength, and redeem ourselves from former humiliation.”²⁷ He concludes by calling his Chinese readers’ attention to the recent experience of Japan, which already by 1860 had constructed and sent out “some ten steamships of their own over the western ocean to pay return visits to the various countries.”²⁸

²⁵ Feng Guifen, “On the Manufacture of Foreign Weapons” (1861) as reprinted in Teng and Fairbank, 53.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid. For an excellent first-hand description of Japan’s experiences with the West, including this reference to Japan’s first domestically built steel ships, originally published in 1897, see *The Autobiography of Yukichi Fukuzawa* (New York: Columbia University Press, 1980).

Zeng Guofan (1811-1872), one of the governors general granted greater regional autonomy in the fight against the Taiping, also wrote extensively about the prospects for self-strengthening, but added a cautionary note. A devout Confucian scholar, he argued throughout his letters that learning from the West about techniques ought to be limited by Confucian principles always in mind. In a letter of 1862 to Li Hongzhang, Zeng wrote, “We should carefully watch and learn their superior techniques and also observe their shortcomings. We should not boast of, nor neglect our ceremonies.”²⁹

The 1860s is thus the crucial decade for the Self Strengthening movement, with its advocates having made their initial case for modernization, and taken first steps toward its realization, and the skeptics solidifying their arguments against it.

Reforming Army Organization and Education

In 1871, U.S. Secretary of State William H. Seward proposed to the Ambassador to China, Frederick F. Low, that Gen. Emory Upton be engaged by the Chinese Empire to instruct its officers and government in how best “to organize its military force on the principles of modern science and economy.” Because the Chinese government had so effectively “already adopted Western principles and guidance in the collection of revenues derived from foreign commerce,” it might follow that the next logical step for them would be “to confide the organization, training, and discipline of the imperial army to some competent military man to be taken from the West.”³⁰ In correspondence from Beijing dated February 29, 1872, Ambassador Low replied with regret, noting the impracticality of the idea, as follows:

²⁹ Zeng Guofan, “Letter to Li Hongzhang” (1862) as reprinted in Teng and Fairbank, 63.

³⁰ Correspondence of Oct. 31, 1871, Secretary of State William H. Seward to Ambassador Frederick F. Low, as reprinted in Peter S. Michie and Emory Upton, *The Life and Letters of Emory Upton*. New York: D. Appleton & Company, 1885), 285.

That you may the better understand my reasons for this opinion, some facts in regard to the present organization of the Chinese military forces may be useful.

With the exception of the troops immediately in and about Peking, the military forces of the empire are made up of separate armies that have been raised and organized by, and are practically under the control of, the several high provincial officers each viceroy being held responsible by the Imperial Government for a suitable quota of troops to maintain order within his own jurisdiction, and, in case of extreme emergency, to help suppress insurrection or repel invasion in other provinces. Theoretically, all the officers are directly the appointees of the emperor; practically, they are selected by the several viceroys whose nominations are simply approved by the central government.

At the present time all the foreigners employed in instructing troops in the art of war are subject to provincial authority and control. They are little better in point of rank and position than “drill-sergeants,” a position which, if not degrading, cannot be considered honorable. Even General Ward and Colonel Gordon, who were employed to assist in putting down the Taeping rebellion, were engaged and paid by the viceroy at Nanking, although the Central Government gave to them a tacit but not real imperial position.³¹

The idea of modernized education in military affairs for China did have a strong advocate in Li Hongzhang, and he had set about establishing the nucleus of a program at the Jiangnan Arsenal. In 1875 he had made arrangements for a cadre of seven Chinese officers to study at the German military academy in Berlin.³² Not until 1885, however, was the first modern military academy launched in China, with German officers serving as instructors, at Tianjin. This reticence might be explained by the always present question of funding, but equally likely is resistance to change anticipated within the command structure, alongside the political danger perceived in an educated officer corps.³³ The proposed curriculum would include math, sciences, foreign language, history and classical Chinese alongside military theory, operations, and drill.

³¹ Correspondence of Feb. 29, 1872, Ambassador Frederick F. Low to Secretary of State William H. Seward, as reprinted in Michie and Upton, 287.

³² Roger B. Jeans, Jr., *Democracy and Socialism in Republican China: The Politics of Zhang Junmai (Carson Chang), 1906-1941* (Lanham, Maryland: Rowman & Littlefield Publishers, Inc., 1997), 28.

³³ Yen P'ing Hao and Erh-min Wang, 267.

Two years later, Li would expand the program to include a preparatory module for boys as young as 13.³⁴

New Arsenals and Arms Manufacture

Despite China's fame as the ninth century point of origin for gunpowder as well as the earliest hand cannon, its arms ten centuries later remained in primitive state and were not produced in any systematic or consistent fashion.³⁵ Chinese arms purchases by the regional officials discussed above from major European and American manufacturers beginning in the 1860s gradually introduced modern infantry weapons to Chinese military personnel.³⁶ During this same decade, two major arsenals and production centers were launched and operated along with several smaller ones as part of the Self-Strengthening Movement. The larger of these operations typically were positioned near the coast, and involved construction of arms for infantry alongside naval vessels.

A first effort to establish a Chinese munitions and arms factory took shape in the inland city Anqing, an inland city by connected to the coast via the Chang Jiang River, upon its liberation from Taiping control by Zeng Guofan in 1862.³⁷ The new arsenal was able in short order to produce traditional firearms of the sort used in China for decades—matchlock muskets and the unwieldy large caliber “jingal” two-man “wall guns”. In 1864 Zeng commissioned a

³⁴ Ibid.

³⁵ The authoritative source on Chinese development and early uses of gunpowder is Joseph Needham, *Science and Civilization in China*, Vol. 5, *Chemistry and Chemical Technology*, Part 7: *Military Technology; The Gunpowder Epic* (Cambridge: Cambridge University Press, 1986).

³⁶ For example, in 1876 Germany's Mauser Brothers & Co. received from China an order for 26,000 rifles of its Model 1871 rifle. See Ludwig Olson, *The Mauser Bolt Rifle* (Montezuma, IA: F. Brownell & Son, Publishers, Inc., 1976), 23. Other primary suppliers included Remington of New York, and Österreichische Waffenfabriks-Gesellschaft in Steyr, Austria. A useful source on the transition in China to modern arms is Dolf Goldsmith, *Arming the Dragon: Mauser Rifle Production in China, 1895-1950* (San Antonio: D.L. Goldsmith, 1997).

³⁷ Ting-yee Kuo, 519.

Cantonese man, Yung Wing, who had graduated from Yale College a decade earlier to travel to the U.S. to purchase modern machine tools. The trip was made, with over 100 pieces of machinery purchased from Putnam Machine Company, Fitchburg, Massachusetts, and delivered to Anqing during 1865.³⁸

Zeng Guofan and Li Hongzhang cooperated in launching several arsenal sites further north in Shanghai at Jiangnan in 1865, including a purchased American shipyard, and using Chinese workers exclusively but with imported machinery and tools.³⁹ In a memorial of 1868, Zeng noted that the arsenal would require a school for accurate translation: “. . . even though every day we practice on their machines, after all we do not understand the principles underlying their manufacture and operation.”⁴⁰ The factory had received the assistance of several English and American translators, and Zeng would oversee the establishment of a formal translation bureau, headed for 28 years by the noted English scholar and translator, John Fryer (1839-1928).⁴¹ A former British Army surgeon, Halliday Macartney, was employed in establishing arsenal properties near Shanghai and Nanjing.⁴² The Jiangnan arsenal's products during this first decade, in particular its copies of Remington rifles, were not well regarded, and Li's own regional Anhwei Army refused to accept them.⁴³

The Mawei (or Fuzhou) Arsenal on the Min River in Fujian Province along China's central coast was the project of Governor General Zuo Zongtang, launched in 1866, with Chinese

³⁸ Ibid. See also Thomas L. Kennedy, “The Establishment of Modern Military Industry in China, 1860-1868” *Bulletin of the Institute of Modern History, Academia Sinica*, Vol. 4:2, Dec. 1974, 788-792.

³⁹ Ting-yee Kuo, 520. For a brief account of the Jiangnan Shipyard's interesting history during the 20th century see <http://www.globalsecurity.org/military/world/china/jiangnan-sy.htm>

⁴⁰ Zeng Guofan, “Founding the Shanghai Arsenal” (1868), as reprinted in Teng and Fairbank, 64.

⁴¹ Ting-yee Kuo, 579. For more on arms production and translation at Jiangnan Arsenal, see Elman, 291-294, and Kennedy, 803-807.

⁴² Ting-yee Kuo, 519.

⁴³ Ibid., 521.

workers supervised by two Frenchmen, Prosper Giquel (1835-1886) and Paul d'Aiguebelle (1831-1875).⁴⁴ The Navy Yard at Fuzhou was engaged in steamship construction from an early date, and by 1882 had completed 11 vessels including several 573 ton displacement gunboats, four 1253 ton transport vessels, and a 1393 ton corvette.⁴⁵ The arsenal's rapid productivity compelled French naval forces to attempt its destruction in the August 1884 Battle of Fuzhou, the opening engagement of the Sino-French War.⁴⁶

Meanwhile in northern China an arsenal began production in the late 1860s at Tianjin under the supervision of Northern Ports Commissioner Chung-hou, producing machinery, ordnance parts and gunpowder along with steamship parts at its several factory sites. Li Hongzhang was named governor general of the Zhili region and assumed oversight of Tientsin factories' production from 1870 to 1895, gradually phasing out foreign personnel.

That the transition to modern arms at these arsenals was still far from complete, we have the critical review of the Chinese armed forces written by U.S. Army General Emory Upton at the conclusion of his 1875 tour of the world's major powers.

⁴⁴ Ibid., 523. See also Steven A. Leibo, *Transferring Technology to China: Prosper Giquel and the Self-Strengthening Movement* (Berkeley: Institute of East Asian Studies, 2008), and Major Mark S. Bell, *China: Being a Military Report on the North-Eastern Portions of the Provinces of Chih-Li and Shan-tung; Nanking and Its Approaches; Canton and Its Approaches; Together with an Account of the Chinese Civil, Naval and Military Administrations, and A Narrative of the Wars Between Great Britain and China. From various sources and notes taken during a reconnaissance of the neighborhoods of Peking, Nanking and Canton, carried out in 1882.* (Calcutta: 1884), 75.

⁴⁵ Bell, 76.

⁴⁶ French Captain Cabaud-Arnault's report on that battle noted that "All the Chinese ships are wooden, without armor; of elegant appearance, but light build." Chinese arms encountered included "6 or 7 [shore] batteries, of which 2 are each armed with 3 Krupp guns of rather feeble caliber, but which can do much injury to our ships." Of Chinese troops, the Captain reported that "they are no longer the undisciplined soldiers without experience or military disposition. . . that were opposed to our troops during the campaigns from 1857-1860; . . . Many of these men are brave, they will give many proofs of it. Many had received their military instruction under European officers; they can move in unison, fire by command, and intelligently perform skirmish drill. Happily for us, their leaders are worse than poor; their artillerists, with a few exceptions, as unskillful as formerly." Captain Chabaud-Arnault, "The Combats on the Min River" trans. By E. B. Barry, U.S. Naval Institute *Proceedings*, 11:2 (1885), 295-320.

At [Tianjin], in 1875, an arsenal was nearly completed, in which Remington cartridges, and powder and shells for cannon of all calibres, were then manufactured. The best English machinery for the manufacture of Remington breech-loaders was also shortly expected. The arsenal with its different buildings, occupying an inclosure a mile square, was planned and constructed by an Englishman, and the superintendents of instruction in the different departments were likewise foreigners.

Remington rifles are also made at the arsenals at Shanghai and Nanking. At Shanghai a short musketoon for cavalry is manufactured side by side with one of the best breech-loaders in the world—a proof that the best weapon for all arms of service is not yet appreciated.

At Canton, where American arms are also manufactured, the Remington and Spencer have been enlarged to a calibre of one inch, with a barrel six feet long. On being told that the barrels were too long, the intelligent Chinese superintendent replied that he “knew it, but that the length was added to give them a formidable appearance.” These enlarged breech-loaders, like the matchlock, are to be carried by two men.⁴⁷

The last of the major arsenals was the Hanyang facility in Hubei province, the project of another of the era’s great reformers, Zhang Zhidong (1837-1909), and was completed in 1894. Hanyang would become the most productive of the China’s arms factories during the early twentieth century, benefiting, no doubt, from its later start date and newer machinery. But in its early years, the arsenal was producing only a fraction of what was needful to supply Chinese armed forces, 136,726 rifles and 1070 field guns in total from 1895 to 1909.⁴⁸

⁴⁷ Emory Upton, *Armies of Asia and Europe: Embracing Official Reports on the Armies of Japan, China, India, Persia, Italy, Russia, Austria, Germany, France, and England* (D. Appleton & Company, 1878), 28. Upton’s highly critical report also indicates that as late as 1875 Chinese officer candidates were tested on “archery, sword-practice, and stone-lifting” but received no encouragement “to study the art of war, tactics, artillery, engineering, fortification, or any of the sciences intimately connected with modern war.”

⁴⁸ Thomas L. Kennedy, “Chang Chih-Tung and the Struggle for Strategic Industrialization: The Establishment of the Hanyang Arsenal, 1884-1895”, *Harvard Journal of Asiatic Studies*, 1973, 156, and Jung-pang Lo, Review Essay of Wang Erh-min, *Rise of the Armaments Industry at the Close of the Ch’ing Period*, in *The Journal of Asian Studies*, 27.1 (Nov. 1967), 144. In comparison, a first modern Japanese arsenal was established in 1870 at Koishikawa, and after a decade of experimental work produced an original design bolt-action rifle in 1880, designated the Type 13, that was adopted by the Japanese Army. By 1884 the arsenal was producing 30,000 rifles annually. See Fred L. Honeycutt, Jr. and F. Patt Anthony, *Military Rifles of Japan* (Palm Beach Gardens, FL: Julin Books, 1996), 8. On arms produced at Hanyang, including the Type 88 Hanyang rifle, see Paul S. Scarlata, *The German Gew. 88 “Commission” Rifle* (Woonsocket, R.I.: Mowbray Publishers, 2007), 64, 150, and Stan Zielinski, “The Chinese Version of the German Model 88 Rifle” *Military Rifle Journal*, May 1997, 116-125.

Self-Strengthening Chinese Naval Power

The Qing court and Chinese intellectuals were well-aware of the country's potential as a naval power. Between 1405 and 1433 the Ming regime had sent out no fewer than seven naval expeditions in search of tribute-paying vassal states, bearing as many as 28,000 Chinese troops, and venturing as far as the Horn of Africa. Since that time, aside from the effort of 1680 to conquer Formosa and pirate fleet suppression in the 1790s, China's focus had been primarily directed inward, its regionally supported naval resources directed more toward securing commerce on the country's massive rivers.⁴⁹ The destruction of armed Chinese junks during the First Opium War led to no real innovation during the period between the wars, and another generation of traditional Chinese vessels were destroyed by French and British naval forces during the second conflict 1854-1860.

The Self-Strengthening Movement offered first attempts to address the Chinese navy's three problems: its decentralized administration, its antiquated equipment and methods, and the lack of consensus about tactical and strategic objectives. The rapid rise of Japanese naval power in the years following the 1868 Meiji Restoration made the urgency of the matter become increasingly clear.

With respect to the first, some progress was realized in 1867 when Li Hongzhang proposed the Imperial Court appoint three admirals to command northern, central, and southern naval squadrons. Two years later the Imperial Chinese Navy was formally established, organized according to Li's proposal, with Admiralty Boards commissioned and naval officer schools launched at Shanghai and Fuzhou. During the 1870s, the Imperial Navy was reorganized again

⁴⁹ Teng and Fairbank, 123.

into four separate fleets—Guangdong in the south, the Nanyang and Fujian fleets in the central coast, and the northern-most, Beiyang.⁵⁰

Li Hongzhang was also China's primary force in the work of modernizing naval power and rethinking naval objectives. With the extent of trade on its southern coast, the immediate Chinese tendency had been to direct naval resources toward its central and southern port cities. With respect to the North, upon his appointment in 1870 as governor-general for Zhili Province, Li realized that this portion of the Chinese coast was virtually unprotected, with nothing resembling a modern warship at its port cities, and he set about shifting ships and resources to build up the Beiyang Fleet.⁵¹ Japan's invasion of Taiwan in 1874 led directly to increased funding for the Fleet, which would under Li's direction grow to include 26 vessels, with 13 purchased from Armstrong & Co. in Britain, four more by the German firm A.G. Vulcan Stettin, and nine manufactured in the new arsenal shipyards. Ships built at the Jiangnan Arsenal during the early and mid-1870s were considered of sound design, equal or better in construction and armament to their Japanese counterparts.⁵² Supporting this investment in ships was the construction or improvement of coastal fortifications, with purchases from the major European manufacturers, Armstrong, Vickers, and Krupp in particular.⁵³

⁵⁰ Alongside Chinese naval power, a steam-powered Chinese merchant fleet emerged, from two vessels totaling 1168 tons in 1872 to 29 vessels totaling 20,737 tons in 1880. See Bell, 13-14.

⁵¹ Chia-chien Wang, "Li Hung-chang and the Peiyang Navy" in Samuel C. Chu, *Li Hung-Chang and China's Early Modernization* (New York: M.E. Sharpe, 1994), 252.

⁵² Benjamin A. Elman, "Naval Warfare and the Refraction of China's Self-Strengthening Reforms into Scientific and Technological Failure, 1865-1895." *Modern Asian Studies* 38 (May 2004), 295. See also Richard N.J. Wright, *The Chinese Steam Navy, 1862-1945*, (London: Chatham Publishing, 2000).

⁵³ See Kwang-Ching Liu and Richard J. Smith, "The military challenge: the north-west and the coast" in John K. Fairbank and Kwang-Ching Liu, eds. *The Cambridge History of China, Vol. 11 Late Ch'ing, 1800-1911*, pt. 2, 243-250. Also useful is the account from the early 1880s of British officer Major Mark S. Bell referenced above, which includes descriptions of imported and domestically produced artillery positioned at coastal and riverside fortifications, as well as the Hong Kong Museum of Coastal Defence, <http://www.lcsd.gov.hk/CE/Museum/Coastal/en/section1-1.php>. A resource offering a sense of the great strides realized in Chinese military power by the end of the century—despite their defeat by Japanese naval power—is W.L. Rodgers, "The Capture of Wei-hai-wei and the Chinese Fleet in the Japanese War in 1895: A Successful

Writing from Shanghai in 1879, U.S. Consul General David H. Bailey assessed the Chinese naval situation as follows:

Soon after the war with the Allies, in 1860, the progressive party, headed by Li-Hung-Chang, the conqueror of the Taipings, and Tso-Tsung-Tang, the conqueror of Turkistan, inaugurated a general reorganization of all the land and naval forces. Dockyards and an arsenal were established near Shanghai, where several iron-clads have been built, launched and equipped . . .

At Foo-chow, still more extensive works were built, and placed under charge of a Frenchman. They have building ships, rolling mills, engine works, blast furnaces, and machine shops; in short all the means for constructing first-class vessels of war and their complete equipment. Twenty one iron-clads have been built at these Foo-chow docks, twelve of which are of more than one thousand tons displacement.

Near Tientsin, the Viceroy, Li-Hung-Chang, has constructed complete works of the same character as those at Foo-chow. For ten years employees from Woolwich, England, have had supervision of them, and have instructed a large corps of men in every branch of ship building . . . In addition to all this, many war vessels have been bought from Europe, as well as large numbers of heavy Krupp guns . . . Forts have been built at the mouths of their rivers and the entrances to their bays and harbors. Electric torpedoes have been laid in some places. Several steel-clad gunboats, with all the machinery below the water-line, are now in the course of construction on the river Tyne.⁵⁴

Li Hongzhang would continue his naval program by purchasing ten torpedo boats from Germany in 1881, with training provided by British and German captains.⁵⁵ Recognizing the importance of training naval personnel at every level, he retained foreigners for the purpose in China and sending at great expense large numbers of Chinese to Europe for training prior to their returning to China with vessels purchased.⁵⁶ Likewise, he sent 35 naval cadets to Royal Naval College in

Combined Attack Under Modern Conditions” in “A Study of Attacks Upon Fortified Harbors” *U.S. Naval Institute Proceedings*, 31:1, March 1907, 97-103. For a recent Chinese perspective on the significance of coastal artillery purchased by the Qing Dynasty for defense of Beijing, see “Tianjin Dagu Fort, a famed coastal defense barrier in China”, <http://www.whatsontianjin.com/guide-86-tianjin-dagu-fort-a-famed-coastal-defense-barrier-in-china.html> [accessed June 7, 2012].

⁵⁴ Correspondence of Consul General David H. Bailey from Shanghai, Aug. 10, 1879 to Hon. Charles Payson, Third Assistant Secretary of State, Washington, D.C. as reprinted in Irvin McDowell, “The Future Influence of China,” *The Overland Monthly* (San Francisco, April 1886), 425. For a more detailed survey of the late 1870s Chinese Navy, see J.W. King, *Warships and Navies of the World*, (Boston: A. Williams & Co., 1881), 425-432.

⁵⁵ Wang, 253.

⁵⁶ *Ibid.*, 254.

Greenwich, the Royal Artillery Academy in Woodwich, or for service in the Royal Navy.⁵⁷ Even more significantly, in 1884 Imperial court officer Chang P'ei-lun persuaded the Qing to further consolidate Chinese naval forces: "If we wish to seek a method to control our enemies, we cannot do it unless we create a navy with steam warships for the outer seas, we cannot do it unless we establish an Office of the Navy."⁵⁸

Assessing the Self-Strengthening Movement

All this rapid and impressive advance--in technology, military organization and the beginnings of modern military planning—described by a contemporary American observer as “the marvelous resuscitation of China during the last eighteen years”--was ultimately insufficient to prevent the loss of significant Chinese naval assets during the 1884-85 Sino-French War, and the loss of assets and territory resulting from the Sino-Japanese War a decade later.⁵⁹ But it would be too shallow to declare the Self-Strengthening Movement—taking place in a culture of such long standing and during such a tumultuous century—an abject failure. One might equally regard it as a chapter in a larger shift toward modernity in Chinese military and foreign policy that is still in the making 150 years after it began.

To be sure, it can be said that together the outcome of these two conflicts raised doubts about the Self-Strengthening Movement for many Chinese, and by extension, they had the effect of seriously weakening the Qing regime. But the fall of the Qing regime, writes John Fairbank, is

⁵⁷ Ibid., 254.

⁵⁸ Chang P'ei-lun, "Proposals of 1884" in Teng and Fairbank, 125.

⁵⁹ King, 425. For an assessment of the movement's impact on Chinese land forces, see Allen Fung, "Testing the Self-Strengthening: The Chinese Army in the Sino-Japanese War of 1894-1895", *Modern Asian Studies*, 30 (1996), 1007-1031.

“as complex a subject as the decline and fall of ancient Rome.”⁶⁰ What might one glean from the Self-Strengthening era that applies to current Chinese security questions and that nation’s interaction with the outside world?

Certainly one sees in the Chinese suspicions about modernization a tendency toward conservatism, not unlike other land-focused populations. China’s immense geographic and demographic mass, with its population’s sense of its long history, its great wealth, with its cultural emphasis on order over chaos, all combine to give its politics the power of a gravitational force that has not easily tolerated dissent or welcomed innovation. Moreover, its autocratic political leadership and system resisted external ideas as a means toward achieving its ultimate goal—protection of the dynasty.

Secondly, the Movement’s leaders at first planned to limit their learning to technical matters, retaining characteristically Chinese Confucian thought as the guiding political principle. This theme will be familiar to students of contemporary Chinese politics—a concern that foreign ideas and communication with the outside world must be managed carefully to avoid danger to the regime. The temptation will be strong for Chinese in our time to think along similar lines—foreign techniques and technology, yes, but separated from political principles.

Thirdly, mid-nineteenth century China includes a reminder that Chinese politics can be quite cyclical, with a conservative, inward-focused decade followed by one more open, followed by another more conservative, and depending on internal events, external pressures, and the views and personalities of the political leadership.⁶¹

⁶⁰ Teng and Fairbank, 125.

⁶¹ A fascinating example of the quick about-face in policy characteristic of nineteenth century China is the story of the “Chinese Boy Students”—120 Chinese youth, average age, 12—sent by the Qing government to study in the U.S. in four groups from 1872 to 1875, but suddenly recalled. See “Imperial Students” <http://www.yale.edu/cusy/imperialstudents.htm>.

Yet another feature is a tendency in the Qing era to look to individuals rather than to appreciate broad economic or international forces. Historians Teng and Fairbank argue that while Chinese historians in more recent times have tended to blame China's problems on foreign imperialism, the Qing court and intellectuals saw instead "the need for men of ability who could deal with the crisis."⁶² This was due in large part to the nation's strong ethnocentric faith in the strength of Chinese culture, that "foreign relations were only a subsidiary function of domestic administration" and that "a dynasty that could handle its domestic problems need have little fear of foreign aggression."⁶³

Finally, the nineteenth century experience might also lead one to conclude that military imbecility for China, as for any nation, is undesirable for all concerned. Not only did its weakened state allow the depredations of outside powers and a population seething with resentment, but its own political development is stifled, with political leaders unwilling to interact well with other powers. The age of nations requires regular communication, trade, diplomacy, exchange of ideas, and tourism for good relations, and a sound military policy is essential to that end.

⁶² Teng and Fairbanks, 125.

⁶³ Ibid.

The self-strengthening movement began in 1861 in order to restore the power and consolidate the Manchus feudal rule, especially after the Second Opium War in 1860. The nature of the reforms was through military modernization and economic self-strength to keep traditional Chinese values and autocratic institutions.[5] The movement can be divided into three parts. The First Phase (1861-1872)[edit | edit source].[^] Renovation of military equipment and training a new army were the most significant missions in the Self-Strengthening Movement. Self-Strengthening Movement (traditional Chinese: 自强运动 or 自强运动); c. 1861–1895 was a period of institutional reforms initiated during the late Qing Dynasty following a series of military defeats and concessions to foreign powers. To make peace with the Western powers in China, Prince Gong was made regent, grand councilor, and head of the newly formed Zongli Yamen (Office of Foreign Affairs). He would be assisted by a new generation of leaders (see below). By contrast, Empress Cixi was virulently anti-foreign, but she had to accommodate Prince Gong because he was an influential political figure i...