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The Wire: Progress, Paradox, and Disaster in the Strategic Networking of China, 1881–1901

Abstract This study of the introduction of telegraphy to China in the late-nineteenth century tells three interrelated stories: China’s pursuit of telegraphic sovereignty with its strategic networking of the empire in the period 1881–99; the functioning of China’s hybrid express courier-telegraphic communications infrastructure; and the international communications crisis during the Boxer Uprising and the “Siege of the Legations” in 1900. The material reality of two inter-connected networks—the privately owned Imperial Telegraph Administration network and the government-run telegraph network—allowed Qing-era Beijing and its provincial governors to communicate with much greater speed. The materiality of these networks—how this new communications technology affected the practical realities of government communications, including the ease of lateral communications between provincial governors—is explored in the context of the communications crisis of 1900. In May and June of 1900 all telegraph lines to Beijing, and throughout much of North China, were cut or otherwise destroyed. While these blinded Western governments are no longer able to exchange telegrams with their Beijing-based envoys, the Qing express courier system continued to operate. Moreover, both the court and provincial officials quickly improvised ad hoc telegraphic communication protocols through the use of “transfer telegrams” (*zhuandian*) that relied on mounted express couriers between Beijing and those North China telegraph stations with working network connections. This assessment of real-time secret imperial communications between the Qing court and the provinces is based on the documentary register *Suishou dengji* (Records of [documents] at hand) maintained by communications managers in the Grand Council. China lost its telegraphic sovereignty in the capital region when Allied troops occupied the Beijing-Tianjin line of communications in the summer and fall of 1900. Moreover, Western dreams of laying, landing, and controlling submarine cables on the China coast were finally realized in North China by the end of 1900. The British, therefore, were able to add a critical section to their planned global network of secure telegraphic communications. China’s recognition of the Western and Japanese right of protecting the Beijing-Tianjin line of

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communications was codified in Article 9 of the Boxer Protocol of September 1901. These losses of China's telegraphic sovereignty would not be completely reversed until after 1949.

Keywords telegraph, submarine cables, Imperial Telegraph Administration, Zongli Yamen, *Suishou dengji*, Boxer Uprising, Li Hongzhang, Zhang Zhidong

Introduction

In the dark of night on December 8, 1870 a submarine cable from Hong Kong was landed at Shanghai. Without fanfare, or Qing government permission, a fringe of China's territory was now linked by wire to Europe. But there the telegraph line ended, not to be extended until 1881, when Qing authorities built a line north to Tianjin. Spurred in part by increasing foreign threats to all frontier regions, most of China's strategic communications network was completed in about fifteen years of methodical construction. In the first six years of this construction, telegraphy came to the capitals of most of China's maritime provinces, most of the Yangzi provinces, and two provinces in Manchuria—eleven provincial capitals in all. In the next six years (1887–92) the network reached nine more provincial capitals in the southwest, northwest, and northeast. In the final years of the nineteenth century the far northwest and Mongolia were connected, and the line to Tibet, via Sichuan, was started. In 1897, with the addition of Hunan's Changsha, all of China's provincial capitals were part of a telegraph network that remained centered where it began: Shanghai.

China achieved this empire-wide telegraphic sovereignty at precisely the moment when it was forced to cede territorial sovereignty from the Manchurian coast in the northeast to the border with French Indochina in the south. In the final years of the nineteenth century, as events began to spin out of control, these intertwining narratives of the enhancing of Qing governmentality, and the encroaching demands of imperialism, open new windows of understanding on the Self-strengthening Era in general and the troubled events of 1900 in particular. Moreover, a third narrative of the global competition to build secure lines of telegraphic communication between metropolises and colonies takes us to the coast of China. We can see evidence that what was at stake in the "scramble for China" in 1897–1900 was not so much Chinese territory itself, but rather East Asian sectors of a global communications network.

The wires, poles, and buildings—some of the material parts of communications infrastructure—are just the starting points of analysis; webbing the world with wire strung or laid across vast distances was but the first marvelous step in creating an international telegraph network. The wires became a network circling a globe of nation-states, territories, and oceans through the agency of states and societies alike. The wire's physical reality was uniform, but

its materiality—how its use in specific situations was “formed by technological, ideological, physical, economic, legal, political, and other determinants”¹—could be as diverse as the lands it traversed. In our study of Qing China’s adoption and use of telegraphy in the late-nineteenth century, then, we should do more than simply add another chapter to a world history of a nineteenth-century communications revolution that focusses on the material reality of the wire. Rather, we must document and analyze the materiality of the telegraph in China. Once we know how a telegraphic message from the Forbidden City reached a provincial governor through the wire, we need to look at the forces—cultural, economic, political, military—that affected the use of telegraphy in China.

What, exactly, did the wire mean to state and society in Qing China? Did telegraphy affect the Qing dynasty’s communications protocols and the effective reach of Beijing? Did it alter the power of provincial governors and their relationships with one another? Did telegraphy influence the local communities through which its lines ran?² Did this information infrastructure—its wires and messages—affect how the “world” was viewed and conceptualized? If we follow the lead of Susan Star and consider the ethnography of infrastructure, can we view a telegraph network and its messages, for example, as artifacts, as traces or records of activities, and a representation of a world?³ It is true that all of the world’s diversity was being represented as pulses—the dots and dashes of Morse code—of modulated electrical energy that moved around the world according to international standards established at European-led conventions held in the late-nineteenth century. But this uniformity obscured the diverse materialities of the international telegraph network.

China followed the example of the United States and Russia, two other countries of vast continental spaces. Russia had relied on a Danish company and foreign capital; the United States relied, for the most part, on private companies. The Qing dynasty, advised by the powerful reform-minded official Li Hongzhang, decided on a third model: a joint government-private effort with no foreign investment. After an initial period of technology transfer aided by the same Danish company that worked with Russia, China achieved a technical capability that minimized the role played by foreign experts.⁴ Although China’s territorial

¹ Bill Brown, “Materiality,” 59.

² I thank Dr. Wook Yoon, who wrote a ground-breaking Yale dissertation “The Grand Council and the Communication Systems in the Late Qing” that included a chapter on telegraphy. See also his essay “Dashed Expectations: Limitations of the Telegraphic Service in the Late Qing,” *Modern Asian Studies*, vol. 49, no. 3, 2015, 832–57. Dr. Yoon’s collegial and generous responses to my questions about the Qing archives and its documents have been very helpful.

³ Susan Leigh Star, “The Ethnography of Infrastructure,” 387. I thank Prof. Thomas Mullaney for bringing Star’s work to my attention.

⁴ Jorma Ahvenainen, *The Far Eastern Telegraphs: The History of Telegraphic Communications between the Far East, Europe, and America before the First World War*; Robert Luther Thompson, *Wiring a Continent: The History of the Telegraph Industry in the United States, 1832–66*.

sovereignty was under attack in this era of unequal treaties and telegraph imperialism,⁵ China sought and achieved “telegraphic sovereignty” (*dianxin zhuquan*),⁶ a remarkable achievement compromised only in the context of the Boxer Uprising of 1900.

Progress

Like many other reforms of the Self-strengthening Era, the development of China’s telegraph network had provincial origins. Governor Ding Richang, who had blocked British efforts to string telegraph lines in the Shanghai area in 1869, sponsored the construction of a telegraph line in southern Taiwan in 1877.⁷ In 1879 Li Hongzhang connected his Tianjin government offices with the Dagu Forts that protected the riverine approach from the Gulf of Zhili to Tianjin. A year later, in October of 1880, he established in Tianjin the Tianjin-Shanghai General Telegraph Bureau (*Jin-Hu dianbao zongju*) and in June 1881,⁸ with imperial approval, crews began stringing lines to the south from Tianjin and to the north from Shanghai. By year’s end the Tianjin-Shanghai line was operational. The Telegraph Bureau was granted *guandu shangban* status (officially-sponsored; merchant-managed) status on April 18, 1882 and renamed the Chinese Telegraph General Bureau (*Zhongguo dianbao zongju*), a term whose conventional treaty-port translation was either “Imperial Telegraph Administration” or “Chinese Telegraph Administration.”⁹ China soon took control of its connection to the world: the Great Northern Telegraph Company’s illegally-landed cable at Shanghai. China reminded the Danish company that telegraph landlines were China’s sole prerogative and on May 18, 1883 ownership of this line was transferred to the privately-held Imperial Telegraph Administration (ITA).¹⁰

This transfer took place during the first phase (1881–83) of network construction, when the provincial capitals of Jiangsu, Zhejiang, and Guangdong were connected to the Tianjin-Shanghai line. In the second phase (1884–86) lines

⁵ Deep Kanta Lahiri Choudhury argues in his work on telegraphy, India, and the British empire that “the telegraph network added a significant dimension to imperialism and imperial expansion.” See Choudhury, *Telegraphic Imperialism: Crisis and Panic in the Indian Empire, c. 1830–1912*, 3.

⁶ *Zhongguo jindai youdian shi*, 71.

⁷ Ahvenainen, *The Far Eastern Telegraphs*, 43; Wang Ermin, “Sheng Xuanhuai yu Zhongguo dianbao shiye de jingying,” 783.

⁸ *Zhongguo jindai youdian shi*, 54; see Erik Baark, *Lightning Wires: The Telegraph and China’s Technological Modernization, 1860–1890*, 166 for start date.

⁹ See *Zhongguo jindai youdian shi*, 54, 61, 227; Albert Feuerwerker, *China’s Early Industrialization: Sheng Hsuan-huai (1844–1916) and Mandarin Enterprise*, 191–92.

¹⁰ Baark, *Lightning Wires*, 173.

reached Fengtian and Jilin; Baoding in Zhili; Shandong; Fujian; Anhui; and Hubei and Sichuan. The third phase (1887–89) connected Heilongjiang, Guangxi, Guizhou, Yunnan, Henan, and Jiangxi. In the fourth phase (1890–92) Shanxi, Shaanxi, and Gansu joined the network. In the final years of the nineteenth century Xinjiang (1893–95) and Hunan (1896–99) were wired. Also in this last phase a line reaching across Mongolia was completed and one to Tibet, via Sichuan, was started.¹¹ Thus, by century's end China had interconnected commercial and government telegraph networks totaling 22,000 miles in length (the world total exceeded 600,000 miles of landlines) that reached all provincial capitals, and many prefectures and counties. Government communications were carried at a discount over commercial lines; government lines could carry private telegrams.¹²

Chinese telegraphic sovereignty meant that this construction, either state-sponsored or state-implemented, faced few of the obstacles, some officially-inspired, that had frustrated early Western initiatives in telegraph line-stringing. Looking at Hunan in particular, and China proper in general, Zhang Zhidong, governor-general of Hubei and Hunan, wrote in a November 1891 report to Beijing about a recent incident in Hunan that he characterized as an outlier. In nineteen other provinces, Zhang wrote, the lines went up.¹³ As we will see, Zhang's matter-of-fact assessment for at least four provinces in the northwest would be complicated by later events, but these appear to have been exceptional. Long before Zhang's report reached Beijing, Shanghai's periodical press had covered the following dramatic events in Hunan. In the summer of 1891, two line-stringing parties operating under the authority of Zhang Zhidong were challenged by angry, sometimes violent, crowds.¹⁴ According to *Shenbao's* Hankou correspondent, one of these events involved more than 10,000 persons

¹¹ Chiba Masashi, *Kindai kōtsū taikē to Shin Teikoku no hembō: Denshin tetsudō nettowā ku no keisei to Chūgoku kokka tōgō no hen'yō*, 65–95 (including line-construction chart at 70–80), 103–5 (provincial-capital chart). For other narratives see Ahvenainen, *The Far Eastern Telegraphs*, 59–157; *Zhongguo jindai youdian shi*, 42–78; Feuerwerker, *China's Early Industrialization*, 191–97; Wang Ermin, “Sheng Xuanhuai yu Zhongguo dianbao shiye de jingying,” 783–89 (line-construction chart); Wook Yoon, “The Grand Council and the Communication Systems in the Late Qing,” 201 (table of construction costs of telegraph line networks). See also Baark, *Lightning Wires*; Yongming Zhou, *Historicizing Online Politics: Telegraphy, the Internet, and Political Participation in China*. In general, the telegraph network replicated the network of imperial postal routes. For a map of the main post routes see Ying-wan Cheng, *Postal Communication in China and Its Modernization, 1860–1896*, 11.

¹² *Zhongguo jindai youdian shi*, 65; Feuerwerker, *China's Early Industrialization*, 197; Daniel R. Headrick, *The Invisible Weapon: Telecommunications and International Politics, 1851–1945*, 28.

¹³ *Yangwu yundong* (hereafter *YWYD*), vol. 6, 426.

¹⁴ *North China Daily News* (hereafter *NCDN*), August 19, 1891, 171, citing *Hubao*. This Chinese-language publication was a sister publication of the *North China Daily News* and the *North China Herald*. See Roswell S. Britton, *The Chinese Periodical Press, 1800–1912*, 51.

who destroyed 2,000 poles and established “a sort of vigilance committee... to watch over all the watercourses and creeks, to prevent foreign engineers and telegraph materials being smuggled into the province”;¹⁵ another *Shenbao* report, probably of the same incident, claimed 20,000 persons had blocked the line party, destroying 10,000 poles.¹⁶ The second line-party left Hunan after a magistrate said he could not promise protection. The report states: “The magistrate of the place was compelled by threats to sign an undertaking, which was dictated to him, not to permit the erection of telegraphs in the province.”¹⁷ Zhang Zhidong was directed by Beijing to investigate this incident, which occurred in the regional context of anti-foreign, secret-society-led riots that roiled the mid-Yangzi region in 1891. In his November 1891 report Zhang explained this context, noting that the line was being built by Sheng Xuanhuai’s ITA with foreign engineers in Lizhou, a district northwest of Changsha and south of the Yangzi, already experiencing anti-missionary animus. He outlined an approach to the project, one he knew had worked elsewhere in China, that Governor Chen Baozhen would eventually implement in 1896.¹⁸

The building of a Changsha-Hankou line took place after a Beijing-directed change in Hunan’s provincial leadership. This new leadership, while mindful of Beijing’s mandate, also sought to address local concerns, enlist local help, and persuade skeptical audiences. In Governor Chen Baozhen’s August 4, 1896 proclamation he wrote:

Moreover, the line in Hunan will pass over only Imperial highways and courier routes, the care of which will be deputed to the chief representatives of the gentry of each district and hence will interfere in no way with the fields, ancestral graves, and houses of the common people, nor will it harm them in any way. Furthermore, the poles, material, and labour are to be supplied by the natives of each district through the agency of each chief representative of the gentry of the said districts, and lastly, after the work is done the care of the line will still be in the hands of the gentry and local watchmen engaged on the spot. As it will not be productive of harm to the people, but on the contrary benefit them, the advantage of the line will be greater to Hunan than it has been to other provinces. It will be of great use to government business and will benefit businessmen in their pursuit after gain.¹⁹

Apart from Hunan, most problems appear to have arisen in the 1890s in areas

¹⁵ *NCDN*, August 5, 1891, 124.

¹⁶ *Ibid.*, 159.

¹⁷ *Ibid.*, August 19, 1891, 171, citing *Hubao*.

¹⁸ See *YWYD*, vol. 6, 422–27.

¹⁹ *North China Herald*, “Telegraph Construction in Hunan,” September 4, 1896, 407–8.

near the lines southwest of Beijing in Shanxi, Shaanxi, Henan, and Gansu provinces.²⁰ As lines reached into the hinterland along strategic routes, some of which were built, financed, and maintained by provincial authorities, local resistance, if manifested, was defeated and the lines kept open.²¹ In 1892, two years after ITA's Baoding-Xi'an line through Shanxi²² was completed, and proclamations had been issued to local jurisdictions (*xiang*) to protect these lines, elite-led destruction destroyed lines in several central Shanxi counties. Provincial troops restored order and the Shanxi line reopened a few months later.²³

Nevertheless, especially in troubled North China, Li Hongzhang had recognized the need for line protection. He used money from his provincial treasury to fund military protection of new lines in the 1880s; he later attempted to transfer this responsibility to county-level militias whenever possible. Military protection of landlines remained a budget item in North China to the end of the nineteenth century.²⁴

The construction of this telegraph network was a tangible symbol of enhanced Qing state visibility at the local level. From the proclamations posted by county officials to announce construction, to the local responsibilities for security, the local and the metropolitan were now, literally, connected by 22,000 miles of wires in 1900. More than half of these lines, especially in strategically important but less populated areas like Xinjiang, Gansu, and Heilongjiang, were constructed, operated, and maintained by provincial authorities; the remaining lines, which have received most of the scholarly attention to this topic, were owned and operated by the privately-held Imperial Telegraph Administration headed by Li Hongzhang's protégé Sheng Xuanhuai. From Shanghai, ITA lines reached north, south, and west to China's provinces along the coast and up the Yangzi River. Another important ITA line ran from Baoding in Zhili province to Xi'an in Shaanxi. But as the line continued west into Gansu it was taken over by

²⁰ See *YWYD*, vol. 6, 325–460, for a collection of edicts and memorials concerning telegraphy drawn from the Qing-dynasty archives in Beijing for the period February 1875–February 1894 (GX1/1–GX19/12). This selection of edicts and memorials covers the period in which most of the network was constructed (1879–93). Oppositional episodes are documented in *Yangwu yundong* for Henan, Shaanxi, and Gansu, as well as the Hunan and Shanxi cases discussed in the text.

²¹ Wang Ermin has surveyed the published Zongli Yamen archive *Haifang dang*, which includes extensive documentation of telegraphy in China, for documents related to these strategic routes in the hinterland. See Wang Ermin, “Sheng Xuanhuai yu Zhongguo dianbao shiye de jingying,” 764–65.

²² *Ibid.*, 787.

²³ *YWYD*, vol. 6, 447–50; Wang, “Sheng Xuanhuai yu Zhongguo dianbao shiye de jingying,” 781.

²⁴ Yoon, “The Grand Council and the Communication Systems in the Late Qing,” 191. See also *Haifang dang*, IV/1/111–123 (Table of Contents) for a listing of line-protection communications from 1884 to 1902.

the government-run telegraph bureau in Lanzhou. Provincial authorities could also manage provincial networks that connected to the ITA network. Among the provinces operating such networks were Yunnan, Guangdong, and Jiangsu.²⁵ In 1908 lines operated by provincial governments (*difang guan ban*) were 49,480 *huali* (about 16,493 miles) in length; commercial lines (*shang ban*) were 41,417 *huali* (about 13,806 miles) in length. As we have seen, some of these commercial lines—the Tianjin-Shanghai line is a good example—were constructed by the Qing government and then quickly turned over to Sheng Xuanhuai's ITA. By 1908 there were 155 government-run telegraph stations and 239 commercially-operated telegraph stations.²⁶ Most of these lines and stations had been constructed by 1900 (by 1895 the ITA part of the network had almost 200 stations).²⁷

Whether lines and stations were operated by provincial governments or the ITA, by 1897 all provincial officials could now submit telegraphic memorials and receive telegraphic imperial instructions. As the network was under construction new communications protocols were developed in Beijing. The Grand Council had taken over the responsibility from the Zongli Yamen for archiving telegrams in 1884, the year telegraph wires reached almost to the Forbidden City and Beijing gained direct telegraphic communications with six provincial capitals. This government telegraph station connected to the domestic network at the ITA

²⁵ Chiba, *Kindai kōtsū taikēi to Shin Teikoku no henbō*, Provincial Tables, Table 2.1, 70–80.

²⁶ See *Zhongguo jindai youdian shi*, 65. A statistical series issued by the Ministry of Posts and Communications (Youchuan bu) for 1907 lists ten provincial telegraph bureaus (the three provinces in Manchuria were under one bureau). See *Youchuan bu diyici dianzheng tongjibiao* (GX33), 30. The most extensive provincial networks were in Yunnan (*ibid.*, 207–8) and Guangdong (*ibid.*, 139–40). Provinces with great distances to string with lines include Xinjiang (*ibid.*, 237–38) and Gansu (*ibid.*, 185–86). One of the best accounts of the building of the global telegraph network in East Asia mistakenly characterizes Sheng Xuanhuai's ITA as a monopoly and says official lines were “outside the network.” See Ahvenainen, *The Far Eastern Telegraphs*, 62. Ahvenainen's ITA-centric view of China's telegraph network is a result, in part, of the nature of his sources: Western-language diplomatic, regulatory, and commercial archives. While limited, it is important to emphasize that these sources, especially those of the Bureau of the International Telegraph Union headquartered in Berne, Switzerland, help us see China's domestic telegraph network in a global context. For example, the French-language publication *Notification* issued from Berne informed the world in 1887 that China's ITA had 76 stations, a number that grew to almost 200 by 1895. See Ahvenainen, *The Far Eastern Telegraphs*, 64. But it is only by consulting Chinese-language archives and documentary compilations (*Haifang dang*; *Yangwu yundong*) that one can glimpse the crucial government-run lines of China's strategic telegraphic network. For secondary works drawing on this Chinese material see Wang, “Sheng Xuanhuai yu Zhongguo dianbao shiye de jingying,” *Zhongguo jindai youdian shi*; Baark, *Lightning Wires*; Yoon, “The Grand Council and the Communication Systems in the Late Qing.”

²⁷ Ahvenainen, *The Far Eastern Telegraphs*, 64.

office outside the imperial precincts. ITA, via Shanghai, connected China to the world.²⁸

At first, the modernization of China's strategic communications network was adapted to the Qing-era palace-memorial system. This system, while based in part on Ming-dynasty precedents, had evolved in the early-eighteenth century with the ad hoc group of high Qing officials who managed the most sensitive of the strategic communications between the emperor and his military commanders in Inner Asia. Over time the Grand Council (Junjichu) of advisors and communications managers became quite important and influential. With a paper trail and a set of archives outside the purview of the six central government ministries, and answerable only to the emperor, the Grand Council's influence and importance was formidable. A palace memorial was a confidential communication between the emperor and his highest officials. It was, in fact, to be written by the official himself. The emperor wrote his comments and replies in vermilion ink on the document and returned it to the provincial official who, once he had noted the emperor's will, sent the document back to Beijing for archiving.²⁹

This was the most secure and secret communication channel. Court letters, with imperial instructions, were prepared by the Grand Council on behalf of the emperor. These important documents were semi-secret, since Grand Council ministers were privy to both the discussions and the emperor's instructions, which could take the form, for example, of edicts. Those palace memorials forwarded for discussion to the Six Ministries and other metropolitan offices were semi-open in their ostensible classification. Finally, unclassified documents were sent to the Grand Secretariat for public distribution. These documents could be sent over from the Grand Council or other metropolitan offices in Beijing.³⁰

Those unclassified documents released for open distribution were posted on the "boards" by the Grand Secretariat and were available for inspection by other officials, especially those responsible for selecting documents of interest to particular provincial audiences. By the mid-nineteenth century this official function had been partially superseded by private companies that paid scribes for

²⁸ Chiba, *Kindai kō tsū taikai to Shin Teikoku no henbō*, 84–85; Yoon, "The Grand Council and the Communication Systems in the Late Qing," 184–85.

²⁹ Beatrice S. Bartlett, *Monarchs and Ministers: The Grand Council in Mid-Ch'ing China, 1723–1820*; J. K. Fairbank and S. Y. Teng, "Of the Types and Uses of Ch'ing Documents," 24–34.

³⁰ For this classification typology, see Silas H. L. Wu, *Communication and Imperial Control in China: Evolution of the Palace Memorial System, 1693–1735*, 104–5. Publicly-issued imperial instructions (*mingfa shengyu*) were released by the Grand Secretariat. See *ibid.*, 102. For a working definition of "court letter" (*tingji*) see Fairbank and Teng, "Types and Uses," 66–67.

the information posted on the “boards.” These private publishing houses (*baofang*) produced what was known to Westerners as the *Peking Gazette*. While the materials printed in the various *Peking Gazettes* were official government documents, the selection, publication, and distribution were unofficial and private.³¹ Moreover, most of the material released to the public was concerned with routine matters of government business. Sensitive, confidential documents were kept within the Forbidden City; the most sensitive and secret by the emperor himself; the more sensitive and semi-secret in the files of the Grand Council.

The notion of information infrastructure can be applied to this traditional palace-memorial system of imperial communications. It too had an important material aspect that had a pragmatic effect on both its practitioners and, we can hypothesize, those aware of its operation. Unlike the modern anonymity and invisibility of telegraphy’s pulses of energy through wires, court letters and memorials, traditionally, were carried by mounted express couriers along established communication lines. In a sense, the message was embodied. For bystanders throughout China, one need not know the contents of the reports to recognize that important information was being couriered to or from Beijing; the penal code, too, brought attention to the network, criminalizing actions that might impede these information flows. In the Forbidden City meticulous and detailed regulations insured the tracking, storage, and retrieval of these highly classified documents.³²

How, in China, did telegraphy affect these familiar conventions, practices, and relationships? Were there unintended consequences as China sought to secure its borders and communicate quickly with its diplomatic representatives abroad with timely electronic communications? Infrastructure is neither value-neutral nor inert; communications infrastructure is about relationships and when infrastructures change relationships change. Could these two information infrastructures, one indigenous and one Western in origin, be integrated effectively? Moreover, what happens when a familiar information infrastructure is compromised and neither the medium nor the message is available?

Telegraphic court letters were dispatched and telegraphic memorials were

³¹ K. C. Liu and Hao Yanping (Hao Yen-p’ing), in an article with a late-Qing focus, characterize the “so-called ‘Peking Gazette’ [as] an unofficial reprinting of notes and documents issued at court.” See Barbara Mittler, *A Newspaper for China?: Power, Identity, and Change in Shanghai’s News Media, 1872–1912*, 175n9. The commercialization of its publication had begun by the mid-nineteenth century. See *ibid.*, 181n38. For Barbara Mittler’s masterful overview of the complicated publishing history of this gazette see *ibid.*, 177–87.

³² See Ying-wan Cheng, *Postal Communication in China and Its Modernization, 1860–1896*, 10–26. For a discussion on telegraph-line security and punishments see Yoon, “The Grand Council and the Communication Systems in the Late Qing,” 191–92.

received, but the new technology did present challenges for the Qing government. At first an effort was made to keep practices and processes familiar. The Zongli Yamen, established in 1861 to facilitate communications between China and Western countries, which was the government bureau that had successfully lobbied the throne to allow telegraph wire into Beijing in 1884,³³ was given the responsibility of decoding, transcribing, formatting, and forwarding telegraphic memorials to the Grand Council for final processing for presentation to the emperor. Likewise, when highly classified and urgent imperial instructions needed to be telegraphed to provincial officials, the Grand Council forwarded these to the Zongli Yamen for encoding and telegraphic transmission. The Zongli Yamen, then, was central to the transmission of government telegraphic communications until the end of the nineteenth century.³⁴

We should pause at this point and consider the materiality of these two means of communication: the express courier system and the telegraphic network. The traditional court letter was drafted, copied, and sealed in the Grand Council and dispatched to the provinces by express couriers whose progress was duly noted in post-station logbooks. The semi-secret court letter, which could include an imperial edict, was opened only by the recipient, a recipient who could document the process of transmission and assess the markers of authenticity—the paper, the calligraphy, the formatting, the seals—of the document itself that, he knew, originated from deep within the Forbidden City.

The provenance of a telegraphic court letter, by contrast, was different, significantly different. First, the message was taken out of the Forbidden City and delivered to the Zongli Yamen. There the Chinese characters had to be located in a book that equated each character to a unique four-digit number. The Zongli Yamen then sent out the telegram, which had to be received and re-transmitted in telegraph offices across China. Finally reaching the offices of the recipient, the stream of four-digit groups of numbers received by the last telegrapher had to be converted back into Chinese characters. Many steps; many hands. And the original document, dematerialized in Beijing and transmitted by numeric Morse code to its recipient, might never be seen by the recipient. The hallmarks of the traditional court-letter system were speed and secrecy. Telegraphy certainly enhanced speed, but it opened for the first time the possibility of garbled transmissions, and communications security became much

³³ Wang, “Sheng Xuanhuai yu Zhongguo dianbao shiye de jingying,” 784; Ahvenainen, *The Far Eastern Telegraphs*, 61.

³⁴ These reporting relationships were codified in the 1899 edition of the Qing dynasty’s compilation of administration regulations, the *Guangxu huidian*. For a flow chart see Chiba, *Kindai kōtsūtaikei to Shin Teikoku no hembō*, 102. For a discussion of the development of these new communications protocols and their practice see *ibid.*, 95–109; see also Yoon, “The Grand Council and the Communication Systems in the Late Qing,” 183–87.

harder for the Grand Council to maintain as its court letters became telegrams at the Zongli Yamen, where the telegrams were prepared for transmission to the provinces.

Unlike the Grand Council, whose office was located near the emperor within the Forbidden City, the Zongli Yamen was located just outside its eastern wall. Foreign diplomats, who had craved access to imperial authority since at least the first Opium War³⁵ were still being buffered by Qing officials. Even in the midst of international crises diplomats only saw, on a face-to-face basis, members of the Zongli Yamen. These men could be, however, very important and influential metropolitan officials. Moreover, members of both the Grand Council and the Zongli Yamen served concurrently in other metropolitan offices, and in some cases one official was both a member of the Grand Council and the Zongli Yamen. Coordination within the Qing government, then, was a function of both organization and personnel. In the age of telegraphy, in a manner similar to the model of telegraphic memorials from provincial officials, the Zongli Yamen was responsible for relaying diplomatic messages to the emperor via the Grand Council. But provincial officials, unlike foreign diplomats, could also communicate directly with the emperor via the Grand Council (bypassing the Zongli Yamen) by writing a palace memorial and entrusting its delivery to the express-courier system operated by the Ministry of War.

Beginning in 1884, then, the strategic communications of the Qing dynasty depended on both a new telegraphic network and the familiar express-courier system. Foreign diplomats relied on telegraphy, the international postal system, and personal couriers. As the Boxer Uprising of 1900 would make clear, the resilience and reliability of the hybrid strategic communications network of the Qing dynasty was superior to the suddenly vulnerable Western-style telegraph network that depended on lines owned and operated by China. In different ways these familiar and new infrastructures became visible in the crisis and collapse of 1900.

Paradox

Paradoxically, the networking of the Qing state through telegraphy, made possible in part by positive provincial responses to new mandates from Beijing, a networking that made Qing defense of borders and integration of provinces more effective, also created a new opportunity for lateral communications (and the

³⁵ Richard S. Horowitz, “‘They Will Look Upon the Most Secret and Important Places’: Political Globalization and its Enemies in Nineteenth Century China.”

implicit threat of factionalism) among officials from different provinces.³⁶

By the late-Qing period provincial officials and elites kept abreast of Beijing news and policies via numerous gazettes published privately, mostly for specific provincial audiences. As we have seen, these gazettes (*Jingbao*; *Tangbao*; *Dibao*) usually referred to by Westerners as the *Peking Gazette*, were based, in part, on official documents released by the Grand Secretariat on the authority of the Grand Council. This was also a venue for news about routine government business; it was not intended, for the most part, for the sensitive or confidential information characteristic of the palace-memorial system. The gazettes reached provincial capitals, where they were reproduced for the target audience.³⁷ This was one of the few means by which provincial officials could glimpse what was happening in Beijing and elsewhere in the empire. (Also, they were seen by Westerners on the south China coast as early as the mid-nineteenth century, offering a rare way to discern what was happening in far-off Beijing. This curiosity notwithstanding, in 1842 at least some provincial officials thought it treasonous to show gazettes to foreigners.)³⁸ The Beijing-centric information flow was echoed by new telegraphic protocols.

Beginning in August 1898 unclassified edicts authorized by the Grand Council to be openly distributed were required to be transmitted by the Imperial Telegraph Administration. It is worth noting that this particular imperial use of telegraphy for communicating with provincial officials began in the waning days of the Hundred Days' Reforms. The Guangxu emperor wrote in an edict of August 27 (GX24/7/11):

Owing to the pretexts our Viceroys and Governors have recently made to excuse the delay they have been guilty of in obeying our commands to begin reform works in their various provinces, we hereby command that in future all our edicts will be sent by telegraph and that the said Viceroys and Governors are to obey our decrees immediately [when] they receive such

³⁶ Chiba, *Kindai kōtsū taikai to Shin Teikoku no henbō*, 201–5.

³⁷ Fairbank and Teng, “Types and Uses,” 61–62; Britton, *The Chinese Periodical Press, 1800–1912*, 7–15.

³⁸ For a translation of an 1842 memorial by the Zhejiang governor in which he argues for restricting foreign access to the *Peking Gazette* see Fairbank and Teng, “Types and Uses,” 62. See also Mittler, *A Newspaper for China?* 181n38, for additional translations of material from this memorial. For a discussion of an 1858 memorial by the high-ranking official Zhou Zupei, on behalf of an ad hoc committee discussing security issues, that opposed the proposal to allow Western diplomats to reside permanently in Beijing see Horowitz, ““They Will Look Upon the Most Secret and Important Places,”” 24–27. Zhou observed that treaty-port Westerners, granted access to China for reasons of commerce, had been studying the *Peking Gazette* as a way to understand and influence Qing government actions and policies. How much worse, he worried, to have foreigners in Beijing.

telegrams, without waiting as heretofore for the arrival of said edicts, written out in full, by overland courier through the Board of War.³⁹

The emperor, frustrated by what he took to be the delaying tactics of his provincial governors, granted to these telegraphed edicts an authority that turned the full hardcopy version of the edict coming from Beijing into a confirming message. Act, he demanded, on the basis of the telegraphic edict.

This had the potential for increasing Beijing's control of the provinces, perhaps one of the reasons this innovation appears to have been unaffected by the ending of the Hundred Days' Reforms in September 1898. But it could have unintended consequences. Once edicts could be transmitted by telegraph the security of the system was lessened. Forging a hardcopy imperial edict was much harder to do than a telegraphic edict, which came across the wire in four-digit groups of numbers like any other message, public or private, important or unimportant. Nevertheless, no longer would there be a long wait for a private gazette, whose contents were selected for publication by non-officials for specific audiences, for details about an open edict. Moreover, unlike the privately selected and published documents in gazettes, the open edicts were telegraphed by the authority of the central government to provincial governments. In essence, these telegraphic edicts constituted a government-issued electronic *Peking Gazette* of edicts that, for the first time, was truly timely, official, and singular.

Telegraphy had also affected the provinces' ties to Beijing. Since 1884 provincial officials had been telegraphing urgent memorials to the Zongli Yamen for submission to the court (*daizou*), even if they continued using either the routine or express courier systems for most Beijing-bound correspondence.⁴⁰

The new technology also made it possible for convenient and timely lateral communications between provinces. While such province-to-province communications had always been facilitated under the jurisdiction of a governor-general, lateral communications among governors in a particular set of provinces now became much easier. Thus, telegraphy—a new communications infrastructure—had the potential to both unify and fracture China in familiar and unfamiliar ways. This observation applies as well to society. New print media

³⁹ *North China Herald*, June 19, 1899, 1109. See also Hou Jiyong, "Wan-Qing dianbao de yinru gongwen xiandaihua de yiyi," 81.

⁴⁰ Yoon, "The Grand Council and the Communication Systems in the Late Qing," 184–85. *Zhongguo jindai youtian shi*, 70. The Grand Council's archives of telegraphic traffic comprise forty published volumes. See *Qingdai Junjichu dianbao dang huibian*. Zhang Zhidong's first telegraphic memorial to the Zongli Yamen is dated July 22, 1884 (GX10/int. 5/30). See Zhang Zhidong, *Zhang Zhidong quanji*, vol. 3, 1875. For examples of telegrams sent by Shandong governor Li Bingheng in early 1895 to the Zongli Yamen, accompanied by a request for the yamen to memorialize on Li's behalf, see *Li Bingheng ji*, 587, 674, 697–98.

such as Shanghai's *Shenbao* introduced the Chinese public to Western-style journalism in the late-nineteenth century. These media, like their counterparts in the West, depended on telegraphy for content and this content could ignite telegraphic firestorms. One of the earliest and most famous of these occurred in early 1900, a few years after the telegraph network reached the last of China's provincial capitals (1897), and concerned the Empress Dowager's plans for succession after the reign of the Guangxu emperor. Telegraphic protests, including telegrams from Chinese overseas, document an aspect of "Chinese public opinion" on the eve of the Boxer Uprising.⁴¹

Shenbao is also part of this story because of its own use of imperial documents. One could argue that the Guangxu emperor's August 1898 decision to send open edicts by telegraph constituted the Qing government's first effort to use this new technology to reach, through provincial yamens, the people. *Shenbao*, which was known for its own version of a *Peking Gazette* similar in content and style to other *Peking Gazettes*, had a special correspondent in Beijing. On January 16, 1882, soon after the Tianjin-Shanghai line was complete, *Shenbao* published the first edict its correspondent had telegraphed from the north.⁴² By 1884 its correspondent could transmit documents to Shanghai directly from Beijing. With this telegraphed information in hand, *Shenbao*'s editors could prepare what was essentially their own telegraphic *Peking Gazette*.

The Guangxu emperor's 1898 instructions can also be seen as part of this opening-up process. Open edicts that special correspondents in Beijing were already telegraphing to newspapers like *Shenbao* would now be transmitted on the specific authority of the central government itself to provincial officials. At the very least this would address the awkward situation of the periodical press publicizing an imperial edict days, if not weeks, ahead of a provincial government's announcement of the same imperial decision. The Qing state was now speaking in its own voice, no longer depending entirely on private publishers to select and communicate its most important messages.

By the end of 1898 all provincial governments could now receive open telegraphic edicts from Beijing at about the same time. The mediation of time and distance was collapsed, a mediation that had previously allowed more autonomy to provincial officials, and protected the central government in Beijing from being implicated as an accessory to foreign hectoring. But now diplomats could demand that the government authorize timely distribution of open edicts throughout China over its telegraph network. No longer would envoys need to rely on the private publishers of the *Peking Gazette*. This combination of 1) changing center-periphery relationships, 2) a new communications technology,

⁴¹ Yongming Zhou, *Historicizing Online Politics*, 59–69. See also Hou Jiyong, "Wan-Qing dianbao de yinru gongwen xiandaihua de yiyi," 83–84.

⁴² Mittler, *A Newspaper for China?* 212n147.

and 3) a foreign community insisting that China speak with one voice in accord with treaty rights and foreign demands was extraordinarily volatile.

Disaster

One of the key properties of infrastructure, according to Susan Star, is its becoming “visible upon breakdown.” She also argues that infrastructure is not infrastructure until its material reality is connected to organized practices. If this is true, then the breakdown of the material implies a relational collapse as well.⁴³ But what does it mean for an infrastructure to become visible upon breakdown? As we have seen, there was an extensive telegraphic infrastructure at risk in 1900. Crucial sections literally broke down, or were destroyed, during the Boxer Uprising. At multiple points along the lines leading to Beijing from Mongolia, Manchuria, and the two routes from the south, the lines were cut. The destruction of lines along the Grand Canal extended almost to the border with Jiangsu. The lines bisecting Shanxi were cut at numerous points, and the section between Kaifeng (Henan) and the Shandong border were cut as well. Finally, a lateral line between the Zhili capital at Baoding, and Tianjin to the east, was also cut in numerous locations.⁴⁴

Qing officials had seen this coming in the spring of 1900. As a rural insurgency spread in North China, government officials quickly began to focus attention on vulnerable communications lines. The budget crisis, precipitated in part by the indemnity levied by Japan after the Sino-Japanese War of 1894–95, had prompted demobilization of regular soldiers and increased reliance for local security on militias.⁴⁵ Fewer soldiers were responsible for line security in North China, and neither soldiers nor militia proved capable of defending the network. Many sources, including the Grand Council archive of telegraphic traffic, document its collapse. The Zongli Yamen noted the May 27, 1900 (GX26/4/29) cutting of the Beijing-Baoding line.⁴⁶ The next day, May 28, Sheng Xuanhui telegraphed Zhili governor Yulu that he must protect the lines. Liu Kunyi also raised an alarm.⁴⁷ Two days later the court itself called on provincial officials to

⁴³ Star, “The Ethnography of Infrastructure,” 380, 382.

⁴⁴ Chiba, *Kindai kōsūtataikei to Shin Teikoku no hembō*, 210–11, Map 4.1 (national map); 212, Map 4.2 (North China); see also Chiba’s narrative, 207–9.

⁴⁵ Yuji Muramatsu, “The ‘Boxers’ in 1898–99: The Origins of the ‘I-ho-chuan’ Uprising, 1900,” 242–48.

⁴⁶ *Haifang dang*, IV/3/2183, Doc. 1656 (GX26/5/1).

⁴⁷ See *Zhidong jiaofei diancun*, 273–74 (Taiwan reprint pagination) for Sheng’s May 28, 1900 (GX26/5/1) telegram to Zhili governor-general Yulu and his response. For Liu Kunyi see *Yihetuan*, vol. 4, 34–35. For the twelve days from May 28, 1900 to June 8, 1900 (GX26/5/1–GX26/5/12), when the Grand Council archive falls silent, see *Qingdai Junjichu dianbao dang huibian*, vol. 27, 149–77.

use soldiers to protect the Tianjin-Shanghai and Baoding-Shanghai lines. Zhang Zhidong telegraphed the contents of this edict to Sheng Xuanhuai on June 4, 1900 (GX26/5/8).⁴⁸ But the news from North China only worsened. Yulu's Tianjin register of telegraphic traffic for 10–15 June lists thirty-five outgoing telegrams. On June 11 he telegraphed Sheng Xuanhuai in Jiangsu about the interruption of the telegraphic connection to Beijing.⁴⁹ Another key record of provincial and extra-provincial telegraphic traffic, which recorded an average of twenty telegrams a day in early June 1900 routed through Tianjin, falls silent on June 13, 1900 (GX 26/5/17),⁵⁰ the day the Beijing-Tianjin line, which split at Tianjin into a northern line to Manchuria and a southern line to Shanghai, was cut.⁵¹ The line to Russia went dead the same day, June 14,⁵² that the Tianjin-Ji'nan line was cut. Yuan Shikai, who would play a crucial role during the crisis, telegraphed this news from Shandong to Zhang Zhidong on June 15.⁵³ Zhang Zhidong, who served as a kind of clearing house for information and tried to keep key officials informed, appeared to think early in the crisis that communications could be quickly restored as long as provincial and local officials fulfilled their responsibilities.⁵⁴

Ironically, Westerners, who would insist throughout this crisis on unimpeded access to “lines of communications,” contributed to the communications chaos by their own actions on June 15. Naval commanders in the Gulf of Zhili, on their own authority, directed Japanese, Russian, and French forces to seize control of three key rail stations between Tianjin and the Dagu Forts. Three hundred Japanese took control of the Tanggu Rail Station just west of the forts; a Russian and French force occupied the Tianjin station near the governor-general's yamen; and a Russian force occupied a station between these two points.⁵⁵ In a repeat of

⁴⁸ Zhang, *Zhang Zhidong quanji*, vol. 10, 7964.

⁴⁹ *British Parliamentary Papers*, China No. 1 (1901): 159 (Outgoing telegram #306, June 11).

⁵⁰ *Zhidong jiaofei diancun*.

⁵¹ June 13, 1900 (GX26/5/17) is the date of first “transfer telegram” (*zhuan dian*) listed in the Grand Council's documentary register *Suishou dengji*. (See 28–29 for explanations of this term and source.) The published archive of the Grand Council's outgoing telegraphic traffic ends on June 8, 1900 (GX26/5/12); outgoing traffic in the record book does not resume until February 9, 1902 (GX28/1/2); incoming traffic in the telegraphic archive record book ends on June 16, 1900 (GX26/5/20) and except for a brief two-week period in July does not resume until January 7, 1901 (GX27/11/28). I have seen no evidence that suggests that Beijing's telegraphic connection had been restored in mid-July; *Suishou dengji* continues to note various transfer telegrams for this period.

⁵² British Minister Claude MacDonald's last June telegram (his 110th in June) to Lord Salisbury went via the Kiachta line on June 14. See Leonard Kenneth Young, *British Policy in China, 1895–1902*, 119n2.

⁵³ Zhang, *Zhang Zhidong quanji*, vol. 10, 7978.

⁵⁴ *Ibid.*, 7985.

⁵⁵ Li Dezheng, Su Weizhi, and Liu Tianlu, *Baguo lian jun qin Hua shi*, 102, 444. See also maps at 103 and 127.

actions taken by the Japanese in 1894–95,⁵⁶ and by the Germans at Qingdao in 1897,⁵⁷ telegraph lines were cut and the ability of the court to monitor Allied naval movements in real time was further compromised.

These were not ad hoc actions by Japan, Russia, and Germany; whether intended or not, these were acts of war. In the nineteenth century, submarine cables and landlines had become objects of international attention and concern, especially in military and strategic-planning circles. In 1875 the International Telegraph Convention of St. Petersburg decided that states controlled their networks: they were not required to send another country's message, as long as notification was given. Even notification could be dispensed with if it represented a threat to state security.⁵⁸ The International Telegraph Convention of 1884 recognized that its peacetime rules did not apply in times of war.⁵⁹ China had followed international precedents in its instructions in 1898 to telegraph offices to reject any foreign coded telegrams during national crises.⁶⁰ In a British report of October 22, 1898 strategic planners (Colonial Defence Committee) meeting behind closed doors had advised the government that "we ought to cut an enemy's cables wherever necessary for strategic purposes."⁶¹ In practice the state that controlled the wires and cables controlled the message,⁶² a new reality Britain addressed with its "all-red" telegraph network. At this point Britain had almost completed its "all-red" network of imperial communications, so named because both landlines and the landings of submarine cables never left British territory, then represented on British maps in red. (This network was completed in 1902.)⁶³

The Allied cutting of the telegraph line at the Tanggu Rail Station, the line Li

⁵⁶ Chiba, *Kindai kō tsū taiki to Shin Teikoku no henbō*, 90.

⁵⁷ Wang Shouzhong, *Deguo qinlue Shandong shi*, 93.

⁵⁸ See Headrick, *The Invisible Weapon*, 88, 98–99.

⁵⁹ See Paul M. Kennedy, "Imperial Cable Communications and Strategy, 1870–1914," 732.

⁶⁰ See Yoon, "The Grand Council and the Communication Systems in the Late Qing," 191, citing *Haifang dang*, IV/2/1945, Doc. 1440 (GX24/8/25).

⁶¹ Kennedy, "Imperial Cable Communications and Strategy, 1870–1914," 740, 742.

⁶² Countries could demand that all telegrams were transmitted *en clair*, i.e., in the clear with no code or cipher systems used. See Headrick, *The Invisible Weapon*, 88. During the Spanish-American War, Great Britain was careful to maintain network neutrality, officially, by refusing access to its telegraph network in Hong Kong to both Spain and the United States. Britain did, however, allow Admiral Dewey to send messages to Washington as long as Dewey declared the messages were not of a warlike nature. See William Reynolds Braisted, *The United States Navy in the Pacific, 1897–1909*, 33n75. During the Boer War Great Britain even insisted that other Western colonial powers in Africa must abide by the *en clair* rule. In addition to, in most cases, enforcing these rules, Britain read, i.e., "censored," all telegraphic traffic. See Headrick, *The Invisible Weapon*, 88–89. See also Kennedy, "Imperial Cable Communications and Strategy, 1870–1914," 747–48.

⁶³ Headrick, *The Invisible Weapon*, 97.

Hongzhang had built in 1879 to connect his Tianjin office with the Dagu Forts, meant that officials at the Tianjin end of the Beijing-Tianjin axis, already cut off from Beijing, were now cut off from telegraphic contact with authorities in Manchuria.⁶⁴ This also meant, however, that Western military forces now surrounding the Dagu Forts could not communicate by telegraph with their compatriots in Tianjin.

For Westerners in North China in mid-1900 it was impossible to send or receive telegrams. The West had come to rely on timely communications between capitals and distant military and diplomatic personnel.⁶⁵ The communications blackout in 1900 was hardly anticipated by Western governments. Their responses varied, with some countries like Great Britain relinquishing control to China Station naval commanders, while leaders in Washington D.C. tried to exercise as much control as possible on a day-to-day basis.⁶⁶ China's hybrid communications structure, however, proved to be adaptable, flexible, and resilient during the crisis. The express-courier system managed by the Ministry of War continued to function and proved to be instrumental in a critical adaptation during the crisis: the use of the "transfer memorial" and the "transfer edict" for especially important telegraphic communications. The first edict sent by transfer telegrams (*zhuan dian*) left for Tianjin on June 13, 1900 (GX26/5/17), the day the Beijing-Tianjin line was cut.⁶⁷

How did the "transfer network" operate? For outgoing telegrams from Beijing, express couriers headed for the first functioning telegraph station with a link to the network; incoming telegrams were sent to the same stations for transfer to Beijing via express couriers: two stations in Zhili (Baoding and Shanhaiguan)

⁶⁴ On June 13, 1900 the Zhili governor-general in Tianjin, in outgoing telegram #302 to the Qing general stationed at Shanhaiguan (Zhili), queried: "I hear that Russian troops from Port Arthur are proceeding to Shanhaikuan and Peitaiho. Is this the case?" See *British Parliamentary Papers*, China No. 1 (1901), 160. Similar information was available in Beijing. In British Minister Claude MacDonald's last June telegram he reported on June 14 that Russia had embarked 2,000 troops from Port Arthur to the Dagu Forts and that Japan was expected to send troops. MacDonald argued that Britain, for political reasons, should send troops as well. See Young, *British Policy in China, 1895-1902*, 119n2. For both the Zhili governor-general and the British minister, these were among the last telegrams they were able to send from their respective posts in Tianjin and Beijing. Given the seriousness of the issues and the stakes involved, one can imagine the impact of the loss of telegraphic contact with their superiors in Beijing and London.

⁶⁵ The Boxer Uprising was "the first major international incident in which diplomacy was carried out on the basis of these telegraphic reports." See Young, *British Policy in China, 1895-1902*, 324. For a recent work on the impact of telegraphy on diplomacy see David Paull Nickles, *Under the Wire: How the Telegraph Changed Diplomacy*.

⁶⁶ See Young, *British Policy in China, 1895-1902*, 118; Braisted, *The United States Navy in the Pacific, 1897-1909*, 81-93.

⁶⁷ *Suishou dengji*, entry for GX26/5/17.

and one in Shandong (Ji'nan) were the three stations in this ad hoc and extraordinary infrastructural adaptation. Zhang Zhidong, who seems to have thought in mid-June that telegraphic communications with Beijing could be restored, informed fellow officials on July 15 how the network operated. He telegraphed his colleagues in Sichuan, Shaanxi, Fujian, Guangdong, and Henan about transit times for transfer memorials from Xi'an, Kaifeng, and Ji'nan. Zhang said a telegraphic memorial received by Yuan Shikai in Shandong could be transferred to Beijing in 5–6 days.⁶⁸ Most transfer telegrams were routed through Baoding and Ji'nan, in part because the Shanhaiguan transfers were less secure. (Before reaching or leaving Shanghai these transfers were routed through the Great Northern submarine cable from Vladivostok.) Unlike the foreigners trapped in Beijing, by this means the Qing court was able to use telegraphy during the Boxer Uprising. This use, however, was restricted to only the most important messages: those going to Chinese ministers abroad and foreign heads of state, and periodically to major provincial officials such as Li Hongzhang, Zhang Zhidong, Liu Kunyi, and a handful of others. In these exceptional cases, less than ten percent of all edicts in the first two weeks of the crisis, the court would send outgoing telegrams by express courier to Baoding, Ji'nan, or Shanhaiguan. Incoming telegrams could follow the same routes, conveyed by express courier for the final leg to Beijing. We can track these information flows in an important archival resource: *Suishou dengji* (Records of [documents] at hand). This Grand Council register of imperial communications recorded, sometimes on an hourly basis, incoming and outgoing messages between the imperial court and its highest officials.⁶⁹

For the period June 13, 1900–June 30, 1900 (GX 26/5/17 to GX26/6/4) the following transfer telegraphic edicts are entered in *Suishou dengji*: for Tianjin June 13 (GX26/5/17) (to Shanghai: telegraph lines cut; Sheng Xuanhuai to repair), June 17 (GX26/5/21) (to Yuan Shikai; come to Beijing), June 25 (GX26/5/29) (to Yuan Shikai); for Baoding June 24 (GX26/5/28) (to Yuxian), June 25 (GX26/5/29) (to Li Hongzhang, Li Bingheng, and others), June 26 (GX26/5/30) (to Yangzi governors), June 29 (GX26/6/3) (Chinese ministers abroad). This practice would continue.⁷⁰

⁶⁸ Zhang, *Zhang Zhidong quanji*, vol. 10, 8133.

⁶⁹ Beatrice Bartlett, "Ch'ing Documents in the National Palace Museum"; *Monarchs and Ministers*, 212–16. I thank Prof. Beatrice Bartlett for introducing me to this valuable archival research tool prior to my departure for dissertation research in Asia; I first used *Suishou dengji* at the National Palace Museum in Taipei. Research for this essay was based on microfilms, produced by the No. 1 Historical Archives in Beijing, that were lent to me by Harvard University and Yale University.

⁷⁰ In Chiba Masashi's survey of the *Shilu* (Veritable records) and *Yihetuan dang'an shiliao* for the period June 25–August 13 (GX26/5/29 to GX26/7/19) he found twenty-six telegraphic edicts. See Chiba, *Kindai kōtsū taikō to Shin Teikoku no henbō*, 224 (Table 4.1).

We can also use *Suishou dengji* to track the transfer telegraphic memorials arriving in Beijing throughout the crisis. For example, Liu Kunyi and Zhang Zhidong submitted a telegraphic memorial, routed via Yuan Shikai, that was received in Ji'nan on June 27 (GX26/6/1) and transferred to Beijing and noted in *Suishou dengji* on June 29 (GX26/6/3). We also know that Liu and Zhang had telegraphed a memorial to Ji'nan based on information in a collection of Yuan Shikai's memorials.⁷¹ Another important Ji'nan transfer is noted in *Suishou dengji* entries for July 24 (GX26/6/28). The first item is a memorial concerning the situation in Beijing from Liu Kunyi, Zhang Zhidong, and four other provincial officials that was sent by express courier from Ji'nan on July 21 (GX26/6/25).⁷² A court letter in response describes the condition and treatment of the ministers in Beijing, information that addressed the widely-circulated, but totally unfounded, rumor of a "Peking Massacre." Appended to this entry are instructions to send the court letter to Yuan Shikai via express courier.⁷³ These are two important correlations between *Suishou dengji* and Yuan Shikai's collection of memorials. The two memorials and others demonstrate the continuing use of the transfer network throughout the crisis. For the period June 27–August 1 (GX26/6/1–GX26/7/7) there are seven transfer telegraphic memorials in Yuan's collection: three from groups of provincial officials signing off on telegrams submitted by Liu Kunyi or Li Hongzhang; three transfer telegrams came from Chinese ministers abroad (Washington, D.C. and Berlin); and one from a provincial official.⁷⁴

In the Boxer Uprising of 1900 the modern but vulnerable information infrastructure connecting Beijing to the world broke down and was made transparent. Paradoxically, the Qing's own information infrastructure, which had integrated telegraphy into its organized practices, did not break down and hence was less visible. *Suishou dengji*, which, as we have seen, documented specific edicts and memorials, also allows us to explore the Qing information infrastructure from a second vantage point: "as a trace or record of activities." As

⁷¹ *Yuan Shikai zouyi*, 146.

⁷² For the text of this Ji'nan transfer memorial see Zhang, *Zhang Zhidong quanji*, vol. 3, 2156–57.

⁷³ For the Liu Kunyi telegram that was memorialized by Yuan Shikai, and the court letter, see *Yuan Shikai zouyi*, 178–80. The court letter can also be found in *Yihetuan dang'an shiliao*, 365–66. There is no indication in this important documentary collection that the court letter was sent to Yuan Shikai as a transfer telegram to be telegraphed to Liu Kunyi. In *Suishou dengji* we must infer its "transfer-court-letter-telegram" status; in another section in the same day's July 24 (GX26/6/28) entries it also informs us that Yuan was being entrusted with a transfer telegram to send to Russia. We can assume that Yuan received both transfer telegrams, one to telegraph to Liu Kunyi in Nanjing, one to telegraph to the Chinese minister in St. Petersburg.

⁷⁴ *Yuan Shikai zouyi*, 146, 163, 172, 178–79, 184–85, 189–91, and 196–97.

Susan Star points out: “[T]he infrastructure itself becomes an information-collecting device.”⁷⁵ As an imperial record book, *Suishou dengji* documents a functioning information infrastructure, which, because of its functionality, remained largely invisible. Few if any Westerners, worried about the breakdown of their own information infrastructure, could have been aware of these recorded traces of action that linked village China to the metropolitan center of power in time-honored ways.

As we have seen, the Qing government, which had come to depend on its telegraphic connection with the empire, continued to use traditional communications without disruption. Edicts left Beijing; an average number of memorials were duly received, recorded, and acted upon. The nerve center of the empire was the Grand Council, which recorded all incoming and outgoing communications (mostly provincial memorials and imperial edicts) in *Suishou dengji*. In the three-month period that included the Siege of the Legations, the Grand Council’s record book ran to 435 pages; the previous quarter’s total was 370 pages; for the subsequent four months the page count is 569. The court was in touch with all parts of the empire. In the first six weeks of the crisis five governors-general submitted 86 separate documents for June 13–July 16 (GX26/5/5 to GX26/6/20). Almost half of these were dispatched by Liu Kunyi from Nanjing.

Outside of North China, there is neither evidence of any communications crisis nor broader infrastructural breakdown. The court and its provincial officials—Zhang Zhidong is a good example—were frustrated by the delays caused by the North China communications crisis. Zhang, like others, had called attention to the problem from the beginning. On June 16, Zhang followed up a telegraphic memorial to the court with a direct communication to Ronglu, an important Beijing official, sent via three different cities (Shanghai, Tianjin, and Baoding) about the importance of restoring communications with Beijing.⁷⁶ Zhang, even as he used the transfer system, continued to press for a restoration of north-south lines of communication. In late July Zhang, along with Yuan Shikai and Liu Kunyi, memorialized their urgent request for network repairs. The court agreed, sending a court letter to all provinces that left Beijing on August 3 (GX26/7/9). It directed provincial officials to repair and protect telegraph lines, especially the Baoding-Taiyuan-Xi’an line.⁷⁷ Moreover, the adaptability and

⁷⁵ Star, “The Ethnography of Infrastructure,” 387.

⁷⁶ Zhang Zhidong, *Zhang Zhidong quanji*, vol. 10, 7981.

⁷⁷ For the memorial, which had been couriered from Ji’an on July 31 (GX26/7/6), and court letter, see *Yuan Shikai zouyi*, 192–93. See also *Suishou dengji* for August 3 (GX26/7/9). For the court letter see also *Yihetuan dang’an shiliao xubian*, 727. On August 1, 1900 (GX26/7/7) Zhang Zhidong received a telegram from Yuan stating that the memorial had been dispatched. See Zhang, *Zhang Zhidong quanji*, vol. 10, 8201.

flexibility of this time-honored system can be glimpsed in the pages of *Suishou dengji*. The crisis of the court's final days in Beijing in mid-August is reflected in the hurried calligraphy and rough formatting of individual entries. But within days of the court's departure documentary normalcy returned, and the court's continuing connection to the rest of China through its express couriers can be documented in the smaller travelling version of the Grand Council's record book.⁷⁸

The vulnerability of telegraph lines, which both strengthen the state and make it more responsive, can also force it to commit military resources for line protection. This has little parallel with express couriers. Nevertheless, for a central government that had been telegraphically connected since 1884, this reversion to a reliance on only one system for the first and last legs of outgoing and incoming communications was but a temporary expedient. This ended when the court reached Xi'an (Shaanxi) in October 1900 and re-connected with the telegraph network. Once in Xi'an the small travelling Zongli Yamen resumed its role of conveying imperial messages to the empire, setting up its telegraph office in Xi'an's provincial examination hall.⁷⁹ A day before the court's arrival on October 26, 1900 (GX26/9/4), it had sent a transfer telegram to Yikuang, Li Hongzhang, and others asking for advice. On October 28, 1900 (GX26/9/6), a day after the court's arrival, it received its first direct telegraphic memorial since the lines to Beijing were cut in June, submitted by numerous officials, including Yikuang (Beijing), Li Hongzhang (Beijing), Xiliang (Shanxi), Sheng Xuanhuai (Shanghai), and Sichuan Governor-general Kuijun.⁸⁰ This group telegram from some of the most powerful and influential of its officials marked the reconsolidation of the imperial center at Xi'an and the restoration of the crucial connection, lost since mid-June when the last two of the three lines to Beijing were cut, to its strategically important telegraph network. This exchange between the court and its highest officials should be placed in a broader context, one made visible because of the partial breakdown of the telegraphic infrastructure in North China.

Although we have seen how Beijing was able to keep its strategic communications system functioning, we know that the West was facing not only an infrastructural breakdown, but also an "information panic" that was a result of both a news blackout and a projection on China of long-standing mistrust and fears.⁸¹ Because of the international crisis, powerful provincial governors like Li

⁷⁸ I thank Dr. Wook Yoon for sharing this detail about the small travelling version of *Suishou dengji*.

⁷⁹ Yoon, "The Grand Council and the Communication Systems in the Late Qing," 186.

⁸⁰ *Suishou dengji* entries for GX26/9/4 and GX26/9/6.

⁸¹ For a discussion of "information panics" in India see C. A. Bayly, *Empire and Information: Intelligence Gathering and Social Communication in India, 1780–1870*, 149, 316. See also Choudhury, *Telegraphic Imperialism*, 153–55.

Hongzhang, Zhang Zhidong, Liu Kunyi, and Yuan Shikai, all of whom were qualified to be members of the Grand Council or the Zongli Yamen, were forced to play a metropolitan role in their dealings with Westerners in other parts of China. While, as we have seen, they had kept in contact with Beijing through familiar and extraordinary measures alike, there was not enough time to await replies and instructions, and these governors, referred to as the “Southern Governors,” played an ad hoc role as a de facto Zongli Yamen, which, as we have seen, was the Beijing office that communicated telegraphically with the rest of China and had mediated between the West and the court. But, with the cutting off of Beijing and the Siege of the Legations, there was little for the Zongli Yamen to do in Beijing. (In this context Shanghai, which was the central hub of China’s commercial and government telegraph networks, had emerged as the communications node for both domestic and international governmental and diplomatic traffic during the crisis.)

In the moment of crisis we also see evidence that provincial governors had become accustomed to using telegraphy to communicate laterally—province-to-province—on matters of regional importance. This communications infrastructure became visible during the partial breakdown of 1900; while the court continued to communicate by familiar means, most of China’s telegraph network outside North China was still operational. The lateral communication between provincial capitals continued. For the six-week period June 13, 1900–July 25, 1900 (GX26/5/17-GX26/6/29), Li Hongzhang’s collected works include about 400 incoming and outgoing telegrams in the draft telegram section. Most of these are lateral communications with other provincial officials. Li also mentions or forwards for memorializing incoming telegrams from Chinese ministers in Great Britain, France, Germany, the United States, Japan, and Korea. Li also received transfer telegrams from Baoding, some of which were routed through Shanghai and presumably went to other provincial officials as well. In a few cases Li tried to communicate directly to the Grand Council and Zongli Yamen with Baoding transfer telegrams, a few of which he asked Baoding to memorialize.⁸²

Similar information flows can be tracked in Zhang Zhidong’s collected works, which include over 1,000 outgoing or incoming telegrams for an eight-week period in 1900 (May 28–July 25). Lateral communications were the most numerous. There are over 600 outgoing telegrams, with some going to multiple addressees. For example, 29 telegrams were sent to three or more province-level officials outside Hubei and Hunan. In this two-month period Zhang sent 66 telegrams to Liu Kunyi, 36 to Sheng Xuanhuai, and 15 to Li Hongzhang, from whom he received 9. In total, there are 285 incoming telegrams, mostly from

⁸² Li Hongzhang, *Li Wenzhonggong quanji: Diangao*, juan 22–23.

Zhang's fellow officials.⁸³ Zhang not only was instrumental in the “group telegrams” that he, Li, and others sent to Beijing, he was also mindful of keeping key provincial officials as well informed as possible.

In Zhang Zhidong's collected works we can also see one of the most remarkable demonstrations of the viability of China's hybrid communications network. On one day—June 22, 1900 (GX26/5/26)—at the beginning of the crisis, in a masterful display of the communications tools available to a late-Qing official in the new age of telegraphy, Zhang sent out three telegrams, one to his local officials, one a collegial lateral communication to other provincial officials, and one a Zongli Yamen-type message to Chinese ministers serving in key diplomatic posts around the world. Zhang required replies from his local officials; he also received timely responses from his colleagues, and from the Chinese ministers abroad.

Zhang directed his local officials in Hubei and Hunan to immediately post the sixteen characters of an imperial edict that he wanted distributed as a provincial proclamation. He even specified the seven characters that should appear at the top: “A Proclamation of the Yamens of the Governor-General and the Governor.” The edict Zhang wanted everyone to know about cautioned against disturbing the peace and harming [Chinese] Christians, and that the death penalty could be used as a punishment. Telegraphy would take the message as far as possible; then the dispatch of the provincial proclamation would use non-telegraphic means.⁸⁴

To Chinese ministers stationed abroad in London, Washington, and Tokyo, Zhang telegraphed a detailed report on recent events that he asked the legation staffs to translate and deliver, along with the Chinese version, to the respective foreign offices. Zhang, who said he was speaking on behalf of all provincial officials,⁸⁵ none of whom he said had received an imperial edict to commence war, wanted foreign governments to know that Li Hongzhang had been summoned by a Qing court, with peaceful intentions, to mediate. Zhang called on Great Britain, Japan, and the United States to temporarily halt military actions—he knew the Dagu Forts had already been taken—in North China. He promised that, if a cease fire held, provincial officials along the Yangzi would be able to keep the peace. But if hostilities resumed in Tianjin, Zhang warned, the situation in the south could become much more dangerous.⁸⁶ Responses from various legations ministers to this or similar telegrams reached Zhang Zhidong's yamen within a week.⁸⁷

⁸³ Zhang, *Zhang Zhidong quanji*, vol. 10, 7958–8177, 8180.

⁸⁴ *Ibid.*, 8014–15.

⁸⁵ *Ibid.*, 8018.

⁸⁶ *Ibid.*, 8017 (GX26/5/26 fa).

⁸⁷ *Ibid.*, 8031–34 for GX26/5/30–26/6/3 (26 June–29 June).

Finally, we can assess a series of lateral telegrams that were a hallmark of Zhang's communications strategy during the crisis. Zhang reached out to his fellow governors in Guangdong, Jiangsu, Fujian, Sichuan, Zhejiang, Anhui, Jiangxi, Hunan, and Shandong with a report of what had been sent abroad. It is unclear which of these officials had signed off on the original group report. Within four days Zhang had responses from seven of the ten recipients.⁸⁸

Like Li Hongzhang's and Zhang Zhidong's, the collected works of Liu Kunyi and Sheng Xuanhuai also include extensive compilations of lateral communications.⁸⁹ This phenomenon of timely lateral provincial communications made possible by a telegraph network centered in Shanghai would become a feature of twentieth-century China.

Westerners, most of whom had little understanding of the palace-memorial system, and who had virtually no information about the ongoing communications between Beijing and its provincial officials, projected upon the "Southern Governors" a legitimacy that came at the expense of the court and its officials in Beijing. The "Southern Governors," who were still in close contact with the court in Beijing, and mindful of its needs and demands, were of like mind with Western consuls in Shanghai to limit the fighting, if at all possible, to the north. Because Shanghai and the rest of the telegraph network were not cut, the dynamic of confusion and chaos so characteristic of Beijing and the north was not repeated in central and south China. Western capitals, and Chinese officials in these parts of China, were both better informed of, and more in control of, events.

The disaster of the Boxer Uprising, by making the infrastructure visible as it was breaking down, also alerts us to the importance of understanding and assessing the significance of the repair and transformation of China's telegraphic network during and after the Boxer Uprising. The telegraph lines in Beijing and across North China that were cut in 1900 were repaired, but in the final fifteen months of Li Hongzhang's life the telegraphic sovereignty he had sought to ensure for China was severely compromised. As the armies of Western nations and Japan occupied North China and Manchuria, one of the first actions they took was to secure lines of communications, a term that included telegraph lines. Western military forces immediately began stringing their own North China telegraph network in the summer of 1900. An Anglo-American military landline was strung between the Dagu Forts on the coast and Beijing by August 22.

Several Western powers also realized dreams long thwarted by the Chinese:

⁸⁸ *Ibid.*, 8018, for Zhang's telegram of GX26/5/26; for responses see 8018–21. Two telegrams went to Jiangsu: one to the governor-general, one to the governor.

⁸⁹ Liu Kunyi, *Liu Zhongchenggong yiji: Dianxin*, juan 1, 8207–8320; Sheng Xuanhuai, *Yuzhai cunghao, dianbao*, juan 11–28, 114–441.

landing submarine cables along the China coast. As discussed earlier, in 1883 the Qing had gained control of the illegal cable the Great Northern Telegraph Company had landed at Shanghai in 1870. In 1883 the British Eastern Extension Australasia and China Telegraph Company had been allowed to land a cable at Shanghai on the same terms granted the Danish company, and both of these companies, in concert with ITA, established lucrative revenue-sharing business practices that were monopolistic as the century drew to a close.⁹⁰ The United States, Germany, and France, however, still lacked cables to Asia. The United States, for one, had made clear to officials at the Zongli Yamen as early as 1881 that a Pacific cable to China was of great interest. The American Minister to China, James B. Angell, in a June 13 meeting with Wang Wenshao and other Zongli Yamen officials said: "It is highly probable that before long American citizens will desire to lay a cable from San Francisco to the Hawaiian Islands, and thence to China. Such a line will be a great advantage to you as well as to us."⁹¹ Angell claimed that Wang, who took the lead in this discussion, "did not see why other nations should be denied" the right to land cables in China.⁹²

Almost two decades later little had changed, but in the aftermath of the Spanish-American War telegraphy in East Asia came to be seen by the Great Powers as it had been in China, a matter of strategic military significance. In 1898 Germany had yearned for a submarine cable connection between its new Qingdao colony in Shandong and Shanghai.⁹³ On November 21, 1898, the German minister threatened, in a communication to the Zongli Yamen, to lead a multi-national effort to lay a submarine cable from Tianjin to Shanghai via Qingdao unless Sheng Xuanhuai's Imperial Telegraph Administration started delivering a more reliable north-south telegraph service.⁹⁴ In 1899 British naval authorities had expressed interest to the British Foreign Office in a submarine cable between Britain's new Weihaiwei concession in northern Shandong and Shanghai in an October 11, 1899 memo, stating that "direct reliable telegraphic communication with Weihaiwei... is of supreme strategical importance."⁹⁵ Moreover, cables to Asia became seen as markers of colonial power and prestige.⁹⁶

One of the underappreciated casualties of the Boxer Uprising was the loss of China's telegraphic sovereignty with respect to submarine cables. At the same

⁹⁰ Ahvenainen, *The Far Eastern Telegraphs*, 91–96, 131–39.

⁹¹ *Foreign Relations of the United States*, 276–77.

⁹² *Ibid.*, 277.

⁹³ Ahvenainen, *The Far Eastern Telegraphs*, 140.

⁹⁴ Wang Heting and Su Quanyou, "Wan-Qing Zhong-Wai haidi dianbao jiaoshe shuping," 73.

⁹⁵ Kennedy, "Imperial Cable Communications and Strategy, 1870–1914," 737.

⁹⁶ Ahvenainen, *The Far Eastern Telegraphs*, 139–46.

time that an Anglo-American landline was being strung between the Dagu forts and Beijing in August 1900, a submarine cable was laid that connected Dagu to Yantai (Chefoo) in northern Shandong, where it connected to a still-functioning line in China's domestic network. In addition to this link to Shanghai, the foreign community also had access to a submarine cable from Yantai to Shanghai that was completed by September 17. Branch cables had already been laid, so this Yantai-Shanghai line also connected via branch cables to landings in southern Manchuria and Shandong. Britain had added a submarine cable from Weihaiwei to this Yantai-Shanghai cable, on September 5, and thus added a critical link in its "all-red" network; Russia's cable between Yantai and Port Arthur was completed on September 3; Germany realized its goal of a submarine cable between Qingdao and Shanghai by December; it had also landed a Yantai-Qingdao cable. According to the terms of agreements, signed by Sheng Xuanhuai on August 4, 1900 and September 27, 1900, management and supervision of these and other cables, including operation of stations, would be in the hands of foreigners until peace returned to China.⁹⁷ As long as the negotiations for the Boxer Protocol continued, Westerners controlled some key parts of China's telegraph network.

China was able to reclaim some of its telegraphic sovereignty after the protocol was signed in September 1901. It quickly nationalized the Imperial Telegraph Administration in 1902, a goal that was achieved in 1908.⁹⁸ On January 30, 1911 (XT3/1/1/) the General Telegraph Administration Bureau of the Ministry of Posts and Communications (Youchuan bu dianzheng zongju) took over managerial responsibilities of eleven provincial-level administrations.⁹⁹ But other aspects of a diminished telegraphic sovereignty, including the Western and Japanese right to protect certain lines of communication in North China, were not regained for some time. In 1911–12, as another threat of widespread disorder appeared imminent, foreign troops quickly moved to secure the Beijing-Tianjin-Tanggu line of communication under the rights and privileges

⁹⁷ *Zhongguo jindai youdian shi*, 72–73; Ahvenainen, *The Far Eastern Telegraphs*, 144–45; Braisted, *The United States Navy in the Pacific, 1897–1909*, 111; Chiba, *Kindai kōtsū taikai to Shin Teikoku no henbō*, 229–39.

⁹⁸ Wang, "Sheng Xuanhuai yu Zhongguo dianbao shiye de jingying," 770–71; Ahvenainen, *The Far Eastern Telegraphs*, 150–57; Feuerwerker, *China's Early Industrialization*, 198–200.

⁹⁹ These were: Zhili; Fengtian, Jilin, and Heilongjiang; Jiangsu and Anhui; Sichuan-Tibet; Guizhou; Yunnan; Fujian; Guangdong; Guangxi; Shaanxi and Gansu; and Xinjiang. See Chiba, *Kindai kōtsū taikai to Shin Teikoku no henbō*, 74, citing a memorial. All of these are government-run networks (*guanban*) in *Youchuan bu diyici dianzheng tongjibiao* (GX33) except Zhili, Anhui, Guangxi, and Shaanxi; according to preface, Guangxi did not report any information.

established by Article 9 in the Boxer Protocol of September 1901.¹⁰⁰ Almost forty years would pass before the People's Republic of China regained all of the telegraphic sovereignty lost in the chaos and violence of 1900–1901.

Conclusion

This study of the materiality of China's strategic telegraph network as the nineteenth century drew to a close adds to our understanding of late-Qing history and its connections to regional and global histories. While high profile defeats in 1894–95 and 1900 grab attention and influence interpretations, we have assessed new evidence of state capacity and Qing governmentality that can be found in the history of China's telegraph network.

This is just a start. It is one thing to know that information flows between Beijing and the provinces were slowed, but certainly neither diminished nor stopped, during the summer of 1900. The functioning of China's information infrastructure, at the very least, should make us wonder about Western claims about the collapse of central government authority and legitimacy. When we can add to this network analysis a more detailed knowledge of the content of the messages, we will have taken an important step toward realizing Siege survivor Robert Hart's hope for an account, still only partially written, of what was happening inside the Forbidden City in the summer of 1900. Sources like the Grand Council's *Suishou dengji*, now available outside China, make such a project feasible.

But we need also to take a step back from 1900 and look again at the Qing dynasty in the post-1860 period. Three developments, one every ten years, transformed the communications infrastructure of Qing China and the relationship of China with the West. In some respects Qing governmentality was enhanced. In 1861 the Zongli Yamen was established and the West, for the first time, had access to an office whose specific responsibility was to deal with the West and things Western. The importance of the office was indicated by the stature and reputation of its members, and its relationship to the Grand Council. Ten years later, in 1871, China was connected to the international telegraph network. Now Western envoys in Beijing could communicate with their home governments in days, not weeks. And finally, at the end of 1881, the line from Shanghai to Tianjin drew envoys even closer to Europe and America. At the same time, as we have seen, Beijing began to draw closer to its provincial officials, and

¹⁰⁰ According to Frederick McCormick, on January 2, 1912 the American Minister Calhoun sent a telegram to Washington D. C. requesting troops so that the United States would not "default in its obligations to assist in guarding the international line of communications to Peking." See Frederick McCormick, *The Flowery Republic*, 444.

provincial officials closer to one another.

Many topics in late-Qing history need to be reassessed in light of this knowledge. And, as we have seen, this new communications infrastructure could integrate and destabilize China itself, as well as improve and complicate Sino-Western relations.

From the perspective of the early twenty-first century, we can see that the disaster of 1900–1901 was a passing one: Li Hongzhang's goal of a China with telegraphic sovereignty was realized once again. But the paradoxes of China's strategic networking remain, especially the paradox of modern communications capacity for both integration and disintegration at both the levels of regions and between persons. Finally, the progress of the communications revolution that played out in China, as it did elsewhere, still confronts us as it continues to the present, with unintended consequences. As we widen our gaze from state to society, it is clear that the adoption of new technologies always possesses a material reality and a materiality. It is the latter element, a technology's materiality that takes us beyond the marvel, the object, and forces us to focus on the agency of its human users and the consequences, intended or otherwise, of its use. Then, as now, China can serve as a laboratory of the new as we confront and transform the familiar.

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