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Heinrich Hildebrand: A German Railway Engineer in Late Qing China[1]

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Abstract: German engineer Heinrich Hildebrand came to China as a spy in 1891, serving at the German Embassy in Beijing and collecting Chinese railway information. In 1892, he began to work for Zhang Zhidong and participated in the construction of the Daye railway and Hanyang Iron Works, among other projects. Recommended by Zhang Zhidong, he was appointed as counselor of the China Railway Company by Sheng Xuanhuai. After Germany took Jiaozhou Bay in 1897, Hildebrand presided over the survey and construction of the Shandong Railway. He served as its General Director and chief engineer for ten years, which was the most important period of his career. As his identity switched from German spy in Zhang Zhidong's staff to General Director of the Shandong Railway, his colonialist mentality gradually came to the fore, and he took a tough stance when dealing with Chinese officials and workers. He was highly appreciated by Zhang Zhidong and strongly opposed by Yuan Shikai. Western engineers in early modern China played a dual role in the course of China's modernization. On the one hand, they promoted the cause of China's modernization as professionals, and on the other hand, they often became spokesmen for and active agents of imperialism.

Keywords: Heinrich Hildebrand, German spy, railway engineer, Shandong Railway

During the process of China's modernization, a number of Western engineers came to China and participated in China's various industrial undertakings, working for instance in the railway, mining, iron and steel, and military industries. Most of them were competent enough to direct the construction and management of these modern enterprises and played an important role in this process. Due to limited sources, however, research on such engineers has been very limited, usually taking the form of a brief account in select monographs (Li 2005, 88; Fang 2011, 56–64; Crush 2013, 106–119;

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Sun 2014, 121–123). Thus, details about the activities of such engineers in China are little known.

Among the Western engineers who came to China in the late nineteenth and early twentieth century was a German named Heinrich Hildebrand. He was originally sent to the German Embassy in Beijing as a spy, and eventually worked for Zhang Zhidong 張之洞 (1837–1909), one of the most powerful regional governors in China. After Germany took Jiaozhou Bay in 1897, Hildebrand directed the construction and operation of the Shandong Railway. As regards research on him, one can find a very brief introduction in *Jindai laihua waiguo renming cidian* 近代来华外国人名辞典 (The dictionary of names of the foreigners in modern China) (Institute of Modern History, Chinese Academy of Social Sciences 1981, 205). Other research includes a brief account of him by the author (Wang 2012, 95–100), two papers by Professor Zhang Guogang 张国刚 (Zhang G. 1998; Zhang G. 2000), and a short biography by Dr. Peter Neu (Neu 2006). However, there has yet to be a systematic and in-depth study of Hildebrandt. Based on the work just mentioned and with the aid of additional German and Chinese sources, the author explores and evaluates Hildebrand's career in China, and by way of this analysis moves towards a broader discussion of the role of Western engineers in China's modernization.

1 A German Spy to China

Heinrich Hildebrand, whose Chinese name was Xileba 錫樂巴, was born in Bitburg, Germany (Rheinland-Pfalz) on March 12, 1855. He graduated from Friedrich Wilhelm High School (Friedrich-Wilhelm-Gymnasium) in Trier in 1874, then studied engineering, architecture, and economics at the Polytechnic in Berlin (das Polytechnikum nach Berlin) while also serving in the military. At the end of 1879, he passed the German national examination and became a leading engineer, and his first job was to participate in the construction of the Berlin city railway. In 1884, he passed the German civil engineer examination and became a government civil engineer. Then he took charge of the construction of regional railway lines in areas such as Eifel in Western Germany. In 1888, he began to preside over the large-scale reconstruction project of Cologne central station as well as the construction of railway bridges in Cologne and its surrounding areas. In 1891, when the temporary waiting hall and the station building had just been completed, he left the project and entered the German Foreign Ministry (Neu 2006), which became a turning point in his life.

Hildebrand lived in an era of Germany's rapid rise and expansion. After the Second Opium War of 1856–1860, Germany gained privileges by signing a trade treaty with China, joining in the competition for Chinese markets. The German government actively supported the development of German trade to China. After the unification of

Figure 1: Heinrich Hildebrand. Hildebrand is wearing the German Red Eagle Medal (above) and Chinese Precious Star Medal (below). Image source: Neu 2006. With the permission of Stadtarchiv Bitburg and Dr. Neu.

Germany in 1871, its economy developed rapidly, especially heavy industry. In the 1880s, the German Prime Minister Otto von Bismarck (1815–1898) followed the example of Britain and France by establishing a regular sea lane between Germany and China subsidized by the state (Stoecker 1963, 211). In the early 1880s, Germany became the most important supplier of Li Hongzhang's 李鴻章 (1823–1901)[3] Beiyang Fleet, of which Krupp's guns and ammunition and Vulkan Shipyard's warships took the major share (Schmidt 1976, 45).

At the same time, the German banking consortium and heavy industry took capital penetration and railway construction as the most important goals of Germany's export economy in China (ibid., 48). By then, railway construction investment in Europe and America had become saturated, while China's transport facilities were still underdeveloped. Thus, its investment potential was huge: railway construction required not only banks, but also mining and metallurgical industries and the machine industry for the supply of equipment and locomotives. In February 1889, pushed by Bismarck and Max August von Brandt (1835–1920), the German Minister to China, thirteen banks and trading companies headed by Discount Company (Disconto-Gesellschaft) set up the German-Asian Bank (Deutsch-Asiatische Bank) in Berlin with an initial capital of 22.5 million marks. Its mission was to report to the sponsors the possible opportunities for state loans and railway business, in addition to ordinary banking business. In April 1890, the Consortium for Asian Business (Konsortium für Asiatische Geschäfte) was set up to assist the German-Asian Bank. In the same year, the Shanghai Branch of the German-Asian Bank was opened, which offered orders for German businesses by providing railway loans to China (Stoecker 1963, 253–254).

In order to gain an advantageous position in the fierce competition for the

3 Li Hongzhang was the founder of Beiyang Fleet, Governor of Zhili, one of the leaders of the Self-Strengthening Movement, and one of most famous diplomats in late Qing China.

Chinese railway market, at the suggestion of Minister Brandt, Bismarck used a secret fund of thirty thousand marks to send to China two qualified engineers who had passed the German national exams. One was P. Scheidtweiler, the other Hildebrand. Disguised as intern interpreters at the embassy, they collected information on the development of Chinese railway technology and reported it to the German Embassy in Beijing. Today they would be considered "economic spies." In 1890, Scheidtweiler began to work for Zhang Zhidong as a consultant for factories, sluices, and other construction projects, and thus arranged a great many orders for German heavy industries. For this, the German foreign secretary paid 500 marks per month and twenty marks per day to Scheidtweiler, sums with which even Brandt took issue (ibid., 243, 284–285).

In September 1891, Hildebrand was sent to the Embassy in Beijing by the German Foreign Ministry (Neu 2006). According to the directive of the Ministry, Hildebrand should obey the following conditions: (1) to work in China for at least five years; (2) to learn Chinese in the Embassy, and then work as a diplomatic interpreter with the main task of "observing the trend of railway technology in China;" (3) to keep his mission secret during the study period (Zhang G. 1998). Hildebrand's salary was equal to that of Scheidtweiler, with an annual salary of 6,000 gold marks (Neu 2006) as well as a travel allowance of 2,000 marks and free housing. During his stay in Beijing, he studied Chinese language, history, and culture, and became interested in Chinese architectural art. Dajue Temple, which was located near Beijing and dated from the eleventh century, was leased to the German Embassy as a summer resort. Hildebrand studied this temple and wrote *Der Tempel Ta-Chüeh-sy bei Peking*, which was published in Berlin in 1897 (Franke 2013, 124). Hildebrand also made several trips within China, which enhanced his understanding of the country.

2 Service on Zhang Zhidong's Staff

Zhang Zhidong, who originated from *Zhili* 直隶 (today's Hebei Province), was one of the leaders in the Self-Strengthening Movement (1860s–1890s). He served successively as Governor of Shanxi, Governor of Liangguang (in charge of Guangdong and Guangxi provinces), Governor of Huguang (in charge of Hubei and Hunan provinces), and Deputy Governor of Liangjiang 署理兩江總督 (in charge of Jiangsu, Anhui, and Jiangxi provinces). In 1905 he directed the redemption of the Yuehan railway (Canton-Hankou railway). In 1907, he was granted the title of Secretary of the Grand Council 大學士 and entered the Office of Grand Council of State 軍機處. He set up a great number of modern enterprises for which he employed a large number of foreign experts. According to one scholar's statistics, during his term as Governor of Huguang he employed no less than 250 foreigners (Wu 2003), including Scheidtweiler and

Hildebrand.

During his term as Governor of Liangguang, Zhang Zhidong witnessed how the large number of foreign iron imports had led to the bankruptcy of the local steel industry in Guangdong, so he petitioned the court to set up an ironworks in Guangdong and to build the Luhan Railway (Lugouqiao-Hankou railway) using rails made locally. In 1889, he was appointed Governor of Huguang, and began to develop the Daye Iron Mines and build the Hanyang Iron Works. Explored by Scheidtweiler and other foreign engineers, the Daye Iron Mines were found to be abundant in reserves of excellent quality. Surprised by the information, Scheidtweiler reported it to the German Embassy before he reported to Zhang Zhidong, and the German government immediately asked the *Zongliyamen* 總理衙門 (Ministry of Foreign Affairs) for the mining rights to it. Alarmed by the news, the Qing court consulted with Zhang Zhidong, who was furious, and the German request was refused (Sun 1957, 760–761). Though Zhang had reason to suspect Scheidtweiler had leaked the message, he still sent Scheidtweiler to direct the construction of the railway from Tieshanpu at Daye to Shihuiyao (Daye Railway) (ibid.), in particular to facilitate the transportation of the ore. Scheidtweiler also arranged orders of 1.7 million marks of railway equipment from German enterprises for the Daye Railway (Li 2005, 88), which was completed in 1894, with a total length of 30 km, all rails and locomotives having been purchased from Germany.

In 1892, Hildebrand was sent by the German Embassy to Zhang Zhidong, with Scheidtweiler presumably having played the role of intermediary. From then on, Hildebrand worked for Zhang, participating first in the construction of the Daye Railway. In addition, he took part in coal mine development and the construction of forts, iron works, rolling plants, and factory buildings (Anonymous n.d.). As a spy, Hildebrand was required to periodically present reports of his conversations with Zhang to the German Embassy in Beijing, and his reports were transferred to the German Foreign Ministry in Berlin (Neu 2006).

In 1894, ordered by Zhang Zhidong, Hildebrand surveyed the route for the Luhan Railway, a project that soon had to be suspended due to the outbreak of the Sino-Japanese War of 1894–1895. During the War, Liu Kunyi 劉坤一 (1830–1902), the Governor of Liangjiang, was granted the title of Imperial Envoy 欽差大臣 and stationed in Shanhaiguan to command the Chinese troops fighting against the Japanese. Zhang Zhidong temporarily served as Deputy Governor of Liangjiang and sent Hildebrand to Shanhaiguan to help Liu inspect the forts (Liu 2013, 1632). Afterwards, Zhang sent Hildebrand to Zhenjiang to consult with local officers about the construction of the Jiaoshan fort (Zhang Z. 1998, 6268).

In 1896, Zhang Zhidong resumed office as Governor of Huguang and Hildebrand was recalled to Wuchang. In October of the same year, the China Railway Company

was established, with the director being Sheng Xuanhuai 盛宣懷, Minister of Railway Affairs. Recommended by Zhang, Hildebrand was hired by Sheng as a Company Advisor (Zhang Z. 1998, 7174). When petitioning the Qing court to build the Luhan Railway, Sheng quoted Hildebrand's estimation of the cost of construction of forty million taels (Sheng 2009). This railway was finally financed and built by a Belgian company with the support of France and Russia. Construction started in 1898 and the railway was open to traffic in 1906.

As Deputy Governor of Liangjiang, considering "the benefit for business, raising funds, as well as coast defense," Zhang Zhidong petitioned the Zongliyamen for the construction of the Wusong-Shanghai-Jiangning (Nanjing) railway, and suggested the construction be carried out in five sections, namely, "from Wusongkou to Shanghai County, from Shanghai County to Suzhou, from Suzhou to Zhenjiang, from Zhenjiang to Jiangning; and from Suzhou to Hangzhou. . . . Raise the funds for one section of the railway, then build the section; finish one section of the railway, then get the profits from the section." Hildebrand was sent to survey the line (Mi 1984, 436–440). The Qing government approved official funds for the construction of the Songhu Railway (from Wusongkou to Shanghai) first, and then the Huning Railway (from Shanghai to Jiangning). After the establishment of the China Railway Company, the Qing government put this project under its control. Construction of the Songhu Railway started in December 1897. Sheng Xuanhuai personally supervised the project in Shanghai, and Hildebrand directed its construction. It was completed in August of the next year with a total length of 16.1 km. The line generally followed the original Wusong Railway,[4] using about 3/10ths of the old bed (Zhang and Yan 2011, 48). The Huning Railway was later financed by Britain. In 1904, the Songhu Railway was incorporated into the Huning railway as a branch line.

Hildebrand had also got involved in the Huning Railway loan issue. After the Sino-Japanese War, Britain, which always regarded the Yangtze Valley as its sphere of influence in China, sought the right to finance the Huning Railway, as did Germany, which led to fierce competition between the two countries. After Germany took Jiaozhou Bay, the Germans put forward six requirements in negotiations, including joint ventures of railway construction in Shandong. Zhang Zhidong pointed out that "the railway requirement is the most malicious among the six, with an intent to occupy the whole of Shandong" (Zhang Z. 1998, 7440), so he favored the substitution of the Shandong Railway with the Huning Railway "for which the powers hold each other up and which thus is less troublesome" (Mi 1984, 377). However, the Shandong Railway was essential to a deliberate plot by Germany, and they were in no mood to give it up. Under duress, China signed the *Jiaozhou Lease Treaty* with Germany, and the latter

4 The first railway in China was the Songhu Railway, built by British in Shanghai in 1876. After one year of operation, however, it was redeemed and demolished by the Qing Government.

secured the right to build railroads in Shandong. By then Germany's attention had turned to Shandong, but Hildebrand still repeatedly telegrammed Zhang Zhidong to discuss the Huning Railway loan. Sheng Xuanhuai proposed to finance the Huning Railway with a British loan, and told Zhang Zhidong, "Germany has obtained the Shandong railway" and "they know they have desired too much and so insist less (on the Huning railway loan)." "It is just Hildebrand that still insists upon it," he added, and suggested that Zhang "control Hildebrand so as to avoid his making trouble" (Zhang Z. 1998, 7577–7578). Eventually, Britain obtained the right to provide the Huning Railway loan. The construction of this railway began in 1905 and was completed in 1908.

In addition to the above-mentioned Songhu Railway, Hildebrand also assisted Sheng Xuanhuai in building the railway from the Pingxiang Coal Mines[5] to Xiangtan.[6] Hildebrand believed that China's railway construction should not be too rapid or extend beyond China's financial resources, and should avoid dependence on creditors; otherwise, the railway would not become a source of prosperity, but rather a cause of financial collapse, as he had observed in other countries (Anonymous n.d.).

3 General Director and Chief Engineer of the Shandong Railway

As its economic and military strength increased in the late nineteenth century, Germany began to strive for external expansion and world supremacy. As the German stake in China grew, German commercial circles and the navy asked for the creation of a foothold in China. After a long-term investigation, the German government chose Jiaozhou Bay, which is located on the south coast of the Shandong peninsula. From the German point of view, Jiaozhou Bay was not only a fine harbor, but also had a hinterland with economic value, for there were abundant mineral resources such as coal in addition to a potential sales market. The famous German geologist and geographer Ferdinand Freiherr von Richthofen (1833–1905), who had traveled in many provinces of China, pointed out in his book *China: Ergebnisse Eigener Reisen und Darauf Gegründeter Studien* (hereinafter referred to as "*China*"), published in 1882, that Jiaozhou Bay was the obvious outlet for the mineral resources of Shandong and generally speaking "the largest and best port in North China." He also proposed that a railway should be built from Jiaozhou Bay via the coal fields of Shandong and Jinan, the capital of Shandong, towards Peking and Henan (Richthofen

5 The Pingxiang Coal Mines are located in Jiangxi, and were first found and developed by Zhang Zhidong and Sheng Xuanhuai in 1898 with the aim of providing coal for the Hanyang Iron Works.

6 Xiangtan is located in Hunan Province, and is also the hometown of Mao Zedong.

1882, 262, 266). This railway plan had a significant impact on Germany's selection of Shandong as a sphere of influence.

In November 1897, Germany occupied Jiaozhou Bay by force, using the killing of two German missionaries in Shandong Province as a pretense, an incident which was referred to by the Chinese as the "Juye Incident" or "Caozhou Incident." On March 6, 1898, China and Germany signed the *Jiaozhou Lease Treaty*, according to which the Chinese government leased Jiaozhou Bay to Germany and ceded to Germany the privileges to build railways and exploit mines in Shandong. The railway privilege included two lines: one from Jiaozhou Bay via Weixian to Jinan and Shandong boundary; the other from Jiaozhou Bay via Yizhou to Jinan. At the same time, a German syndicate composed of fourteen banks and trading companies, led by the German-Asian Bank, applied to the German government for the railway concession in Shandong,[7] which was granted on June 1, 1899 (Schantung-Eisenbahn-Gesellschaft 1904). On June 14, the syndicate founded the Shandong Railway Company in Berlin with initial capital of fifty-four million marks. The company was responsible for the construction of the railway from Qingdao (the city area of Jiaozhou Bay) to Jinan, the capital of Shandong (the railway was called the Jiaoji Railway by the Chinese, and Shandong Railway by the Germans). Soon after, the seat of the company moved to Qingdao, and the Berlin office became a branch (Schantung-Eisenbahn-Gesellschaft 1899).

In 1898, Hildebrand became the General Director and Chief Engineer of the Shandong Railway. On September 1, 1898, Hildebrand signed a three-year contract with German-Asian Bank, and then went to Shandong to direct construction of the railway (Anonymous 1901). After the establishment of the Shandong Railway Company, it replaced the German-Asian Bank in the contract. Hildebrand presided over the whole process, from the railway survey to construction and the opening ceremony, and continued to preside over the operation for years, altogether working for the Shandong Railway for ten years.

3.1 Directing the Line Survey

From the German point of view, in regard to the *Jiaozhou Lease Treaty*, the German railway privilege in Shandong was "the most valuable part for German industry, and the long-cherished wish and request were realized" (Schmidt 1976, 65). As soon as the treaty was signed, German industrial and commercial circles could not wait to start preparations for railway construction in Shandong. The Consortium for

7 The railway concession here mainly involved the construction of the first railway line in the *Jiaozhou Lease Treaty*, that is, the Qingdao-Weixian-Jinan Railway. As for the second line, the Qingdao-Yizhou-Jinan Railway, the application needed to be made by the same syndicate before 1908, otherwise the German Government could grant it to others.

Asian Business and the Shandong syndicate[8] respectively hired railway experts to go to Shandong to carry out the line survey, to work out the budget, and to predict the mining conditions. The Consortium for Asian Business hired Hildebrand (Müller-Jabusch 1940, 129), while the Shandong syndicate hired Alfred Gaedertz (1853–1907), a senior engineer from Berlin who had previously worked in Turkey and later worked in management in the Shandong Railway Company in Berlin. Between April and June 1898, he went to Shandong to conduct the line survey, a task which took him two and a half months. The railway location was determined on the basis of survey work done by Hildebrand and Gaedertz. Here only the survey by Hildebrand is briefly described.

From early September to early November 1898, Hildebrand carried out the preliminary survey with Lorck, a Norwegian engineer. The lines they originally surveyed included Qingdao-Jinan and Qingdao-Yizhou-Jinan (the two lines stipulated in the *Jiaozhou Lease Treaty)*, a total length of 942 kilometers. Weiler was responsible for making topographic maps from the results of the survey. He especially praised the diligence and capability of Hildebrand, who took only eight days to survey the 190 km-long section from Qingdao to Weixian, though he knew such speed would affect the accuracy to some extent. On November 11, 1898, Weiler wrote in a letter that:

> Regarding the accuracy of the general survey carried out by Hildebrand, I am in a position to say, after doing the work on hundreds of kilometers of return routes, some of them returning to the same point, that it's not quite all it's made out to be. However, I also believe that, for our purposes, such a survey is enough to get a general idea of the railway layout and its costs. Certainly, satisfying the general conditions for preliminary work in Prussia is necessary. Yet surveying more than 1000 kilometers in less than 2 months is in any case an achievement that should not be underestimated. Hildebrand's survey also provides a good foundation for the preliminary work in question. (Falkenberg 1986)[9]

Though Hildebrand's survey report has not been found, according to Gaedertz, the

8 The Shandong syndicate was composed of a number of industrial and commercial enterprises led by Carlowitz & Co., which constituted the Shandong Railway Company together with the Consortium for Asian Business.

9 "Betreffs der Genauigkeit der von Hildebrand ausgeführten generellen Vorarbeiten bin ich nunmehr, nachdem ich einige 100 km aufgetragen habe, vom zum Theil zum selben Punkt zurückkehrenden Linien, in der Lage zu sagen, dass es damit nicht sehr weit her ist. Indes bin ich doch der Ansicht, dass die Aufnahmen für unsere Zwecke, einen allgemeine Begriff von der Linienführung und deren Kosten zu erhalten, genügen. Freilich den Bedingungen für generelle Vorarbeiten in Preußen nötig. Über 1000 km Vorarbeiten in nicht ganz 2 Monaten bleiben bei alledem eine nicht zu unterschätzende Leistung. Auch geben die Hildebrand'schen Aufnahmen eine gute Grundlage für die speziellen Vorarbeiten."

Qingdao-Yizhou-Jinan Railway[10] was unpromising: firstly, it was difficult to build; and secondly, the availability of local coal was limited (Gaedertz 1898). Therefore, this line was basically ruled out by Gaedertz, leaving only the Qingdao-Jinan line. On December 28, 1898, Hildebrand reported to the German Embassy that "the survey shows, the route passes through fertile and densely populated land. Along the railway, there are abundant coal mines in Weixian, Boshan, etc. There are also excellent iron mines in Boshan. . . ." (Neu 2006).

On January 20, 1899, a general plan of the Qingdao-Jinan Railway project signed by Hildebrand and Weiler was sent to Berlin, followed by a longitudinal plan of some sections. According to Hildebrand's budget, the Qingdao-Jinan Project would cost fifty-seven million marks, of which about twenty million marks would be used for wages and the purchase of materials in Shandong (Falkenberg 1986). On January 25, 1899, Hildebrand officially left the German Foreign Ministry and entered the Ministry of Public Labor, where the minister agreed that Hildebrand could work for the Shandong Railway Company by way of vacation. On June 3, a telegram came from Berlin giving approval for the commencement of construction (ibid. 1986). On June 28, two weeks after the foundation of the Shandong Railway Company, the German Prime Minister formally appointed Hildebrand as the General Director of the Shandong Railway Company in Qingdao for a term of five years (Anonymous 1899a; Anonymous 1899b).

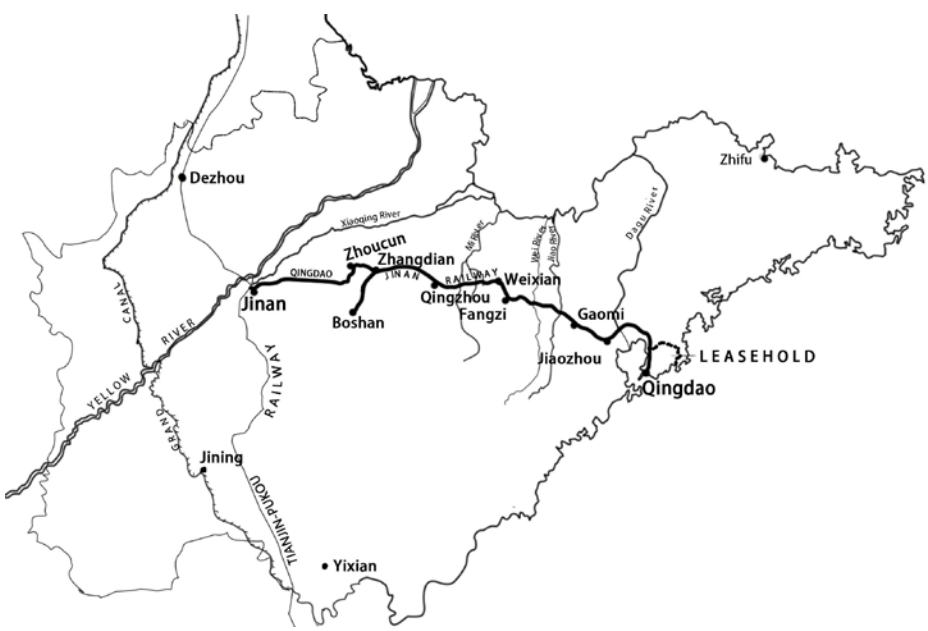

Figure 2: Qingdao-Jinan Railway line and Shandong, drawn by Miss Yan Xingru 闫星汝.

10 The German Government formally gave up rights to the Qingdao-Yizhou-Ji'nan Railway in 1907.

3.2 Debate on the Location of Qingdao Railway Station

Shortly after construction of the railway started, there was conflict between the Qingdao and Berlin management personnel of the Shandong Railway Company. Gaedertz in Berlin tried to take charge of the construction leadership in Qingdao, to the extent that he "even wanted to determine from Berlin the type and way of laying the foundation for each bridge" (Falkenberg 1986). Hildebrand stood his ground; neither of them would back down.

There was also a protracted and heated debate over the location of Qingdao Railway Station in which Gaedertz got involved. In the first city plan of Qingdao of August 16, 1898, Gromsch, who was in charge of construction of the port, placed Qingdao Station near the landing bridge to link the railway and shipping. However, the landing bridge was only a makeshift one, because ever since Georg Franzius (1842–1914) had investigated Jiaozhou Bay in May 1897, it had been determined that a new port would be built at the interior harborage of Jiaozhou Bay, when the landing bridge would no longer be used. In addition, in this sketch plan, the railway track had a 1/4 circle arc before approaching the landing bridge, and both Hildebrand and Weiler considered that such a location for the railway station was irrational due to the great technical difficulties involved (Warner 1996, 142). On March 13, 1899, Weiler reported Hildebrand's plan for an alternative location of the station, which was opposed by the Governor of Jiaozhou and Gaedertz. In a letter, Hildebrand publicly criticized Gaedertz for his "technical immaturity" (Falkenberg 1986). In the end, Hildebrand's option was adopted, and the station was moved westward (Figure 3). Thus, after January 1900, Berlin did not interfere with technical details as before (ibid.).

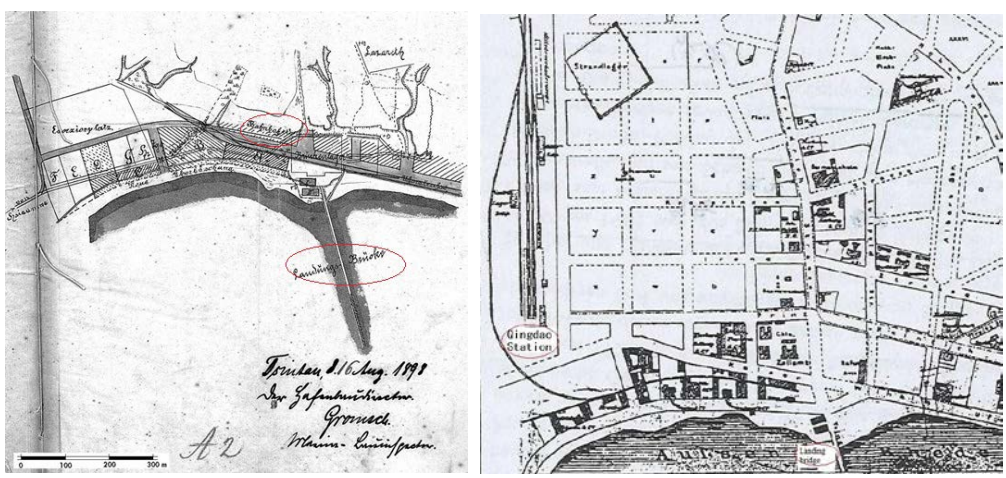

Figure 3: (Left) Location of Qingdao Station in the first city plan of Qingdao in 1898. (Right) The actual location of Qingdao Station in the city map of Qingdao in 1901. Source: Warner 1996, 117, 151.

3.3 Tough Stance towards Conflicts

From June 1899 to November 1900, violent confrontations between the Germans and local villagers took place from time to time. At first, such conflicts between railway personnel and the villagers were small-scale, but later clashes escalated and German troops intervened. The source of these conflicts can be attributed to cultural, legal, and economic factors, but the immediate cause was the behavior of the Germans. German minister to Peking Klemens von Ketteler (1853-1900) admitted that the unrest was caused by their reckless actions during railway construction; other countries had built railways in China over preceding years without causing such disturbances (Mühlhahn 2000, 118). When the conflicts flared up, the Germans didn't try to solve them in a positive manner or consider the sensible requests of local people; they simply resorted to force, which clearly reflected their colonialist mentality.

As General Director of the railway company, Hildebrand was ultimately responsible for the company's behavior. However, he took a tough, uncompromising stance towards the conflicts. During the first confrontation of June 1899, at the request of Hildebrand, Paul Jaeschke (1851–1901), the Governor of Jiaozhou, sent troops to Gaomi to suppress the unrest. More than twenty villagers were killed, countless wounded, and all the books in the Gaomi Academy were burned (Institute of Modern History, CASS and the First Historical Archives of China 1983, 32–33).

After the second confrontation from the end of 1899 to early 1900, Hildebrand finally met a tough opponent. Yuan Shikai 袁世凯 (1859–1916), the newly appointed Governor of Shandong, decided to introduce detailed regulations for the railway company, which "both sides can abide by" and could rein in the Germans (Wang Y. and Wang L. 1987). At Yuan Shikai's insistence and under his threat of "no resumption of construction," Hildebrand was obliged to go to Jinan for negotiation. Before he set out, Hildebrand specially telegrammed Zhang Zhidong, pleading for his support. He wrote:

> Recommended by your Excellency 大人, the person from faraway 远人 has been working on the Shandong Railway for years. The Jiaozhou-Weixian section is going to be finished soon. But there are bandits spreading rumors, gathering together and causing trouble for no reason to the west of Gaomi. My country intends to suppress the riot with force. The person from faraway says that we develop business between China and the West, so there should be harmony among governments and people. Today, the person from faraway is leaving for Jinan to meet Governor Yuan with a sincere desire to mediate. Having not met Governor Yuan before, the person from faraway begs your Excellency to telegram Governor Yuan so as to help accomplish the matter. The person from faraway is lucky enough to have served your Excellency for many years without having been rejected, despite being stupid. The honesty of the person from faraway has long been known by your Excellency and the person from faraway is so grateful to you for your great help.

> Best wishes and Happy New Year! Hildebrand of Qingdao Railway. (Zhang Z. 1998, 7909)[11]

By referring to himself humbly as "the person from faraway," Hildebrand tried to display great respect and earnest feelings. But he obviously hid some truths about the conflicts from Zhang Zhidong. First of all, that so-called bandits were "causing trouble for no reason" was not true: the real reason was that the villagers were afraid that the railway would interfere with farmland drainage. They asked the railway company to change the route (Liao and Luo 1987, 100–101), or to build more culverts to channel away excess water, but the railway personnel ignored the request (Yuan 1928, 25), using the excuse that it would be too expensive (Biener 2001, 44), so villagers attacked them. Second, Hildebrand claimed to hope for "harmony," but on the contrary he took a tough stance, requesting more than once for the Governor of Jiaozhou to send troops to intervene. Negotiations between Yuan and Hildebrand began at the end of February 1900, and after over twenty days of intense debate, the *Shandong Railway Regulations* were finally signed by both sides on March 21. The regulations standardized the behavior of the railway company, straightened out the relationship between the railway company and the Shandong Government, and were beneficial to the progress of the railway construction.

The third conflict took place during the Boxer Rebellion in the summer of 1900. Many villagers and Boxers attacked and robbed foreigners, and Hildebrand again asked Jaeschke to take military action. He wrote, "We consider it necessary that when amicable means have been fruitless, strict means should be applied, in order for the people living along the railway to realize that behind us stood a state which is capable and willing to protect German enterprises and punish riots, so that they will be prevented in the future" (Mühlhahn 2000, 127).[12] In October, Yuan Shikai and Jaeschke reached a military agreement which specified the respective scope of their protection. Jaeschke sent German troops to station on the border of the colony as well as Jiaozhou and Gaomi (Schmidt 1976, 82–83), so as to ensure the resumption of the construction of the Qingdao-Jiaozhou and Jiaozhou-Gaomi sections. The German army slaughtered more than 500 villagers in Gaomi (Mühlhahn 2000, 130). Thus, conflict surrounding the

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11 "遠人緣蒙薦至山東承辦鐵路，今已載餘。自膠至濰工程，將有成效，不意匪人散謠聚眾，在高密以西，無端滋鬧。敝國欲以用兵剿辦。遠人謂：'中西振興商務，無論官民，總歸於和好。'今遠人赴濟，謁見袁撫憲，誠意說和，緣與撫憲未當識面，仰乞大人電致袁憲，玉成其事。且遠人幸蒙大人不棄，愚陋在貴治效力數年，誠實之忱，大人所識已久，懇荷關照，感德無涯矣。
肅此恭請勳安，敬賀新禧。青島鐵路錫樂巴拜稟。"

12 ". . . wir halten es für geboten, das jetzt, wo gütliche Mittel sich als fruchtlos erwiesen haben, strenge Mittel angewandt werden, um der der Bahn entlang wohnenden Bevölkerung vor Augen zu führen, daß hinter uns eine Macht steht, die im Stande und gewillt ist, die deutschen Unternehmungen zu schützen und Ausschreitungen so zu bestrafen, daß ihnen für alle Zukunft vorgebeugt wird."

railway was intensified due to Boxer Rebellion, reaching its climax. The situation didn't ease until the winter of 1900.

3.4 Fame and Fortune

In April 1901, the 74 km-long Qingdao-Jiaozhou section was opened to traffic, and in June 1902 the railway was opened to traffic in Weixian. On June 1, 1904, the entire railway, with a length of 435 km, was opened to traffic, for which both Hildebrand brothers were awarded prizes by the German government (Anonymous 1904a).

The completion of the Shandong Railway was also regarded as a great personal victory for Hildebrand, and he gained great fame and fortune. As early as December 1898, the German Emperor Wilhelm II awarded him "the Red Eagle Medal Fourth Class" (der Roten Adler Orden 4. Klasse) (Neu 2006). In June 1901, Wilhelm II granted him the title of "Royal Civil Engineering Counsellor" (Königlicher Baurat).[13] In 1902, the Qing Government awarded him the "Second Class Third Grade Precious Star Medal" (二等第三寶星).[14] The Shandong Railway company extended his contract several times, with an annual salary of thirty thousand marks, plus free housing (Figure 6). In July 1908, Wilhelm II awarded him the title of "Confidential Civil Engineering Counsellor" (Geheimer Baurat) (Neu 2006). Hildebrand had reached the pinnacle of his career.

Figure 4: Arrival of the first construction locomotive at Jinan East Station on February 25, 1904. The old man standing high in the middle is Zhou Fu, Governor of Shandong, the German on his left is Heinrich Hildebrand. Image source: Rossberg 1984, 118.

13 The certificate is kept in Nachlass Hildebrands. Kreismuseum Bitburg.
14 The medal is in Figure 1 and the certificate for the medal is in Figure 5.

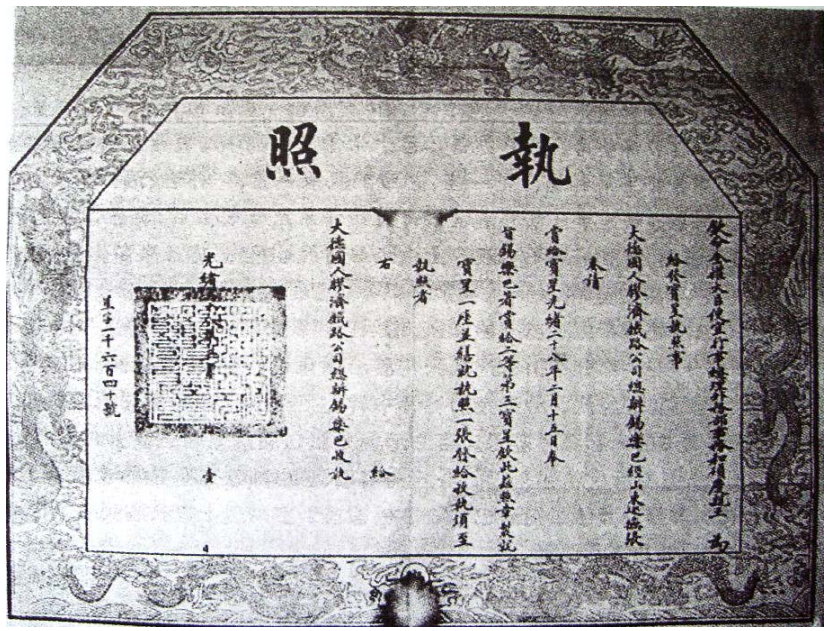
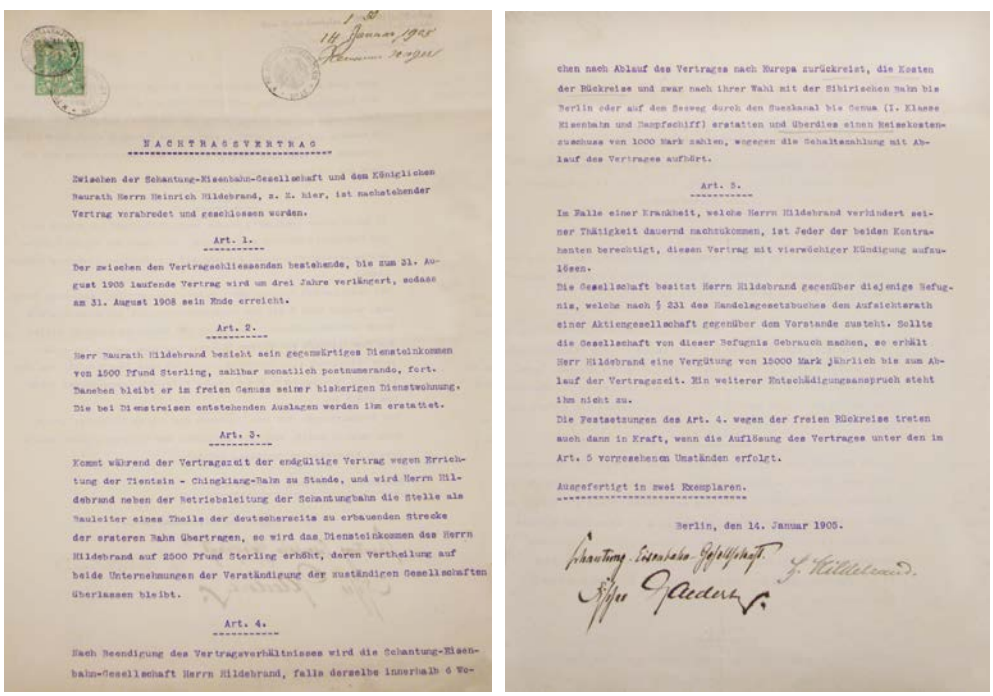


Figure 5: Hildebrand's Certificate for the Precious Star Medal granted by Qing Government in 1902. Image source: Nachlass Hildebrands. Kreismuseum Bitburg.



NACHTRAGSVERTRAG

Zwischen der Schantung-Eisenbahn-Gesellschaft und dem Königlichen Baurath Herrn Heinrich Hildebrand, z. Z. hier, ist nachstehender Vertrag verabredet und geschlossen worden.

Art. 1.

Der zwischen den Vertragschliessenden bestehende, bis zum 31. August 1905 laufende Vertrag wird um drei Jahre verlängert, sodass am 31. August 1908 sein Ende erreicht.

Art. 2.

Herr Baurath Hildebrand bezieht sein gegenwärtiges Diensteinkommen von 1500 Pfund Sterling, zahlbar monatlich postnumerando, fort. Daneben bleibt er im freien Genuss seiner bisherigen Dienstwohnung. Die bei Dienstreisen entstehenden Auslagen werden ihm erstattet.

Art. 3.

Kommt während der Vertragszeit der endgültige Vertrag wegen Errichtung der Tientsin - Chingkiang-Bahn zu Stande, und wird Herrn Hildebrand neben der Betriebsleitung der Schantungbahn die Stelle als Bauleiter eines Theils der deutscherseits zu erbauenden Strecke der ersteren Bahn übertragen, so wird das Diensteinkommen des Herrn Hildebrand auf 2500 Pfund Sterling erhöht, deren Vertheilung auf beide Unternehmungen der Verständigung der zuständigen Gesellschaften überlassen bleibt.

Art. 4.

Nach Beendigung des Vertragsverhältnisses wird die Schantung-Eisenbahn-Gesellschaft Herrn Hildebrand, falls derselbe innerhalb 6 Wochen nach Ablauf des Vertrages nach Europa zurückreist, die Kosten der Rückreise und zwar nach ihrer Wahl mit der Sibirischen Bahn bis Berlin oder auf dem Seeweg durch den Suezkanal bis Genua (I. Klasse Eisenbahn und Dampfschiff) erstatten und überdies einen Reisekostenzuschuss von 1000 Mark zahlen, wogegen die Gehaltszahlung mit Ablauf des Vertrages aufhört.

Art. 5.

Im Falle einer Krankheit, welche Herrn Hildebrand verhindert seiner Thätigkeit dauernd nachzukommen, ist jeder der beiden Kontrahenten berechtigt, diesen Vertrag mit vierwöchiger Kündigung aufzulösen.

Die Gesellschaft besitzt Herrn Hildebrand gegenüber diejenige Befugnis, welche nach § 231 des Handelsgesetzbuches den Aufsichtsrath einer Aktiengesellschaft gegenüber dem Vorstande zusteht. Sollte die Gesellschaft von dieser Befugnis Gebrauch machen, so erhält Herr Hildebrand eine Vergütung von 15000 Mark jährlich bis zum Ablauf der Vertragszeit. Ein weiterer Entschädigungsanspruch steht ihm nicht zu.

Die Festsetzungen des Art. 4. wegen der freien Rückreise treten auch dann in Kraft, wenn die Auflösung des Vertrages unter den im Art. 5 vorgesehenen Umständen erfolgt.

Ausgefertigt in zwei Exemplaren.

Berlin, den 14. Januar 1905.

Schantung Eisenbahn Gesellschaft. H. Hildebrand.

Figure 6: The contract between the Shandong Railway Company and Hildebrand of 1905.
Image source: Nachlass Hildebrands, no. 106, Kreismuseum Bitburg.

4 Praise and blame

When it comes to contemporary evaluations of Hildebrand, there were two opposing views. Zhang Zhidong had always admired, perhaps too much, German engineers. When recommending Hildebrand to Sheng Xuanhuai, he wrote, "regarding railway engineering, Germany is the best. Many of the big projects in Britain and France were aided by Germans, and most superior engineers were trained in Germany, so no matter which country builds railways, Hildebrand could be used. He has considerable expertise and a bright heart, which is hard to come by." Sheng Xuanhuai assessed him as "shrewd and proficient in Chinese language" after an interview with him (Zhang Z. 1998, 7173). Later, Sheng sent Hildebrand to survey and produce estimates for the Pingxiang-Xiangtan coal line, and introduced him to Chen Baozhen 陳寶箴 (1831–1900), the Governor of Hunan, praising him for "his expertise in railways, proficiency in Chinese, . . . and capability to cope" (Sheng 2005). Cai Xiyong 蔡錫勇 (1847–1897), one of Zhang Zhidong's confidential followers, considered him "excellent both in profession and character" (Zhang Z. 1998, 6586).

In marked contrast to the high evaluation of Hildebrand by Zhang Zhidong, senior officials in Shandong rated him very low indeed. Yuan Shikai and Zhou Fu 周馥 (1837–1921), who had both served as Governor of Shandong and had dealings with Hildebrand, strongly opposed him. In November 1904, Mr. Lieder from the German-Asian Bank in Tianjin went to Shandong to investigate the operation and management of the Shandong Railway. He wrote in a letter, "All of the persons I met are against Hildebrand. . . . he is generally accused of being insincere and stubborn. I think it's harmful for the company to let Hildebrand stay in senior management" (Anonymous 1904b). In 1905, the German Consulate in Nanjing wrote to the German Minister in Beijing, Alfons Mumm von Schwarzenstein (1859–1924), that the Governor of Shandong, Zhou Fu, publicly expressed his dislike of Hildebrand, saying that Hildebrand was insincere, untrustworthy, very stubborn, and unfriendly to Chinese workers, of which people often complained. What is more, he said, he even hired some incompetent and infamous fellows, so that not only the locals in Qingdao, but many of the upper class of Shandong and the staff of the railway company were dissatisfied with him, and he hoped Hildebrand would not participate in the construction of Tianjin-Yangtze Railway (Anonymous 1905).[15] Eventually, it was because of the opposition of Yuan Shikai and several other leading Shandong officials that Hildebrand

15 Tianjin-Yangtze Railway was originally proposed to run from Tianjin to Zhenjiang. In 1899, the *Jianzhen Railway Loan Draft Contract* was signed between China, Britain, and Germany, but the formal contract was not signed until 1908, and one terminal was changed from Zhenjiang to Pukou. Chinese local taxes were taken as guarantee in exchange for China's right to the construction and management of the railway.

failed to become chief engineer of the Tianjin-Pukou Railway. Another railway engineer, Julius Dorpmüller (1869–1945), who was working at the Shandong Railway Company, was appointed as German Chief Engineer of it. Although at the time he had yet to do anything especially outstanding, he was peaceful and prudent, which was regarded by the Germans as the "first important thing" when dealing with Chinese people (Anonymous 1908). It is worth mentioning that Dorpmüller's two younger brothers also took part in the construction of the Tianjin-Pukou Railway. In 1918, Dorpmüller returned to Germany, and later served as President of the German Railway Company and Minister of Transportation in the Nazi era.

In 1908, Hildebrand resigned due to poor health. Before he returned home, the Germans held a grand farewell banquet in Prince Heinrich Hotel for him. After he returned home, he was selected as a member of the Board of Supervisors of the Shandong Railway Company for a term until 1913. He lived in his hometown of Bitburg, working as an adviser for railways and China's economy and serving on the city council. Delegated by the German Public Labor Ministry in 1910, he went to Saint Catherine, Brazil, to inspect German railway construction there (Anonymous n.d.). In 1912, Hildebrand went to China again, but he failed to get support from the new Beiyang Department of Transport and soon returned home (Anonymous 1912).

Hildebrand died in Berlin on August 21, 1925. According to his will, he was buried in his hometown, and his tomb has been well preserved. In 2014, the local government restored his tombstone. When the house where Hildebrand used to live in Bitburg was demolished in the 1960s, workers found Chinese manuscripts in the house and handed some of the documents to Dr. Josef Hainz, the director of the local museum. After seeing them, he immediately rushed to the house and saved most of the manuscripts at the last minute. Fortunately, these have been well kept in Kreismuseum Bitburg (Zhang G. 1998). Today, there is also still a street named after him in Bitburg (Figure 7).

Figure 7: The sign for Heinrich Hildebrand Street in Bitburg.
Photo taken by the author in 2009.

After Hildebrand's resignation, his younger brother Peter Hildebrand (1864–1915), whose Chinese name was Xibeide 錫貝德, took over the post of General Director. Before coming to China, Peter also participated in the construction of the Berlin railway. Before participating in the construction of the Shandong Railway in January 1899, he worked for Songhu Railway. During the construction of Shandong Railway, he served as an engineer in charge of two construction sections with a length of 233.2 km, accounting for more than half of the total length of the whole line (Schantung-Eisenbahn-Gesellschaft 1904). Later, he presided over the line survey for the northern section of the Jinpu Railway. Such a wealth of work experience made Peter the best candidate to take over Hildebrand's post. After inauguration, his annual salary was the same as that of his brother. Peter Hildebrand returned to Germany after the outbreak of World War I and died of heart disease on August 8, 1915 (Anonymous 1915).

5 Conclusion

One of the characteristic features of imperialist expansion is travel by scientists and technicians from a metropolitan center to colonial outposts (Pyenson 1982). As a means of imperial expansion, science and technology were also an important adjunct to force. Scientists and engineers played the role of trailblazers and builders in this process. The famous German geographer Richthofen came to China for the first time as a member of the Prussian expedition of 1860, and one of his tasks was to find a suitable location for a German foothold on China's coast. After his second visit to China to explore mineral resources, he wrote the book *China*, which was regarded by the German government as a scientific and reliable source of knowledge about China. Richthofen's analysis and judgment of Jiaozhou Bay became a significant basis for Germany's choice of Jiaozhou Bay as its base in East Asia.

Hildebrand received a comprehensive engineering education in Germany and had practical experience in railway construction. As an engineer, he was sent by the German Government to China to fulfill the needs of Germany's expansion, and his mission was to obtain information about China's railway construction so as to help win orders for German enterprises. In the meantime, Chinese Governor Zhang Zhidong was looking for competent foreign engineers for his modern undertakings. Germany's needs for expansion and China's needs for developing its economic infrastructure intersected in the figure of Hildebrand. Favored by opportunity, he became General Director of the Shandong Railway, presiding over the whole process from railway survey to construction and opening ceremony, and became one of the most successful foreign engineers among the many to travel to China at that time.

Regarding the disagreement in contemporary evaluations of Hildebrand, these probably can be understood from changes in his identity or role. Originally, he was

sent to China as a spy by the German Foreign Ministry, serving first in the German Embassy in Beijing, then on Zhang Zhidong's staff. At that time, Hildebrand was merely a foreign employee and staff member, who had to hide his identity as a spy. As a result, he was cautious and showed respect to Zhang, who trusted him in return. In 1899, Hildebrand left the German Foreign Ministry, shedding the spy identity, and became General Director of the Shandong Railway, earning the envy of many foreign engineers to China. By then, he had become the spokesmen for German colonialists and business circles, who took a tough stance in railway conflicts. It was his tough colonialist attitude that caused strong opposition from Yuan Shikai and Zhou Fu.

China's modernization process was accompanied by the large-scale transfer of science and technology from the West to China, which also involved the introduction of Western engineers to China. These engineers, of whom Hildebrand is representative, played a dual role in the process of technology transfer to China. On one hand, as professionals, they played an important part in various projects, for instance railway construction, mining and metallurgy, and military-related industries, among others, and pushed forward the course of China's modernization. However, this role was far from straightforward. Western engineers often encountered cultural conflicts, for instance the impact of traditional Chinese beliefs related to *fengshui* in railway construction and mining, and the resulting distrust and hostility directed against them by the ordinary Chinese people. But the bigger challenge for them was to get along with the Chinese officials and colleagues and win their trust. Successful examples included Heinrich Hildebrand, who obtained the trust of Zhang Zhidong and was awarded the Precious Star by the Qing government, Krupp engineer Carl Baur who won the trust of Li Hongzhang and was also awarded the Precious Star (Sun 2014, 121–123), and Claude Kinder (1852–1936), chief engineer of the Imperial Railways of North China, who successively worked for five Chinese bosses during his 31 years working in China before he quit due to an unhappy experience with the sixth boss (Crush 2013, 106–119). Distrust of foreign engineers was frequently exhibited in Chinese national enterprises, such as the Hanyeping Company (Fang 2011).

On the other hand, as technology transfer at that time was usually accompanied by the aggression and expansion of Western powers, Western engineers unavoidably became the spokesmen of imperialism and active agents of imperialist expansion, and they often got involved in the imperialist scramble for interests in China. Hildebrand and Scheidtweiler were both sent to China as spies with the aim to collect information relevant to railway construction in China and report to the German Embassy. Similarly, Krupp engineer Carl Baur was sent to China to examine the practicability of a Siberian railway, but he also was tasked with investigating China's military force and reporting to the German Embassy (Sun 2014, 121–123). At the same time, Western diplomats in China took an active role and tried every possible way to insert their own engineers

into these modern enterprises. According to Fang's study, the frequent swapping-out of Western engineers—from British to Belgian, German, American, and back to Belgian—in the early stage of the Hanyeping Company embodied the fierce competition between the Western powers for political and economic interests in China (Fang 2011). For similar reasons, Claude Kinder also faced the challenge of being replaced by Russian and German engineers when these powers scrambled for spheres of influence in North China, although Kinder himself loathed all such politics and merely wanted to deal with the engineering aspects of his beloved railway for the betterment of China (Crush 2013, 106–119).

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