Internationalization in Early Chinese Industrialization (1840s-1911): Representations and Perceptions in the Museum

Juan Manuel Cano Sanchiz, Ruijie Zhang** and Lan Long****

Abstract

This paper discusses how industrial museums within the People's Republic of China represent the international interferences and influences that characterised the first stages of China's modern industrialization. In terms of methodology, this is a cross-disciplinary exercise that combines museum studies and discourse analysis to examine seven case studies. The investigation is developed on two levels: on the one hand, the production and delivery of narratives about the role of international factors in Chinese industrialization during the Late Qing dynasty (1840s-1911); on the other, the reception of such narratives by national and international audiences. The study concludes that the museums' narratives of early internationalization are heterogeneous and present nuances depending on the institutions that produce them and the countries involved. Our results also evidence that visitors do not interact significantly with these narratives. Nevertheless, these narratives can still be understood as playing an important role in how Chinese industrial museums present and define China as a modern nation.

Keywords: industrial museums, Chinese industrial history, colonization, westernization.

Introduction

Within twenty first century China (People's Republic of China [PRC]) there has been noticeable growth in the use of history and heritage as a means of supporting the country's policies, and defining national identity and the contribution of the Chinese civilization to the world (Evans and Rowlands 2014; Ludwing et al. 2020). In this context, this article focuses on how China's global relationships during its early industrialization in the Late Qing period (1840s-1911) are presented in museums. Chinese industrial historians and heritage scholars define three major stages in the industrialization of the country: the origins of modern industrialization at the end of feudalism (1840-1911), state capitalism (1912-1948), and socialist industrialization (1949 onwards) (Lu et al. 2020: 502). This research concentrates on the first of these stages and its two characteristic modes of internationalization: colonialism and westernization. These modes have no rigid chronological borders and, in some cases, overlap. Colonialism and westernization have been described by Leilei Li and Dietrich Soyez (2017: 303-5) as two modes of 'transnationally influenced industrialization'. Under their influence, they argue, most industrial enterprises in China from the nineteenth and early twentieth century were related to, or dependent on, other countries from Europe, North America, and Asia. This modern colonization - or semi-colonization (see Yang 2019) - grew in China after the victory of Britain in the First Opium War (1839-1942), and the subsequent passage of unequal treaties granting territorial and sovereignty rights to various foreign powers (particularly Britain, Germany, France, Russia, Japan and the USA) that the Chinese were forced to accept during the second half of the nineteenth century and the early twentieth century. Colonialism has often been approached (especially outside China) as a complex event involving some positive outcomes (arrival of the latest technologies and techniques, modern education, etc.), although these were limited in scale and overcome by the negative influences of the imperialist interferences

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(Wahed 2016; Reinhard 2018). On the other hand, the Westernization Movement, also known as the Self-Strengthening or Self-Improvement Movement, was promoted by some sectors of the Qing government after the defeat of China in the Second Opium War (1856-1860). This movement attempted to follow Western models to modernise the country via industrialization and to reinforce its military power. In this context, the industrial relationships between China and other nations occurred in a more symbiotic scheme, although this was often fragile. Whilst the Westernization Movement failed to achieve its goals, its influences survived (albeit with various interruptions), with China continuing to gradually open itself up to international people and companies in subsequent years. Here, we consider both the movement and some of its impacts beyond 1895. The particularities and results of westernization have been sufficiently scrutinised by both non-Chinese and Chinese historians (Teng and Fairbank 1982; Ding 2011), but the presence and representation of this mode of Chinese internationalization within museums has been little explored. The representation of colonization and colonialism in history museums and heritage sites has been the topic of recent research in Shanghai (Ifversen and Pozzi 2021) but a similar approach to industrial museums is missing.

Following on from our previous research exploring the narratives museums present of industrialization during the PRC period (1949-present) (Cano-Sanchiz, Zhang, and Lei 2020), this article examines how museums interpret earlier phases of Chinese industrial history. We believe that scrutinising the narratives presented by Chinese industrial museums about this period is interesting because telling the early industrial history of China challenges the museums to integrate international discourses into their more prominent national approaches. Furthermore, Chinese early industrialization may provide lessons for fairer modes of international cooperation in the present, when China is investing in the industrialization of less developed parts of the world.

In this article, we define an industrial museum as a collection (in situ or not) of technological objects and other artefacts, images, displays, etc. that is used to tell stories of people at work (especially, but not only, during the industrial period) and/or to reflect on the past and present impacts (social, economic, cultural, ecological, political, etc.) of industrial activities and industrialization. In China, this type of museum has experienced dramatic growth over the last two decades – more than 700 were counted in 2022 by the Ministry of Industry and Information Technology.[1] Chinese scholarship on industrial museums has initially focused on examining prominent Western museums (e.g. Ironbridge Gorge Museum) (Lu 2016). Some authors have analysed the transformation of industrial sites into museums (Li 2013; Ma 2015), while others have discussed the definition of this kind of museum and its different types (Hao et al. 2019). The educational function of industrial museums (Yang 2015; Kang 2017) and their role in promoting industrial culture (Lu and Li 2021) have also received attention. Following the global trend, Chinese industrial museums are also tightly related to industrial heritage, which is reflected in the academic literature by the popularity of the term 'industrial heritage museum' (工业遗产博物馆) (Liu 2014; Lu 2016). However, in China, this expression does not necessarily involve industrial collections and may refer to any type of museum or gallery housed in former industrial installations (Li 2013: 12).

To date, there has been no research exploring how industrial museums in China represent the role of foreign powers in Chinese early industrialization, nor on how this is perceived by national and international audiences. We believe that researching visitors' perceptions is essential because they reveal the extent to which these museums' authorized heritage discourse are reproduced (or challenged) by the general public.[2] This article aims to contribute to filling this gap by analysing how international factors (people, investment, technology, etc.) are integrated into the narratives of Chinese industrial museums, and how visitors receive and reproduce these narratives on social media.

Materials and methodology

This study focuses on a sample of 12 museums from across China, covering a variety of industrial sectors, and categories of museum. This sample is divided into two groups: core (seven museums), in which we carry out in-depth quantitative and qualitative analyses; and supplementary (five), which are used to test our explanations and to reinforce the presence of

relevant industries during the westernization period less represented among the core cases, such as the textile sector (Table 1). The selection of both core and supplementary cases, responds to their significance (most visited/renowned industrial museums) and tries to reflect the complexity and diversity of industrial museums in China.

Name	Place	Category	Inauguration	Industrial sector	Website
Industrial Museum of China (IMC)	Shenyang (Liaoning)	Industrial museum / National (2nd class)	2012	Iron and Steel. Industry in general	none
China Railway Museum (CRM)	Beijing	National (1st class)	2010	Railways	http://www.china-rail.org.cn
Yunnan Railway Museum (YRM)	Kunming (Yunnan)	Industrial museum	2004	Railways	none
China Railway Origin Museum (CROM)	Tangshan (Hebei)	Not registered as a museum	2018	Railways	none
Kailuan Museum (KM)	Tangshan (Hebei)	Industrial museum	2008	Mining (coal)	http://www.kailuanpark.com
Tangshan China Cement Industry Museum (TCCIM)	Tangshan (Hebei)	Industrial museum	2010	Cement	none
Beijing Auto Museum (BAM)	Beijing	National (1st class)	2011	Automobile industry	http://www.automuseum.org.cn
Nantong Textile Museum	Nantong (Jiansu)	Industrial museum	1985	Textile (cotton)	none
Shanghai Railway Museum	Shanghai	Industrial museum	2004	Railways	none
China Aviation Museum	Beijing	National (1st class)	1989	Aviation, military	https://www.zghkbwg.mil.cn/#/home
Huangshi Museum	Huangshi (Hubei)	National (2nd class)	1979	Mining and metallurgy (copper); others	www.hssbwg.com

Anshan Iron and Steel Group Museum	Anshan (Liaoning)	Company museum	2014	Metallurgy (iron and steel)	none

Table 1: Research sample – core (blue) and supplementary (green) case studies.

The Industrial Museum of China (IMC) is located in the former Shenyang steelworks (established in 1956). It covers the general industrial history of the country and has monographic displays on different sectors. IMC gives certain prominence to the recent past, from the founding of the People's Republic of China in 1949 to the present, and looks to the future.

China Railway Museum (CRM) is the national museum for railways. It is split across three sites: Zhengyangmen Exhibition Hall (general history of Chinese railways); Eastern Suburb Exhibition Hall (rolling stock); and Zhan Tianyou Memorial Hall (dedicated to the pioneering railway engineer Zhan Tianyou and the Peking-Kalgan line – see below). CMR's collection and narratives give prominence to the synergistic relationship between railways and socialism, as well as to very modern railway technology.

Yunnan Railway Museum (YRM) is housed in the former North Railway Station of Kunming and tells the history of the railways in Yunnan province. A key section of the museum is devoted to the Yunnan-Vietnam line, the first to be built in the region. This was a French railway linking the south of China to Vietnam (then French Indochina), the construction of which during the first decade of the twentieth century came with outstanding engineering achievements but also with severe human costs on the Asian side. The history of this line is contrasted to that of the Chinese-developed railways in the area.

China Railway Origins Museum (CROM) belongs to the Kailuan National Mine Park. It is housed in a repurposed railway warehouse, although part of the collection (rolling stock, heavy machinery, km 0 or starting point of the Chinese railway network, and the reconstruction of the old Tangshan Railway Station) is exhibited open air. CROM focuses on the first chapters of railway development in China during the Qing Dynasty, particularly in the last quarter of the nineteenth century and the first decade of the twentieth century.

Kailuan Museum (KM) also belongs to the Kailuan National Mine Park. The museum is housed in a Western classical-style building which occupies the former site of the Tangshan Railway Maintenance Factory. It displays the geology and technology of coal mining in Tangshan, which played an important role in the industrialization of the country. The narratives of the museum celebrate coal mining from the beginnings of the Chinese civilization until today, although the focus is on modern mining during the Qing Dynasty (1644-1911), the Republic of China (1912-1948), and the People's Republic of China (1949 onwards).

Tangshan China Cement Industrial Museum (TCCIM) is a museum on the site of the Chee Hsin Cement Factory, which was founded (as Kaiping Coal and Tangshan Cement Plant) in 1889 by Tang Tingshu – a businessman and interpreter with strong international connections who worked for the Chinese Maritime Customs Service and the international trader Jardine, Matheson & Co, among other enterprises (Wang 1994). The gem of the collection is the building itself and its imported rotatory kilns, which have been preserved as archaeological ruins (Figure 1).

Beijing Auto Museum (BAM) introduces the past, present, and future of the car industry with a diverse collection of artefacts that range from antiquity to the twenty first century. The museum does cover the Late Qing period and the vehicles available during this time. However, it is more oriented to the modern automobile industry, which is illustrated by a significant number of imported cars and pieces of technology (although BAM does not discuss internationalization). We include this case as a complementary example in the core group of analysis to demonstrate that internationalization is not addressed by every industrial museum in China.

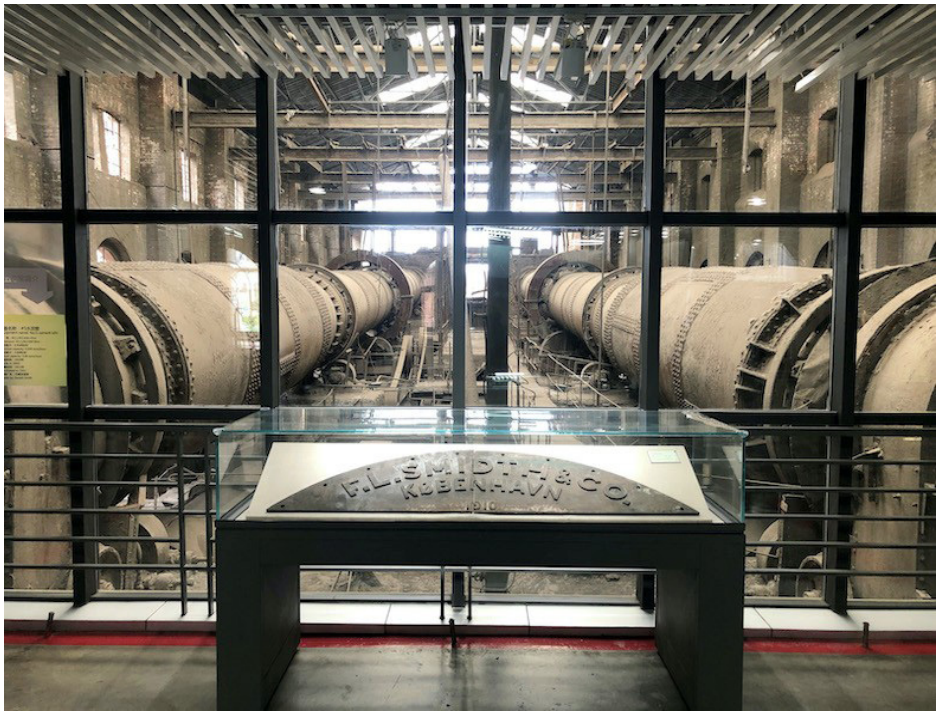

Figure 1: Rotatory kilns of the Chee Hsin Cement Factory in TCCIM. Source: authors.

The collections and exhibition designs of the museums listed above were recorded using photography, video, text, and audio notes during several study visits carried out between 2018 and 2021. Data on the museums' online presence was also gathered from the museums' websites (see Table 1) and visitor reviews posted on the travel review platforms Mafengwo (马蜂窝, Chinese visitors) and TripAdvisor (international visitors). Code was applied to collect data posted between September 2009 and April 2020 from these digital sources (Table 2). Following the gathering of this data both on-site and online, comparative analysis was undertaken of the official narratives presented by the museums, and visitors' perceptions of these as ascertained from online reviews. Even though there is an asymmetry between the times covered in the online (2009-2020) and on-site (2018-2021) data gathered, as we prioritized permanent exhibitions over temporary ones, these two datasets relate to the same collections and exhibition contexts: with the photographs posted by visitors showing, with few exceptions, the same collections and exhibition designs we documented in the field.

		Sample	R	1st MRW	2nd MRW	3rd MRW	4th MRW	5th MRV	C	P
IMC	M	14.07 – 20.04	4.48	工业 industry	博物馆 museum	中国 China	沈阳 Shenyang	铸造 cast	43	69
	https://www.mafengwo.cn/poi/7913346.html									
	T	IS	-	-	-	-	-	-	-	-
	https://www.tripadvisor.com/Attraction_Review-g297454-d5116533-Reviews-China_Industrial_Museum-Shenyang_Liaoning.html									

CRM (Zheng yangmen Hall)	M	13.12 – 19.06	3.73	铁路 railway	博物馆 museum	中国 China	前门 Qianmen	正阳门 Zheng yangmen Gate	75	35
	https://www.mafengwo.cn/poi/4874.html									
	T	09.09 – 19.12	3.51	railway	museum	China	trains	models	53	48
	https://www.tripadvisor.com/Attraction_Review-g294212-d2346619-Reviews-China_Railway_Museum_Zhengyangmen-Beijing.html									
YRM	M	15.02 – 19.03	4.28	火车 train	铁路 railway	博物馆 museum	云南 Yunnan	历史 history	75	113
	https://www.mafengwo.cn/poi/5429762.html									
	T	14.09 – 19.10	4.62	railway	history	museum	China	Yunnan	21	9
	https://www.tripadvisor.com/Attraction_Review-g298558-d4186769-Reviews-Yunnan_Railway_Museum-Kunming_Yunnan.html									
CROM	M	IS	-	-	-	-	-	-	-	-
	Not reviewed on Mafengwo									
	T	IS	-	-	-	-	-	-	-	-
	Not reviewed on TripAdvisor									
KM	M	IS	-	-	-	-	-	-	-	-
	https://www.mafengwo.cn/poi/5427890.html * These reviews are about the mining park the museum is part of, not about the museum itself.									
	T	IS	-	-	-	-	-	-	-	-
	https://www.tripadvisor.com/Attraction_Review-g659916-d8862610-Reviews-Kailuan_National_Mine_Park-Tangshan_Hebei.html * These reviews are about the mining park the museum is part of, not about the museum itself.									
TCCIM	M	IS	-	-	-	-	-	-	-	-
	https://www.mafengwo.cn/poi/18562777.html									
	T	IS	-	-	-	-	-	-	-	-
	https://www.tripadvisor.com/Attraction_Review-g659916-d14131676-Reviews-China_Concrete_Industrial_Museum-Tangshan_Hebei.html									
BAM	M	14.02 – 19.05	4.16	汽车 vehicle	博物馆 museum	孩子 children	五层 fifth floor	喜欢 like	75	105
	https://www.mafengwo.cn/poi/22071.html									
	T	15.03 – 19.10	4.13	Cars	Museum	Chinese	Automobile	Beijing	14	23
	https://www.tripadvisor.com/Attraction_Review-g294212-d4097173-Reviews-Beijing_Automobile_Museum-Beijing.html									

Legend: M: Mafengwo. T: TripAdvisor. IS: insufficient sample. Sample: year.month – year.month. R: rating. MRW: most repeated word. C: number of comments. P: number of photos.
Comments: Chinese photos and comments are excluded from the data collected on TripAdvisor. Insufficient sample: the museum is not in M/T, or it has less than 10 comments

Table 2: Quantitative data retrieved from Mafengwo and TripAdvisor (after processing – filtered). All the comments and photos analysed in this article can be accessed by following the links provided in the table.

The data collected on-site and online was processed using quantitative and qualitative analyses. The quantitative analyses were grounded on spreadsheets, word frequency lists, and statistics. These tools let us visualise, for example, the popularity (overall ratings) of the museums, the influential items in their collections and discourses, and the common topics discussed by Chinese and international visitors. The qualitative analyses were supported by three methods: structured brainstorming, photovoice, and discourse analysis. The data gathered in the field and online was discussed in structured brainstorming sessions by the authors of this article, other members of the research team, and a multidisciplinary group of students from the University of Science and Technology Beijing (USTB, China). In these sessions, the discussion was open but guided by a series of questions:

- What international elements, such as objects, ideas, and historical characters and events, are included in the exhibitions?

- What image do these international elements bring to the narratives of the museum?

- How are these images represented (negative, neutral or positive representation)?

- How do visitors relate to them?

The brainstorming sessions proved effective in gathering and contrasting the different views of the participants mentioned above, who represented diverse demographics (nationality, gender, age, etc.), disciplinary approaches (museology, heritage studies, archaeology, linguistics and translation, among others) and levels of education/previous related knowledge. We employed the photovoice method (Gubrium and Harper 2016) with two different aims: 1) with USTB students and the research team, to contrast our disciplinary perceptions of the museums and to channel the structured brainstorming sessions (Figure 2); and 2) with visitors in general, to analyse their experiences and perceptions of the museums' collections and interpretive narratives based on the materials they had posted online. While the interpretations of how visitors interact with museum's narratives offered in this article are primarily based on aim 2, aim 1 enabled a more qualitative analysis that considers disciplinary biases and facilitates a deeper reflection on the content and messages of the museums. To achieve this, the students from USTB shot photos of ideas, themes or concepts we proposed, and also explained the meanings suggested by images we pre-selected. Finally, our discourse analysis (Handford and Gee 2012), grounded on a combination of linguistic and semiotic tools, was developed at a multi-modal level to explore the meanings attributed by the museums and their visitors to the texts and images they produced.

Figure 2: Participatory action research in BAM with USTB's students: guided tour and structured brainstorming (above), students' photographs of given concepts (centre), and students' interpretations of given photographs. Source: authors, with photos provided by the students.

Data and findings

In this section, we introduce how the museums characterise the role of international factors in early Chinese industrialization, and how these narratives are perceived by the public. We begin by discussing the themes and general discourses present in the museums' narratives, before examining how visitors perceived these in relation to each museum.

Museums' narratives

Colonization

In the nineteenth and early twentieth century, China was still a premodern, semi-feudal and agricultural country, which put it at a disadvantage internationally (Hsu 1984). Imperialism is presented in the museums as hampering national industrial development – IMC is particularly explicit in this narrative, using language in gallery text such as 'exploited' and 'dominated'. The industries developed by overseas firms in China under the basis of economic colonization are represented as occupations, while the relationships of China with foreign powers are described in terms of humiliation, especially during the Opium Wars (1839-1842, 1856-1860) and the Sino-Japanese Wars (1894-1895, 1937-1945).

The railway sector is illustrative of both this context and its representation. CROM, YRM and CRM refer to the imperial railways built after the Opium Wars as military assets utilized by foreign powers such as Britain, France, Russia or Japan to facilitate their invasion of Chinese territories. CROM explains that fighting imperialism was one of the main reasons that motivated the Qing administration to develop a national railway system, especially after losing several rights to the Eight-Nation Alliance (Austria-Hungary, France, Germany, United Kingdom, Italy, Japan, Russia, and the USA) with the Boxer Protocol of 1901 – an unequal treaty that followed the Boxer Rebellion's failed attempt to release the country from foreign interferences around 1900. This agreement was indeed a key chapter in the development of colonial railways: by the early 1910s, 93% of the railway network was related directly or indirectly to non-Chinese interests (Hsu 1984: 155).

In dealing with colonial railways, Chinese museums normally distinguish between different *firsts*: the first railway *built in China* (in the country's territory) and the first *Chinese railway* (not only made *in* but made *by* China). Following this differentiation, the first railway built in China was the Woosung Road, a 14-km British line connecting Shanghai and Woosung that was active only from 1877 to 1878 (Crush 1999). The first Chinese railway was the Tangshan-Xugezhuang, a 9.7-km line promoted by the Kaiping Mining Bureau in 1881 (Xue et al. 2002: 155). CRM provides a nuanced narration of these two lines, one as the first operational railway on China's land, the other as the first railway operated by the Chinese (although with significant international assistance). CROM follows this narrative too, and emphasises the Tangshan-Xugezhuang (which evolved into the Peking-Mukden Railway) as the first standard-gauge railway in the country (1.435 m; Woosung Road was narrow-gauged) and as the birthplace of the 'national railway network'. Conversely, the Shanghai Railway Museum gives more weight to Woosung Road.

Beyond the Shanghai exception, the museums' representations of Woosung Road avoid depicting it as the primary origin of the railways in China. This differentiation of firsts can also be found among Chinese historians, with most researchers considering that the construction of the Tangshan-Xugezhuang 'marked the real beginning of railways in China' (Hsu 1984: 103). This duplicity of firsts and the greater importance given to the Tangshan-Xugezhuang line reveal some resistance to presenting Woosung in a pioneering position. This is partly because Woosung was a colonial enterprise, and the British, who were granted authorization to build a road instead of a railway, deceived the Chinese authorities to construct it (Crush 1999). Thus, it constitutes an element of humiliation, and the memory of it is met with resistance in the museums.

The rolling stock also evidences these discourses. The *Rocket of China* (named after Stephenson's early locomotive, the *Rocket* [1829], a symbol of the British Industrial Revolution) was erected in 1881 to serve the Tangshan-Xugezhang line. This engine, known among the Chinese workers as the *Dragon*, is frequently described as the first locomotive built in China.

In actuality, it was assembled in Kailuan under the guidance of the English engineer Claude W. Kinder, and comprised of recycled pieces (e.g. boiler and cylinders from portable winding engines) and imported materials purchased as scrap (e.g. chilled-iron wheels from the USA) (Hsu 1984: 104; Crush 2013: 18). Despite this early domestic locomotive, China's railways were highly dependent on imported rolling stock until the beginnings of socialist industrialisation in the early 1950s. This is made evident, for example, by CRM's pre-1949 rolling stock collection, which only features imported locomotives. CROM and CRM are rich in details about these engines, which were made in Britain, USA, Japan, Germany, France, Belgium, and the USSR. Among them, the British *Class 0* (1881), which ran on the Tangshan-Xugezhuang railway, is praised in CRM as the oldest preserved steam locomotive in China. Replicas of the *Rocket of China* and *Class 0* can be seen in the most important railway museums (such as CRM and CROM) and related locations (e.g. TCCIM, Tangshan Industrial Museum), while the original *Class 0* is exhibited in CRM in a central position. However, none of these were the first locomotives to operate in the country. The *Pioneer*, made in England in 1874 and received in China in 1876, was used before in the construction of the Woosong Road and its test runs, and later, another two English engines, the *Celestial Empire* and *Flowery Land*, ran on that line (1877-1878) (Crush 1999). Even though these earlier machines are not forgotten (especially in the Shanghai Railway Museum), in general, the museums' narratives on early railways in China highlight Tangshan's history and locomotives and put less emphasis on the earlier colonial railways (Figure 3).

Figure 3: Replicas of the Rocket of China in CROM [1] and CRM [2]. Original Class 0 in CRM [3] and replica in TCCIM [4]. Models of the Pioneer [5] and Celestial Empire [6] in Shanghai Railway Museum. Space devoted to colonial trains in CROM [7] and CRM [8]. Source: authors.

YRM also allows for a discussion of the complexity of the Chinese narratives of industrial colonialism. Few industrial museums in China portray colonization more tragically: 'The railway [Yunnan-Vietnam] combined French capital and technology, with the blood and lives of Chinese labour'. Nevertheless, YRM acknowledges the ideas and technologies that the Europeans brought to China, and their contribution to the modernization of the territory – a perspective commonly shared by Chinese scholars (Sang and Lin 2021: 3). In line with this discourse, the physical presence of the French in the museum is mostly embodied by their containers of knowledge (books, plans, treaties, and other documents), as well as scientific instruments and singular pieces of technology (e.g. a *Michelin* locomotive – a French diesel locomotive equipped with rubber tyres) (Figure 4).

Figure 4: French material culture in YRM: vehicles of knowledge transfer, building materials and pieces of technology. Source: authors.

In conclusion, a mixed response to the economic colonization of China is presented in these industrial museums, incorporating a sense of national humiliation and a critique of the incapability of the Late Qing rulers, but also pride in the early efforts of Chinese intellectuals and authorities. This representation is contextualized in the museums' interpretation with bitter memories of falling behind, losing territory, and suffering and shame, stamped as a Century of Humiliation (百年国耻). This enduring legacy persists in China's national founding narrative and contributes to shaping the perception of its past and present global status.

Westernization

The Westernization Movement (c. 1860s-1895) was a Chinese reaction against colonization

that aimed to learn from the Western powers to fight back. It had two main objectives: a military one, consisting of importing weaponry and developing a modern navy; and a business and industrial one, based on the acquisition of knowledge and technologies from the West to promote development (Li and Soyez 2017; Wang 2013), which was not exempt from technical difficulties (Wang 2010). This article focuses on the second of these objectives. Westernization and the naval and military industries are the topics of other relevant museums in China (e.g. the Museum of the Foochow Arsenal 1866 in Fuzhou, or the Humen Naval Museum in Guangdong), but they are out of the scope of this study.

'Learning from the West' is represented in several museums. KM grants plenty of space to the Chinese Educational Mission, which sent students abroad to import knowledge. One of its most celebrated pupils, Zhan Tianyou, was responsible for the construction of the first railway in China without international assistance after studying in the USA: the Peking-Kalgan (1905-1909) (Ling 2011: 42). This episode is celebrated at the Zhan Tianyou Memorial Hall of CRM. Railways help discuss westernization, but in this section of the article, we concentrate on mining, the textile industry (both key sectors in the westernization process), and cement production.

In KM, westernization is presented as the beginning of Chinese industrialization. More specifically, Kailuan Coal Mine (established in 1878) is described as the birthplace of China's railways and mechanical coal mining, as well as the 'starting point of the transition of the country from a farming-based civilization to an industrial one'. The museum acknowledges the international contribution to this process, which was channelled through the arrival of overseas technologies, techniques, and workers. Like in YRM, such international transfer of knowledge is represented not only with text and reproductions of old photographs, but also with manuals and handbooks from abroad, technical publications, and documents generated by international industrialists in China. In addition, KM discusses the cultural impacts of non-local people's presence in Tangshan, whose society is portrayed as a hybrid community featuring customs and practices from northern and southern China, and from the West. The museum illustrates this topic with photographs of coexistence in and outside work, samples of acculturation (a Chinese wedding in a Western fashion), reproductions of Western and Chinese urban scenes, and international and local material culture (Figure 5).

Figure 5: International (left) and Chinese (right) material culture coexisted in old Tangshan and is displayed together in KM. Source: authors.

KM attributes the origins of China's modern coal industry to the team led by Tang Tingshu, which integrated Western staff (including Claude W. Kinder) and former students of the Chinese Educational Mission. Tang was also the founder of the Chee Hsin Cement Factory in Tangshan. In TCCIM, material culture (Figures 1 and 6) and textual narrations together vividly present these more symbiotic international relations in China's early industrial development, which in the museum's textual narrations are portrayed with adjectives such as 'engaged' or 'joint'. These symbiotic relations are represented, for example, by the imported equipment of the cement factory. The original rotatory kilns (the first in the country) were manufactured by the Danish F.L. Smidth & Co, and the plant was expanded in 1940 with North American equipment. At that time, energy production relied on engines made by Siemens and AEG (Germany), and Babcock & Wilcox (USA). All these examples indicate China's early dependence on technologies from abroad. However, this factory exported building materials (e.g. to the USA for the first time in 1912) using the imported technology mentioned above, which demonstrates a more reciprocal relationship between China and the West in terms of industry and trade. Other related installations were also developed under this equitable context, including the Tangshan Porcelain Factory, and the Chee Hsin Machinery Repair Factory (1910). The museum's discourse on these experiences contrasts with that of the Japanese occupation of the city (1935-1945), for which there are no positive accounts. This is a shared characteristic with other industrial museums located in regions occupied by the Japanese in the recent past. In the Anshan Iron and Steel Group Museum in Liaoning province, for example, the boards of the exhibition read 'Japanese invaders also encroached on Anshan iron mine, seizing mining rights, forcibly occupying land, establishing a factory, presumptuously plundering and executing cruel colonial rule'.

Figure 6: Western-style tiles made in China displayed in TCCIM (left) and the Tangshan Industry Museum (right). Source: authors.

The role of imported technology in the industrial development of China can be observed in other museums, such as the Nantong Textile Museum in Jiangsu province – the first textile industrial museum in China, opened in 1985. The museum tells the history of textile production in the region from prehistoric to present times. In this long narrative, Zhang Jian (1853-1926) – an industrialist and educator praised in China for his contributions to the modernization of the country (Guo and Wu 2018) - and his Dasheng Cotton Mill from 1895 are granted a prominent position. The factory started production in 1899 equipped with the best machinery available in the global market (mostly British), which the museum describes as an 'intelligent development' opening a 'silver age'. This mill led to the development of the

textile sector of Nantong (and of the country) and, together with other initiatives ran by Zhang Jian, contributed to the modernization of the city (Li and Luo 2011; Jiang 2002). Zhang Jian and his Dashen Cotton Mill, whose imported machinery is exhibited in a replica of the original spinning workshop (Figure 7), are presented as national role models, even though part of the mill's success was grounded on international technologies.

Figure 7: Original British machinery of the Dasheng Cotton Mill exhibited in the Nantong Textile Museum. Source: authors.

In conclusion, westernization is represented in the museums (especially in Tangshan) as an agent of modernization that favoured industrial and military improvements. It is generally acknowledged that westernization promoted structural changes in Chinese society and the strengthening of urbanization, and that imported ideas and technologies contributed to the

development of industry, commerce, and transportation networks. Together, all these changes are identified as the transition from the agricultural to the industrial civilization, which Lu, Liu and Wang (2020: 502) have described as an urban and industrial process that started in the 1860s.

Visitors' perceptions

Our data (see Table 2) on visitors is partial and limited since they are based on the impressions shared by some of them online. Still, the samples collected show how Chinese and non-Chinese visitors relate to internationalization narratives. As a first observation, neither group shows a strong interest in the topic (Figure 8). The quantitative analysis of the textual dataset reveals few differences between non-Chinese and Chinese visitors. Most keywords are shared in their conversations, although international visitors are more attracted by the technological side of the exhibitions, while the Chinese echo more frequently the national narratives of progress and development. The qualitative analysis discloses other nuances, as explained below.

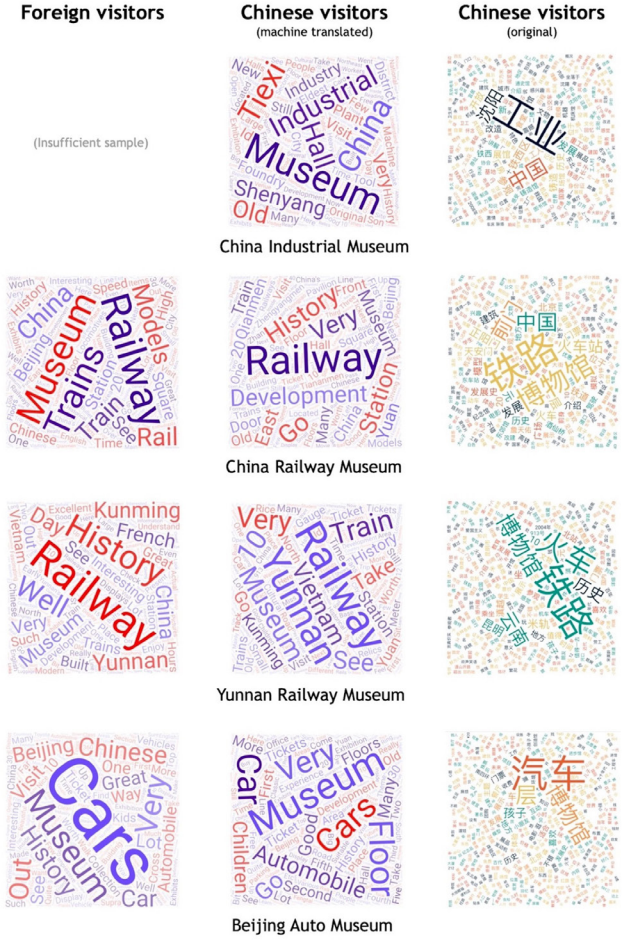

Figure 8: Word frequency (the bigger, the more repeated) in the comments posted by international visitors on TripAdvisor and Chinese visitors on Mafengwo (before processing – raw). Source: authors.

Industrial Museum of China

Chinese visitors generally relate to IMC patriotically. Their narratives reproduce the museum's discourse on industry and national development, especially in the PRC period (in the words of a visitor: 'commemorate the industrial development process of the original period of the founding of the People's Republic of China'). In broad terms, visitors comment on the positive aspects of industrialization, glorifying industry and its workers, who are represented as national heroes. Thus, internationalization has little weight in the visitors' representations of the museum due to the prominence of an institutional national narrative. In our sample, there is only a nostalgic mention of the Soviet Union and its influences on the social environment of the working class ('the old memories of the Soviet Union are in the old houses. The bed, the house where the junior high school classmates lived originally, the kitchen supplies are the memories of the 1980s and 1990s').

China Railway Museum

Chinese visitors see Zhengyangmen as a place for learning about the development of China's railways ('it introduces the development history of my country's railways in detail'; 'a systematic display of the history and development of the railway'). However, CRM's well-defined narratives of progress struggle to reach the public. The museum attracts mostly families with children and railway fans, who make few reflections on internationalization. Nevertheless, Chinese visitors' photographs show that the museum building (the former Zhengyangmen East Station) is more appealing to them than the collection itself, which is in part due to its Western style ('this unique Western-style building'; 'the building is very characteristic of Western architecture'; 'European building in the heart of Beijing').

Overseas visitors share more impressions about how globalization is represented. One English-speaking tourist points out how CRM describes imperialism as one of the reasons for the Chinese '[railways'] relatively late development, and often hostility to what was seen as an extension of imperial interference', while a North American visitor is surprised to discover the role of the USA in this period ('I was most surprised to learn how large of a role the US had at the beginning of the railroad in China'). One visitor criticises the scarce representation of the line extensions built by the Japanese during the war, and of the Soviet Union's influence. There is also one reference in our sample to the European imported locomotives in the collection made by a visitor from Romania. Finally, photos at TripAdvisor show attraction to the building (as with the Chinese visitors) and to the genuinely Chinese elements in the collection.

Yunnan Railway Museum

Chinese visitors generally see YRM as a family attraction, especially because of a mini-train trip offered as part of the visit ('the key is to take the little train that is still in operation'). YRM also has strong patriotic education functions, which is in accord with its official designations as a National Railway Patriotic Education Base and a Yunnan Provincial Patriotic Education Base, and materialised in its accounts of national resilience. All this displaces the visitors' attention from the detailed narratives on the role of France in the early railway history of Yunnan. Consequently, a significant number of Chinese visitors within our sample do not reflect on France, although those who do address the French as colonisers. One of them even refers to the Yunnan-Vietnam railway as dark history, remembering the many Chinese and Vietnamese workers who died in its construction ('the corpses of countless Chinese and Vietnamese labourers are buried on both sides of the railway'). Conversely, several people see the imported pieces of technology displayed in the museum (namely the *Michelin* locomotive) as national heritage or local treasures. On the other hand, the selfies posted on Mafengwo (see link in Table 2) show happy people disconnected from the human suffering behind the construction of the Yunnan-Vietnam line, which is eclipsed by the main theme of the museum: railways and development.

YRM is considered a must-see among international visitors. In general, they experience the museum as a way to approach Chinese culture, and as a place for learning about the

railway development of the country up to the twenty-first century. Not every overseas visitor reads the French actions in a colonial sense. For example, a North American visitor praises the Yunnan-Vietnam railway as being responsible for 'opening the city [Kunming] up to the world'.

Beijing Auto Museum

BAM's Chinese visitors can be classified into car fans (generally men) and families with children. Both groups perceive that the museum's narratives highlight the country's development ('it has both history and future development'). Thus, the weight of a national discourse displaces a deeper approach to international exchanges. Some visitors comment that the museum displays both the global and local history of automobiles, but without providing further thoughts about internationalization. The role of foreign countries is reduced to the production of cars and based on the imported machines exhibited. As for their photos, most of them show cars only, especially the oldest and the most luxurious ones. The visitors' visual representation of BAM suffers from the 'shiny syndrome' (Davies 1996), which does not accurately reflect the complexity of the collection.

International visitors of BAM can also be split into two groups: car fans and chance visitors. Like their Chinese counterparts, they also identify the museum's interest in the future and national education. Regarding internationalization, overseas visitors appreciate that the collection includes a good number of imported cars. Some visitors dislike the Chinese ones, but many others love them, especially the official black autos from Chairman Mao's era ('[…] just seeing China and the Soviet Union's locally made cars in the 1950s and 60s will generate a lot of interest'). The photos posted on TripAdvisor confirm that Chinese vehicles attract the attention of most international visitors.

Discussion

In general terms, internationalization in industrialization can be traced through investment, technology transfer, materials exportations and importations, global circulation of ideas via people's mobility or publications, and the homogenization of production and consumption. All these elements can be seen, with different nuances, in the narratives and collections of the Chinese industrial museums considered in this article. In this section, we discuss two main themes: the complexity of the narratives about international factors in early Chinese industrialization; and the difficulties of delivering such narratives to the public, in relation to the broader context of the museums' main discourses.

Multifaceted pasts and complex narratives

The interactions between China and the rest of the world in the context of early industrialization adopted different forms (Li and Soyez 2017). As a consequence, there is not a homogeneous narrative on their impacts, but an ensemble of accounts in which international agents are represented in diverse ways. These representations also depend on the country in question. Overgeneralising, foreigners can be divided into two main groups. On one hand, the Westerners, whose image is multifaceted and involves both positive (early industrialization, modernization) and negative (colonization) consequences. On the other, the Japanese, whose relations with China are described in terms of invasion and conflict, with none or few positive outcomes, as reflected by the industrial museums from Liaoning and Hebei provinces included in this study, for example. Russia/USSR falls between these two representations.

The railways evidence the complexity of these narratives. Non-Chinese technologies, knowledge, and engineers are described in the museums as essential elements in the early development of Chinese locomotives and lines. Yet, at the same time, the railways are depicted as a major tool for colonization and a vehicle for national humiliation. Thus, the image of the railways in the Late Qing Dynasty presented by the museums depends to a great extent on the impacts of each enterprise. When people from abroad worked together with the Chinese, their contribution is acknowledged and praised, as is the case with Kinder. On the contrary, colonial railways are described in terms of exploitation and imperialism (e.g. Woosung Road), and the foreign powers related to them are blamed as one of the main reasons for the late

and weak early industrialization of China.

These colliding narratives can coexist within the same museum. YRM presents France as a colonial force that brought suffering to the local population and, at the same time, the essential knowledge and technological progress to help Yunnan become a 'modern industrial civilization'. The museum maintains a collaborative relationship with France, which donated numerous pieces to the collection; and temporary bilingual (Chinese and French) exhibitions are also organized regularly, bringing together French and Chinese museum professionals and volunteers. All of this reveals the diplomatic function of the museum as a facilitator of international cooperation that overcomes, and heals, the wounds of a conflictive past. In a slightly different sense, international cooperation and globalization are addressed in almost every railway museum in China (YRM, CROM, CRM), where the trains are depicted as links to the rest of the world.

It is possible to perceive different nuances in national and local/regional narratives. Chinese narratives of economic colonization are in accord with the national memory of a time of falling behind the Western powers technologically (Pomeranz 2000). Internationalization in this sense is not only about global relations but also about the formation of national identity. Regional narratives, such as those from YRM or the Shanghai Railway Museum, take a more lenient perspective towards the issue to some degree.

The museums' presentation/narratives of westernization offer different insights. The reception of imported technology during the Late Qing has been read by Chinese historians in terms of failure, since it did not prevent defeat in the war against Japan (1894-1895), nor did it facilitate a fast and strong industrialization during the Republic of China period (1912-1948) (Wang 2013). This perspective is not reproduced (at least, not with such forcefulness) by the museums examined in this article, except for IMC. In IMC, the Westernization Movement is presented as an unsuccessful initiative, while imperialism, feudalism, and bureaucrat-capitalism are described as detrimental forces that held back private Chinese initiatives from prospering. Other museums offer a more positive portrayal of westernization. Those in Tangshan represent it as the beginning of the modernization and industrialization of the country, even when its actors belonged to imperial/feudal China (TCCIM mentions that the Qing used westernization to perpetuate its feudal system) and/or followed capitalist models. To our eyes, this is not contradictory to the discourse on socialist industrialization that is prominent in most Chinese museums, especially in IMC and the national ones. Instead of representing the past as a *foreign country* – borrowing the metaphor of Hartley (1954) later explored by Lowenthal (1985) - the industrial museums build a narrative of unity and continuity of the Chinese civilization in which the role of the Chinese people in the development of the country is celebrated beyond the historic period or the system they belonged to. This can be seen in the Hubei Museum of Huangshi, for example, where the ingenuity and entrepreneurship of Chinese miners and metallurgists are presented in a continuous sequence of more than three millennia. Against a backdrop of profound foreign interferences, the genuinely Chinese contributions to industrialization are elements of national pride regardless of their contexts.

Discourses and readings

The narratives related to internationalization in the early stages of Chinese industrialization struggle to reach the public. This is because the museums are more oriented to Chinese audiences and other discourses are more prominent than early internationalization, such as national history and the celebration of industry.

In general, the narratives of industrial museums in China give more importance to the socio-political consequences of industrialization than to its scientific and technological aspects. Beyond a more technological approach to the industrial past, the depiction of national history is essential to fulfilling the museums' missions as institutions for patriotic education and building the national identity (Bollo and Zhang 2017). In this sense, colonization is used to create narratives of national heroes. For example, KM presents Kailuan miners as 'being particularly good fighters' (as described once by Chairman Mao) who combated the Japanese and imperialism.

Chinese industrial museums offer a positive image of industry. KM represents coal

mining as a major agent of civilization and mastering nature. Its narratives highlight the benefits of this sector while paying less attention to its negative consequences. In industrial museums, progress and development are celebrated in the general framework of the transition from an agricultural (feudal) to an industrial (modern) civilization. There is also space for environmental concerns in some of them (IMC, CRM), but these are normally related to recent developments pursuing the country's goals for a new ecological civilization (see Wei et al. 2021).

In this context, visitors pay little attention to early internationalization and rarely perceive the dark sides of industrial history. The fact that visitors see YRM and other museums (BAM) as ideal destinations for families with kids demonstrates to what extent the dark stories of industrial colonialism are displaced by other narratives. The happy selfies and photographs of pieces of technology posted by visitors (especially the Chinese ones) on social media (accessible following the links provided in Table 2) also prove that visiting an industrial museum is a nice experience that celebrates progress and development, rather than an encounter with globalization and its negative impacts on Chinese early industrialization (semi-colonialism, humiliation, exploitation, etc.).

This is also partly a consequence of the instrumentalization of the industrial museums as soft-power devices that - beyond fulfilling the traditional functions of education, conservation, and research - are entrusted with more pragmatic and future-oriented missions, as we have discussed elsewhere (Long and Cano-Sanchiz 2024). By creating and delivering an institutional image in a new discourse of *created in China* (contrasted to that of *made in China*), museums aim to replace the international perception of the country as the world's factory of low-cost goods that grew in the late twentieth century (Haour and Zedtwitz 2016). In this context, the museums' narratives about the ingenuity of the Chinese and their technological and industrial achievements are not only elements of national pride but also of global representation. In addition, the industrial museums of China are designed to provide effective support to national plans for social, economic, technological, and industrial development, as reflected by CRM, IMC, and BAM, for example. This implies that, rather than focusing on the industrial past as a terminated process, Chinese museums look at it as a source of inspiration to champion industrial culture in the present, and to promote ongoing and future projects (Wang, Sun and Luo 2018). All of these displace to a certain extent the narratives about early globalization we have paid attention to in this article.

Conclusion

This article has analysed how Chinese industrial museums use texts, images, and objects to represent industrial globalization and its consequences in Late Qing China, when most international industrial activities occurred in the framework of economic colonization or the westernization initiatives aimed at fighting back against the colonial powers. The research has shown that internationalization only accounts for a small portion of the museums' discourses, and that visitors do not read colonization and westernization in terms of internationalization. The multifaceted Chinese industrial history is transformed into different representations in the present. Foreign powers play various roles depending on the case and country, but in general, they constitute a heterogeneous group that is approached in contrast to another diverse collective: the Chinese. The contrast between international and national allows the museums to produce a narrative of continuity of the Chinese civilization, even when there are *foreign pasts* (feudalism, bureaucrat capitalism) in the country. As a reaction to the strong foreign interference in the early industrialization of China, the museums commemorate every Chinese contribution to the transition from a feudal and agricultural civilization to a modern and industrial one. These messages are only slightly received by non-Chinese visitors, while Chinese visitors normally pay more attention to the prominent national narratives of the museums and their discourses of development and progress.

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Notes

[1] Peng Lin (2023) '工信部：支持利用国家工业遗产带动产业发展 [Ministry of Industry and Information Technology: Support the Use of National Industrial Heritage to Drive Industrial Development]', CCTV Finance 2023. https://baijiahao.baidu.com/s?id=1763409797435996313&wfr=spider&for=pc, accessed 21 May 2025.

[2] Following L. Smith (2006), the Authorised Heritage Discourse (AHD) is built on a series of authorised institutions, experts, normalized practices and documents that set and naturalize what heritage is, and how and by whom it should be managed. That creates an institutionalized way of dealing with patrimony that often leaves little room for alternative approaches that do not fit into the technical procedures and expertise of the AHD.

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***Juan Manuel Cano Sanchiz**, Associate Professor at the Institute for Cultural Heritage and History of Science & Technology, University of Science and Technology Beijing

****Ruijie Zhang**, Associate Professor at the School of Foreign Studies, University of Science and Technology Beijing

*****Lan Long**, Alumna at the Institute for Cultural Heritage and History of Science & Technology, University of Science and Technology Beijing