

Article

The Grand Canal in China: An Envoy of Civilization Crossing the Historical Boundaries

Zixi Gao ^{1,*}¹ Southland Christian school, Rowland Heights, CA, 91748, USA

* Correspondence: Zixi Gao, Southland Christian school, Rowland Heights, CA, 91748, USA

Abstract: The Grand Canal, as a world man-made mega project with a length of 3200 kilometers, was listed as a world heritage site in 2014. The excavation of the Grand Canal was firstly to meet the needs of armies in the wartime. The Grand Canal connected the northern political center with the southern economical center and was gradually extended northward with the transferring of the nation's political center. In this study, the search strategy is applied to analyze and summarize the data collected from scientific journals, local chronicles and renowned classics to depict the cultural and historical connotation of the Grand Canal and reveal its role as an envoy of civilization.

Keywords: The Grand Canal, cultural, an envoy of civilization, historical

1. Introduction

The Grand Canal of China (GCC), the longest artificial waterway in the world, stretches for 3,200 kilometers and was listed as a UNESCO World Heritage site in 2014 [1]. As a world-class cultural heritage, the GCC not only represents the continuation of the historical and cultural legacy of the Chinese nation but also serves as a significant witness to global civilizational exchanges. The construction of the Grand Canal spanned several millennia, connecting the north and south of China and becoming an important economic, political, and cultural link [2]. In China, the unique cultures that developed along the canal are closely tied to the rise and fall of the Chinese nation. With China's resurgence, the revival and dissemination of these cultures play a significant role in enhancing national cultural confidence and global cultural influence [3-4].

The Grand Canal is not only a masterpiece of ancient Chinese water conservancy engineering but also an important conduit for cultural exchange. From the perspective of cultural heritage preservation, in recent years, with the construction and promotion of the Grand Canal Cultural Belt, the historical value and cultural connotations of the GCC have gradually become a research focus. Especially in the context of the "Belt and Road" initiative, the Grand Canal, as a key cultural route connecting the East and West, has increasingly highlighted its role in cross-cultural communication [5]. By reexamining the cultural heritage of the Grand Canal, we can not only understand its significant role in history but also explore its pathways for cultural inheritance and innovation in contemporary society.

This study aims to explore the historical evolution and cultural functions of the Grand Canal, particularly its role as a "civilization messenger." Through an in-depth analysis of the GCC's history and cultural functions, this paper will reveal its trans-era cultural value, providing reliable historical data and theoretical support for related academic disciplines [6-7]. We believe that delving into the cultural connotations of the Grand Canal will not only strengthen the global dissemination of Chinese culture but also inject new vitality into the revival of Chinese national culture.

Received: 04 January 2026

Revised: 24 February 2026

Accepted: 09 March 2026

Published: 13 March 2026



Copyright: © 2026 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

2. Methods

2.1. Search Method

The relevant literature published in English (prior to December 2022) and Chinese historical classics were searched in the databases of Ebscohost and National Digital Library of China. The Boolean operators and keywords used in the searches were "history and the grand canal", "the grand canal in China", and "culture and the grand canal". The search strategy and the keywords are adjusted as appropriate according to the searched database. In addition, local chronicles and historical classics on history of GCC were reviewed for inclusion.

2.2. Search Results

More than 78 articles were retrieved and reviewed by the researcher. 20 Chinese classics were summarized and analyzed to give a brief description of the history of GCC. The related descriptive chronicles were reviewed critically and the essence was summarized and incorporated in this paper. After removal of duplication (n = 241), no GCC history at all (n = 164), no abstract (n = 33), non-English or Chinese articles (n = 17), incomplete papers (n = 37) and full articles not accessible (n = 21), only 112 papers were left for further review. Furthermore, 42 articles were excluded because of duplications of GCC information and containing irrelevant information. Finally, 70 published studies and 20 Chinese classics was included. Thirteen additional references suggested by reviewers were added to this paper. As shown in Figure 1, the total number of studies included is now 83.

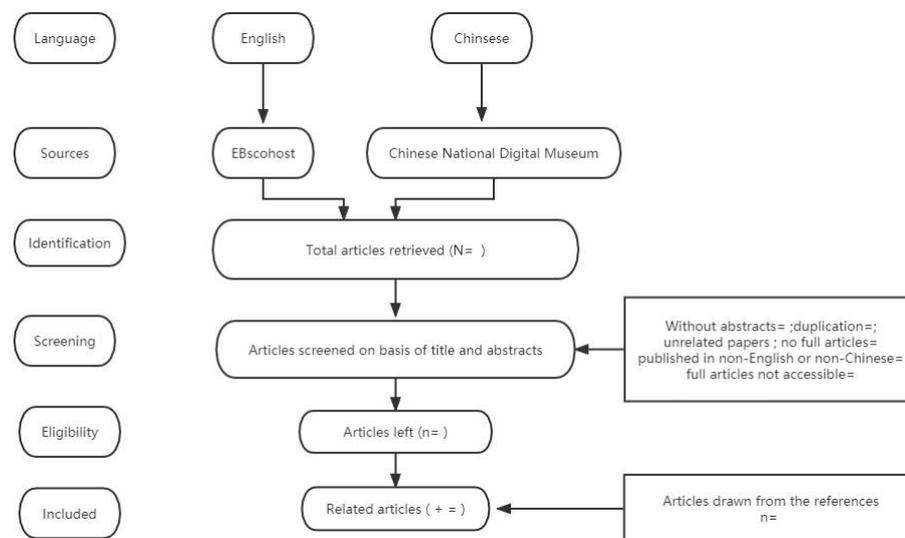


Figure 1. Total number of studies included in the paper after adding the suggested references.

3. GCC in History: People, Places and Ideas

3.1. The Construction of GCC

China's three-step descending terrain is higher in the west and lower in the east. The mountains in China mostly extend from the west to the north or from northeast to the southwest. Therefore, it is of nature that most rivers flow into the sea from west to east. However, the construction of GCC, as the is distinct from the natural discipline.

GCC straddles two natural climatic zones: temperate monsoon climate and subtropical monsoon climate. It runs for 3200 kilometers, covering eight provinces including Bei Jing, Tian Jing, He Bei, Shan Dong, An Hui, He Nan, Jiang Su and Zhe Jiang. It connects the six major waterways of Hai River, Yellow River, Huai River, Yangtze River,

Qiantang River and Yong River, which facilitate the integration of regional cultures like Wuyue Culture, Jingchu Culture, the Culture of Central Plains, the Culture of Yan and Zhao State, etc. GCC has become an entry on the UNESCO World Heritage Site list in 2014. The construction of GCC was started before the Qin Dynasty and consolidated during the Sui Dynasty (589-618) [1]. It was originally used for transporting grains, strategic raw materials and soldiers in the wartime due to the vassal's contending for hegemony.

The construction process is both time and energy consuming. It is recorded in Zuo Zhuan that "Autumn, Han Gou in Wu state, connected Jiang and Huai" [1]. In the autumn of 486 BC, Wu state, aiming at marching north to achieve hegemony, dug Han Gou in Yang Zhou. Han Gou, stretching for 200 kilometers, connected waterways of Yangtze River and Huai River by joining Baima Lake, Baoying Lake, Gaoyou Lake, and Shaobo Lake, etc. Han Gou, was the first canal with an exact excavation date recorded in Chinese historical documents [2]. Han Gou is the river foundation of the Shan Yangdu section of GCC in Sui Dynasty and the Huaiyang section of the Beijing-Hangzhou Grand Canal.

As a major agricultural country, ancient China was not skilled in resources scheduling. Therefore, the Grand Canal became the lifeblood that sustained the survival of Beijing and Tian Jing area. In 589 A.D., the Sui Dynasty united China. The increasing droughts in the Central Plain (present day the central part of Shaanxi Province) caused the food shortages in the ancient capital Da Xing (present-day Xi'an). In 594 A.D., Emperor Yang of Sui Dynasty led his civil and military ministers to "eat in Luo Yang". The emperor, helpless and undignified, took his ministers from the capital to Luoyang to beg for food. To facilitate the delivery of abundant natural resources in the east regions and to enhance the linkage with the Jiang Huai region, Emperor Yang of Sui Dynasty moved the political center of the nation to the east, established the capital in Luo Yang and ordered to construct The Sui Grand Canal, with the purpose of scheduling resources and improving taxes.

For over 2500 years, the Grand Canal has been continuously extending northward with the movement of China's political center. Meanwhile, its function has also transcended the natural geographical boundaries and stridden over the socio-cultural boundaries.

3.2. People: The Sceptre of Unification and Dominance

An emperor-centered bureaucratic landlord centralism was set up in Qin and Han dynasties. Confucianism established the orthodox status and the Grand Unification concept stroke root in the hearts of people. To implement effective governance of prefectures and counties in a country which was vast in territory and inferior in information transmission, the authorities had to develop water and land transportation actively, in order to solve the problems caused by undesirable transportation of personnel, goods and materials, and to overcome the predicament of being out of reality in county management as the central government is far away. Developing GCC to build an economically efficient water transportation channel becomes a practical choice for the rulers to strengthen the territorial control in linking the north and the west and to promote the economic prosperity and the unity of the nation.

After the conquer of Chen State, rulers of the Sui Dynasty, with the consideration of economy and politics, ordered to excavate the Tongji Canal on the basis of previous Bian Canal to connect Yellow River and Huai River. Han Gou was dredged and widened and the canals in the south of Yangtze River was further chiseled, which enabled GCC to stride across the Qiantang River and reach the Ningshao Plain. Yongji Canal, was constructed in the north of the Yellow River on the basis of the canal sections of the late Eastern Han Dynasty. It could flow directly to Zhuo county (present-day Southern suburbs of Beijing). As is recorded in the Book of Sui, "the fourth year of Daye (reign title of Yang Guang - the Emperor Sui and Yang), an imperial edict was sent to lead men and women of the counties in the north of the river to excavate Yongji Canal to lead Qin River to the Yellow River

and build the canal to connect Zhuo County in the north" [2]. Thus, the Y-shaped Sui-Tang Grand Canal was completed from the northeast to the southeast, from Zhuo County to Jiang Nan, with Luo Yang as the center.

For the first time in Chinese history, an inland water transport artery was formed, which has connected the political center of the Central Plains, the important agricultural production area in Jiang Nan, and the vital military county in Northern China. GCC strengthen the dominance of the imperial court and the mobilization of armies. It also improved the efficiency of national governance and the radiant power of government decrees, which consolidated the dominant status of Guan Luo area (present-day central region of Shaanxi province and Luo Yang). It also supported and guaranteed the sustainability of regime and prosperity of Sui, Tang and Song Dynasties.

3.3. Places: Ancient Thoroughfares in China

With the thriving of GCC, the economic center of China had gradually transferred to the southern regions along Yangtze River while the political center was still located in central part of the north. The excavation and extension of GCC became the prerequisite to intimate the connection between the southern economic center and the northern political center.

In 1960s, state-owned grain depot was discovered in the old north town of Luo Yang. A total of 287 grain depots were exhumed. The grains conserved in the ancient largest depot of China was delivered from Jiang Nan and the Central Plain via GCC. In 1289, Yuan Dynasty took curve cut-off measures to make the canal straightforward. GCC might run directly from the south to the north and omitted the detour through Luo Yang, which shortened the voyage for over 500 kilometers. In 1293, after the construction of Huitong River, GCC accomplished its second grand connection. The delivery of grains and materials from the south to the capital could reach Ji Shuitan directly from Tong Zhou, which bestowed GCC with a new opportunity to shine over the new Chinese civilization.

"Bei Jing is a floating city. Most world-famous historical architectures, for instance, The Imperial Palace, the Temple of Heaven, and the Ming Tombs, were built with the Shougong bricks which were mostly free of decay and corrosion. Shougong bricks, also called "Linqing tribute bricks", may give out clear sounds when being hit. These bricks were all shipped to Bei Jing via GCC. In 1956, the vajra wall, eight-meter tall and 2-meter wide, was discovered erecting at the entrance of the underground palace of Ming Tombs. It was built with 24 kilograms of "Linqing tribute bricks". It had been over 500 years since the bury of Emperor Wan Li of Qing Dynasty and it was astonishing that bricks looked brand-new.

3.4. Ideas: The Medium of National Integration and Cultural Identification

After the establishment of Qing Dynasty, the emperor accepted and was determined to merge into Han culture. Confucius was worshiped and scholars studied the Confucian classics. Offspring of the eight-banners was required to accept education of Han culture. Renown classics like Kangxi Dictionary and Sikuquanshu were edited and published. GCC promoted the unification and popularity of diverse Chinese cultures. Literature and arts from GCC regions have widely absorbed the essence of cultures, literature and arts in the Yangtze River basin and the Yangtze River delta. A series of vernacular novels, represented by A Dream of Red Mansions have occurred.

"From of old to the present,
There are no certain boundaries."

- Die Lian Hua Nara Singde

As is written in the lyrics, Zhenghuang Qi poet of Qing Dynasty, Nara Singde has utilized the writing style of Han ethnicity to describe Manchu amorous feelings.

In 1789 (the 45th year of Qian Long Reign in Qing Dynasty), Emperor Qianlong made his fifth southern tour along GCC. Over a dozen of opera troupes performed for him in Yangzhou. Whereafter, these southern opera troupes went to the north to put on performance. They arrived in Beijing in 1782 (the 47th year of Qian Long Reign) and performed in the theaters of Beijing. They learned from each other. Their performances integrated constantly, which laid the foundation for the birth of Peking Opera. In the 55th year of Qian Long Reign, the four major troupes of An Hui, namely, San Qing Troupe, Si Xi Troupe, He Chun Troup, Chun Tai Troupe sailed to Beijing via GCC with the purpose to celebrate the birthday of Emperor Qing Long. These actors and actresses, mostly from An Hui province, achieved great popularity both in the Palace and the city.

During the Southern Inspection Tour of Emperor Qian Long, the artists in companion with the emperor blended the architectural features of Jiangnan classical garden into the palace construction of the Summer Palace, Yuanmingyuan, and Chengde Summer Resort, whereas architectures such as White Pagoda, Wuting Bridge, and Diao Yutai in Yangzhou Slender West Lake have demonstrated a unique style of northern Imperial gardens. From the palace to the folk, Manchu-Han Imperial Feast is a masterpiece of Manchu-Han culture integration along GCC.

4. An Innovative Finding: The envoy of civilization

4.1. A Platform for Scientific and Technological Innovation

GCC was also an effective North-South Water Division Project. In Yuan Dynasty, the canal section in Shan Dong province was extended to pass through lakes like Dongping Lake. The canal section between Shushan Lake and Yuankou Town raised like an arch bridge. The south section to Zhenkou in Xuzhou descended 116 terrain in 116 feet which formed a water crest high in the south. Huitong canal was dug in 1289. More than 30 dams were built over the channel from Jining to Linqing. The passing ships ascended with the floatage causing by the dam and then crossed the water crest in order. In 1411 (the 9th year of Yong Le in Ming Dynasty), Song li, the Minister of works, was sent to dredge the Huitong River, which is stagnated by sands and mud. The navigation in GCC is regained.

The folk irrigationist Bai Ying proposed four strategies to Song Li to dredge the River [2]. The first proposal is to build a dam to block the water. They built a dam in Village Dai to block and inlet the water to Nan Wang water division outlet, aiming at replenishing the water in the canal. The second proposal is to divide the water resource appropriately. Two water division outlets were set in Nan Wang to form the north-south division from Wei River to the Yellow River, which formed a pattern of "70% percent floating towards the Emperor, and 30% to to Jiangnan. The third proposal is to dispatch the water effectively. To solve the difficulties caused by the large gaps of terrain elevation and steep declivity of the channels, 38 dams were constructed in the south and north of Nan Wang. The water level was controlled from opening and closure of the dam gates to guarantee the successful transcending of the cargo ships over the water crest, from Lingqing directly to the capital.

The whole construction work, lasting for 8 years, ensured the unimpeded operation of GCC. Transportation capacity of GCC was greatly expanded. Tons of grains were delivered from the southeast to the capital. Technological innovation in Nan Wang section rejuvenated GCC, boomed the economic and sustained social stability of the nation.

4.2. A Bond of China and Foreign Countries

GCC set up the bridge connecting the inland and the sea across national boundaries. With its advantage in transportation, GCC enhanced international import and export. Cloth, silk, tea, porcelain, Chinese medicinal herbs and handicrafts were constantly shipped overseas to Persia, Arabia, Goryeo, and Europe. Jewelry, ivory, spices, carpets and other luxuries were imported to China.

A large number of people from Europe and Central Asia came to do business in China and some even became officials. Marco Polo, born in Venice, Italy, served as an official from 1275 to 1282 in Yuan Dynasty. Marco Polo befriended Emperor Kublai Kahn, who appointed him mayor of Yangzhou for a few years. The Travel of Marco Polo has demonstrated the prosperity of his second mother-town to the whole world. In 1409 (the 7th of Yong Le Reign in Ming Dynasty), Zheng He, the great Chinese navigator, reached the Indonesian island of Java six times during his seven global expeditions, and announced the imperial edict from the Chinese emperor to invite the kings to visit China. In 1417 (the 15th of Yong Le Reign in Ming Dynasty), the King of the Indonesian island sailed to China with a companion of over 340 people including his wife, children and officials. They sailed to China and arrived the inland capital via GCC. They were warmly welcomed by Zhu Di (he third emperor of the Ming Dynasty). They were conferred titles of nobility.

5. Conclusion

The Grand Canal of China extends northward with the movement of the Chinese political center. It did not only transcend the natural and geographical boundaries but also get involved in the the social and cultural boundaries. Its function has been expanded extensively. The function of GCC has evolved from a scepter of promoting unified interests of the rulers and the resource scheduling into a media of cultural unification, a platform for scientific and technological innovation, and a link of China and foreign countries. In the process of bridging multi-dimensional historical boundaries, geographical boundaries and promoting national unity and prosperity, CGG has become a prestigious envoy of civilization at home and abroad. The cultural system of GCC derives from the studies relevant to the Grand Canal. It is not only a bright peal in Chinese traditional culture but also a contemporary "living" culture, which is of great academic research value. With the constant construction of Chinese discursive and narrative systems, the study of Chinese culture spirit endowed in sustainable cultures involved in the canal and the basic principle of "harmonious coexistence between man and nature" is of far-reaching research significance in the new epoch.

References

1. Y. Chen, "The hot spots and frontiers of research on the Grand Canal Culture Belt in China: Literature and academic trends," *Humanities and Social Sciences Communications*, vol. 9, no. 1, p. 453, 2022. doi: 10.1057/s41599-022-01479-9
2. F. Gu, K. Zhu, and Q. Zhu, "Interview with Feng Gu: Revitalizing and Activating Canal Cities through the Integrated Protection of Water Heritage of the Grand Canal," *Blue Papers*, vol. 3, no. 2, pp. 186-95, 2024. doi: 10.58981/bluepapers.2024.2.15
3. H. F. Lee, X. Jia, and B. Ji, "Population, wars, and the grand canal in Chinese history," *Sustainability*, vol. 14, no. 12, p. 7006, 2022. doi: 10.3390/su14127006
4. R. Delliols, and R. J. Ferguson, "China's quest for global order: from peaceful rise to harmonious world," *Bloomsbury Publishing USA*, 2012.
5. F. Mao, Y. X. Wu, B. F. Yang, and X. J. Li, "Water Environment Evolution along the China Grand Canal," In *IOP Conference Series: Earth and Environmental Science*, March, 2014, p. 012170. doi: 10.1088/1755-1315/17/1/012170
6. B. Qiu, and D. Lang, "Connotation and qualities of the Buddhist culture of Grand Canal," *HTS Teologiese Studies/Theological Studies*, vol. 80, no. 3, p. 10102, 2024. doi: 10.4102/hts.v80i3.10102
7. J. Li, X. Yang, Y. Gao, and C. Gao, "Spatial and temporal distribution characteristics and influencing factors of cultural heritage: A case of the Grand Canal (East Zhejiang section)-maritime silk road," *PloS one*, vol. 20, no. 2, p. e0318529, 2025. doi: 10.1371/journal.pone.0318529

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of SOAP and/or the editor(s). SOAP and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.