

## The Western Timepieces in China From the Late Ming to the Middle of the Qing Dynasty

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### Abstract

Western timepieces were introduced to China in the 16th century and were favored by the Chinese upper class, and then gradually formed “Western Timepieces Consumption Heat” in China. Many Chinese churches, commercial buildings, and public buildings had Western timepieces, and officials, priests, merchants, servants, and actors also wear Western timepieces. As tributes, gifts and commodities, Western timepieces not only opened up new trade and political relations between China and the West, but also served as a material carrier for Chinese and Western art and cultural exchanges. Facing the massive introduction of Western timepieces, the attitude of the Chinese court towards Western timepieces was very different. Some upper class in China was willing to accept the multicultural and advanced ideas behind Western timepieces. Other upper classes, especially literati, had many criticisms of Western timepieces, insisting on the “Chinese Central Theory.” Behind these attitudes reflects the conflict and integration of Chinese and Western cultures and aesthetics, therefore, the introduction of Western timepieces into China has an important value and significance for exploring how Western culture influences the evolution and cultural transformation of early modern Chinese society.

**Key words:** Western timepieces; Sino-western collecting; Early modern period

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### INTRODUCTION

In the 16th century, Western timepieces were first introduced to Macao by Portuguese Jesuit missionary Michele Ruggieri (1543-1607) and then to mainland China.<sup>1</sup> These timepieces entered China as gifts and commodities, and they were mainly brought to meet the curiosity of the Chinese court and the upper class. These Western striking clocks were called “Zi Ming Zhong” (自鸣钟) in China, which means they can automatically report time. At the end of the Ming Dynasty, Chinese artisans began to learn the tech of timepieces and imitate production, then they became a unique line of handicrafts in the Qing Dynasty.<sup>2</sup> Since the introduction of the timepieces to China, they became an extraordinary medium for communication between the East and the West. These timepieces allowed missionaries to obtain residency in China which helped them open the door to

<sup>1</sup> R. P. Henri Bernard, *Aux Portes de La Chine Les missionnaires du X<sup>e</sup> Siècle*, Transl. Xiao Junhua, Shanghai: The Commercial Press, 1936.

<sup>2</sup> Watchmakers were divided into court craftsmen and folk craftsmen. The court craftsmen made clocks for the royal family, working in the making clock department; The folk craftsmen generally worked in watchmaking factories, and they made clocks for the upper classes of society. Watchmaking factories were generally distributed in Jiangnan, Fujian and Guangzhou. On the history of timepieces production in China see D. J. Macgowan, *Chinese Guilds or Chambers of Commerce and Trades Unions* (Shanghai: China Branch of the Royal Asiatic Society, 1886); Catherine Pagani, “Eastern Magnificence and European Ingenuity”: *Clocks of Late Imperial China* (Michigan: the University of Michigan Press, 2001); Catherine Pagani, “Clockmaking in China under the Kangxi and Qianlong Emperor,” *Arts Asiatiques*, no.50(1995): 76-84.

the Chinese Imperial Palace. The earliest case, in order to ensure the smooth development of Guangzhou trade and obtain permanent residency in Macau, is in 1582, Ruggieri brought an exquisite Western watch to Chen Rui who was a governor of Guangdong and Guangxi. According to *Aux Portes de La Chine Les missionnaires du X<sup>VI</sup> Siècle*, Ruggieri changed the Arabic characters to Chinese and altered the 24-hour system to 12-hour system in order to cater to Chinese habits. This was by far the earliest example of a timekeeping modification.<sup>3</sup> Chen Rui was devoted to this watch and approved Ruggieri's permanent residency in Macau. In addition to the above, Western timepieces were also used as precious gifts from private social activities to the transnational diplomacy; as a representative collection from the purchase of royal supplies to transnational trade between China and the West.

This paper is divided into three parts. The first part analyzes the ways that Western timepieces were introduced to China and reveals the hidden purposes behind those ways; the second part reveals the transportation and collection of Western timepieces in China, and analyzes how Western timepieces opened up new trade diplomacy between China and the West; the third part, dissects the integration and conflict of Chinese and Western cultures from the attitude towards Western timepieces in the Chinese court. This paper deals with interdisciplinary knowledge, and it will help scholars to have a clearer understanding of the history of politics, trade, and cultural exchanges between China and the West from the late Ming to the middle of the Qing Dynasty. The introduction of Western timepieces into China has an important value and significance for exploring how Western culture influences the evolution and cultural transformation of early modern Chinese society.

## THE WAYS AND PURPOSES OF THE INTRODUCTION OF WESTERN TIMEPIECES INTO CHINA

Since the introduction of Western timepieces into China in the late Ming Dynasty, the speed of acceptance in China had been unmatched by any other Western objects. As a result, the peculiar phenomenon of the "Western Timepieces Consumption Heat" in the middle period of the Qing Dynasty was formed. The sources of imported timepieces were mainly divided into two categories: tribute and purchase. There were also a few cases when royal families held those timepieces when an official had been Chaojia<sup>4</sup>. For example, when He Shen, the most

powerful minister in the middle of the Qing Dynasty had been Chaojia, the 216 pieces of Western artifacts were found in the Rehe Residence. Among those Western artifacts, there was one pocket watch, four table clocks, and one pair of wall clocks.<sup>5</sup> While this residence was just one of his simplest places, and one can imagine how many timepieces were in his other house. However, the timepieces obtained from the Chaojia are very few cases, so they are not discussed in detail here.

First of all, tribute was the main way to get the timepieces in court, and it was also the initial way. In 1579, the Jesuits Alexandre Valignani (1538-1606), an Italian Jesuit priest, came to East. At this time, the Western Jesus Church had begun to plan a Chinese-style missionary strategy<sup>6</sup>. In 1579, Michele Ruggieri (1543-1607) came to Macao at the invitation of Valignani and began to learn Chinese and prepared to enter the Chinese mainland. In 1581, Ruggieri gave the governor Huang Yingjia a mechanical watch, which helped him entry into the mainland. This was called the "timepieces diplomacy" that the Jesuits planned in order to preach in China.<sup>7</sup> Afterwards, Matteo Ricci (1552-1610), an Italian Jesuit priest, decided to go to Beijing to get Emperor Ming Guangzong's (1582-1620) approval, thus making it a more extensive mission in China. Ricci's trip continued to give local bureaucrats and imperial courtiers such wonderful objects, such as timepieces and prisms, in exchange for permission to stay in the area or to enter Beijing. In 1601, Ricci arrived in Beijing and presented gifts. Emperor Guangzong were fully appreciative of the big and small mechanical timepieces. He had the small ones with him and built a wooden attic for the big clock.<sup>8</sup> The emperor had a good impression of the priests because of these pleasing gifts, and he also became interested in European civilization. In the end, Ricci successfully settled in

<sup>5</sup> In 1781, the Governor Hang Jiahu was Chaojia, forfeiting five striking clocks, one table clock and one watch; the governor Chen Huizu was Chaojia, forfeiting 71 timepieces. In 1782, the governor Guotai was Chaojia, forfeiting one hanging screens with clock, four table clocks and one watch; In 1786, the Governor Fu Lehun was Chaojia, forfeiting a pair of boîte à musique with clocks, a pair of music clocks, a table clock, a pair of wall clocks... a total of 30 pieces. It can be seen that these corrupt officials collected not only a large number of timepieces, but also a lot of styles. See China's first historical archives(中国第一历史档案馆编), ed., *Archives of corrupt officials in Qianlong Dynasty* <乾隆朝惩办贪污档案选编> (Beijing: China Book Company, 1994).

<sup>6</sup> This strategy was to combine Christianity with Confucianism. Advocating the basic idea of Christianity and Confucius was the same because they were all ideas that advocated the unity of nature and man. So that Christianity can be more widely accepted in China.  
<sup>7</sup> R.P.Henri Bernard, *Aux Portes de La Chine Les missionnaires du X<sup>VI</sup> Siècle, Part II, Chapter 1*, Transl. Xiao Junhua (Shanghai: The Commercial Press, 1936), 190.

<sup>8</sup> Nicolas S. J Trigault, ed., *China in the Sixteenth Century: The Journals of Mathew Ricci: 1583-1610*, Vol.4, Chinese transl. He Gaoji, Wang Zhunzhong and Li Shen (Beijing: China Book Company, 2010), 400-405; English transl. Louis J. Gallagher, S.J. (New York: Random House, Inc. 1953).

<sup>3</sup> R.P.Henri Bernard, *Aux Portes de La Chine Les missionnaires du X<sup>VI</sup> Siècle*, Vol. 2, Transl. Xiao Junhui (Shanghai: The Commercial Press, 1936), 208.

<sup>4</sup> Chaojia means the corrupt official's property was confiscated.

Beijing and was honored as the founder of the Chinese missionary.

Afterwards, the Qing court's interest in timepieces were even higher, so the Jesuits still used the timepieces as the important gifts to get close to the emperor. This is a watch mounted on an astronomical instrument (Figure 1) from Britain. This astronomical watch was not only an important tool for political diplomacy, but also is representative of the timepieces that showed the advanced technology and science of the West.



**Figure 1**  
Watch mounted on astronomical instrument<sup>9</sup>

Britain, 18 century, Gilded bronze and green shark skin, 169x85cm, Palace Museum

This watch consisted of a base, an astrolabe and a watch. The three sides of the base were inlaid with images of western architecture and pastoral pastures. These intuitive images directly showed the real West to Chinese court and made Chinese people feel the diversity of world culture. There were six gold-plated Westerners on the six lion's paws, holding the celestial sphere and telescope. An astrolabe on the base showed 12 constellations and months in Chinese, and the clear north-south tropics and arctic circles around the astrolabe. It is important for people to understand that the Chinese still believed that they were

the center of the world.<sup>10</sup> Everything was centered around China, there was no scientific concept about moon and sun in Chinese mind. This advanced science and astronomical knowledge were showed by those timepieces, attracting great interest from the Chinese court. However, in the face of Western advanced achievements, the Chinese emperor and the upper class only regarded them as tools for recreation and did not spend energy to specialize them. And even if some Western technology were studied by the Chinese, they were just simple reproductions and had not derived new science and technology. For example, many clocks had small fountains. This technique was very attractive to the Chinese emperor at that time, but he only used this technology in his own "back garden"-Yuanmingyuan (Figure 2) to achieve the purpose of entertainment and ignored the meaning of science behind it.

Not only missionaries, but also the timepieces were the first choice of envoys. The Macartney Mission<sup>11</sup> not only carried watches and clocks as gifts, but also accompanied watchmakers and mechanics. Catherine Pagani states, "An important element of the embassy were the gifts for Qianlong that Macartney carried with him on half of George III... these items were of central importance... Prominent among these articles were clocks and watches."<sup>12</sup> The timepieces as a gift, here, was no longer a tool for missionary purposes, but a medium for transnational diplomacy. "Timepieces diplomacy" can be regarded as an important means of political diplomacy between China and the West.

<sup>9</sup> The Palace Museum, ed., *Timepieces in the imperial palace < 故宫钟表图典 >* (Beijing: The Forbidden City Publishing House, 2008), 115-116.

<sup>10</sup> The conception of "China Center" derived Xia (2070 BC - 1600 BC). There are three reasons for this concept. Firstly, the long-term self-sufficient farming economy had an absolute dominance and people's lives were stable. Secondly, China was in a closed geographical environment and lacked contact with the outside world. Thirdly, compared with neighboring countries, Chinese social level had long been in a superior position. See Yang Yongfu and Yan Xing, "The impact of conception of China Center on learning the West in early modern China <论“华夏中心”观对近代中国学习西方的影响>," *Journal of the Second Northwest University for Nationalities* 53, no.1 (2002): 5-11; Chang Guixiang, "The Affection of China-Center Ideas to the Diplomacy in Ancient and Modern China <华夏中心说对中国古代, 近代外交的影响>," *Journal of Liaoning Educational Administration Institute* 24, no.9 (2007): 1-3.

<sup>11</sup> On Macartney Mission see Aeneas Anderson, ed., *A Narrative of the British Embassy to China in the years 1792, 1793, and 1794-Containing the Various Circumstances of the Embassy, with Accounts of the Customs and Manners of the Chinese, and Description of the Country Towns, Cities, etc.*, (London: Harlow, 1796); Vincent T. Harlow, *British Colonial Developments, 1774-1834* (Oxford: Clarendon Press, 1953); James Louis Hevia, *Cherishing Men from Afar: Qing Guest Ritual and the Macartney Embassy of 1793* (Durham: Duke University Press, 1995); Helen Robbins, *Our First Ambassador to China: An Account of the Life of George, Earl of Macartney* (London: E.P, 1908).

<sup>12</sup> Catherine Pagani, *Eastern Magnificence & European Ingenuity: Clocks of Late Imperial China* (MI: University of Michigan Press, 2001), 70.



**Figure 2**  
Giuseppe Castiglione (1688-1766), north façade of Palace of the Delights of Harmony, Xieqiqu, Yuanmingyuan.

The second way to get timepieces was through purchase. This became a popular way after Chinese emperors and officials indulged in Western timepieces. Guangzhou had become the main buying place. The Emperor Qianlong (1736-1795) was very enthusiastic about the timepiece, which was manifested in “he gave instructions for the annual purchase of clocks and watches of the best kinds to the value of 12,000-25,000 pounds per year. Thus, by the middle of the eighteenth century, the East India Company transported timepieces with a value of 20,000 pounds or more from London to Guangzhou every year.”<sup>13</sup> Qianlong believed that the artifacts were best made in the West and required the purchase of pure Western products. He once said, “The gold-plated watch that this tribute was very good. If there were more such watches in the future, do not need to worry about the price.”<sup>14</sup> This proved that Qianlong was willing to pay for the exquisite watches. In this case, the officials responsible for the procurement struggled to collect various Western watches to satisfy the emperor’s curiosity.

Through the Guangdong office and intermediate traders, Chinese demand for Western timepieces was fed back to the Western watch industry. They developed timepieces that specially sold to China, which not only enriched the collection of watches in the Qing Dynasty, but also won more opportunities for the Western watch industry in China. The Qing Dynasty’s massive demands for watches and clocks undoubtedly promoted

the prosperity of Chinese and Western trade and the improvement and innovation of technology. China in the eighteenth century became one of the largest countries in importing timepieces.

In addition to the trade diplomacy between China and the West, the purchase of watches and clocks at the same time had been used as a medium for maintaining good relations between the emperor and the minister. Matteo Ripa, an Italian priest, wrote in a letter, “...I was commanded to show the [Russian] ambassador... collection of clocks and watches... Count Ismailof was so astonished at the number and variety of these articles... I told him that all the clocks and watches he now saw were intended for presents.”<sup>15</sup> This proved that Kangxi collected a large number of first-class timepieces as gifts, which would be given to ministers who have given merit. This undoubtedly consolidated the political status of Emperor Kangxi. From this perspective, timepieces were also an important tool for winning the public support at this time.

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## TRANSPORTATION AND COLLECTION OF TIMEPIECES

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Robbins states, “The industry and the ingenuity of the Chinese...no longer be barricaded; [Westerners] they would be attempted by all the adventures of all trading nations, who would search every channel, creek, and

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<sup>13</sup> · J.M. Braga, *A seller of 'Sing-Song': A Chapter in the Foreign Trade of China and Macao* (Hong Kong: Hong Kong University Press, 1967), 69.

<sup>14</sup> · Translated into English by author. *The Palace Museum. Timepieces in the Palace Museum <故宫钟表>* (Beijing: The Forbidden City Publishing House, 2004), 24.

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<sup>15</sup> · Matteo Ripa, “Chapter XX”, in *Memoirs of Father Ripa during thirteen years' residence at the court of Peking in the service of the Emperor of China: with an account of the foundation of the college for the education of young Chinese at Naples* (London : J. Murray, 1855), 108-113.

cranny of China for a market.”<sup>16</sup> Portuguese merchants found new business opportunities as Western missionaries brought timepieces into China and were generally welcomed by the upper class. They used the twice-a-year Guangzhou Trade Fair (rising in the 16th century) to start selling the timepieces. Montalto de Jesus mentioned in Historic Macao, a royal family fleet sails from Lisbon to the Guangzhou Trade Fair every year, usually loaded with wool fabrics, crystals, glass products, the UK clock, and the wines produced in Portugal.<sup>17</sup> It proved that in the middle and late Ming Dynasty the timepieces had become an important commodity in the Guangzhou market.

When European ships carried timepieces to Guangdong, the court purchased timepieces by Guangdong officials were reshipped from Guangzhou to Beijing. The prosperity of the timepieces trade in Guangzhou market can also be seen from the “Tariffs of Timepieces in Guangdong Customs”<sup>18</sup>, and a wide variety of timepieces entered Guangzhou from Guangdong Customs. It showed that the tariffs of a large clock reached 10 silver. The tariffs were high, and the price of timepieces entering the Chinese mainland was even higher, so timepieces were indeed high-end consumer goods in the upper class. In February 1726, Karel Slaviček (1678-1735), a Czech missionary, mentioned that a British-made music clock can sell for 3,000 to 5,000 gold coins in Guangzhou.<sup>19</sup>

Back to the transportation of the timepieces, when the timepieces were transported from Guangzhou, everything on the way was the responsibility of the family of the officials. Sometimes they had help from the official relay. Timepieces only were boarded by Hangzhou or Suzhou and transported to Beijing via the Beijing-Hangzhou Grand Canal. Before boarding, transportation was only relied on manpower because of many mountain roads, and the vehicles could not move forward. The whole process, these transported timepieces were housed in wooden crates and shipped with the original box.<sup>20</sup> The Palace Museum now collects a British clock box (Figure 3), which was made by wood and has two halves that can be separated, and the two parts are connected by copper buckles.



**Figure 3**  
Wooden clock box, 18 Century, British, 149.5x83x51cm, Palace Museum

When these timepieces arrived in Beijing, they were collected in different ways according to size. The large clocks were placed on display or stored in warehouses, there were two ways to prevent dust. One was to put the clock in the glass jars, which were designed according to the shapes and sizes of the clocks. It was generally pyramid-shaped, made of hardwood or copper strips, with glass on all sides, one side of which can be opened and closed for easy debugging clocks (Figure 4). The file of Qian Long recorded, “There lost a glass on the clock jar, and removed the glass from the armrest and pressed it on the glass.”<sup>21</sup> Most of the clocks in the Qing Palace were equipped with this kind of glass jar. Now the Palace Museum also has a large collection of such clock jars.

The second way was to use the cloth cover, which was called “Wadan” in the file. “Wadan” was a vocabulary of Manchu, which was equivalent to the wrapper in English. This type of cloth can be large or small: large can cover multiple clocks, while small just for covering one piece. In 1945, “Zi Ming Zhong” department, a section dedicated to collecting, repairing and making timepieces for the royal family, required “there were many clocks in the court, and there were not enough covers, so we wanted to make 8 pieces of Wadan.”<sup>22</sup> Such clothes were generally used for timepieces of the storage rooms, and this kind of cloth would become old after a long time, so it should be replaced regularly.

The storage of small timepieces was relatively flexible.

<sup>16</sup> · Helen Robbins. *Our First Ambassador to China: An Account of the Life of George, Earl of Macartney with Extracts from His Letters, and the Narrative of His Experiences in China, as Told by Himself, 1737–1806, from Hitherto Unpublished Correspondence and Documents* (London : John Murray, 1908), 386.

<sup>17</sup> · C.A. Montalto De Jesus, *Historic Macao, International Traits in China Old and New, Chapter VII* (Macao: Salesian Printing Press and Tipografia Mercantil, 1926), 80-94.

<sup>18</sup> · (Qing) Liang Tingnan梁廷柅. *Guangdong Customs <粤海关志>* (Guangdong: Guangdong People’s Publishing House, 2014), 174-177.

<sup>19</sup> · Karel Slaviček, *Listy z Ciny <中国来信: 1716-1735>*, transl. Li Mei (Henan: Elephant Press, 1727), 56.

<sup>20</sup> · China’s first historical archives, ed., *The archives of The Royal Workshop of the Qing Imperial Household Department (Neiwufu)<清宫内务府造办处档案总汇>*, Vol. 32 (Beijing: People’s Publishing House, 2007), 624-625.

<sup>21</sup> · Translated into English by author. China’s first historical archives, ed., *The archives of The Royal Workshop of the Qing Imperial Household Department (Neiwufu)<清宫内务府造办处档案总汇>*, Vol. 8 (Beijing: People’s Publishing House, 2007), 813.

<sup>22</sup> · Translated into English by author. China’s first historical archives, ed., *The archives of The Royal Workshop of the Qing Imperial Household Department (Neiwufu)<清宫内务府造办处档案总汇>*, Vol. 13 (Beijing: People’s Publishing House, 2007), 585.

They were usually concentrated in a special cabinet, which had various specifications and textures. The best cabinet was made of rosewood.<sup>23</sup> The inside of the cabinets was made into the grooves according to the size and shape of each timepiece, so timepieces were very stable. Due to the large number of small timepieces in the palace, there were dozens of small timepieces in one case.<sup>24</sup>



**Figure 4**  
Old photo of Empress Dowager Cixi, The Palace Museum in Beijing (The glass jar of the British clock is the same as during the Qianlong period)

The Emperor Qianlong was particularly fond of timepieces. He regarded them as treasures. Therefore, many small timepieces were put into his treasure cabinets. The treasure cabinets of the Emperor Qianlong can still be seen in the collection of the National Palace Museum in Taipei (Figure 5). There are 47 pieces of treasures in

<sup>23</sup> China's first historical archives, ed., *The archives of The Royal Workshop of the Qing Imperial Household Department (Neiwufu)* < 清宫内务府造办处档案总汇 >, Vol. 7 (Beijing: People's Publishing House, 2007), 800.

<sup>24</sup> China's first historical archives, ed., *The archives of The Royal Workshop of the Qing Imperial Household Department (Neiwufu)* < 清宫内务府造办处档案总汇 >, Vol. 22 (Beijing: People's Publishing House, 2007), 303-310.

the cabinet, including a box embedded clock made by Paul James Cox<sup>25</sup>. The beautiful small clock was a very important part of this treasure cabinet.



**Figure 5**  
The treasure cabinet of Emperor Qianlong, 30.5x30.3x16.5cm, the National Palace Museum in Taipei

## ANALYSIS OF THE INTEGRATION AND CONFLICT OF CHINESE AND WESTERN CULTURES FROM THE ATTITUDE TOWARDS WESTERN TIMEPIECES IN CHINESE COURT

The attitude of emperors to Western timepieces

Emperors generally controlled the court's right to speak, and his preference tended to directly influence the choice of the court group. At the end of the Ming Dynasty, the Emperor Wanli (1573-1620) was interested in finding the exotic objects, so the Jesuit's timepieces diplomatic strategy gained space for development. In the Qing Dynasties, the court's interest in timepieces had continued to rise. Almost every emperor had poems written about

<sup>25</sup> Paul James Cox is a British jeweller, goldsmith and entrepreneur, and the proprietor of Cox's Museum. Cox specialized in intricate clockwork curios encrusted with gold, silver, and jewels, referred to as "sing-songs." His primary market was the Far East, especially India and China, and the Chinese Qianlong Emperor possessed one of his automata, in the shape of a chariot. Cox's popularity was important to British trade: the tea trade ensured that British imports far outweighed their exports to China, and Cox helped redress the imbalance. His sing-songs initially reduced British trade deficit. On Paul James Cox and his museum see Roger Smith, "James Cox (c. 1723-1800): A Revised Biography," *The Burlington Magazine* 142, no. 1167 (2000): 353-361; Richard Altick, *The Shows of London*. Cambridge (Massachusetts: The Belknap Press of Harvard University Press, 1978), 69-70; Marcia Pointon, "Dealer in Magic: James Cox's Jewelry Museum and the Economics of Luxurious Spectacle in Late-Eighteenth-Century London," *History of Political Economy*, no. 31 (1999): 423-451.

timepieces. Most of these poems are included in the *Emperor's Anthology* <御制文集>, among which Kangxi, Yongzheng, and Qianlong are the most representative.

In 1711, Emperor Kangxi made a poem called “*Zi Ming Zhong*.”<sup>26</sup> This poem described the rules of the operation of the clocks, and the music of these clocks called him to get up on time every morning, which improved his work efficiency. It proved that Kangxi himself was enthusiastic about Western science and had a strong interest in Western watch technology. His attitude was positive in the face of Western advanced technology, and his understanding of timepieces was based on science. He admitted that Western timepieces had exceeded the traditional Chinese timing instruments in terms of accuracy, and he even arranged daily life according to Western clocks. During this period, many advanced Western technologies, such as renewable telescopes, scales, sundials and many other scientific instruments were imported from the West to China. In 1708-1718, Kangxi made a large survey of national geography and painted a national map called “Huangyu Panorama”.

Emperor Yongzheng also wrote poems about the timepieces.<sup>27</sup> In those poems, Yongzheng depicted better than Kangxi the exquisiteness of the timepieces and the accuracy of the timekeeping. It can be seen that he paid more attention to the practicality of the clock, not the technology behind it. In addition, he also reflected on the prosperity of China by describing the collection of timepieces. He thought that a large collection of timepieces represented the willingness of many countries to establish diplomatic relations with China, reflecting the strength of China. Influenced by the emperor, the court's definition of fashion had also changed. This was one of the most beautiful portraits of the concubines (Figure 6) during the Yongzheng period. These concubines were deeply loved by the emperor, so the paintings mainly highlight the gifts given to them by the emperor. The table clock is an important piece of furniture in this painting, which reflects the status and fashion taste of this concubine.



**Figure 6**  
Qing, Court painter, One of the Twelve Beauty, Silk, 184x98cm, Beijing Palace Museum

Until the Qianlong period (1711-1799), the enthusiasm for studying Western science formed by Kangxi gradually declined. The timepieces were regarded as a kind of high-class toy, and its timing function had relegated to a secondary position. The use of Western timepieces was mainly to display royal status and decoration. In addition to highlighting the imperial style, the Emperor Qianlong's collection of many Western timepieces was a metaphor for the expression of political rights. He believed that only a capable monarch can truly possess the treasures of the world, and the timepieces were the treasures in his opinion. Qianlong had ordered the court painters to create a number of paintings called *Official Tribute (Wan Guo Lai Chao Tu)*<sup>28</sup> (Figure 7), which depicted the tribute scenes of the embassies of various countries with the treasures for the Chinese emperor. In the bustling tributary team, a Western ambassador held a gold-plated clock. The timepiece was the shape of a western building, and the exterior of the clock was engraved with the typical Rococo style. It can be seen that timepieces had become indispensable objects for the establishment of diplomatic relations between China and the West.

<sup>26</sup> “The technology is from in the West, knowing the mystery after being taught...The hour hand is followed by the minute hand. Waking up on time in the morning by the sound of clock, then work diligently.” (“法自西洋始，巧心授受知。轮行随刻转，表指按分移...清晨勤政务，数问奏章迟。”) (Qing) Ji Yun and Yong Rong, ed., “The corpus of Emperor Kangxi <圣祖仁皇帝御制文集>,” in *The Si Ku Quan Shu*<四库全书>, Vol.4, 1792.

<sup>27</sup> “Those clocks and watches were shipped from tens of thousands of miles...The works of them are extremely fine, and when I hear the song from clocks, I know that it is noon.” (“八万里殊域，恩威悉咸到，珍奇争贡献，钟表极精工，应律符天健，闻声得日中，莲花空制漏，悉必老僧功。”) (Qing) Ji Yun and Yong Rong, ed., “The corpus of Emperor Yongzheng <世宗宪皇帝御制文集>,” in *The Si Ku Quan Shu*<四库全书>, Vol.21, 1792.

<sup>28</sup> This is a series of works. Series works. Depicting foreign missions to China, including the Netherlands, English, France, Japan, North Korea, Annan and many other countries. The picture shows that every New Year's Day celebrations, envoys dressed in traditional costumes with a variety of tributes gathered outside the Taihe Gate, waiting for the meeting of Emperor Qianlong. This series of works fully demonstrates the grandeur of the Chinese palace complex and the prosperity of China at that time.



**Figure 7**  
Chinese court painters, the part of *Wan Guo Lai Chao*, Qing Dynasty, Silk, 322x122.7cm, The Beijing Palace Museum

After Qianlong, although other emperors' enthusiasm for timepieces gradually subsided, people could still see timepieces in the court. The creation of this painting during the Emperor Xianfeng period (1831-1861) (Figure 8), the prince wears a watch in his waist. In the past, males used to wear different jades to show their status and fashion. However, in this painting, jade was replaced by a watch, and it can be seen that watches were still an important accessory that reflected status and fashion at that time. Even in the Emperor Guangxu period (1871-1908), people can see the important position of timepieces in China. This painting (Figure 9) shows the scene of Guangxu's marriage, which is the most luxurious wedding in Chinese history. In the welcoming team, various clocks were used as important gifts. This proved that in major festivals timepieces occupied an important position. In other words, timepieces have always received attention since its introduction to China, and it had been integrated into all aspects of court life.



**Figure 8**  
Qing, Chinese court Painters, A prince play with a princess in patio (part), Silk, The Beijing Palace Museum



**Figure 9**  
Qing, Qing Kuan (a Chinese court Painter), The Atlas of Emperor Guangxu's wedding ceremony (part), The Beijing Palace Museum

The attitude of literati to Western timepieces

The literati had always mastered the right to speak in society, so the voices of praise or opposition to Western timepieces were mostly from them. Their attitudes also represented the views of the elite class.

Some literati formed a multicultural concept after recognizing the advanced thinking and technology of Western artifact civilization, which can be seen as they accepted the fusion of Chinese and Western cultures. The famous Chinese literati Zhao Yi (1727-1814) stated, "Timepieces were from the West civilization, which can self-sound on time... This is the stunt... These timepieces are shipped from thousands of miles away, so we can feel the vastness of the world."<sup>29</sup> Although China's mainstream thinking still rejected other cultures at this time, it was undeniable that the coexistence of Chinese and Western multiculturalism had already planted seeds in the Chinese mind. It had made an important foundation for the development of Chinese thought.

On the other hand, some literati had multiple criticisms about the timepieces. This also reflected the cultural conflicts when Western culture was introduced to China. The main reason for these literati to reject Western culture was the traditional concept of China called "Xi Xue Zhong Yuan" that means the roots of some Western ideology came from China. Even the famous British science and technology history expert Dr. Joseph Terence Montgomery Needham had asserted that "the traditional Chinese astronomical clock seems to be the direct ancestor of the European mechanical clock."<sup>30</sup> However, at that time, the Chinese literati did not think about why Western instruments can continue to improve and develop,

<sup>29</sup> Translated into English by author. Zhao Yi, "Zi Ming Zhong. <自鸣钟>," in *Xiao Bao Za Ji* <箫曝杂记>, Vol.2.

<sup>30</sup> Translated into English by author. Joseph Terence Montgomery Needham, "How did the Chinese invent the mechanical clock?" <中国人是如何发明机械钟的>, *Journal of National Museum of Chinese History*, no.2 (2000): 122-126.

while Chinese science can only find images of their history from books. The advocates of this kind of thinking did not actively learn Western scientific and technological knowledge, but just get psychological satisfaction from it, thus losing the motivation to learn from the West.

In addition, the most serious cause of cultural conflict between China and the West belongs to the ethical category. Chinese traditional culture is an ethical culture. Its outstanding features are closedness, stability, and introversion. It focuses on the exploration of the inner world and the internal relations of society. The literati believed that the self-sounding timepieces was the product of science and belonged to the category of “tools.” Therefore, it only stayed at the material level, but cannot rise to the spiritual level, so the timepieces were low-level. They thought that the timepieces were just flashy playthings and dismissed them.

It was this kind of Chinese traditional concepts that seriously hindered the development of Chinese mechanical timepieces technology and other scientific advances. Moreover, eroding the motivation of Chinese people to learn from the West.

## CONCLUSION

The article discusses imported timepieces, which are mainly to meet the living needs of the palace court and a few upper-class figures in Chinese society. To some extent the introduction of western timepieces had promoted the formation of China’s self-produced timepieces industry and the development of Chinese machinery production technology. These domestic timepieces played a very important role in promoting the use of timepieces in the middle and lower statue of China in the early Qing Dynasty. Many Chinese churches, commercial buildings, public offices and public buildings, officials, priests, businessmen, servants, and even actors and prostitutes in the crowd wear timepieces.<sup>31</sup>

When the use of Western timepieces became a common phenomenon in Chinese society, it participated in Chinese and Western politics, culture, and trade diplomacy and played a role that could not be ignored. However, from a rational and objective perspective, the value of Western timepieces has not been fully utilized. For example, Western timepieces were shipped thousands of miles to China, which was the fruit of western science

<sup>31</sup> · See (Qing) Zhaoyi, “Timepieces <钟表>,” in *Yan Bao Za Ji* <檐曝杂记>, Vol. 2 (Shanghai: China Publishing House, 1997). Zhaoyi states, “Timepieces are everywhere in Fu Wenzhong’s (Famous Minister of the Ming Dynasty) house, and even his servants wear watches;” (Qing) Ding Kerou, “Watches,” in *Liu hu* <柳弧> (Shanghai: China Publishing House, 2002). Ding Kerou states, “Nowadays, there are no merchants and servants without watches, and a person even has a few watches;” (Qing) Liang Gongchen, *Beidongyuan transcript sequel* <北东园笔录续编>, Vol 2 (Jiangsu: Guangling Ancient Books, 1995). Liang Gongchen states, “Guan Tingshu (an official office) no one does not wear watch.”

and technology, while most Chinese scholars and nobles didn’t realize this. Recorded in the *Xiao Ting Xu Lu*, “The use of most Western timepieces is mainly a status display, an environmental decoration, and even many people regard it as a toy.”<sup>32</sup> Therefore, once the ruler’s attitude changes, it will be difficult to maintain the upsurge of pursuing Western timepieces. When Emperor Jiaqing (1796-1820) came to power, he regarded Western timepieces as a temptation that would sap the spirit of the people by seeking pleasures. This directly led to the gradual decline of the tide of Western timepieces.

In addition, the missionaries, as the backbone of the technology of timepieces, only used timepieces and their techniques as an open means of mission and had no intention of helping China to develop new technologies, so they did not train a group of Chinese clock masters. As foreign watchmakers left the palace one after another, in the late Qing Dynasty, Chinese watchmakers only managed the Western clocks in the Forbidden City, which could not do anything for the complicated repair work. At the same time, the folk timepieces factories were very small, and folk watchmakers rarely had access to the Western watchmakers, so they were impossible to master the advanced technology without professional training. Therefore, it is difficult to transform those small timepieces factories into an industrialized industry. Conceivable, “Western Timepieces Consumption Heat” was drowned in the long river of history over time. This attitude towards Western timepieces was a miniature of China’s treatment of all foreign affairs at that time, which led to the seclusion of China in the later period, and the fundamental reason for China’s transition from prosperity to decline.

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<sup>32</sup> · Translated into English by author. “The timepieces are from Guangdong (Western imports to Guangdong), scholars scramble to buy them and set up at home as toys.” Zhao Lian, “Timepieces <自鸣钟>,” *Xiao Ting Xu Lu* <啸亭续录>, Vol. 3 (Shanghai: China Publishing House, 1980), 468.

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