Christian Scholar Xu Guangqi and the Spread of Catholicism in Shanghai

Shi Xijuan¹

¹Doctoral Programme, Graduate School of Humanities, Kyushu University, Japan

Correspondence: Shi Xijuan, Doctoral Programme, Graduate School of Humanities, Kyushu University, Japan. E-mail: crean724@hotmail.com

Received: October 28, 2014Accepted: November 6, 2014Online Published: November 13, 2014doi:10.5539/ach.v7n1p199URL: http://dx.doi.org/10.5539/ach.v7n1p199

Abstract

Xu Guangqi, one of the first and most notable Christian scholars in the Ming Dynasty, cast a profound influence on the spread of Catholicism in Shanghai. After his conversion, Xu Guangqi successfully proselytized all of his family members by kinship and affinity, a fact that was foundational to the development of Jesuit missionary work in Shanghai. His social relationships with pupils, friends, and officials also significantly facilitated the proliferation of Catholicism in Shanghai. This paper expands the current body of literature on Chinese–Christian scholar Xu Guangqi and his role in the spread of Catholicism in Shanghai during the late Ming and early Qing. Though there are several extant studies on this topic, most of them focus on Xu's personal achievements and neglect the areas that this paper picks up: the role of Xu's family and social status in his proliferate evangelism, and the longevity his influence had even beyond his own time. Through this approach, this paper aims to attain a deeper and more comprehensive understanding of Xu Guangqi's influence on the dissemination and perdurance of Catholicism in Shanghai.

Keywords: Catholicism, Shanghai, social relationships, Ming and Qing Dynasties, Xu Guangqi

1. Introduction

Xu Guangqi, mostly remembered as a great scientist and one of the precursors who introduced Western science to China, was also one of the first Christian scholars in the Ming Dynasty. He, Li Zhizao, and Yang Tingyun were called the "Three Pillars of Chinese Catholicism." Xu supported evangelism through intellectual collaborations with the Jesuits, such as translating European scientific texts or inviting the missionaries to participate in the Calendar Reform that assimilated Western astronomy into the traditional Chinese calendar system (Note 1), and by directly passing the Great Mission on to others, via his family and through his various social relationships.

After receiving the baptism in Nanjing in 1603, Xu Guangqi introduced his newfound faith to his family and countrymen. The district of Xujiahui (also called Zi-ka-wei) in Shanghai, which was named after Xu Guangqi's family, became one of East Asia's famous Catholic strongholds. Some of the remarkable constructions erected in Xujiahui by the Jesuits are still standing, bearing testimony to their influence in that area.

Many studies have been carried out on Xu Guangqi's life and his indispensable role in the propagation of Catholicism and Western scholasticism (Note 2). Although prior studies mostly focus on Xu's personal achievements, such as his contributions to science or his engagement in the military, some scholars have noted the reciprocal influence between Xu Guangqi and Shanghai. For example, Timothy Brook discusses Xu Guangqi's early life, including his social origins and circuitous educational career and, by re-embedding him in the social and physical world of Shanghai, establishes a better understanding of his commitment to statecraft and his interest in agricultural knowledge, military defense, foreigners, and religion (Brook, 2001). Ma Xueqiang discusses Xu Guangqi's family background, as well as Xu's influence on some of the famous literati in the Su-Song area, especially in agronomy (Ma, 2006). Liu Yunhua analyzes the literary works of some of Xu Guangqi's relatives by affinity, taking Xu Zuanzen and Sun Zhimi as examples, and probes into the changes in their attitude toward Catholicism (Liu, 2009).

Prior studies help us to establish a general understanding about the mutual influences between Xu Guangqi and his hometown of Shanghai, as well as his family's reception of Catholicism. However, in order to fully reveal Xu

Guangqi's role in the propagation of Catholicism in Shanghai, there are still a couple of details that need to be expatiated:

1) Most prior studies concerning Xu Guangqi's contributions to the spread of Catholicism in China focus on his personal achievements such as his intellectual contributions to the development of science (agriculture, astronomy, mathematics, etc.), failing to recognize the significant role that Xu Guangqi's social relationships played (Note 3). As Timothy Brook points out, as Xu Guangqi's life inextricably caught up in the world of Shanghai gentry, his contribution to the spread of Catholicism in Shanghai should understood accordingly. Xu Guangqi's relationships with his family, pupils, friends, and other officials also significantly facilitated the proliferation of Catholicism in Shanghai. Using Brook's study as a springboard, this paper will show a more comprehensive picture of the society in which Xu Guangqi and the ways he contributed to the dissemination of Catholicism in Shanghai.

2) Xu Guangqi and his family cast a profound influence not only in their contemporaneity, but for centuries to come, even to the rebuilding of the Church after the Prohibition against Catholicism in China was repealed. Xu's contribution to the whole history of the Catholic mission in Shanghai, particularly his indirect yet long-lasting impact on the development of Catholicism in modern Shanghai, has not be fully recognized by previous studies.

In order to address these deficiencies, this study employs Chinese historical records such as local chronicles and collected works, combined with Jesuit missionaries' records, to investigate the reception of Catholicism of Xu's family members and their relatives by affinity, as well as their role in evangelizing the Songjiang. Following, I discuss the connection between Xu Guangqi's social relationships and officialdom and the proliferation of Catholicism in Shanghai during the late Ming and early Qing. Finally, I look at the development of Catholicism when the Jesuits came back to Shanghai after the Prohibition was repealed in 1844 and discuss its connection to Xu Guangqi and his family. Through this approach, I aim to show the significant role that Xu Guangqi played in the propagation of Christianity and to attain a deeper and more comprehensive understanding of his influence on the dissemination and perdurance of Catholicism in Shanghai.

2. The Conversion of Xu Guangqi's Family

As many believers are, Xu Guangqi was actively engaged in evangelism immediately after his conversion. He successfully proselytized all of his family members, including his nine grandchildren, and some of his relatives by kinship and affinity. Their conversion can be considered foundational to the development of Jesuit missionary work in Shanghai.

Existing studies on Xu Guangqi, though they often refer to Xu's family, mostly give only brief overviews of the family. Besides the previously mentioned studies, one can find anecdotes about Xu's family in *The Catholic Magazine* (Note 4), a publication of the Catholic Church in Shanghai compiled by Xu Zongze, a descendent of Xu Guangqi. This publication will be of some import later in our discussion. However, these articles, without annotations or references, are more sermons than they are formal academic studies. Most of the studies concerning Xu Guangqi's family were carried out by Chinese scholars. And, since the Jesuit missionary Philippe Couplet wrote a well-known biography of one of Xu Guangqi's granddaughters, the famous Candida (Couplet, 1688), some Western scholars have shown great interest in her (King, 1996; Von Collani, 2012). Yet the rest of Xu Guangqi's family members are left basically undiscussed, and there is no systematic account of the reception of Catholicism in Xu Guangqi's family.

In this section, I will utilize Chinese historical records such as the recently published "Jingyitang Zhi" (Anonymous, 2013a) and "Xuwendinggong Xingshi"(Anonymous, 2013b), and Jesuit missionaries' records such as Augustin Colombel's *L'Histoire de la Mission du Kiang-nan* (Note 5) and Philippe Couplet's biographies of Xu Guangqi and Candida (Couplet, 1934), in order to show the role of kinship and affinity in Xu Guangqi's evangelistic efforts.

In 1606, Xu Guangqi invited his father, Xu Sicheng, his wife Wu, and some other family members to Beijing for a visit. Xu Sicheng was moved by the way Xu Guangqi prayed every day and night and became curious about Catholicism. In the same year, Xu Sicheng converted to Catholicism and was baptized under the name Leo. In the following year, he died of an unknown illness. In order to show Xu Sicheng's Christian identity and to set an example for the other believers, Xu Guangqi observed the Catholic rites during the funeral, and held a memorial mass for his father in Beijing with the help of Matthew Ricci (Note 6). After the mass, before returning to his hometown of Shanghai, Xu Guangqi asked one of the Jesuits, Lazarus Cattaneo, to go with him to care for the spiritual needs of his family and his fellow citizens (Note 7). During the two years that Father Cattaneo stayed in Shanghai (1608–1610), Xu Guangqi's son and daughter in-law and all their children were baptized by him.

Soon after arriving in Shanghai, under the urging of Xu Guangqi, Father Cattaneo held a grand baptism for fifty people (Colombel, 2008, p.149). Xu Guangqi's only son, Xu Ji, and his wife Gu were likely included in this baptism. Xu Ji was baptized under the name Jacob. Xu Ji was a pious Christian like his father. He proved a great help to the missionaries, supporting their preaching activities in Shanghai and commending them to the officials of Nanjing and Songjiang through the social connections he had developed thanks to his father's reputation. During the Nanjing Persecution in 1616, Xu Ji helped his father accommodate the missionaries who came to Shanghai for refuge. He continued the mission in Shanghai after Xu Guangqi's death in 1633. According to Philippe Couplet, among all the missionaries in Shanghai, Francesco Brancati was closest to Xu Ji. "With Xu Ji staying around Brancati all along to help him preaching, every year thousands of people converted because of them" (Couplet, 1934, p.326). Xu Ji's wife Gu died in 1622. After that, he chose to remain a widower for twenty-three years until his death, and devoted himself to the learning of Catholicism.

Xu Ji's wife had given birth to five sons and four daughters. All nine children were baptized at an early age and kept the faith piously. Xu Ji's eldest son, Xu Erjue 爾覚, was baptized in 1608 under the name Michael. He wrote the prefaces to Martino Martin's "Qiuyou Pian" and Francesco Brancati's "Shengjiao Sigui." He also sold some of his land outside Nan Men to the missionaries to be used as a graveyard for missionaries. The plot later became a part of the Shengmu Tang (Church of Our Lady), in whose management Erjue frequently participated (Note 8). Xu Ji's second son was Xu Erjue 爾爵, whose Christian name was Ignatius. When Xu Guangqi was alive, Erjue frequently went to Beijing to take care of him. When Guangqi passed away in 1633 in Beijing, Erjue stayed by his side and listened to his last words. Erjue held a memorial mass for his grandfather under the association of the missionaries in Beijing and escorted the coffin's return to Shanghai. Xu Ji's third son was named Xu Erdou, baptized under the name Matthew. The fourth son was named Xu Ermo, baptized under the name Thomas. There are not many records left concerning their religious lives, but according to Augustin Colombel, the descendants of Xu Ermo kept their faith until at least the end of the nineteenth century (Colombel, 2008, p.191). The fifth son, Xu Erlu, was baptized under the name Luke. Erlu is known to have frequently communicated with the missionaries. In 1676, he wrote a creed for the church, which read, "I believe in the resurrection of the body" (Anonymous, 2013a, p.95). In 1678, when Father Philippe Couplet finished Xu Guangqi's biography, he asked Erjue 爾覚, Erjue 爾爵, and Erlu to edit it. In 1671, Erjue, together with his brothers, went to bring the body of Father Francesco Brancati-who had been exiled during Yang Guangxian's attack on Christianity-back to Shanghai and buried him at the Shengmu Tang (Colombel, 2008, p.191).

These are the male members of Xu Guangqi's family; the under-discussed female family members now require our attention (Note 9). Female Christians, especially of the upper class, were very influential in the late Ming, as the women in Xu Guangqi's family attest. They played a very important role during the propagation of Christianity through kinship and marital relations.

Xu Guangqi's wife Wu was baptized in Beijing in 1606, together with Xu Guangqi's father. According to the biography Philippe Couplet wrote for Xu Guangqi, we learn that Wu lived a frugal life, despite having married a senior official. She was a devout believer and very enthusiastic about all kinds of Christian activities (Couplet, 1934, p.326). Unlike the other women in her contemporaneity who rarely left their homes, Wu went to church regularly with the male believers (Anonymous, 2013b, p.166). Before her death, she asked the missionaries to administer the last confession and anointing, just as they would with a male Christian (Couplet, 1934, p.326). This was very rare for the women in traditional Chinese society (Couplet, 1688, pp.108-110). As the most authoritative woman in Xu's family, Wu's devotion to Catholicism is very likely to have had a deep influence on her family, particularly on the other women.

As mentioned, Xu Guangqi's daughter-in-law, Gu, received the baptism in Shanghai together with her husband. According to Couplet, she raised her nine children according to the Catholic doctrine (Couplet, 1688, p.10). Among the other Christian women in Xu's family, Xu Ji's four daughters are the most notable. Thanks to their grandfather Xu Guangqi's high social status and prestigious reputation, these women married into the most illustrious families of Songjiang and passed their Christian faith on to their husbands and their husbands' families. These prestigious families' influence in the local society in turn enhanced Catholicism's reputation.

Xu Ji's first daughter was baptized under the name Felicitas. She married Ai Yanhuai, a student of the Guozi Jian (Imperial College) and the grandson of Ai Kejiu, a former Taichang Boshi (Erudite of the Court of Imperial Sacrificers). Influenced by her piety, all of the Ais converted to Catholicism, even Ai Yanhuai's mother who had previously been a devout believer in Buddhism. According to J. de la Servière, the descendants of the Ai family were among the most pious Catholics in Shanghai, and they continued their religious practices until at least the 1880s (Servière, 1941, p.120).

Xu Ji's second daughter was the famous Candida. Hoping his granddaughter could marry an offspring of a Christian family, Xu Guangqi is believed to have arranged Candida's marriage with Xu Yuandu, a grandson of Xu Leshan who converted to Catholicism under Guangqi's persuasion, when Candida was only five years old (Note 10). However, Xu Leshan's enthusiasm for Catholicism faded and he did not actively persuade his family to convert, so his grandson Xu Yuandu was not a Christian by the time Candida married him (Note 11). Candida married into the Xu family when she was sixteen, and under her influence, her husband Xu Yuandu and their eight children became Christians. Furthermore, the wife of her oldest son, Xu Zuanzen, Li, who believed in Buddhism at the time she married into the Xu family, also converted to Catholicism under Candida's influence. After her conversion, Li evangelized her own family, and successfully converted two of her brothers and several other relatives (Couplet, 1688, p.40).

Xu Ji's third daughter, whose Christian name is unknown, married Qu Ye, who was also a student of the Imperial College, and a grandson of Qu Yin, a former county magistrate of Haicheng county. From the record of the "Jingyitang Zhi," it is very likely that this Qu family also worked with the missionaries because of Xu Guangqi's family (Anonymous, 2013a, p.122).

Xu Ji's fourth daughter was baptized under the name Martine. She married into the Pan family, one of the most prestigious families in Shanghai (Note 12). Her husband, Pan Xiaona, was a grandson of the former You Buzhengshi (Right Provincial Administration Commissioner) of Si Chuan, and a student of the Imperial College. Incidentally, Xu Ji's fifth son Xu Erlu's wife also came from the Pan family. She, too, very likely converted to Catholicism under the influence of Xu's family. After Pan Xiaona passed away in 1678, Martine, just like her sisters, kept her widowhood for nearly forty years. She remained devoted to her religious life (Couplet, 1688, pp.67-68), and commissioned Father Francesco Brancati to purchase Shichun Tang, an estate belonging to the Pan family, and reconstruct it into a church named Jingyi Tang, which means to show respect for the Trinity of God (Ye, 2007, pp.242-243; Colombel, 2008, p.150&192).

Besides those family members we investigated in this section, who were related to Xu Guangqi by consanguinity, there were many among his affinities and collateral relatives who converted under his direct or indirect influence, such as his father-in-law Wu Xiaoxi, his nephew Chen Yujie, his granddaughter-in-law Yu (Couplet, 1934, p.326), his grand-grandson-in-law Sun Zhimi (Note 13), and even some of the servants and tenants (Note 14).

Thus, one can see that Xu Guangqi successfully passed his faith on to his immediate family. With their devout faith and support of the missionary work, as well as Xu Guangqi's high reputation in the local society, the Xu family became the most famous and influential Catholic family in Shanghai. Xu Guangqi's faith spread to the families who were connected with the Xu family by marriage, especially via his four granddaughters. The significant number of conversions in these influential families was certainly a great support for the evangelism of the rest of Shanghai. Furthermore, a general picture of upper class Christian women can be captured through the example of the Christian women in Xu Guangqi's family. These women played a significant role in the propagation of Catholicism among their families and, through them, in the local society.

As shown from the investigation above, kinship and marital relations played an important role in the propagation of Catholicism. The conversion of the Xu family and the various families connected to them by marriage laid a solid foundation for the development of Catholicism in Shanghai. Many of these family members stood fast to their faith during the Prohibition and contributed to the rebuilding of the Church, which will be discussed later.

3. The Spread of Catholicism in Shanghai During the Seventeenth and Eighteenth Centuries

Although Shanghai county was only a humble district city at the time, it was a member of the affluent Jiangnan area, and its inhabitants lived a relatively wealthy life. Matthew Ricci records,

'This section of the province is especially rich in rice, and in cotton for making different kinds of cloth, and they say there are two hundred thousand weavers here...The people here, especially those in the city, are very active and somewhat unsettled, well-endowed intellectually, counting many scholars and literati among them, and consequently many Magistrates who formerly held high positions and now are retired as wealthy men, living in magnificent palaces' (Ricci & Tregault, 1953, p.549).

From this description, one can also get a snapshot of Shanghai's gentry society. Some of the Shanghai gentry were related to Xu Guangqi's family by marriage, as discussed in the previous section. Others were connected with Xu Guangqi through his relationships with his pupils or friends. The attitudes of these prestigious gentry toward Catholicism were very important to missionaries' evangelism. Indeed, the Jesuits' strategy in China was to preach to the upper classes. In their reports to Rome, missionaries repeatedly emphasized that China valued knowledgeable people; if the literati were to convert to Catholicism, others would follow (Gobien, 1780,

pp.270-271). The case of Xu Guangqi is a perfect example of the effect of this strategy. Under Xu Guangqi's high reputation, and with the help of Xu and other patrons, the Jesuits' missionary work was extremely successful.

According to Matthew Ricci, Father Cattaneo was met with an enthusiastic reception when he arrived in Shanghai. Xu Guangqi spent three days celebrating his arrival. During his stay, many people went to visit Cattaneo and listen to his instruction. His work was remarkably fruitful. Matthew Ricci records, "In the first short period of thronging activity, [Cattaneo] had fifty coverts and before two years were up, he had two hundred; something that had not happened at the other stations, in so short time, during a pioneering period" (Ricci & Tregault, 1953, p.551).

Most people, whether commoners or officials, probably visited the missionary out of curiosity about Western people and culture. However, Xu Guangqi's reputation and authority in the local society also promoted people's interest in and acceptance of the missionaries, which was key to Catholicism's ability to flourish. Philippe Couplet records that Xu Guangqi once declared, "All those who respect Deus together with me are my friends, my family." With Xu Guangqi as their model, many were eager to convert (Couplet, 1934, p.323). Matthew Ricci also records that Xu Guangqi was always the central figure during religious celebrations. "[H]e was so attentive to the converts of the lower social classes that he always invited some of them to come and sit with him, whereas on state occasions, they had so much respect for the dignity of his high position, that they would scarcely dare to look at him" (Ricci & Tregault, 1953, p.553).

In addition to being a model for other believers, it is notable is that Xu Guangqi used his social connections with other literati and officials of the local gentry society to promote communication between the Chinese upper classes and the missionaries, not only in Shanghai county, but in other counties in Su-song area as well. Xu Guangqi's relationship with Sun Yuanhua, one of his favorite pupils, is a good example of this. Sun was born in Jiading county, adjacent to Shanghai county, and became a Juren in 1612. According to João Froes, after Xu Guangqi had been baptized in Nanjing in 1603 and was on his way home, he stopped by the house of Sun Yuanhua, and introduced him to Catholicism (Froes, 2007, p.153). Sun began to learn about Catholicism and ultimately converted to the faith. Sun was baptized under the name Ignatius. Right after his baptism, Sun followed Xu Guangqi's example and paid a visit to Xu Guangqi's friend Yang Tingyun to invite the Fathers to come and bring the Gospel to Jiading (Yang, 1946, p.43; Colombel, 2008, p.115). Sun later built a magnificent church in Jiading, which was highly praised by the missionaries (Gouvea, 2005, p.200; Colombel, 2008, p.115). Catholicism prospered in Jiangding, and missionaries finally decided to set up a residence there. In 1627, the Jiading meeting was held to determine the official Chinese translation of "Deus." Sun attended the meeting with the "Three Pillars," indicating his and Jiangding's importance to the Catholic Church (Fang, 1988, p.165).

Xu Guangqi's high reputation among the literati also indirectly promoted the introduction of Catholicism to Chongming county. Catholicism was introduced in Chongming county by a literatus named Xu Qiyuan. According to his biography written by Lu Picheng (Lu, 1996), a Christian of the Qing Dynasty, Xu Qiyuan was born around 1605 to a prestigious family in Chongming county. Early in his life, he was a devout follower of Buddhism. But when a Christian friend of his named Wang Junfu introduced him to Catholicism, he was curious and asked his friend where he should go to learn more of the Catholic doctrine and study its principles. Wang Junfu replied,

'There is a county named Above Ocean (Shangyang, an alternative name of Shanghai) under the jurisdiction of Songjiang Prefecture, where you'll find a Catholic church built by the Prime Minister Xu Guangqi. In the church live Fathers who can explain the doctrine and give guidance to people' (Lu, 1996, pp.1232–1233).

From this record, one can see that Xu Guangqi's prestigious reputation as Prime Minister was persuasive proof of the value of Catholicism, which aided the religion's dissemination in Songjiang. According to Lu's biography, as his curiosity about Catholicism grew, Xu Qiyuan decided to go with three of his relatives and friends to Shanghai county to visit the Fathers. Coincidently, Father Francesco Brancati was already thinking about taking the Gospel to Chongming county at that time. When he heard about the visit of Xu and his friends, Brancati welcomed them with great pleasure. After listening to Brancati preach, Xu Qiyuan and his three companions converted to Catholicism and were baptized (Lu, 1996, pp.1233–1238). Their baptism marked the beginning of the evangelization of Chongming county. According to Philippe Couplet, Xu Guangqi's granddaughter Candida also aided the development of Catholicism in Chongming. When she learned Father Jaques Favre's plan to evangelize Chongming. With the assistance of Candida and the local officials who were friendly toward missionaries, Favre's work went smoothly. Soon after his arrival, he constructed the first church in Chongming, and six others followed (Couplet, 1688, pp.68-69; Pfister, 1932, p.293).

The Jesuits' missionary work in Songjiang not only obtained support from devoted Christians such as Sun Yuanhua and Xu Qiyuan, but also from the officials, which, as we have mentioned, was largely due to Xu

Guangqi's excellent reputation among them. The officials commonly showed their support by sending tablets ("biane"). In "Jingyitang Zhi," a record of Jingyi Tang, one can find an account of the tablets sent by officials to the missionaries around the late Ming and the early Qing (Anonymous, 2013a, pp.82-84). Among the senders, there were high-ranking officials such as Fu Guang and Lin Yuji, who both had been Libu Shangshu and Wenyuange Daxueshi, as well as Gu Xichou, who had held the title of Libu Youshilang (Right Vice Minister of Rites). There were also local officials such as Fang Yuegong who was the Zhifu (Prefect) of Songjiang Prefecture, and Qin Shizhen who had been the Xunan (Regional Inspector) of Suzhou and Songjiang Prefectures. Most of the tablets were sent to Father Brancati after the Chongzhen Emperor sent a tablet saying, "The Learning of Heaven is honored by the Emperor" in 1641, in commemoration of the missionaries' achievement in compiling the calendar, which was carried out under the leadership of Xu Guangqi. Brancati was sent to China in 1637 and after his arrival in China, he preached mostly in Jiangnan area, which left him less chance to communicate with those capital officials. Furthermore, Brancati not because of the officials' friendship with him, but to honor Xu Guangqi. No matter the original purposes of these sendings, though, these tablets expressed an overtly supportive attitude toward Catholicism, a clear asset in the propagation of the Gospel.

Xu Guangqi enjoyed high prestige in the gentry society not only because he was a high-ranking official in the court, but also because he was one of the pioneers that set out to bring Western learning to China. In conjunction with the strategy of adaptation, the Jesuits used Western learning as a useful tool for evangelism in China. Western learning in science and Western culture had been proven a very effective way to attract Chinese people, especially the literati. As Matthew Ricci once declared, "Chinese are more readily persuaded by books than by verbal argumentation about the Christian Law," and "Heaven has employed the sciences for converting the Solons [respected national leaders, here referring to the literati] of China" (Ricci & Tregault, 1953, pp.545-546). This was the main reason Jesuits so actively devoted themselves, with the help of Christian scholars such as Xu Guangqi, to the translation and publication of books on science and other Western learning. In order to widely publicize these works and improve Chinese scholars' understanding of the West, Chinese scholars were often asked to write the preludes and to participate in the revision of these books before publication. Many of the scholars connected with Xu Guangqi through various social relationships had participated in such revisions.

One of the most important relationships among Chinese scholars was that between Tongnians, that is, those who passed their highest imperial examinations in the same year. There were at least sixteen officials among the Tongnian of Xu Guangqi who had participated in the translation or publication of the works of Western Learning (Shi, 2014, pp.90-94), and four of them were born in Songjiang Prefecture. Yao Yongji, Li Lingyun, and Zhang Nai helped with the revision of Taixi Shuifa, co-translated by Sabatino de Ursis and Xu Guangqi. Yao Shishen helped to revise Euclid's Jihe Yuanben, co-translated by Matthew Ricci and Xu Guangqi. Since Xu was the co-translator of both these works, it is very likely that he invited the aforementioned four scholars to do the revision. Their participation showed that they were interested in Western learning, and at least had a friendly attitude toward missionaries and Catholicism. All four of these scholars later became senior officials. Yao Yongji, who was born in Shanghai county, same as Xu Guangqi, became the You Buzhengshi of Zhejiang; Li Lingyun became the Taipusi Qing (Chamberlain for the Imperial Stud); Zhang Nai became the Nanjing Libu Youshilang; and Yao Shishen became the Xingbu Shangshu (Minister of Justice). All three of these men were born in Huating county. Their status as high-ranking officials and high reputations in their hometown meant that their revision of the missionaries' books was a significant factor in promoting the reputation of Catholicism in Songjiang Prefecture. In this way, many literati and officials of Songjiang started to communicate with missionaries or show interest in Western learning. Of course, showing interest in Western learning does not equal interest in Catholicism (Note 15). However, these degree holders were, as Eugenio Menegon points out, as "influential as hundreds of common people" (Menegon, 2010, p.169), so the fact that they were involved in missionaries' activities in any capacity would have helped to promote the missionaries' reputation among the local society. Although many of these officials and literati of Songjiang Prefecture we discussed in this section did not ultimately convert to Catholicism, their communication with the missionaries and their friendly attitude toward Western learning are believed to have promoted the reputation of Catholicism.

According to Augustin Colombel, during the late Ming and early Qing, Shanghai and Jiading counties were central to Catholicism's development in China, and because of the high reputation of the "Three Pillars," there were more converts in these three areas (Colombel, 2008, p.144). From the biographies of the missionaries in Shanghai, we learn that in 1622, there were at least 200 hundred people baptized by Father Francois Sambiasi, and about one-fourth of them were literati (Pfister, 1932, p.137); in 1639, there were 1124 people baptized by Father Francesco Brancati and Father Jerome de Gravina, and in the next year, the number of converts increased to 1240.

By 1665, missionaries had built sixty-six churches in Songjiang Prefecture and the converts numbered as many as 50,000. According to a letter Francesco Brancati wrote to Father Goswin Nikel, the Superior General of the Society of Jesus, 2000–3000 people converted every year in Songjiang (Pfister, 1932, pp.224-225). As a result of the persecution of Yang Guangxian in 1644, many missionaries were expelled from mainland China to Canton, including Francesco Brancati. However, since the foundation of missionary work had been well laid in Songjiang, and with the support of Xu Guangqi's family and those officials who were supportive of the missionaries (Couplet, 1688, pp.55-56), the propagation of Catholicism continued. It is said that from the time the missionaries were banished until the end of 1688, more than 1000 people received the baptism in Shanghai (Rougemont, 1999, p.28). These believers did not leave many records to account for the reasons for their conversion, but it is likely that they were, to some extent, affected by Xu Guangqi, who was highly revered among them. Although by that time Xu Guangqi had been long gone, a letter from Father Fontaney to Father la Chaife speaks highly of Xu Guangqi and attributes the thriving of Catholicism in Shanghai to Xu Guangqi's prestigious reputation and piety (Gobien, 1780, pp.270-271).

4. The Development of Catholicism in Shanghai After 1844

Although it had suffered under the persecution of Yang Guangxian, Catholicism was generally allowed at the beginning of Qing Dynasty, largely due to the missionaries' great achievement in compiling the calendar. Father Adam Schall von Bell was on good terms with the Shunzhi Emperor, and the Kangxi Emperor was well acquainted with Father Ferdinand Verbiest (Pfister, 1932, pp.171-177&345-352). Though many residences were damaged during the disturbance, constructions such as the aforementioned Jingyi Tang were protected because the relationships between these Emperors and the Fathers (Ye, 2007, p.243). However, every semblance of benevolence ended with the famous Chinese Rites controversy.

As is generally acknowledged, the Jesuits' had such remarkable success in their evangelism in China primarily because of their adaptation strategy. However, other missionary orders such as the Dominicans and the Franciscans refused to adapt to any local customs, and constantly appealed their concerns and complaints to the Pope. In 1705, Pope Clement XI sent a Papal Legate to the Kangxi Emperor, to communicate the interdiction of Chinese rites, and then issued the Papal bull *Ex illa die* in 1715, which officially condemned the Chinese rites. As a result, in 1721, the Kangxi Emperor banned Christian missions in China (Note 16). Prohibition was enforced under the Yongzheng and Qianlong Emperors (Marinescu, 2008). Missionaries were expelled from the mainland, and Catholic churches were confiscated, most of which were later rebuilt as temples of Taoism or Buddhism. Augmented by the suppression of the Jesuits by Pope Clement XIV in 1773, missionary work in China was seriously obstructed.

Under the prohibition, Christians were either forced to give up their faith or take their religious activities into the underground. However, as mentioned earlier, some of Xu Guangqi's descendants and relatives managed to keep their faith through all these persecutions. Augustin Colombel claims that the descendants of Xu Ermo remained Christian until at least the nineteenth century. The Ai family became one of the most devout Christian families in Shanghai. According to Servière, after the public churches were confiscated by the government, many Christians of Shanghai went to the Ais' chapel for the mass (Servière, 1914, p.120).

When the Society of Jesus was restored by Pope Pius VII in 1814, 1832, and 1833, some of the Christians in Beijing petitioned to the Superior General of the Society of Jesus, T. R. P. Roothaan, to send more missionaries to China. Following them, Christians of the Jiang-nan area also started a petition in 1839. In response, after almost seventy years after the dissolution of the Society of Jesus, French Jesuits Francis Estève and Benjamin Brueyre returned to Shanghai in 1842 under the leadership of Father Claude Gotteland (Servière, 1914, pp.15-40). Although more than 200 years had passed since Xu Guangqi's death, he was still the best known Christian of Shanghai. In order to show their respect for Xu Guangqi, and in an effort to reawaken the enthusiasm for and support of Catholicism that Xu's family had once demonstrated (Note 17), missionaries paid a visit to Xu Guangqi's offspring soon after their arrival. Father François Estève baptized a descendant of Xu Guangqi (Colombel, 2008, p.79& 87; Servière, 1914, p.56), believed to be an offspring of Xu Ermo.

More missionaries were sent to Shanghai in 1846, and with the Church getting stronger by the day, Claude Gotteland began to petition Shanghai's government to return the properties of the Catholic Church, starting with the church located in Nan Men, Shengmu Tang, built by Father Brancati with the help of Xu Guangqi's family (Couplet, 1934, p.326), as well as the missionaries' cemetery where Father Brancati and some other missionaries were buried (Note 18).

When the Jesuits returned to Shanghai, some of Xu Guangqi's descendants living around the Tushanwan in Xujiahui, where Xu Guangqi was buried, were still practicing their faith. According to J. de la Servière, although their family's fortune had declined, they still remembered their ancestor with great pride. They had built a small

house alongside the river (presumably the Zhaojia Bang) and used it as their chapel Out of respect for Xu Guangqi, and to commemorate the return of the Jesuits to Shanghai, Father Claude Gotteland decided to establish a Jesuit residence there. The first residence in Shanghai was actually built in Hengtang. However, it was too far away from the downtown area to be a convenient center for the propagation of Christianity. After the construction of the residence in Xujiahui, completed in July of 1847, the center of the Jesuits' missionary work in Shanghai moved from Heng Tang to Xujiahui (Servière, 1914, pp.111-114).

With the missionary work developing rapidly, several Catholic organizations and institutions were established in Xujiahui. In 1848, the Jesuits built a library to store all kinds of Chinese and Western books. This library was rebuilt into the famous Bibliotheca Zi-ka-wei, and it is now the earliest existing modern library in Shanghai. In the next year, floods in Jiang-nan area sent refugees swarming into Shanghai. The missionaries set up a sanctuary in Xujiahui to take in the victims. In 1850, Father Claude Gotteland established the Collège Saint Ignace or St. Ignatius High School, which later became the Xuhui High School. In 1864, Father Pierre Marie Heude established a museum of natural history belonging to the Society of Jesus. The Congregation of Mary, originally located in Hengtangin, was moved to Xujiahui in 1865, and became one of the most important Catholic institutions in Shanghai. Under the Congregation of Mary, there were three societies for Christian women: The Helpers of Holy Souls, founded in 1867; the Presentation Sisters, founded in 1869; and the Sisters of the Immaculate Conception, founded in 1870. These societies constituted the center of the religious lives of women believers in Shanghai. Tushanwan (or Tou-se-we) Printing House was also established in 1867. In 1872, with the help of Father Augustin Colombel, the famous Xujiahui observatory (or Zi-ka-wei Observatory) was established near the tomb of Xu Guangqi, which was likely intended to commemorate Xu's outstanding contributions in Astronomy and his cooperation with the missionaries in the Calendar Reform, and later it became the Shanghai Astronomical Observatory. In 1903, to commemorate the 300-year anniversary of Xu Guangqi's baptism, the restoration of Xu Guangqi's tomb was conducted under the leadership of the Jesuits, and a cross was set up before Xu's tomb. In 1910, the construction of St. Ignatius Cathedral, also known as Xujiahui Cathedral, was completed. It is still the biggest cathedral in Shanghai, and one of the most famous cathedrals in all of China (Note 19).

The successive establishment of Catholic organizations and institutions reflected the success of the missionary work in Xujiahui. It is worth mentioning that some of Xu Guangqi's descendants not only continued to practice Christianity (Note 20), they also devoted themselves to the missionary work. The most prominent among them are Xu Yunxi and Xu Zongze, both of whom were descendants of Xu Ermo. They made great contributions to the studies of their ancestor Xu Guangqi and the history of Catholicism in Shanghai.

Xu Yunxi was the ninth great-grandson of Xu Guangqi, baptized under the name Simon. He became a Catholic priest and scholar. He was the director of the Bibliotheca Zi-ka-wei from 1876 to 1922. In 1909, Xu Yunxi compiled eight volumes of *Zengding Xuwendinggong Ji*, which constituted the third anthology of Xu Guangqi' work, following the anthology in *Ming Jingshi Wenbian* and the anthology edited in 1896 by Li Di, a Chinese Jesuit working in Jiangnan area (Note 21). In 1938, Yunxi translated the *Histoire D'une Dame Chretienne De Chine ou Madame Candide Hiu*, written by Father Philippe Couplet, into Chinese.

Xu Zongze was the tenth great-grandson of Xu Guangqi, baptized under the name John. He was born in Shanghai's Qingpu, and entered the Society of Jesus at the age of twenty-one. After that, he went to Europe to study literature, philosophy, and theology, and subsequently became a priest. In 1912, Xu Zongze went back to China to do missionary work in Shanghai's Nanhui. He went to Xujiahui in 1923, and became the director of the Bibliotheca Zi-ka-wei and the chief editor of *The Catholic Magazine*. After *The Catholic Magazine* stopped publication because of the Sino-Japanese War, Xu Zongze concentrated his efforts on the management of the Bibliotheca and managed to increase the collection of local chronicles to 2000, the largest in China at that time. Xu Zongze was also an outstanding scholar of Catholic history. He published multiple essays on theology, philosophy, and Catholic history on *The Catholic Magazine*, and those essays were later compiled into books. He also collected great quantities of notes, letters, and other literature written by the Jesuits of the Ming and Qing Dynasties, and conducted several studies on Chinese Catholic history, such as the *Ming-Qing Jian Yesuhuishi Yizhu Tiyao* and the *Zhongguo Tianzhujiao Chuanjiao shi Gailun*, which have been regarded as valuable reference books by modern scholars (Ren ed., 2002).

Xujiahui's central role in the Catholic missionary work in Shanghai is inseparable from Xu Guangqi's contributions. Xu's prestigious reputation, his comprehensive knowledge of Chinese and Western scholasticism, and his exceptional piety promoted Catholicism's reputation, while his prominent social status as a high-ranking official encouraged favorable conditions for the propagation of the faith. Those who were influenced by Xu Guangqi, such as his family and the local gentry, also gave tremendous support to the missionaries, so that Catholicism continued to develop long after Xu Guangqi's death. Although not every Christian scholar was as

devoted or influential as Xu Guangqi, their continued contributions to the dissemination and perdurance of Catholicism through various social relationships were, to some extent, similar. For instance, Li Zhizao and Yang Tingyun, the other two "pillars of Chinese Catholicism," were actively engaged in the proselytism of their family members (Note 22) and encouraged the literati and officials in their social circles to support the missionary work in their hometowns. Thus, by discussing Xu Guangqi's influence on the spread of Catholicism in Shanghai, we gain perspective on how other influential Christian scholars could have facilitated the development of Catholicism, paving the way for future research.

References

- Anonymous. (2013a). Jingyitang Zhi (Records of Jingyi Tang). In N. Standaert, A. Dudink, & R. Wang (Eds), Sequel to Chinese Christian Texts from the Zikawei Library (vol. 14). Taipei: Taipei Ricci Institute.
- Anonymous. (2013b). Xu Wending Gong Xing Shi (Acts of Xu Wending). In N. Standaert, A. Dudink, & R. Wang (Eds), Sequel to Chinese Christian Texts from the Zikawei Library (vol. 14). Taipei: Taipei Ricci Institute.
- Bartoli, D. (1825). Della Cina. Torino: Giacinto Marietti.
- Brook, T. (2001). Xu Guangqi in his context: The world of the Shanghai gentry. In C. Jami, P. Engelfriet, & G. Blue (Eds.), *Statecraft and intellectual renewal in Late Ming China: The Cross-Cultural Synthesis of Xu Guangqi (1562-1633)* (pp. 72-98). Boston: Brill Academic Publishers.
- Colombel, A. M. (2008). *Jiangnan Chuanjiao Shi (History of The Mission in Jiangnan)*. Translated by Zhou Shiliang. Shanghai: Guangqi Publishing House.
- Couplet, P. (1688). Histoire d'une dame Chrétienne de la Chine ou par occasion les usages de ces peuples, l'établissement de la religion, les manieres des missionnaires, & les exercices de pieté des nouveaux Chrétiens sont expliquez. Paris: Michallet.
- Couplet, P. (1934). Xu Guangqi Xinglue (Acts of Xu Guangqi). The Catholic Magazine, 23, 322-327.
- Ding, Z. (1996). Yang Qiyuan Xian Sheng Chao Xing Shi ji (Records of Yang Qiyuan's religious life). In *Chinese Christian Texts from the Zikawei Library* (vol. 2, pp. 217-237). Taipei: Fangji Publication.
- Dunne, G. H. (2010). *Generation of giants: The story of the Jesuits in China in the last decades of the Ming Dynasty.* Whitefish: Kessinger Publishing.
- Elman, B. A. (2005). On their own terms: Science in China, 1550–1900. Cambridge, MA: Harvard University Press.
- Fang, H. (1988). Zhongguo Tianzhujiao Renwu Zhuan (Biographies of the Christians in China). Beijing: Zhonghua Book Company.
- Froes, J. (2007). Xu Baolu Jinshi Xingshi (1634) (Acts of Doctor Xu Paul, 1634. In Dong Shaoxin (2007) (Trans.), *Historic Studies on Macao*, 6, 153-159.
- Gobien, C. le. (1780). Lettres édifiantes et curieuses, écrites des missions étrangères (Vol. 17, pp. 270-271). Paris: Chez J. G. Merigot le Jeune, 270-271.
- Gouvea, A. de. (2005). Asia extrema. Segunda parte, Livro 1. Lisboa: Fundação Oriente.
- Hashimoto, K., & Jami, C. (2001). From the elements to calendar reform: Xu Guangqi's shaping of scientific knowledge. In C. Jami, P. Engelfriet, & G. Blue (Eds.), *Statecraft and intellectual renewal in Late Ming China: The cross-cultural synthesis of Xu Guangqi (1562–1633)* (pp. 263-278). Boston: Brill Academic Publishers.
- Huang, Y. (2006). Liang Tou She: Mingmo Qingchu de Diyi Dai Tianzhujiaotu (Double-headed snake: The first Christian believers in the Late Ming and Early Qing). Shanghai: Shanghai Ancient Books Publishing House.
- King, G. (1996). Couplet's biography of Madame Candida Xu (1607-1680). Sino-Western Cultural Relations Journal, XVIII.
- Latourette, K. S. (1929). A history of Christian missions in China. New York: The Macmillan Company.
- Liu, Y. (2009). The Catholic literati in Shanghai along the line of marriage of Xu Guangqi: Take Sun Yuanhua, Xu Leshan's two families as centre. *Studies in World Religions*, 98-107.

- Lu, P. (1996). Feng Tianxue Xu Qiyuan Xingshi Xiaoji (A short biography of Christian Xu Qiyuan). In N. Standaert, *Chinese Christian texts from the Zikawei Library* (vol. 3). Taipei: Furen daxue Shenxueyuan.
- Ma, X. (2006). Xu Guangqi and the Shanghai society in the Late Ming Dynasty. In H. Song (Ed.), *The first person that digested Western and Chinese culture together: Essays for the learning proseminar on Xu Guangqi*. Shanghai: Shanghai Guji Publishing House.
- Marinescu, J. M. N. (2008). Defending Christianity in China: The Jesuit defense of Christianity in the "Lettres edifiantes et curieuses" & "Ruijianlu" in relation to the Yongzheng proscription of 1724. Ann Arbor: ProQuest.
- Minamiki, G. (1985). The Chinese rites controversy: From its beginning to modern times. Chicago: Loyola University Press.
- Menegon, E. (2010). *Ancestors, virgins, and friars: Christianity as a local religion in Late Imperial China.* Cambridge, Massachusetts: Harvard University Press.
- Pfister, L. (1932). Notices biographiques et bibliographiques sur les Jésuites de l'ancienne mission de Chine 1552-1773, Tome I, XVIe et XVIIe siècles. Shanghai: Impr. de la mission catholique.
- Ren, J. (ed.). (2002). Zhongguo Xueshu Dadian- Zongjiao Xue (Chinese academic canon in the twentieth century: religious studies). Fuzhou: Fujian Jiaoyu Education Press.
- Ricci, M., & Tregault, N. (1953). *China in the sixteenth century: The journals of Matthew Ricci, 1583–1610.* Translated from Latin by Louis J. Gallagher. New York: Random House.
- Rougemont, F de, S. J. (1999). Missionary in Ch'ang-Shu (chiang-Nan): A study of the account book (1674– 1676) and the elogium. Belgium: Leuven University Press.
- Servière, J. de la. (1914). *Histoire de la mission du Kiang-nan. Jèsuites de la province de France (Paris)* 1840-1899. Impr. de l'Orphelinat de Tu-s-w.
- Shi, X. (2012). Biography, scholarism and religion: The studies of Xu Guangqi in China and Japan. *The Oriental Studies*, 40, 23-47.
- Shi, X. (2013). A discussion on the Late Ming scholars' reception of Catholicism: From the observation on Xu Guangqi's social network. *Asian Culture*, *37*, 2013, 47-61.
- Shi, X. (2014). Christian scholars' social network and the spread of Catholicism and West learning: With the example of Xu Guangqi. *The Reports of Graduates Students' Inquiry (Denzu Yikuekai)*, 7, 90-115.
- Song, H. (ed.). (2005). Lishi Shang de Xujiahui (Zikawei in history). Shanghai: Shanghai wen hua chu ban she.
- Tiedemann, R. G. (2009). *Reference guide to Christian missionary societies in China: From the sixteenth to the twentieth century.* New York: M. E. Sharpe.
- Von Collani, C. (2012). Lady Candida Xu: A widow between Chinese and Christian ideals. In J. G. Lutz (Ed.), *Pioneer Chinese Christian women: Gender, Christianity, and social mobility*. Bethlehem: Lehigh University Press.
- Wang, C. (2009) Xu Guangqi Jia Shi (Lineage of Xu Guangqi). Shanghai: Shanghai University Publication.
- Wu, R. (1997). Mingqing Shi qi Shanghai Diqu de Zhuxing Wangzu (Distinguished families in Shanghai during the Ming and Qing Dynasties). Shanghai People's Publishing House.
- Xu, Z. (1903). Fengjiao Gelao Yu Jiating (The Christian Prime Minister and his family). *The Catholic Magazine*, *11*(22), 26-33.
- Yang, Z. (1946). Yang Qiyuan Xiansheng Nianpu (A chronicle of Yang Qiyuan). Shanghai: Business Publishing House.
- Ye, M. (2007). Yue Shi Bian (Notes on seeing the world). Beijing: Zhonghua Book Company.
- Zhou, P. (2007). 17, 18 Shiji Tianzhu Jiao zai Jiangnan de Chuanbo (The propagation of Catholicism in Jiangnan area during the seventeenth and eighteenth centuries). Beijing: Social Sciences Academic Press.

Notes

Note 1. Regarding Calendar Reform, see Keizo Hashimoto and Catherine Jami, 2001.

Note 2. For details on the prior studies concerning Xu Guangqi, see Shi, 2012.

Note 3. I have published an article discussing the reception of Catholicism on the part of Ming scholars in Xu Guangqi's social network. See Shi, 2013.

Note 4. See, for example, Xu Zongze, "Fengjiao Gelao Yu Jiating" (The Christian Prime Minister and His Family).

Note 5. As I cannot presently obtain the original version, the Chinese translation of Augustin Colombel's *L'Histoire de la Mission du Kiang-nan*, trans. Zhou Shiliang will be used in this article.

Note 6. On the funeral Xu Guangqi held for his father and its significance in the history of philosophical thought, see Shi, 2013, pp.48-50.

Note 7. Ricci and Nicolas, 1953, pp.477-478. Also see the Japanese version of this text, *Chūgoku Kirisutokyō fukyō shi 2* (Iwanami Shoten, 1983), 194. Since the Japanese version is translated from Ricci's Italian manuscript, edited by Pasquale M. D'Elia, whereas *China in the Sixteenth Century* is translated from the Latin text amended by Nicolas Trigault, the contexts are sometimes different. By cross-referencing both versions, we can get a fuller picture.

Note 8. According to Colombel, Xu Erjue had intended to donate these lands to the church; however, the missionaries insisted on purchasing them. Colombel, 2008, p.191. Also see Anonymous, "Jingyitang," 87-90.

Note 9. For the state of research about Christian women in the old China Mission, see Von Collani, 2012, p. 225.

Note 10. Dunne, 2010, p.121. However, Dunne mistakes Xu Leshan's grandson for his son.

Note 11. For Xu Leshan's reception of Catholicism, see Huang, 2006, p.86, and Shi, 2013, pp. 51-54.

Note 12. For details on this Pan family, see Wu, 1997, pp.189-192.

Note 13. Fang Hao, 1988, pp.248-252. For Sun Zhimi, see Liu, 2009, pp.101-104.

Note 14. Ricci and Tregault, 1953, pp. 552; Colombel, 2008, p.150, quoting *Lettres de Jersey* (L'année de1885, Saint-Hélier) Livre Quatre, 337.

Note 15. For the various attitudes of Chinese literati toward Western learning, refer to Elman, 2005.

Note 16. For the details of the Chinese Rites controversy, see Minamiki, 1985.

Note 17. Sica. Annales domus Zi-ka-wei, p. 3. sq. P. Lemaitre, lettre du 3 Mai 1847. N. M. 2, 36 sq, quoted in Servière, 1914, p.113.

Note 18. P. Pierre Hoang's memoir collected in *Variétés sinologiqncs. Commentariolum de Ecclesia Lao tien tchou tang urbis Chang-hai, et de Cocmetcrio Patrum Sen mon tang,* in Archives de la mission du Kiang-nan à Zi-ka-wei, quoted in Servière, 1914, p.85.

Note 19. For details on the organizations and societies established in Xujiahui during the nineteenth century, see Tiedemann, 2009; Servière, 1914; Song ed., 2005.

Note 20. For the details of Xu Guangqi's descendants, see Wang, 2009, pp.156-240.

Note 21. Regarding the anthologies of Xu Guangqi, see Shi, 2012, pp.27-28.

Note 22. For details on the conversion of Li Zhizao's family, see Bartoli, 1825, Libro Terzo, pp.236-238; Ricci and Nicolas, 1953, pp.537-541. For details on the conversion of Yang Tingyun's family, refer to Ding, 1996; Bartoli, *1825*, Libro Terzo, pp.12-130.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/3.0/).