

## A Review on John Fryer's Scientific Translation in the Late Qing Dynasty

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### Abstract

John Fryer was a British missionary in the late Qing Dynasty who came to China and was employed by The Translation Department of Kiangnan Arsenal. He has been engaged in the translation work for over 28 years, not only having translated a great deal of Western scientific works into Chinese, but also having contributed greatly to the standardization of the scientific terminology translation. This paper first attempts to analyze the previous studies on John Fryer, and then tries to analyze the studies on scientific translation in the late Qing Dynasty. Based on the analyses, we come to a conclusion that a detailed and systematic study on John Fryer's scientific translation and his contribution to the standardization of translated scientific terminologies is greatly worth doing.

**Key words:** John Fryer; Scientific translation; The late Qing Dynasty

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### INTRODUCTION

John Fryer (1839-1928) is an English missionary and a great translator in the late Qing Dynasty (1840-1921).

Driven by his intense interest in China, Fryer came to Hong Kong in the year of 1861 to serve as the dean of St. Paul's College. And in 1868, Fryer was employed by The Translation Department of Kiangnan Arsenal as an editor and chief translator. During the 28 years on his job, with the help of his colleague Xu Shou (1818-1884), Fryer not only translated a great deal of Western scientific works but also illustrated his translation views. As the most productive one in the foreign translators of that time, Fryer translated more than one hundred Western books, concerning primarily with scientific works. For Fryer, translating Western scientific books into Chinese is a noble work which helps accelerate the process of people's scientific enlightenment in the late nineteenth-century China. In addition to his achievements in translation, Fryer also paid much attention to the standardization of translated scientific terms in modern China. He made his unceasing efforts to call for attention to this work, summarized the related problems, set up theoretical rules for the terminology translation, and made bilingual lists of scientific terminology for other translators' reference. Among all the translators in the late Qing Dynasty, Fryer was the most remarkable figure and the one who contributed most to the standardization of scientific translation (Wang, 2009, p.106).

### 1. PREVIOUS STUDIES ON JOHN FRYER

Based on the books and articles available, the previous studies on John Fryer can be roughly divided into two categories: general studies on John Fryer and studies on certain specific aspects of John Fryer.

#### 1.1 General Studies on John Fryer

Among all the studies on John Fryer, *The John Fryer Papers*, compiled by American scholar Ferdinand Dagenais (2010) is of great importance. Dagenais collects and sorts out a great deal of journals, letters, and essays

written by Fryer together with a number of reports and speeches delivered by Fryer, which constitute three volumes -- *The First Decade in China 1861-1871*, *Years in Jiangnan Arsenal 1872-1896*, and *The Berkeley Years 1896-1928*, giving us a panorama of Fryer's personal and professional life as well as providing a lot of valuable materials for the later studies.

In *John Fryer: The Introduction of Western Science and Technology into Nineteenth-Century China*, another American scholar Adrian Arthur Bennett (1967) makes a comprehensive study on Fryer and his efforts in the promotion of Western knowledge, covering mainly three parts: Fryer's early years in China; Fryer's role as a translator working for the Chinese government; and his contribution to the dissemination of Western knowledge through his own efforts. In the end of this book, Bennett concludes that Fryer's publications helped to introduce Western science and technology into the nineteenth-century China and greatly influenced the literati of that time.

David Wright (1996) makes a research on Fryer and his contribution to the dissemination of Western science in the late Qing Dynasty entitled *John Fryer and the Shanghai Polytechnic: Making space for science in nineteenth century China*. In his study, Wright firstly analyzes Chinese literati's unwillingness to learn from the West and "the walled academy" resulting from the atmosphere of Chinese intellectual self-satisfaction. Then, Fryer's translation works, together with other scientific popularization activities of the polytechnic, are explored. Finally, Wright comes to the conclusion that the Shanghai Polytechnic Institution, an educational institution established by Fryer, provided space for Western science, undermined the traditional views of the natural world, and promoted the Western science which led to the enlightenment and progress of modern China.

Liang (1896), a famous scholar in modern China, also lists most of the books translated by Fryer in his work entitled *Western Bibliography Table* (《西学书目表》) in which Liang highly praised Fryer's contribution and remarked Fryer's translation works as "very important". Wang (2000) gives a general study of Fryer and the role he played in the progress of the scientific enlightenment in modern China. Arranged chronologically, the study begins with Fryer's younger years in England and the first seven years he spent in China during which Fryer devoted himself to the educational career. Then are the 28 years Fryer spent in The Translation Department of Kiangnan Arsenal for which he worked as an editor and chief translator. The last part of Wang's study concerns Fryer's latter years in the University of California at Berkeley where he worked as a professor of Oriental Language and Literature. Wang's study is of great value to paving the way for later studies.

Wang (2006) conducts a research on Fryer and his translation career which consists of five parts --

the incentive of Fryer's devotion to the translation career, Fryer's job as a translator in Kiangnan Arsenal, the magazine *Ko-chih-hui-pien* edited by Fryer, Fryer's attitude towards scientific translation, and the significance of Fryer's translation. *From "Missionary" to Cultural Envoy: The Research on John Fryer* written by Yang (2004) is another paper dealing with Fryer's transformation from a Christian missionary to a cultural ambassador. In this paper, Yang mainly discusses the two ideological changes Fryer has undergone and then, based on Fryer's personal experiences, explores the reasons of this transformation, which makes it possible for readers to reconstruct Fryer's image as a translator and cultural envoy, and get a better understanding of Fryer and his contribution.

## 1.2 Studies on Certain Specific Aspects of John Fryer

Besides the general studies on Fryer, there are also some researches regarding certain aspects of Fryer, which could fall into the following categories: Fryer and his translation studies in modern China; Fryer and Western Learning; Fryer and his educational career in modern China; Fryer and newspaper industry in modern China.

### 1.2.1 John Fryer and His Translation Studies in Modern China

There are some researches dealing with Fryer and his translation studies, covering such aspects as Fryer's views on translation, Fryer's translation practice, and the significance of Fryer's translation work. Chen and Yin (2016) make a research collaboratively on Fryer's attitude towards the Chinese culture, pointing out Fryer's belief in the equality of the Western culture and the Chinese culture which greatly influenced Fryer's translation ideas, choices of source texts and translation strategies. Xia (2011) makes a comparative study between Fryer's attitudes towards translation and C. M. Mateer's. On the basis of this comparison, Xia comes to the conclusion that Fryer tends to put more emphasis on the Chinese tradition and language habits which makes his translation enjoy a better acceptability in China. In *Fryer's Principles and Ideas on the Translation of Chemical Terminology*, Zhang (2000) probes into the difficulties Fryer encountered and the strategies he adopted in translating organic and inorganic chemical terms. And at the end of the paper, Zhang emphasizes Fryer's contribution to the development of the Chinese language which was made by creating new Chinese chemical characters. Zhao (2007) analyzes the background, motivation, characteristics and influence of Fryer's selection of the source texts for his translation. She points out that, taking into consideration the translation purposes, the requirements of Kiangnan Arsenal and the educational level of common people in the nineteenth century China, Fryer has made good choices in material selection for translation. Also, there are some researches focusing on the significance and contribution of Fryer's

translation works. A case in point is the study made by Sun (2006), in which Sun explores Fryer's contribution to the translation cause in modern China, highlighting the important role Fryer played in the standardization of the scientific terminology translation.

### 1.2.2 John Fryer and Western Learning

In *The Dissemination of Western Learning and the Late Qing Society* (《西学东渐与晚清社会》), a book investigating into the Western Learning and its influence upon the society of that time, Xiong (1994) highly praises Fryer and the active roles he played in the dissemination of Western knowledge as a great translator, a promoter of science popularization as well as an editor of scientific textbooks. Shang (2008) also briefly mentions Fryer's relationship with the Western Learning in his book *The Missionaries and the Western Learning* (《传教士与西学东渐》, 2008), in which Fryer is regarded as "the master of Western Learning" and his contribution is explored mainly in such three aspects as the Shanghai Polytechnic Institution established by Fryer, the scientific magazine *Ko-chih-hui-pien* compiled by Fryer, and a great number of scientific works translated by Fryer in Kiangnan Arsenal.

Yu (2008) discusses the efforts Fryer made and the various means Fryer employed in the dissemination of the Western Learning and the popularization of modern science. In addition, Sun (2000) compares Fryer and W. A. P. Martin, another famous missionary in the late Qing Dynasty, in terms of the motivations and purposes of their coming to China, and the major events they have been engaged in China. And then Sun draws the conclusion that W. A. P. Martin is an aggressive missionary who serves for colonialism, whereas Fryer is a friendly cultural ambassador who promotes Western science in China.

### 1.2.3 John Fryer and His Educational Career in Modern China

Most of the researches regarding John Fryer and his educational career are associated with the educational thoughts Fryer held, the educational institution Fryer established and the textbooks Fryer edited.

In *Introduction of Western Science into China: A Study of John Fryer's Educational Thoughts*, Yang (2013) holds that the core of Fryer's educational thoughts is "to introduce Western science into China" and "to promote the science of nature in China", she further points out that Fryer has made a tremendous influence on the education system by introducing adult education and special education into modern China. Sun (1991) makes a research on Shanghai Polytechnic Institution, an educational institution established by Fryer whose aim is not only to promote the Western science, but also to cultivate scientific talents for China. In this research, Sun discusses the role Fryer played and the contribution Fryer made in the establishment and operation of the school, pointing out that the open classes and the

scientific essay contest advocated by Fryer helped greatly in the dissemination of Western knowledge. In his study regarding the School and Textbook Series Committee, a textbook publisher established by Christian missionaries in 1871, Ding (2013) argues that Fryer, as the editor-in-chief of this agency, has greatly contributed to the publication of scientific textbooks and the development of educational career in modern China.

### 1.2.4 John Fryer and Newspaper Industry in Modern China

The studies concerning John Fryer and newspaper industry are always related to the study of *Ko-chih-hui-pien*, the first scientific magazine in modern China compiled by Fryer.

Liu (2014) probes into Fryer's reader-oriented consciousness in the compilation of *Ko-chih-hui-pien*, regarding column setting, content arrangement and magazine publishing. Liu holds that by expanding journal scope, innovating advertising strategies and increasing editors' interaction with readers, Fryer laid a foundation for the development of China's modern sci-tech journals. Wang (1995) makes a close study on the contributors and editors of *Ko-chih-hui-pien*, pointing out that it was Fryer that contributed most to this magazine, then came the missionaries and Fryer's colleagues, and a few anonymous contributors also couldn't be ignored.

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## 2. PREVIOUS STUDIES ON SCIENTIFIC TRANSLATION IN THE LATE QING DYNASTY

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The previous studies on the scientific translation in the Late Qing Dynasty are conducted mainly in such aspects as the studies on translation institutions and translators in the Late Qing Dynasty, the studies on the factors influencing the scientific translation and the studies on the influence of scientific translation.

### 2.1 The Studies on Translation Institutions and Translators in the Late Qing Dynasty

Following are some scholars who devote themselves to the researches of the translation institutions and translators in the Late Qing Dynasty. Feng (2011) conducts a general study on the translation institutions and translators in the Late Qing Dynasty. In his book, Feng divides the scientific translation institutions in the Late Qing Dynasty into three categories: government-run translation agencies, such as the Translation Department of Kiangnan Arsenal (江南制造局翻译馆), T'ung Wen Kuan (京师同文馆), the Translation Department of Nanyang Public School (南阳公学译书院); Christian church-run translation agencies, such as London Missionary Society Press (墨海书馆), Christian Literature Society (广学会), School and Textbook Series Committee (益智书会); and private translation agencies, such as the Civilization Press (文明

书局), the Department of Translating and Editing of The Commercial Press (商务印书馆编译所) and so on. Feng also lists, in his book, some famous Chinese and foreign scientific translators like Xu Shou (徐寿, 1818), Hua Hengfang (华衡芳, 1833), Li Shanlan (李善兰, 1811), and John Fryer (1839), Alexander Wylie (1815), Young John Allen (1836), D. J. MacGown (1814) etc.. And then brief comments on their contribution towards the dissemination of Western scientific knowledge are given.

Ren (2006) makes a study on the Chinese and American Holy Classic Book Establishment (华花圣经书房), a publishing agency established by American missionaries in the Late Qing Dynasty, and elaborates on the social background, operation process and the significance of the published scientific works of this agency. At the end of her paper, Ren also provides readers with the agency's influence upon the dissemination of Western science in China. Zhang (2011) gives a study on T'ung Wen Kuan, the first official foreign language school in modern China whose aim is to cultivate foreign language talents. Zhang looks at the background of T'ung Wen Kuan and focuses on its teaching and translating process as well as its achievements and losses. At the end, Zhang comes to the conclusion that T'ung Wen Kuan played an important role in introducing Western learning into China and thus promoted the scientific enlightenment in the Late Qing Dynasty.

There are also some researches regarding the Chinese and foreign translators who devoted themselves to the scientific translation. Chen and Wu (2013) co-work on the study of Li Shanlan's scientific translation achievements concerning Mathematics, Botany and Astronomy. They argue that Li should be taken as the pioneer and founder of the modern science and technology in China. Zhang and Xie (2012) explore another famous Chinese translator Hua Hengfang's translation activities under the guidance of Even Zohar's polysystem theory. The topic is mainly discussed in three aspects: social and historical background, ideology and patronage. Taking three famous American missionary translators -- Young John Allen, W. A. P. Martin and John Glasgow Kerr in the 3<sup>rd</sup> Chinese translating climax as examples, Gao (2012) conducts a research on the missionary translation and its influence upon modernity of the culture and the society in the Late Qing Dynasty. In the thesis, Gao emphasizes American missionaries' contribution to the Chinese social modernization covering three aspects: their contribution to scientific translation, to the establishment of translation agencies and to modern textbooks compilation in the Late Qing Dynasty.

## 2.2 The Studies on the Factors Influencing the Scientific Translation

There are some researches regarding the factors influencing the scientific translation in the Late Qing Dynasty. David Wright (1996) explores the social

background in the nineteenth-century China. He points out that the change of the Chinese government and intellectual's attitude towards the Western science results from internal and external political forces. Suffered a series of internal disturbances together with the unequal treaties made in the two opium wars (1839-1842 and 1856-1860), the government of the Qing Dynasty came to realize the importance of science and technology. The military weakness and technological backwardness urged the authority to introduce Western science and technology into China, and the scientific translation thus was in great need.

Jiang (2009) analyzes the social ideological trends in the Late Qing Dynasty, namely, learning from the West (师夷长技), military strengthening and national prospering (强兵富国), constitutional reform and modernization (变法维新), and the enlightenment of the common people (开通民智), and then emphasizes the importance of the ideological changes which acted as a catalyst in the development of scientific translation in the nineteenth-century China.

In addition, from the perspective of system theory, He (2006) probes into the foreign missionaries' contribution to the translation cause in the Late Qing Dynasty, holding that in order to win the Chinese literati's support and spread the Christian culture, these missionaries attempted to remould the Chinese culture and the view of the world by translating Western scientific works into China. Objectively speaking, though the missionaries' translation activity is tinged with colonial color, their great contribution to the scientific translation in modern China could not be underestimated.

## 2.3 The Studies on the Influence of Scientific Translation

Feng Zhijie and Feng Kailun (2008) makes their study on the scientific translation in the Late Qing Dynasty and its impact upon the modern Chinese society, believing that the scientific translation, as a means of introducing the Western knowledge into China, contributed not only to the promotion of the scientific enlightenment, but also to the formation of modern science system in China.

Zhang (2010) studies the relationship between missionaries' scientific translation and the modern education, publishing industry and the unification of translated terms. As for the scientific translation and modern education, Zhang points out that the scientific textbooks which were translated from foreign scientific works promoted the standardization of modern textbooks and the development of modern education. In terms of scientific translation and the publishing industry, Zhang argues that the translated scientific articles taking up most volumes of scientific newspapers and journals enriched the content of publications. With regard to scientific translation and the unification of translated terms, Zhang holds that the bilingual scientific terms made by some

foreign missionaries, including John Fryer, had set a good example for the standardization and unification in translating terminologies.

## CONCLUSION

To sum up, from the previous studies on John Fryer, we can see that the scholars tend to give a general picture of Fryer's personal and professional experiences or focus on certain specific aspects of Fryer. Obviously, detailed and systematic studies on Fryer and his translation contribution are still lacking. From the previous studies on the scientific translation in the Late Qing Dynasty, we can find out that the number of researches dealing with the foreign missionaries' contribution to the scientific translation is fairly limited. And among the limited studies, only a few focusing on Fryer's contribution to the standardization of translated scientific terminologies, but not systematic or deep. Thus, there is much to be explored in this field.

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