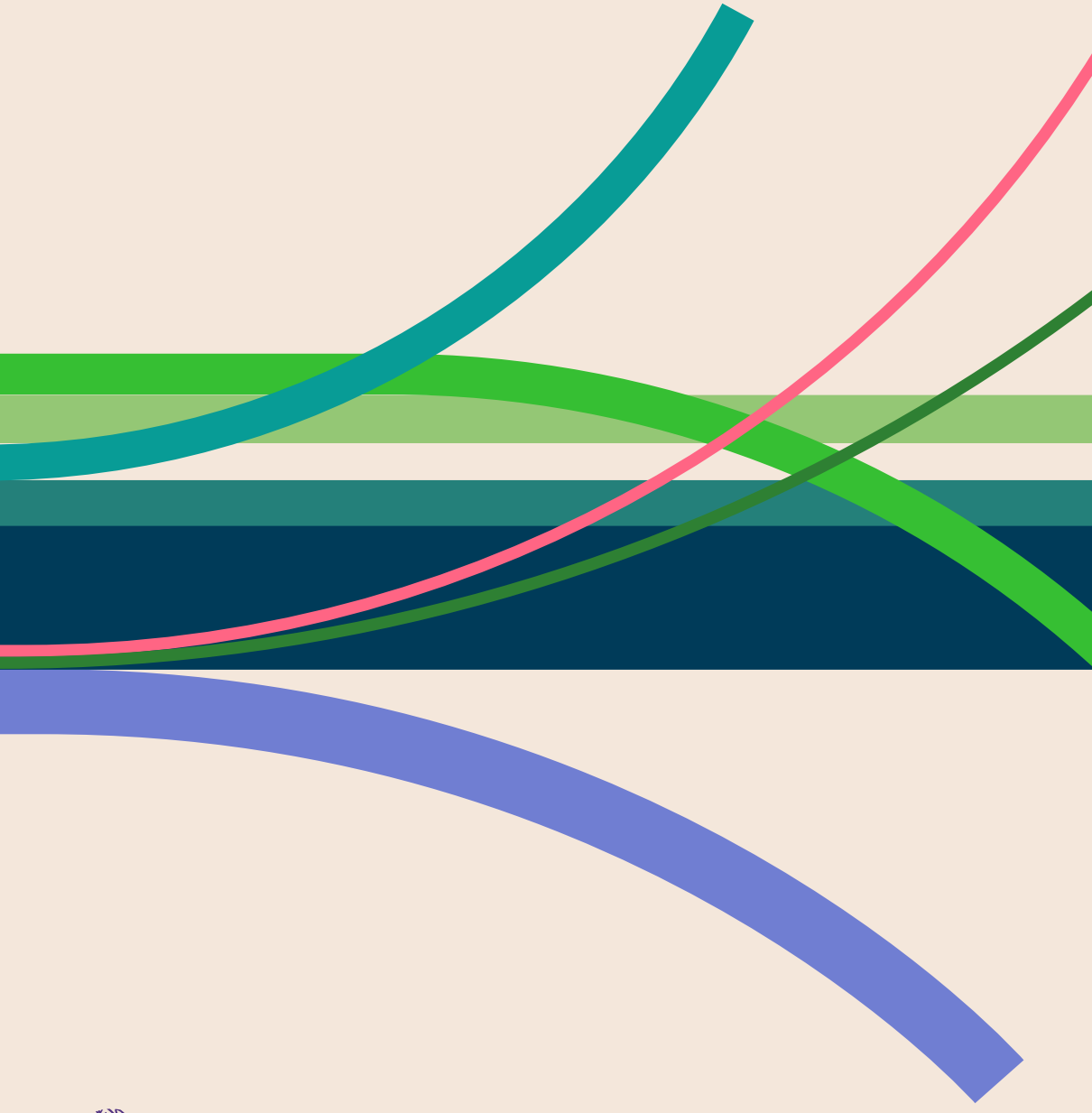
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edited by
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Spaces of circulation: Knowledge Production Between China and the West

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Due to a combination of academic, geopolitical, and economic factors, research into the production of new knowledge in and about China has significantly accelerated around the verge of the twenty-first century. Most studies on the period of the early Christian mission in China were based on the assumption that it were the very same actors – mainly missionaries and a very limited number of Chinese scholar-officials – who played an important role for the exchange in both directions. However, our understanding of the developments since the late nineteenth century until about the middle of the twentieth century has remained limited and highly fragmented. While the political and economic transformations of this era understandably have drawn much focus, the inter-connections and complex relationships as well as the role of intermediaries underlying these developments warrant greater attention than they have received so far. This is particularly important given the recent increase in the availability of primary sources, such as archival documents and personal memoirs, as well as the easier access to rare books.

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To make sense of these sources, new analytical tools and more sophisticated methodological approaches are necessary. Fortunately, we can draw on concepts developed within the rapidly growing academic field of the history of knowledge (Burke 2015). While earlier research was guided by concepts such as diffusion, dissemination, transfer, and centre-periphery relations – contributing significantly to valuable insights – the spatial and practical turns in scholarship have led to entirely new and inspiring approaches. It is difficult to discuss knowledge production without seriously considering *lieux de savoir* (sites of knowledge) as emphasised by Jacob (2017), and as demonstrated by several papers in this volume.

Christian Jacob's concerns in the "Sites of Knowledge" approach are, to some extent, reflected in Kapil Raj's compelling concept of "Spaces of Circulation." Raj argues that "circulation" itself can be viewed as a "site of knowledge" (Raj 2013, 345). Building on this idea, we understand the actors involved in knowledge production at these sites as forming emerging epistemic communities. Spaces of circulation are both social and physical. As an analytical concept, they acknowledge the unevenness and asymmetries between actors, while also fostering the emergence of normative similarities. Circulation encompasses processes of encounter, negotiation, reconfiguration, and transformation of knowledge (Raj 2007, 58). These "spaces of circulation" are marked by a high degree of dynamism and entanglement, in which knowledge production has an "incremental aspect" (Markovits, Pouchepadass, Subrahmanyam 2003).

As Raj and others emphasise, knowledge production of such kind is not possible without intermediaries or "go-betweens" (Schaffer et al. 2009). Their role is of central focus in this volume and in all case-studies it is understood as functioning in both directions. Yet, going beyond an understanding of 'go-betweens' as human actors only, we also consider texts and translations as having agency. People, texts, and translations all are travelling actors vital for the creation, imitation, innovation, and adaptation of bodies of knowledge.

The articles in this special issue show that botanists, translators, logicians, linguists, writers, engineers, biologists, Communist Party members, diplomats, philologists, scientists, customs officers, book printers, and sinologists all shaped and participated in spaces of circulation between Europe and China. A first group of papers (Jami, Li, Lioi, Münning) reveals the distributed agency between human actors in a continuous space of circulation. The protagonists, rather than being singular points along a trajectory between China and Europe, or being bound to a specific site, turn out to be in constant come and go, moving knowledge back and forth between various social and physical realms.

They also produced a considerable number of texts – letters, notebooks, printed material, marginalia – which we view as equally or

even more important agents in the processes of knowledge generation. Considering texts as agents was an approach already taken earlier. Renewing the history of libraries, Latour and Hermant (1996) put forward a reading of libraries as "computing centers", animating and articulating flows of information, which would later be at the heart of the theory of an actor-network (Romano 2014). For scientific texts more specifically, Callon, Law and Rip (1986) were also "suggesting that texts, often in combination with bodies or machines, constitute a crucial method of long-distance control." For our case, the control of knowledge. Integrating these insights on texts as agents into our model of 'spaces of circulation' allows us to even better understand the dynamics of the generation of knowledge between China and the West. A second set of contributions to this issue is therefore primarily concerned with the movement of knowledge materialised in the form of texts (Amelung, Bréard, Bussotti).

Furthermore, equally crucial to our approach and within the given timeframe is to emphasise the complexity of the 'translation' operations at work. Rather than understanding knowledge as an immobile abstract entity independent of language, we understand translation not only literally as a contact of languages (Mounin 1963, 7) but also figuratively as a transfer, both linguistically and geographically. It is "a creative act of generating meaning and constructing discourse" in translingual contexts (Howland 2005, 21), operating changes and having a certain impact on the receiving context. Within our theoretical framework, we seek to show that scientific, linguistic, literary, political, and technological knowledge about China is not the result of mere processes of unidirectional 'translation' from China to Europe and vice versa, but the outcome of processes of translingual and transnational co-production. The influence of or ignorance towards certain terms or ideas cannot be explained simply by their presence or absence in a dictionary, in a book, or in a library. They came into being through the interventions of subjects in language, culture, discourse, and media material. Our approach allows us to account for their success or failure by studying the social and linguistic contexts in which they emerge, the controversies and negotiations they are part of, and the heterogenous, sinuous, and bumpy roads they travel within spaces of circulation. The production of new terminologies is closely related to the shaping and reshaping of concepts in the emerging epistemic communities. This materialises, albeit not exclusively, in dictionaries. Dictionaries certainly influence the production of terminologies beyond their original linguistic boundaries and still form the nuts and bolts that sinologists are working with today. As a third set of articles (Chen, Pisano, Shen, Wippermann) demonstrates, translations shaped both sinology as an academic discipline and the terminologies that make it up simultaneously.

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People

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"An Old China Hand Who Loved the Chinese People": Herbert Chatley (1885-1955), Civil Engineer and Historian of Chinese Science and Technology

Catherine Jami
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Abstract Herbert Chatley (1885-1955) was one of the scholars on whose research and expertise Joseph Needham drew when writing *Science and Civilisation in China*. Chatley worked in China for three decades, first as a teacher in Tangshan 唐山, where he trained a number of Chinese engineers and scientists, then as an engineer in charge of the dredging of the Huangpu 黃浦 river in Shanghai. His scholarship spanned a wide spectrum of fields, and therefore belonged in various spaces of circulation, including not only the global community of engineering, but also that of knowledge about China pertaining to the history of science and technology, then mostly separated from academic sinology in the West.

Keywords Republican China. Engineering. History of science and technology. Astronomy. Joseph Needham.

Summary 1 Introduction. – 2 A Versatile Engineer. – 3 Teaching Civil Engineering in Tangshan. – 4 A Prominent Figure in Shanghai. – 5 Chatley and the "Old Knowledge of China". – 6 Chatley and the History of Chinese Technology. – 7 Relating to the Scholarly Community: Chatley's Interest in the History of Astronomy. – 8 Herbert Chatley and Joseph Needham. – 9 The Posterity of Herbert Chatley. – 10 "Old China Hands" and Knowledge About China.

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1 Introduction

> [T]he dominant idea of mathematical order and relation of effect to cause appears in the Chinese classics in so definite a form that several very striking analogies are presented between the native philosophy and modern science. (Chatley 1911b, 557)

To a historian of Chinese science, these lines evoke the view of the field's pioneer, Joseph Needham (1900-1995). In fact, he was still a schoolboy when they were written. Their author, Herbert Chatley (1885-1955, Chinese name Cha Deli 查得利), shared with Needham several features that were fundamental to the latter's work: a scientific training in Europe, a strong interest in pre-modern Chinese science and technology, and the reliance on Chinese historical sources to study them. There is, however, a stark contrast between Needham's fame and the obscurity of Herbert Chatley, whose name has, to the best of my knowledge, never been mentioned in accounts of the history of the knowledge of China in twentieth century Europe.

I first encountered the name of Herbert Chatley when reading *Science and Civilisation in China* (Needham et al. 1954-, hereafter *SCC*). Volume 4 part 3 (1971), devoted to civil engineering and nautics, is dedicated posthumously to the Chinese economist and historian Ji Chaoding 冀朝鼎 (1903-1963) and to Chatley.[1] The dedication to the latter reads as follows:

> Herbert Chatley, once Professor of Engineering at Thang-shan[2] College and Chief Engineer of the Huang-po Conservancy, an 'Old China Hand' who loved the Chinese people, historian of the engineers of Cathay and Manzi.[3]

I wish to thank Christopher Cullen for his advice on the history of astronomy. John Moffett, the Librarian of the Needham Research Institute, helped me locate materials kept there, some of which are not yet fully catalogued; figures 2 to 7 below are reproduced by kind permission of the Needham Research Institute. I am also grateful to the *China knowledge Networks* project participants for their comments on an earlier version of the present article, to Théophile Rabu (EHESS) for helping me find Herbert Chatley's Chinese name(s), and to the participants of the Needham Research Institute Seminar for their questions and suggestions. My thanks also go to Laurent Blondeau-Georges, of the Grande Chancellerie de la Légion d'Honneur, and to Carol Morgan, Archivist of the Institution of Civil Engineers (London). Yu Jia 余佳 helped me obtain Mao Yisheng's 1917 article. Thorben Pelzer kindly shared with me some materials he had collected at the MIT. Last but not least, I am grateful to the two anonymous reviewers for their detailed comments.

1 Ji was an economist and political activist. The book on the economic history of China that he published in Britain (Chi 1936) was quite influential.

2 Tangshan 唐山. Needham used a slightly modified version of the Wade-Giles transcription, in which he replaced the apostrophe by an 'h'.

3 Cathay refers to North China, Manzi to South China; on the Tangshan College and the Huangpu Conservancy Board, cf. below section 3.

As we shall see below, the expression "China Hand" aptly captures Chatley's status vis-à-vis both China and Britain. It refers to Britons (and later Americans) who had acquired some expertise on China by working there, either in the service of the Chinese government, or as businessmen, journalists, or diplomats.[4]

Chatley's name also appears in the bibliographies of no less than eleven volumes of *SCC*. My attention was initially drawn to him by the fact that he is one of the Western language authors most quoted in volume 3 of *SCC*. More specifically, no less than sixteen titles by him are listed in the bibliography corresponding to section 20, devoted to astronomy. His name also appears in the bibliographies of volumes 1, 2, 4.1, 4.2, 4.3, 5.2 and 5.3, all written by Needham himself, as well as in volume 5.9, written by Dieter Kuhn, in volume 5.13, written by Peter Golas, and in volume 6.2, written by Francesca Bray.[5] Furthermore, a search for Chatley's name in the catalogued archives of the Needham Research Institute (NRI) reveals that he was in correspondence with Needham from 1948 until Chatley's death in 1955, and that Needham occasionally exchanged letters with his wife and daughter until 1982.

As well as one of many who indirectly contributed to *SCC*, Chatley was also one of those Europeans who played a double role in China. He was a Western expert in the service of China on the one hand, and a China expert to Western historians of science on the other hand. His professional affiliations (first Tangshan College, and then the Whangpoo[6] Conservancy Board, Junpuju 浚浦局) in great part determined the spaces of circulation within which he constructed and shared his knowledge of China. In what follows, I will explore his career and his writings on Chinese science and technology, as well as his relationship with Needham.

Beside his abundant publications,[7] materials that enable one to study Chatley's career and work include his papers, which are now available at the Senate House Library of the University of London.[8]

4 The expression "China hand" originally referred to the first Britons to visit China or establish themselves there since the end of the eighteenth century (Caroll 2021). During World War II and the Cold War, it came to refer to Americans who worked in China for US intelligence.

5 Like Needham himself, D. Kuhn and F. Bray refer to Chatley's translation of chapter 3 of the *Huainanzi*; P. Golas quotes an article by Chatley and Wright (1913).

6 The Huangpu 黄浦 is the largest river flowing through Shanghai. It flows into the Yangtze River less than 50 km upstream from the sea: Chatley had crucial responsibilities in maintaining Shanghai's role as a main entry port into China.

7 A search in the catalogue of the Cambridge University Library yielded more than 60 different titles, ranging from letters to the editor of *Nature* to books.

8 "Herbert Chatley papers", Senate House Library, University of London; cf. `https://archives.libraries.london.ac.uk/resources/MS420.pdf`.

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These include notebooks, typescripts and some correspondence. They give us a glimpse of how he worked, and also of what appears to have been a worldwide network of correspondents. Some of the books from his collection relating to China, which he bequeathed to the Royal Asiatic Society, shed further light on his interests.[9] His correspondence, with Needham, and with a few other persons, is kept at the Needham Research Institute. Other letters are kept in various libraries and archives in the United Kingdom and elsewhere.[10]

2 A Versatile Engineer

Herbert Chatley was born on 17, 1885 in London, where he attended the Cambridge House Grammar School, and then the Northern Polytechnic Institution (Holloway, North London), from which he received his Bachelor's degree in engineering in 1906. For the next three years, he was a Lecturer in applied mechanics at the Portsmouth Technical Institute.[11] His birthplace, education and first teaching post strongly suggest that Chatley came from a much less privileged milieu than Needham, who attended a public school[12] and then the University of Cambridge, where he spent the rest of his academic career.

In 1907, Chatley married Nelly Loader Smith. That same year, at the age of 22, he published two books. *The Problem of Flight: A Text-Book of Aerial Engineering* (Chatley 1907a) is a short, richly illustrated work that he described as "an epitome of the knowledge available at present on the subject" destined for "the engineering profession". At the time, aeroplanes were still at an experimental stage, and as Chatley put it, one was "on the verge of a practical solution to this classic problem of flight" (Chatley 1907a, Preface, n.p.). This gives us a first glimpse of his active curiosity about matters that were not strictly speaking indispensable to his role as a teacher. Published in

9 A handwritten list of these books is found together with the correspondence between the librarian and the executors of Chatley's will; Royal Asiatic Society of Great Britain and Ireland (1823-, London, England), Correspondence regarding Chatley bequest, January 31, 1955-April 14, 1955. Royal Asiatic Society Collections Acquisitions Records. Royal Asiatic Society Archives. GB 891 RAS COLL3-RAS COLL3/7-RAS COLL3/7/2-RAS COLL3/7/2/4.

10 Archives kept in China include the archives of the Tangshan College, now at the South-Western Jiaotong University (Chengdu) and those of the Whangpoo Conservancy Board, preserved in the Archives of the Shanghai Waterways Office (Shanghai hangdaoju dang'an shi 上海航道局档案室).

11 Correspondence dating to 1908 kept in Chatley's papers at the Senate House Library indicates that his address in Portsmouth at the time was 32 Britannia Road, Southsea.

12 In Great Britain this phrase refers to elite, fee-charging private schools. Needham attended Oundle School, in Northamptonshire.

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London by C. Griffin & Co, who published a number of other books by Chatley, the work underwent two revised, augmented, editions, in 1910 and 1921, which suggests that it was quite successful. In 1911, another book by Chatley on the same topic, entitled *Principles and Design of Aëroplanes*, was published in New York by Van Nostrand as no. 126 in their *Science Series*. Sold for 50 cents, it attracted a severe review in *Scientific American*, as being outdated; the book nonetheless underwent a second edition the following year (Chatley 1911a; "New Books etc" 1911).

The second book Chatley published in 1907, entitled *How to Use Water Power* is, according to its author,

> not an exhaustive treatise, but a clear account of the methods and principles of Hydraulic Engineering as at present practised, in a form that can easily be grasped by the craftsman or student with limited knowledge of mechanics and mathematics. (Chatley 1907b, Preface, n.p.)

Compared with aeronautics, this is perhaps more central to the interests one would expect from a Technical Institute teacher. One might say the same about a third title, *How to Make a Survey*, mentioned on the title page of *How to Use Water Power* as authored by Chatley; the fact that no book with this title is found in any of the British copyright libraries suggests that it was never actually published (Chatley 1907b, cover page). Altogether, between 1907 and the 1930s, Chatley authored about a dozen books of the same kind on topics related to engineering and physics.[13]

Notwithstanding the opinion of the *Scientific American* reviewer, Chatley was a respected member of his professional community in his own country. In January 1906, he became a member of the Royal Society for the Encouragement of Arts, Manufactures and Commerce (known as the Royal Society of Arts) ("Ninth Ordinary Meeting" 1906, 298). He went on to give lectures at this Society, and to publish in its journal. In 1908, he joined the Aeronautical Society of Great Britain. He was admitted into the Institute of Civil Engineering, based in London, as an Associate Member in 1920, and then as a Member in 1928. He contributed seven papers to its meetings, and received Telford Premiums, money awards that ranged between GBP 15.00 and GBP 30.00, for four of them.[14] Altogether, his name occurred about

13 Six of them have been republished by Forgotten Books over the last decade; cf. https://www.forgottenbooks.com/en/search?q=Herbert+Chatley&w=a&l=0&Y=0&y=9999&P=0&p=9999&V=0&v=9999&i=0&g=0.

14 These papers all bore on topics relevant to his work as an engineer in Shanghai: "Silt" (1920-21); "Problems in the Theory of River Engineering" (1928-29); "The Principles of Drag-Suction Dredging" (1939-40); "Dredging Machinery" (1944-45)

thirty times in the *Journal of the Institute of Engineering* up to 1950, both as author and in discussions on published articles.

Evidence of Chatley's interests beyond his professional expertise first emerged in 1908, in the form of a seven-page article on "Mediæval Occultism" published in a renowned philosophical journal, *The Monist*. Referring to a number of French authors of the 1890s, and relying on both occultist and Christian religious literature, the article draws parallels between religious and magic cults, both characterised as tending to "produce assent to and realization of certain beliefs"[15] ("Ninth Ordinary Meeting" 1906, 298). The article concludes that there is, "if not the identity, at least a close analogy of religious cult, ceremonial magic, and auto-suggestion" (Chatley 1908, 516). Chatley's interest in occultism, of which there is plenty of evidence in his papers, may be regarded as eccentric. But it should be emphasised that there is nowhere any indication of his adhesion to it; his is, in his own words, "a sympathetic but critical treatment of belief and cult" (510). His article on "Mediæval Occultism" is of interest because it indicates to us that he did not share the prejudices prevalent at his time, that led many to describe what they found in China as 'superstition' as opposed to the beliefs and rituals that prevailed in Europe, that they labelled as 'religion'.

3 Teaching Civil Engineering in Tangshan

In January 1909, Chatley, then aged 23, moved to China to become a professor of civil engineering at the Tangshan 唐山 College of Mining and Engineering (Tangshan lukuang xuetang 唐山路礦學堂, founded in 1906),[16] a post he held until 1915. The College was then divided in three departments: civil, mechanical and electrical engineering. By 1912, it had produced about fifty graduates; unlike most higher

(Communication from Carol Morgan, Archivist, Institute of Civil Engineering, London). The two sums are equivalent to GBP 560 and GBP 1,120 respectively in today's currency (cf. `https://www.bankofengland.co.uk/monetary-policy/inflation/inflation-calculator`).

15 The abundance of notes on occultism in Chatley's papers bear witness to the fact that he closely read at least some of the sources quoted in this article.

16 The full English name of the institution given here is the one found in a document kept among Chatley's papers at the University of London Senate House Library, MS420/3/1, inserted in a notebook titled "General Notes on occultism, electro-magnetic waves &c". The Chinese name held by the College at the same time literally means "Tangshan College of Railways and Mines". Founded in 1896, the College changed names repeatedly, including twice during the six years that Chatley spent there (cf. `https://en.swjtu.edu.cn/ABOUT/History.htm`). This College is an ancestor of the Southwest Jiaotong University, based in Chengdu (Cui 2021; Will 2019, 98). The date of Chatley's arrival in China is mentioned by Lunt (1925, 41).

education institutions, the College was not much disrupted by the 1911 Revolution. The main impact of this event seems to have been a diminution of financial resources, which impeded the acquisition of the machine tools necessary for the students' training, and in particular for the aeronautical course that Chatley hoped to start. In 1913, the college had about 200 students. The teaching was in English;[17] the heads of the three departments were all British, and a good part of the equipment had been imported from Britain. This reflected the wish of British engineering firms to develop connections in China, and may well have been behind Chatley's own departure for China. Also in 1913, he published an article on "Technical Education" in the *Journal of the Royal Society of Arts*. He concluded it by asserting that "China is on its way to take its place among those Powers whose industry and progress entitle them to be called 'Great'" (Chatley 1913, 819). He sharply criticised foreigners, especially his compatriots, for underestimating the Chinese. While he did not deny the difficulties that the country's development encountered, such as corruption, he professed respect, and even admiration, for its inhabitants' achievements and capacities (818), as Needham would after him. In both cases, this open-mindedness predated their historical investigations into science and technology in early and imperial China, and was indispensable to make these investigations fruitful. This being said, Chatley's 1913 article also reads as a plea for further British investment in Chinese industrial development, at a time when the 1911 Revolution may have made investors reluctant, or at least cautious, in the face of political instability.

Chatley's students mostly went on to staff positions in railway companies. Some of them, like Xue Zhuobin 薛卓斌 (1895-1991) and Tan Zhen 譚真 (1899-1976), who both graduated from the Tangshan College in civil engineering in 1917, and therefore must have at least started their studies under him, pursued further studies in the United States.[18] Both of them returned to China with John Ripley Freeman (1855-1932), a civil engineer famous among other things for designing the Panama Canal, when the latter was appointed hydraulic engineer at the Grand Canal Improvement Board (Duban Yunhe gongcheng shiyi chu 督辦運河工程事宜處) in 1919.[19] Xue later became Chatley's Assistant Engineer at the Whangpoo Conservancy Board, and then succeeded him as Engineer-in-Chief in 1937 (Yi et al. 2018,

17 A few teaching materials are preserved in Chatley's papers at the Senate House Library, including a notebook entitled "Engineering College, Tangshan, Civil Engineering Department, Mechanical Laboratory, Practical Instructions"; MS420/3/1.

18 Cf. Pelzer 2023, 32, and *passim* for the careers of Xue and Tan.

19 Papers of John Ripley Freeman, Box 130. MIT Libraries Distinctive Collections, MC.0051. On Freeman's work on the Grand Canal, cf. Pelzer 2023, 57-62.

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84). Tan eventually taught at the Tangshan College and in other Chinese higher education institutions.

Others among Chatley's former students went to the United States at a later stage of their careers. This was the case of Yu Mingde 余明德 (1893-?), who graduated from the College in 1913. When he travelled to America in 1924, Yu brought, among others, a recommendation letter from Chatley for Freeman. While this letter is evidence that Chatley kept contact with his former students after he moved to Shanghai, and was ready to support them, its terseness suggests that he was not well acquainted with either Yu or Freeman. The warmth of the latter's reaction to Chatley's recommendation is all the more striking:

> I have noted with great interest that you have studied under Dr Chatley. He sends me from time to time some of his publications which I judge about the best scientific presentations of the problems of silt which have appeared anywhere in the world. I only wish that Dr Chatley had returned to England by way of America and had made me a visit.[20]

Thus, Chatley and his former students were all integrated into what was effectively a global network of engineers connected to China, which allows a glimpse at a global space of circulation of Chatley's publications as an engineer.

Perhaps the most famous among Chatley's former students who went on to study in the United States was Zhou Houkun 周厚坤 (Chow Hou-Kun, 1890-after 1959). Best known as the inventor of the Chinese typewriter (Mullaney 2018, 137-46) Zhou studied at the MIT from 1912 to 1916. There he conducted experiments that led to a thesis entitled "Bamboo as a Reinforcing Material for Concrete". Chatley referred to this thesis in a paper he delivered in 1916, which shows that he kept in touch with the work of his former students, and had an interest in possible innovations coming from them (Shu 2021).

Among the students of Tangshan College during Chatley's tenure, there were others who later became famous. Mao Yisheng 茅以昇 (1896-1989), the most renowned bridge builder in twentieth century China, graduated in 1916. Zhu Kezhen 竺可楨 (1890-1974), a meteorologist who was President of the National Chekiang University from 1936 to 1949, studied at the College from 1909 to 1913. Li Yan 李儼 (1892-1963), a pioneering scholar in the history of Chinese mathematics, who earned a living as an engineer for many years, studied at the College from 1912 to 1913. All three names are familiar to historians of Chinese science and technology, the last two having

20 Papers of John Ripley Freeman, Box 130. MIT Libraries Distinctive Collections, MC.0051.

contributed in major ways to establishing the field in China.[21] Mao Yisheng also had an interest in the subject. In 1917, he published an article on the history of the number π in China; in a short foreword to the article, Mao pays homage to Li Yan's work, and states that his own wish to write on the history of π goes back to his days as a student at the Tangshan College (Mao 1917, 411).[22] One of Zhu Kezhen's contributions to the history of science will be discussed below. It is interesting to note that Chatley's interest in the history of Chinese science and technology was shared at least by some of his most illustrious students, although we do not know whether they discussed the topic together while he was their teacher.

It was during his tenure at the Tangshan College that Chatley completed his doctoral degree at the University of London: he became a DSc in 1914, with a dissertation on rolling friction and convex contact, a topic well suited to the fact that he taught future railway engineers.

4 A Prominent Figure in Shanghai

After six years at the Tangshan College, Chatley turned to working as an engineer. From 1915 to 1916 he served as District Engineer with the Nanking-Hunan Railway.[23] In 1916, he moved to Shanghai, where he was appointed Assistant Engineer at the Whangpoo Conservancy Board, the institution in charge of maintaining the Huangpu River at Shanghai and the mouth of the Yangzi River, which was jointly managed by China and foreign powers.[24] By 1925, he was Acting Engineer-in-Chief, and in 1928 he was promoted to Engineer-in-Chief, serving in that last post until he left China in 1937, the same year the Second Sino-Japanese War started. There he supervised

21 Cf. https://en.swjtu.edu.cn/Alumni1/Notable_Alumni.htm; in a letter to Needham dated September 3, 1948, Chatley mentions that Zhu Kezhen "was one of [his] old Tangshan students". Needham Research Institute Archives, Joseph Needham's book sale, uncatalogued.

22 Mao also had an interest in the history of Chinese bridge-building technology (Mao 1986).

23 A British firm obtained a concession for building this railway in 1914; cf. *The Brisbane Courier*, April 4, 1914, 5; cf. https://trove.nla.gov.au/newspaper/article/19946067.

24 The Whangpoo Conservancy Board was founded in 1905, following the Boxer Protocol signed in 1901. It was jointly supervised a Chinese and a Westerner of the Shanghai Customs. From 1920 to 1943, The Board compiled and published reports on the harbour and port of Shanghai; cf. Yi et al. 2018; Friedman 1940, 36-7, on the reorganisation of the Board in 1912.

important dredging works (Lunt 1925, 41)[25] and also worked on a number of reports.[26]

The responsibilities held by Chatley's in Shanghai are illustrated by an anecdote recounted on the "History of the Chinese Communist Party in Shanghai" website. The hero of this anecdote, Yang Junsheng 楊俊生 (1890-1982), who trained as engineer in Japan, was inspired by Sun Yatsen to start a shipbuilding company in Shanghai. In 1930, the lease of the land on which Yang's Great China Shipbuilding Machinery Factory (Da Zhonghua zao chuan jiqi chang 大中華造船機器廠, founded in 1926) was built was not renewed, and the factory had to be relocated. He then sought to rent a piece of land from the Whangpoo Conservancy Board, but was only granted less than 20 *mu* of land (about 1.3 ha), in an inconvenient location, for his new factory. He then went to see Chatley, who answered his request by saying: "Your factory only repairs small boats. A piece of land like this one will do". As one might expect in a stereotyped piece of propaganda, this response only strengthened Yang's determination to build large ships ("Yang Junsheng de 'Zhonghua' meng" 2022). This anecdote, evidently intended to praise Yang Junsheng's dream, casts Chatley in the role of the evil foreigner serving Western imperialism. This being said, it brings to the fore the fact that, unlike the Tangshan College, the Whangpoo Conservancy Board was not controlled by Chinese, and was not primarily concerned with Chinese sovereignty, but rather with the economic interests of the various foreign powers present in Shanghai (Ye 2015; Gong 2021). In this context, it is hardly surprising that today's propaganda disagrees with Needham's characterisation of Chatley as someone "who loved the Chinese people".

Chatley's social rank was no match to that of his predecessor in the post of Engineer-in-Chief: Captain August Verner Hugo von Heidenstam (1884-1966, Chinese name Hai Desheng 海德生), who held the post from 1910 to 1926, was a Swedish aristocrat and diplomat, as well as an engineer.[27] Nonetheless, Chatley seems to have been quite a prominent figure in Shanghai. The 1922 edition of the *Who's Who in China (Foreign)* mentions that he was then the President of

25 The works he supervised were valued at GBP 100,000 (equivalent to about GBP 5.25 million in today's currency) and involved 3,000,000 cubic yards annually in 1928. Cf. https://archives.libraries.london.ac.uk/resources/MS420.pdf, 1.

26 From 1920 to 1943, the Board produced reports regarding the harbour and port of Shanghai. Cf. https://www.gale.com/c/service-lists-and-reports-of-the-chinese-maritime-customs-service-and-whangpoo-conservancy-board (2024-05-10).

27 Cf. Obituary. August Werner Hugo von Heidenstam, 1884-1966" (1967). Chatley mentions him in his paper on "Silt" for which he received his first Telford Premium (Chatley 1921). Chatley's papers contain a draft of a letter in Swedish to von Heidenstam from 56 Victoria Road South, Southsea (Portsmouth), presumably Chatley's parents-in-law's address, dated July 7, 1922 (during one of Chatley's trips back to Europe). MS 420/2/3.

the Aeronautical Society of Shanghai, and at the same time, the President of the Quest Society (founded in 1909 by a group of people with an interest in theosophy) (Lunt 1922, 63); this is consistent with his interest in occultism, to which his papers bear ample witness.[28] In the same edition of the *Who's Who in China*, we also learn that he had earlier been the Master of the Tongshan Masonic Lodge,[29] and that he belonged to the Shanghai Tuscan Lodge (founded in 1864), which he represented on the Executive Committee for the Masonic Hall in Shanghai (63). Freemasonry had by then been present in China for several decades. Chatley owned three books on the subject.[30] The most remarkable one is a lecture given by Herbert Giles on June 1, 1880 to the Ionic Lodge of Amoy (Xiamen, Fujian), simply entitled "Freemasonry in China".[31] In this lecture, Giles discussed evidence of the importance of the symbolic masonic tools, the square and the compass, in early Chinese sources, and described the mythical Pangu 盤古 as the Chinese "Great Architect of the Universe", taking up the Masonic term used to refer to the Deity (Giles 1880, 26). The lecture's purpose was to provide evidence concerning "any Masonic connection between China and the West". It contained numerous quotations from Chinese sources that mentioned the square and compasses, the best-known Masonic symbols, in a metaphorical way (33-4). The sketch of the famous representation of Fuxi 伏羲 and Nüwa 女媧 found in one of Chatley's notebooks **[fig. 1]**, in which the two deities respectively hold a try square and a compass, nicely illustrates the convergence between his Masonic culture and his interest in "the old knowledge of China".[32]

We have seen that Chatley's interest in occultism predated his departure for China (Chatley 1908). It remained historical and

28 He was also the President of the Engineering Society of China from 1927 to 1929, and the chairman of the Shanghai Association of the British Institution of Civil Engineers; cf. Shu 2021, 97.

29 This was lodge no. 3001, Province of North China; it closed in 1953. The spelling "Tongshan" for Tangshan is also found in the issue dated December 29, 1888 of *The Freemason*, 771, which reports the inauguration of the Tianjin to Shanhaiguan 山海關 railway ("Masonic and General Tidings" 1888). Cf. `https://masonicperiodicals.org/static/media/periodicals/119-FVL-1888-12-29-001-SINGLE.pdf`.

30 They are found among Chatley's books bequeathed to the Library of the Royal Asiatic Society in London. This Library's catalogue only includes three books said to be part of the "Chatley bequest". A list of about 30 titles, all in English, gives an idea of what was sent to the Royal Asiatic Society after Chatley's death. Interestingly, this list includes Ji Chaoding's book on Chinese economic history that Needham held in high regard (Ji 1936).

31 Herbert Allen Giles (1845-1935) was a British diplomat who became the second Professor of Chinese at the University of Cambridge.

32 Fuxi and Nüwa are two deities of Chinese mythology. Chatley's sketch reproduces a widely known rubbing from an Eastern Han dynasty (25-220 CE) tomb mural.

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ethnographic. Some of the notes found in his papers suggest that in his view, science in general and mathematics in particular provided tools that would eventually account for matters so far dealt with by other disciplines or by religion and occultism.[33] Such a view is consistent with his search for knowledge valid by the scientific standards of his time in sources that were (and still are) deemed as non-scientific, be they early Chinese texts or occultist writings. Both his publications and his private papers bear witness to this search. This being said, one cannot but wonder where Chatley would have located Masonic rites in the spectrum which included religious and magic cults defined in his 1908 article.

As indicated above, Chatley, beside his prominence in the Shanghai society, also remained an active member of the international academic and engineering community. During his career in China, he authored a large number of articles, published in a wide variety of journals. Beside the *Journal of the Institution of Civil Engineering*, he also was a regular contributor to the "Letters to the Editor" section of *Nature*: out of his sixteen contributions to the latter journal between 1908 and 1940, fourteen were published as "Research" and two as "News". Moreover, he contributed papers to a number of British, China-based and international conferences. Thus, he appears on the group photo of the members of the Royal Aeronautical Society taken in the UK on September 30, 1927 (Pilmer 2020). On 13, 1936, he gave the Chairman's address to the Shanghai Association of Civil Engineers, upon being re-elected for a third and final term in that position. But he was also President of the North China Branch of the Royal Asiatic Society in 1931-32 ("Presidents of the Royal Asiatic Society, N.C.B." 1948), which indicates that he was not only active in his profession, but had also won some recognition among knowledge of China circles. The remaining sections of the present article will be devoted to his role and visibility in the latter space of circulation.

Upon his retirement from the Whangpoo Conservancy Board in 1937, Chatley was awarded the Order of the Brilliant Jade (*Caiyu da xunzhang* 采玉大勳章, established in 1933) by the Republican government; he then moved back to London where he worked as a private consultant. During World War II, he became Superintending Civil Engineer at the Department of the Civil Engineer of the Admiralty; this may have been when he settled in Bath.[34] There he contributed to the development of the Mulberry harbours, temporary structures which facilitated the offloading of cargo during the Allies' landing

33 Cf. for example Senate House Library, University of London, MS420/3/1, notebook 6, last two pages, a note on Kant's *Critique of Pure Reason* where consciousness is expressed as a quadruple integral.

34 Senate House Library, MS420/3/4.

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in Normandy in 1944. For this, he was made an officer of the French Legion of Honour in 1947.[35] Chatley resided in Bath until his death on January 14, 1955.[36] His exchanges with Needham, through which he came to our attention, seem to have taken place during the last decade of his life.

5 Chatley and the "Old Knowledge of China"

Chatley's investigations into the history of Chinese science and technology are best understood in the context of his career in China, and of his intellectual pursuits within and beyond his profession. Some notes on Chinese science and technology are found in his notebooks kept at the University of London Senate House Library. His record of publication in that field is as striking as that relevant to his profession, albeit not as long. The earliest of these publications is, to the best of my knowledge, an article entitled "Chinese Natural Philosophy and Magic", which appeared in the *Journal of the Royal Society of Arts* where it is dated Friday, April 21, 1911, that is, two years after he started teaching in Tangshan (Chatley 1911b). This article is interesting in two respects. Firstly, it shows that at the time Chatley was already confident enough of his knowledge and understanding of the Chinese scholarly tradition to give a description of "the Chinese Theory of the Universe" according to the Song Neo-Confucian philosopher Zhu Xi 朱熹 (1130-1200), and to argue that there were Shamanistic features in the initiation rituals of some religious practitioners in China. Chatley writes as someone who has direct access to Chinese premodern sources, and quotes J.J.M. De Groot (De Groot 1892-1910) as well as missionaries who had written on China. Secondly, the opening paragraph of the article reveals Chatley's view on Chinese knowledge:

> Within the last few years there has been a rapid assimilation of Western science by the intellectual classes of China, and it may perhaps be feared that, as in Japan, the old knowledge of China is being forgotten. It is, nevertheless, quite demonstrable that the

35 The Légion d'Honneur's file of foreigners mentions: "Par décret du 24 juin 1947, la nomination au grade d'officier de la Légion de M. Herbert Chatley, Britannique, en qualité de 'Superintending civil engineer, civil engineer in chief's departement Admiralty'". This indicates that Chatley held a quite high post of responsibility.

36 Chatley died of a brain tumour (NRI Archives, GBR/1928/NRI/SCC4/1/26). This biographical sketch in based on two obituaries, one published in the *Proceedings of the Royal Institution of Civil Engineering*, 4(4) (1955), the other in the *Monthly Notices of the Royal Astronomical Society*, 116 (1956), and on information sent to Needham by Nelly Chatley with a letter dated June 10, 1955.

> early Chinese ideas as to cosmogony and physics have a basis far sounder than that of the Greek philosophy, which was so long the pabulum of the European scholars. In fact, the dominant idea of mathematical order and relation of effect to cause appears in the Chinese classics in so definite a form that several very striking analogies are presented between the native philosophy and modern science. (Chatley 1911b, 557)

This article, dated to April 1911, reveals its author's good command of classical Chinese; it is possible that he had begun to acquaint himself with the language and the sources before he left for China in 1909. The article is quite descriptive; it discusses "natural philosophy" and "magic" (some aspect of religion and religious rituals) separately, rather than connecting the two topics. As mentioned above, the view of Chinese knowledge expressed in it is consonant with that expressed by Needham who would later contrast two world views: Chinese "organicism" and Western "mechanism", and argue that the former was more in line with the findings of modern science (Needham 1969). Although a 'sound basis' of ancient worldviews according to modern science is no longer something historians seek in their reading of the sources that Chatley mentions in this article, his interest in and respect for the "old knowledge" they contain are quite striking. In that respect, there appears to have been some convergence between him and some of his Tangshan students mentioned above, Zhu Kezhen, Mao Yisheng and Li Yan.

This article was the first of a long series of publications on the history of science and technology in China. More than thirty articles by Chatley are kept in the off-print collection of the Needham Research Institute. They were collected by Needham himself; there is a dedication by Chatley on the front page of some of them. Many of them discuss the history of astronomy: his interest in it went beyond China. Several papers focus on Ancient Egypt. There is also a comparison between the Maya calendar and the Chinese system of counting the days. The offprint collection also contains a typescript translation of chapter 3 of *Huainanzi* 淮南子 (The Masters of Huainan, second century BCE), entitled *Tianwen xun* 天文訓 (Teaching on heavenly patterns). This translation was used not only by Needham, but also by Dieter Kuhn and Francesca Bray in their respective volumes of *SCC*. It is listed among the account of earlier *Huainanzi* translations in the complete translation of the book by John Major et al, which suggests that Needham and his collaborators were not alone if finding it of some value (Major et al. 2010).[37] A number of articles in the

37 It is likely that Major had access to the copy of this translation kept at the Needham Research Institute.

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same collection focus on the history of Chinese technology, in which Chatley was both an actor and an observer. He was recognised in the second role while working in China in the first one: it is in this second role that, as mentioned above, he was elected Chairman of the North China Branch of the Royal Asiatic Society in 1931 ("Presidents of the Royal Asiatic Society, N.C.B.", 1948).

6 Chatley and the History of Chinese Technology

An article on "The development of Mechanisms in Ancient China," which was read at the Royal Asiatic Society in London on February 11, 1942, opens in a way that echoes the words quoted above on old Chinese knowledge:

> One of the commonest reactions of the older Chinese scholars to the mechanical technique of the West has been the assertion that the Chinese themselves had originated machines in the past and that the principles of the new devices and of physical science in general are all to be found in Chinese ancient literature. Some Western scholars of eminence (e.g. Prof. H.A. Giles) have partially accepted this broad claim, whilst others have rejected it altogether. (Chatley 1941, 117)

Chatley then argues that the "older Chinese scholars" are right, drawing on Chinese written sources to identify devices similar to those found in Europe. He first gives a historical overview, referring both to extant mechanical devices and to works in which they were described. He then goes on to consider a number of devices, some of which he briefly compares to similar ones found in other regions of the world. The article is illustrated: a note mentions that the presentation was accompanied by lantern slides, only a few of which, namely figures 47 to 54 and plate XIII, are included in the publication. The figures "were supplied to the author by Mr. Wang Yen, who stated that they were taken from Wang Chen's *Nungshu* (*Wang Zhen Nongshu* 王禎農書), published in 1314 and last printed in 1617". These images are quite similar to illustrations found in Song Yixing's 宋應星 (1587-1666) *Tiangong kaiwu* 天工開物 (The Exploitation of the Works of Nature, 1637), a work on which Chatley did some research.[38] As is well known, the illustrations of Chinese books on technology were often copied from earlier books. In any case, this suggests that when Chatley worked on this piece, he did not have access to the sources he mentions in it. Plate XIII is composed of two photographs: "Chinese

38 On the *Tiangong kaiwu*, cf. e.g. Schäfer 2011.

water lift wheels on a river in Hunan Province", dated 1934, and "Chinese Windmill, from the Salterns near Tientsin", dated 1940. Although the latter cannot have been taken by Chatley himself, these images emphasise his status as a direct eyewitness of Chinese technological devices still functioning at the time when he wrote the article, and as a scholar who combined the study of written sources with fieldwork.

Limited access to the *Tiangong kaiwu* 天工開物 may also have prompted Chatley to keep a record of its contents and a list of its illustrations. An unlabelled notebook of his starts with the table of contents of *Tiangong kaiwu*, with an English translation of all the headings and the Wade-Giles romanisation of some of them. This is followed by a nine-page long list of the illustrations contained in the same book, in each case with an English title and in most cases also with their Chinese title. There is no date on the notebook.[39] In the same folder as this notebook, one also finds a handwritten copy of the part of the section of *Tiangong kaiwu* on "Making Salt" (*Zuo yan* 作鹹) devoted to brine wells, with an interlinear word for word translation.[40] This translation is written on the reverse of typewritten correspondence, some of which is dated to 1947, which gives us a *terminus post quem* for Chatley's translation. In a letter he wrote to Needham on 2, 1952, he acknowledges receipt of some written material from the latter, stating that "[he thought] this [would be] quite adequate for the 'History of Technology', on the subject of brine wells".[41] It could be that Chatley's interlinear translation was produced in direct connection with Needham's writings on the subject.

This translation, and the fact that Chatley cites one of his own articles, dated to 1923, in his "Bibliography of Chinese Mechanisms",[42] indicates that Chinese technology was a long-term interest of his.

7 Relating to the Scholarly Community: Chatley's Interest in the History of Astronomy

Another topic to which Chatley devoted extensive research over decades is the history of astronomy, which seems less directly related to his profession. As mentioned above, it was the fact that volume 3 of

39 Senate House Library, MS420/2/1.

40 Senate House Library, MS420/2/1.

41 NRI Archives, GBR/1928/NRI/SCC2/124/5/2. Section 37 of *SCC* has yet to be written; there are, however, many references to the Sichuan brine wells in *SCC* 4-2, devoted to mechanical engineering.

42 P. 133 of the Bibliography. I have not been able to access this earlier article (Chatley 1923), published in Shanghai.

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SCC quotes more than fifteen pieces by Chatley relating to the history of Chinese astronomy, published between 1933 and 1943, that first drew my attention to him (*SCC* 3, 751). His interest in the field was not limited to China: we have seen that he also published on Egyptian astronomy. The issue of knowledge circulation underlaid this broad curiosity, and, as on other topics, he expressed his views in print on several occasions. Thus, in 1934, he wrote a letter to *Nature* pointing to the differences between the Maya calendar and the Chinese calendar, arguing against Dr Kiang Kang-hu who felt "able to bring forward a number of instances, in which he sees resemblances between the two civilisations, for the further scrutiny of specialists," and who suggested that the Maya were at the very least "culturally related" to the Chinese (Chatley 1934). Chatley's criticism was based on the difference between the day counts of the two systems. Such a focus on technical details is characteristic of his approach to ancient Chinese astronomy, which relied on primary sources.

This taste for precise facts rather than general statements is also apparent in an article published in 1939, in which thirteen "salient features" of ancient Chinese astronomy are listed (Chatley 1939, 66). This article, more of a "state of the field" than an original contribution, confirms that Chatley was able to keep up to date with what sinologists and historians of astronomy had published. Most of the predecessors he lists in this article are European. Some of them were well-known sinologists: Édouard Chavannes (1865-1918), Henri Maspero (1883-1945), Léopold de Saussure (1866-1925),[43] Wolfram Eberhard (1909-1989), Homer H. Dubs (1892-1969, who taught among other places at Duke, Columbia, and Oxford). The name of Walter Perceval Yetts (1878-1957), a surgeon who was a collector of Chinese bronzes and became a Lecturer at SOAS in 1930, is perhaps less well-known. Chatley also mentions John Knight Fotheringham (1874-1936), a historian versed in ancient astronomy and chronology, who established the chronology of Babylonian dynasties. Three Japanese scholars are named in the same list. The first one is Shinzō Shinjō 新城 新蔵 (1873-1938), the founder of the Department of Astrophysics at Kyoto Imperial University, who wrote extensively on the history of Chinese astronomy; he was the president of the University from 1929 to 1933. The astronomer Ueta Jō 上田 穣 (1892-1976, also known in English as Joe Ueda), who studied under the former and became a Professor at Kyoto Imperial University, is also mentioned, for his article on *Shishi xingjing* 石氏星經 (Star Manual of Mr Shi), a text whose title is mentioned in the 2nd century BC historical work *Shiji* 史記 (Records of the Grand Historian). The third Japanese scholar

43 De Saussure is the most quoted author in the section of *SCC* devoted to astronomy, with about 40 titles mentioned in the bibliography.

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mentioned is Iijima Tadao 飯島 忠夫 (1875-1954), who authored a number of works on ancient Chinese astronomy. Chatley states in passing that "Several Chinese scholars, instructed in Western methods of criticism, have done useful work," but does not mention any of their names (Chatley 1939, 66).

This brings out an interesting question: how much did Chatley know about the work of Chinese scholars on the history of science done in the 1920s and 1930s? I have not found any Chinese names mentioned in those of his articles that I have consulted. The case of Zhu Kezhen is interesting, as it appears to be one of mutual ignorance. In 1926, Zhu published an article in which he undertook to ascertain the date of the *Yaodian* 堯典, the first section of the *Shujing* 書經 (Book of Documents) using the precession of equinoxes (Zhu 1926). Such a use of astronomy to critically investigate the Classics is highly evocative of Chinese evidential scholarship (*kaozheng xue* 考證學) of the late imperial period. Although Zhu's calculation methods must have been drawn from the science he learnt at Tangshan College and elsewhere in the academia of his time, it is less than certain that he would have needed "methods of criticism" uniquely Western to write on this subject. I have yet to find a reference to this article or to any other by Zhu Kezhen in Chatley's writings. Moreover, in a letter to Needham dated September 3, 1948, Chatley wrote:

> I had seen [Zhu Kezhen's] article [on the 28 lodges (*xiu* 宿)] in "Popular Astronomy". It is rather surprising that he doesn't refer to my papers as he is one of my old Tangshan students. Probably owing to the war he hasn't come across them.[44]

This is a reference to Zhu Kezhen's well-known article on the origin of the 28 lodges, first published in Chinese in 1944.[45] The English translation that Chatley read appeared in the American journal *Popular Astronomy* in 1947 (Chu 1947). Interestingly, this translation was first envisaged in the context of an English language edited volume on the history of astronomy. On 24, 1945, the chemist Zhang Zigong 張資珙 (1904-1968, who signed his name D.K. Djang in English), who was at Christ's College in Cambridge, informed Needham, then in Chongqing, about a plan to "translat[e] literatures on history of Chinese Science". He mentions that two papers translated by a Mr. C.Y. Hsieh "will form part of the Collection of Essays on History of Chinese Astronomy and Calendar Making, a volume proposed to be published sometime during the middle of next year". He adds that he is

44 Needham Research Institute Archives, Joseph Needham's book sale, uncatalogued.

45 The article was published in two journals: *Sixiang yu shidai* 思想與時代 34(1) and *Qixiang xuebao* 氣象學報 18(1); quoted in *SCC* 3, 725. It was reprinted in Zhu 2004.

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> entrusting the final editing of this volume to Dr. Herbert Chatley, the (sic) past chairman of the North China Branch of the Royal Asiatic Society, who is, for the present, quite occupied with war work.

Zhang intended to include in this collection three contributions by Dong Zuobin 董作賓 (1895-1963), the great specialist of oracle bones then based at Academia Sinica, as well as the "good paper on 'The Origin of the Twenty-eight Mansions'" by "President Tsoh Ko-tsen (竺可楨)".[46] At Zhang Zigong's request, Needham wrote to each of them on August 5 to suggest that the English translation should be done at their end. Zhu Kezhen replied to Needham on August 16, stating that he would do the translation himself; this task, he added, required that he should be in Beibei 北碑 (a district of Central Chongqing), "because most of the reference books mentioned in [his] paper [could] not be obtained in Tsunyi (Zunyi 遵義, Guizhou province)", to where Zhejiang University had been evacuated.[47]

Another witness to the links between Chatley and Zhu Kezhen at the time is the latter's diary, which he kept from 1936 to 1952. There are two occurrences of Chatley's name in it: in a letter he wrote on August 6, 1945, Zhu mentioned "his old teacher at Tangshan [who] has already retired to Britain". Ten days later, on the sixteenth, the news that "Japan [had] formally surrendered" was announced on the radio. On that day, Zhu replied to Needham's letter concerning the book that Zhang Zigong and Chatley intended to publish, mentioning that Zhu intended to translate his own article on the 28 lodges during the coming month of October. Other than that, Chatley's name does not appear in Zhu's diary.[48]

The English version of Zhu's article contains a substantial bibliography, mentioning not only James Legge (1815-1897), Gustav Schlegel (1840-1903), Léopold de Saussure (also mentioned in Chatley's article discussed above), and Nōda Chūryō 能田忠亮 (1901-1989), but also two specialists of "Hindu astronomy", W. Brennand and Prabodh Chandra Sengupta (1876-1962). Of these, the two most recent references published outside China are a book by Nōda (1933)[49] and a chapter by Sengupta (1936, referenced as 1940 by Zhu). This gives us some idea of what was available to Zhu Kezhen at the time: as

46 Letter from D.K. Djang (Christ College, Cambridge) to Needham (Sino-British Science Cooperation Office, Chongqing), June 24, 1945, NRI Archives, GBR/1928/NRI/SCC2/3/9. Zhu Kezhen was then the president of Zhejiang University, which was based in Guizhou, successively in Yishan 宜山, Zunyi 遵義 and Meitan 湄潭 during the Japanese occupation of China.

47 On Needham's visit to Zhejiang University during the war and on his relationship with Zhu Kezhen, cf. Cullen 2017.

48 *Zhu Kezhen riji*; cf. also Pan 2017.

49 This book is in Japanese, but Zhu gives its title in English (Sengupta 1936).

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Chatley suggested in his letter, the latter's works must have been unavailable to the former for geopolitical reasons in 1945. Chatley's words also suggest that he had not read Zhu's article before its publication. Therefore, it seems that he did not work on the editing of the papers that Zhang Zigong intended to put together as a collection; this is probably the reason why this collection was never published. In sum, there could well be some asymmetry in the absence of Zhu's and Chatley's names from each other's bibliography: Zhu had limited access to Chatley's publications, whereas Chatley may not have taken the time to acquaint himself with the work of Zhu and of his Chinese colleagues.

8 Herbert Chatley and Joseph Needham

In his letter of condolences to Chatley's widow, Needham wrote that he "came to know him through [their] mutual interest in the history of science and technology in China".[50] It is unclear when they became acquainted. The earliest mention of Chatley that I have found in Needham's correspondence is the one mentioned in the previous section, dated to 1945, when Needham was based in Chongqing and Chatley already resided in Bath; it is possible that the two became acquainted through mutual colleagues among Chinese scientists. The earliest item in their correspondence is dated to September 1948, when Joseph and Dorothy Needham had already visited Herbert and Nelly Chatley in Bath **[fig. 2]**.[51] The last item is a note from Chatley to Needham dated March 24, 1954. The correspondence mostly consists in Needham sending questions, manuscripts and published articles (not always written by himself) to Chatley, and in Chatley giving opinions on what he receives and answering Needham's questions.

The way in which some of Chatley's letters have been preserved in Needham's archives is revealing of how the latter worked: when the information provided by Chatley in a single letter was relevant to different topics, and therefore to different volumes of *SCC* as planned by Needham, the latter cut them up and filed each part of the letter in the folder where he accumulated information for these volumes. This was possible because Chatley's letters had text only on one side of each sheet. For example, on November 6, 1948, Chatley wrote a two-page letter which can be reconstructed from three different items in

50 Joseph Needham, Letter to Nelly Chatley, March 20, 1955; Needham Research Institute Archives, uncatalogued.

51 NRI Archives, GBR/1928/NRI/SCC2/262/6/4; Needham's letter is dated September 1, 1948; Chatley's reply, dated 1948, mentions this visit. The photo of the Chatleys kept at the NRI could have been taken around this period, as it is kept with an envelope stamped on October 4, 1948 (non-catalogued).

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the archives: the letter is a list of reading notes, each of which has an underlined title. Needham has added the date of the letter and/or "from Herbert Chatley" whenever necessary, so that each part of the letter is easy to identify **[tab. 1; figs 3-5]**.

The second part of the letter is heavily annotated in Needham's hand, both in pencil and ball pen: he checked and completed Chatley's bibliographical references. All these references occur in the bibliography of the volume where the subject they discuss belonged; but only some of them occur in the footnotes of the corresponding section. Needham chose to provide extensive bibliographies, rather than following the modern rule of listing only the items that occur in footnotes.

In the third part of the letter, Chatley has written the quotes in Chinese using a fountain pen. Needham has again added copious annotations using a ball pen, providing a draft translation and his idiosyncratic version of the Wade-Giles transcription the phonetic transcription of some characters.[52]

This sample suggests that Needham made full use of Chatley's notes, integrating them into his own research rather than quoting them directly in the text and footnotes of *SCC*. Moreover, it should be noted that in his review of bibliography at the beginning of volume 4.2, he put Chatley among the three authors of studies that "deserve particular gratitude". Among them, Chatley is the only one who wrote in English, the two other authors being Zhang Yinlin 張蔭麟 (1905-1942), a Chinese historian who taught at Zhejiang University in Zunyi at the end of his life, and Liu Xianzhou 劉仙洲 (1890-1975), a mechanical engineer who published extensively on the history of his field in China (*SCC* 4.2, 3).[53]

52 Cf. above fn. 2.

53 The two articles by Chatley mentioned are Chatley 1941 and Chatley 1954, 151-67 (no. 36 in *SCC*'s bibliography).

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Table 1 From Chatley's Letter of 6 November 1948 to *Science and Civilisation in China*

Part of letter	Call number	Headings in letter	Bibliography given in letter	Needham's classification	Occurrence in *SCC*
Top of p. 1	GBR/1928/NRI/ SCC2/102/1/18	Arabic Engineering	E. Wiedemann & F. Hauser. "Heben von Wasser in der Islamischen Welt", "Beitrage zur Geschichte der Technik und Industrie", Vol.8, p. 121-154, 1918. Berlin.	Engineering and mechanical technology 7a/ Water handling machinery	Vol. 4, part 2, section 27, g. Quoted as Wiedemann & Hauser (1) in bibliography. (1) The Swape ('Shādūf'; Counterbalanced Bailing Bucket). Quoted in note i p. 334. Chatley (36) quoted on p. 331.
Middle of p. 1	GBR/1928/NRI/ SCC2/90/3/2	Magic Mirrors	• Basil Hall Chamberlain. (1891). "Things Japanese". 2nd ed. London, 295. • Ayrton and Perry, Proc. Royal Society, Vol. XXVII, pp. 127-42. • J.J. Rein, "Industries of Japan", London, 1889, p. 447. • Muraoka (Mitt.d. Gesel. Ostasiens, Heft 311, 1884 • Brewster, Phil. Mag, vol. ???, I think) 1832 • Ayrton & Perry, "On the Magic Mirrors of Japan", Proc. Roy. Soc. vol. XXVIII, pp. 127-142 • Govi, Ann. De Chim, et de Phys. 5 Serie, T.xx, 1880, pp. 99-110. • Bertin, loc. cit.T.xxii, 1881, pp.472-513.	Physics: optics/ "Magic" mirrors of unequal curvature	Vol. 4, part 1, section 26, g (3). Mirrors of unequal curvature, pp. 94-97. All 7 refs in bibliography. Chamberlain, Ayrton & Perry, Rein and Bertin quoted in footnotes in section.
Bottom of p. 1 glued with p. 2	GBR/1928/NRI/ SCC2/94/3/4	Great Bear & Compass	A note on Lo-pan "Incidentally have you read my article on the Lo-pan in the Encyclopedia Sinica".	Physics: magnetism and electricity1/ Magnetic attraction	Volume 4, part 1, Section 26, i. Chatley's article on "Fêng-Shui" in bibliography as item (7). Quoted on p. 229, note d.
		Lun Heng and magnetic needle	A note without bibliographical references. Quotation from the *Lunheng*, XVI, p. 692, p. 696, provided by Walter Perceval Yetts.		Volume 4, part 1, Section 26, i (2). Passages of *Lunheng* quoted on p. 233.

Needham stated his admiration for and indebtedness to Chatley repeatedly in his writings. The two of them shared great respect for the "old knowledge of China". However, despite this respect for knowledge of the past, Chatley still followed the model of most sinologists

of his time in that he did not cite contemporary Chinese authors in his work, but mostly European sinologists. This contrasts with an important feature of *SCC*: the extensive use of twentieth century Chinese scholarship on the history of science and technology. To Chatley's respect for the "old knowledge of China", Needham added respect for the knowledge held and produced by the Chinese scientists and scholars of his own time. He thus opened a new space of circulation, wider than the one in which Chatley's knowledge about China had operated. Indeed, it is one of Needham's achievements to have united the hitherto separated spaces of circulation defined on the one hand by Chinese scholarship, and on the other hand by Western and Japanese scholarship on the history of Chinese science and technology.

9 The Posterity of Herbert Chatley

Very few historians of science know the name of Chatley. The few who do have mostly spotted it in one of the volumes of *SCC*. However, his most visible contribution to it is also the most criticised. In his discussion of "ancient and medieval cosmological ideas" found in volume 3 of *SCC*, Needham famously presents three models of the universe. For the first model, which he calls "the *gaitian* 蓋天 theory", he relies heavily on Chatley's 1938 article entitled "'The Heavenly Cover' - A Study in Ancient Chinese Astronomy". In particular, he reproduces Chatley's diagram entitled "Meridian section of 'Tien Kai' Cosmos" (Chatley 1938, 18). This diagram embodies Chatley's attempt to make sense of the dimensions of the universe given in the *Zhoubi suanjing* 周髀算經 (Mathematical Classic of the Gnomon of Zhou, first century CE).[54] Chatley's diagram is inspired by that given by Nōda in his 1933 book (Nōda 1933, 53),[55] but it is a lot more elaborate, in that the various magnitudes given in the *Zhoubi suanjing* have been incorporated into what is effectively a hemispherical model **[figs 6-7]**.

According to the classification proposed by Qu Anjing in his historiographical review, this diagram pertains to the traditional interpretation of the *gaitian* model, in which heaven and earth are thought to be parallel curves (Qu 2002, 92-4).[56] Among the objections that can be raised to Chatley's model, one can be phrased in non-technical terms: in that model, day and night correspond to the sun's position being respectively above and below the observer's horizon. By contrast, the *Zhoubi suanjing* states: "The illumination of the sun

54 On this book, cf. Cullen 1996.

55 Nōda's diagram is reproduced in Ch'a 2000, 269.

56 Cf. also the review of nineteenth- and twentieth-century studies of the *Zhoubi suanjing* in Cullen 1996, 168-9.

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extends 167000 *li* to all sides. The distance to which human vision extends must be the same as the extent of solar illumination" (Cullen 1996, 180). In such a cosmos, day and night would simply correspond to the distance between the sun and the observer being respectively less and more than 167000 *li*, the change in that distance being brought about by the sun's rotation in a celestial plane parallel to the flat earth on which the observer stands.

It is somewhat ironical, and perhaps unfair, that the greatest visibility of Chatley's work in *SCC*, to which he contributed much information, should be through this diagram, which has received only criticism from later historians of astronomy, and has cast some doubt as to his understanding of the early sources that he read. His translation of chapter 3 of the *Huainanzi*, on the other hand, which was evidently deemed of some value by those who could access it, has remained invisible to the wider community of historians of science and historians of early China.

10 "Old China Hands" and Knowledge About China

This exploration of Herbert Chatley's life and work and of his connection with Joseph Needham brings into light a group of actors of knowledge about China in Europe who may be regarded as 'amateurs', in the sense that they were not academics paid to construct and circulate this knowledge, or savants who had the means to devote themselves entirely to the study of China, as Needham himself did during the last fifty years of his life. Chatley was "an old China hand", that is, a Westerner who spent his career in China during the late imperial and Republican periods. This group of actors played a significant role throughout the process of professionalisation of sinology in the nineteenth and twentieth centuries, and all 'professional sinologists' knew some of them. Nowadays, the latter group seldom assess positively what 'amateurs', whose expertise is acquired while working as engineers or businessmen in China, write, let alone quote them in their own publications. The experience of the China of their own time which amateurs past and present have in common is no longer deemed sufficient to contribute to academic research on China, and especially on its imperial past.

Chatley's story confirms the fact that in the first half of the twentieth century things were different: his affiliation with a number of learned societies, and his election as Chairman of the North China Branch of the Royal Asiatic Society indicate that his research on China was acknowledged as valuable scholarship: Needham was not alone in regarding him as a genuine contributor to knowledge about China. How unique was Chatley in this respect? Was he just one of many 'amateurs' who contributed to the Western discovery of

imperial China's science and technology? We have seen that his professional expertise allowed him to recognise pre-modern Chinese technological achievements, and that his technical understanding of astronomy enabled him to investigate early Chinese astronomy. This leads to a second question: was the study of Chinese science and technology more accessible to Westerners than, say, that of the classics or poetry, which could only be approached through a lengthy process of becoming literate in classical Chinese? Answering such broad questions would require a prosopographical study of the men and women who, like Chatley, contributed to European knowledge of China from the margins of the academic institutions of sinology in nineteenth and twentieth-century Europe. The case of Chatley suggests that the bibliographical sections of *Science and Civilisation in China* would form an interesting starting point for such an enterprise.

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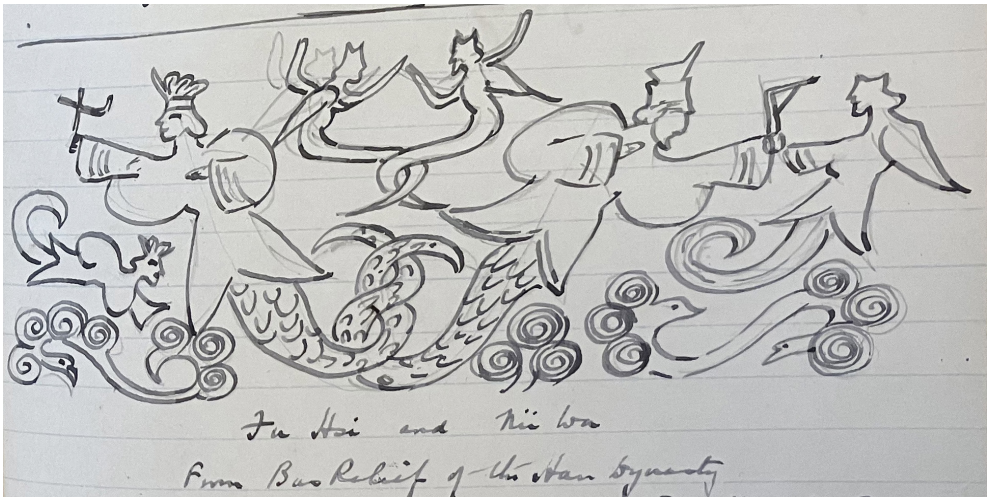
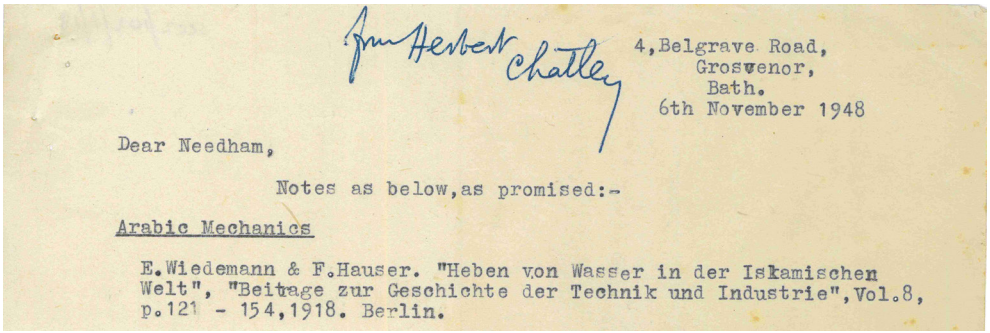


Figure 1 Chatley's sketch of the Nüwa and Fuxi mural. Notebook, Senate House Library, MS420/3/1



Figure 2 Nelly and Herbert Chatley c. 1948. Photo kept at the Needham Research Institute; not catalogued



from Herbert Chatley 4, Belgrave Road,
Grosvenor,
Bath.
6th November 1948

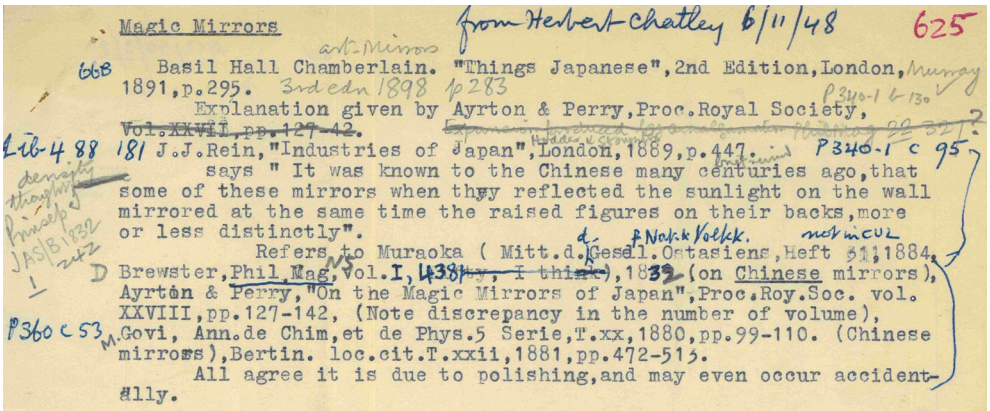
Dear Needham,

Notes as below, as promised:-

Arabic Mechanics

E. Wiedemann & F. Hauser. "Heben von Wasser in der Islamischen Welt", "Beitrage zur Geschichte der Technik und Industrie", Vol. 8, p. 121 - 154, 1918. Berlin.

Figure 3 Letter of November 6, 1948, part 1



Magic Mirrors — from Herbert Chatley 6/11/48 — 625

668 Basil Hall Chamberlain. "Things Japanese", 2nd Edition, London, 1891, p. 295. 3rd edn 1898 p 283

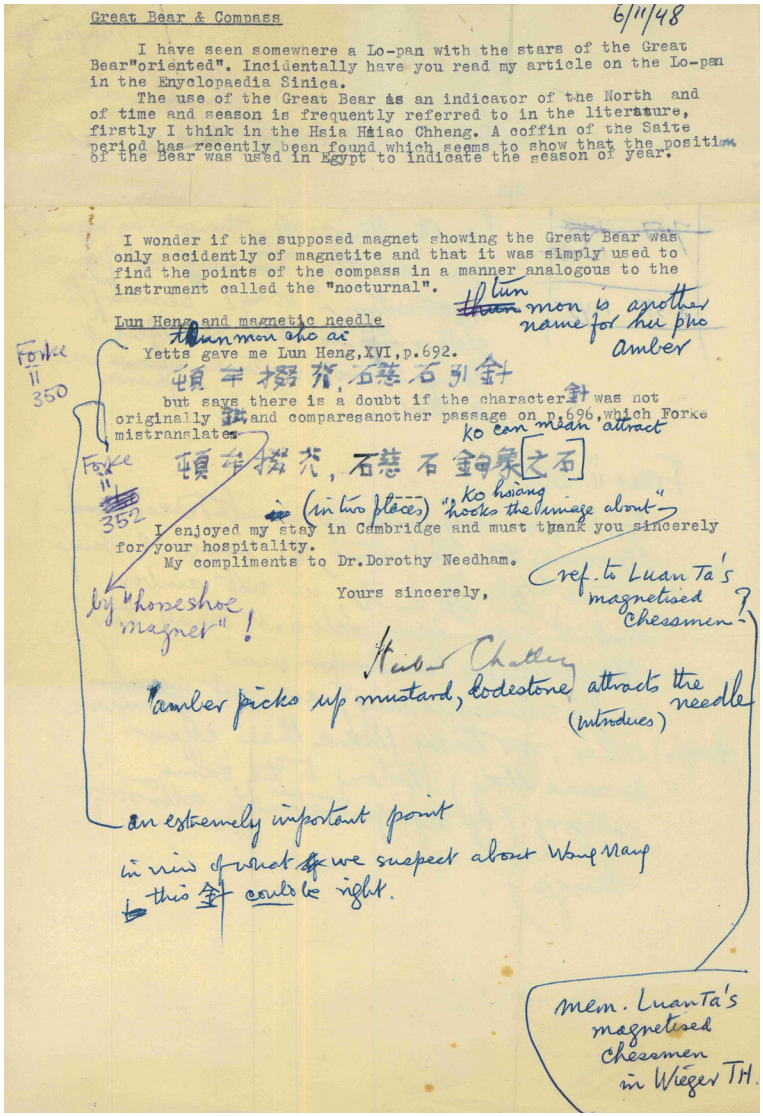
Explanation given by Ayrton & Perry, Proc. Royal Society, Vol. XXVII, pp. 127-42.

181 J.J. Rein, "Industries of Japan", London, 1889, p. 447. says " It was known to the Chinese many centuries ago, that some of these mirrors when they reflected the sunlight on the wall mirrored at the same time the raised figures on their backs, more or less distinctly".

Refers to Muraoka (Mitt. d. Gesel. Ostasiens, Heft 61, 1884, Brewster, Phil. Mag, Vol. I, 1838, (on Chinese mirrors), Ayrton & Perry, "On the Magic Mirrors of Japan", Proc. Roy. Soc. vol. XXVIII, pp. 127-142, (Note discrepancy in the number of volume), Govi, Ann. de Chim, et de Phys. 5 Serie, T. xx, 1880, pp. 99-110. (Chinese mirrors), Bertin. loc. cit. T. xxii, 1881, pp. 472-513.

All agree it is due to polishing, and may even occur accidentally.

Figure 4 Letter of November 6, 1948, part 2



Great Bear & Compass 6/11/48

I have seen somewhere a Lo-pan with the stars of the Great Bear "oriented". Incidentally have you read my article on the Lo-pan in the Encyclopaedia Sinica.

The use of the Great Bear as an indicator of the North and of time and season is frequently referred to in the literature, firstly I think in the Hsia Hsiao Chheng. A coffin of the Saite period has recently been found which seems to show that the position of the Bear was used in Egypt to indicate the season of year.

I wonder if the supposed magnet showing the Great Bear was only accidently of magnetite and that it was simply used to find the points of the compass in a manner analogous to the instrument called the "nocturnal".

Lun Heng and magnetic needle

Yetts gave me Lun Heng, XVI, p.692.

頓牟掇芥，石慈石引針

but says there is a doubt if the character 針 was not originally 鉗 and comparesanother passage on p.696, which Forke mistranslates:

頓牟掇芥，石慈石鉤[之]石

(in two places) "hooks the image about"

I enjoyed my stay in Cambridge and must thank you sincerely for your hospitality.

My compliments to Dr. Dorothy Needham.

Yours sincerely,

Needham Chatley

Forke II 350

Forke II 352

Lun mon is another name for hu phu amber

Ko can mean attract

Ko hsiang

by "horseshoe magnet"!

ref. to Luan Ta's magnetised chessmen?

amber picks up mustard, lodestone attracts the needle (introduces)

an extremely important point in view of what we suspect about Wang Mang & this 針 could be right.

mem. Luan Ta's magnetised chessmen in Wieger TH.

Figure 5 Letter of November 6, 1948, part 3

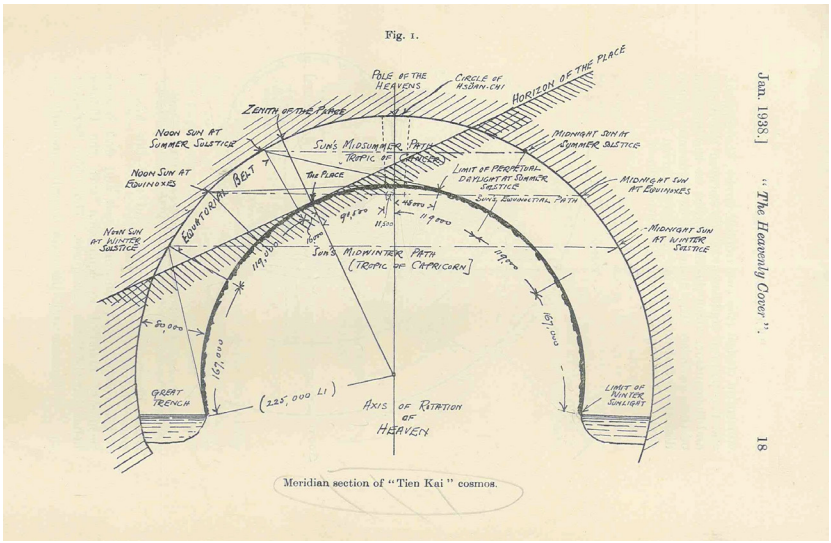


Figure 6 Chatley's cosmographical diagram (Chatley 1938, 18)

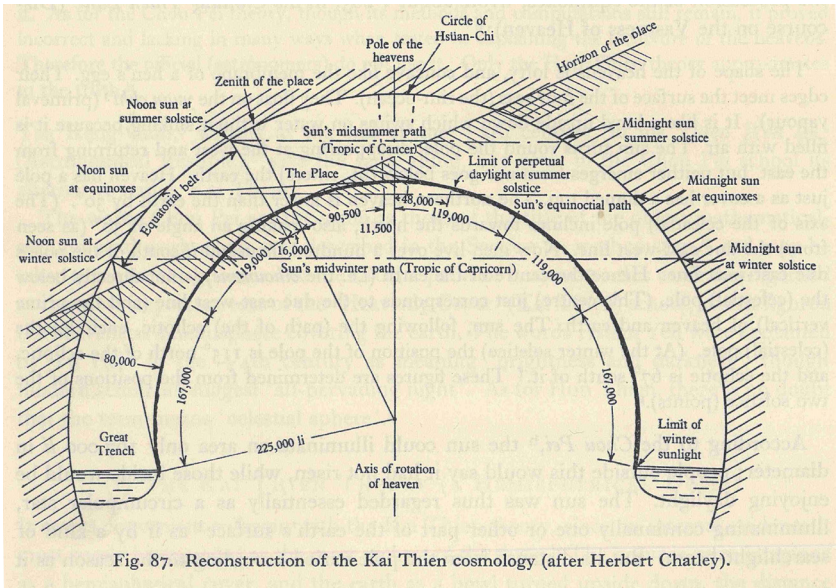


Fig. 87. Reconstruction of the Kai Thien cosmology (after Herbert Chatley).

Figure 7 Needham's reproduction of Chatley's diagram (SCC 3, 212)

Archives

Royal Asiatic Society Archives, RASCOLL 3/7/2/4.
Senate House Library, University of London, Herbert Chatley's Papers, MS420.
MIT Libraries Distinctive Collections, MC.0051: Papers of John Ripley Freeman, Box 130.
Needham Research Institute Archives, GBR/1928/NRI/SCC.

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Jean-Marie Delavay (1834-1895), His Botanical Collection in Yunnan and Relationship with the National Museum of Natural History at the End of the Nineteenth Century: Cooperation, Interactions, and Contributions

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Abstract Jean-Marie Delavay (1834-1895), a missionary of the Missions étrangères de Paris, was one of the most influential botanical collectors in Yunnan and China. He sent his collection to the Muséum national d'histoire naturelle, where Adrien Franchet (1834-1900) identified the specimens. This article examines Delavay's collection in Yunnan and the scientific collaboration between Delavay and the Museum, based on seventy-three of his letters and other archives. It highlights the cooperation between the French state, religious orders, and scientific institutions in the nineteenth century, which contributed to advancements in the natural sciences.

Keywords Jean-Marie Delavay. Missionnaire-collecteur botanique. Yunnan. Go-between scientific cooperation. Natural sciences.

Summary 1 Introduction. – 2 Before Yunnan: Delavay's Early Botanical Pursuits and Collections. – 3 Delavay's Collections in Yunnan. – 4 The Muséum's Allocation to Delavay and Delavay's Shipments to the Muséum. – 5 Delavay and Franchet: Interactions and Researchon Delavay's Collections. – 6 Conclusion.

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1 Introduction

The history of botanical collecting in China by the French, spanning from the late seventeenth century to the early 1950s, can be divided into two main categories based on the use of plants in the recipient country. On one side, there is the collection for practical purposes – whether for economic, horticultural, agricultural, culinary, or medicinal use – and on the other, there is the collection driven by botanical herborisation, following a taxonomic system. A pivotal moment for this second category came in 1740 when Pierre Nicolas Le Chéron d'Incarville (1706-1757) began collecting for Bernard de Jussieu (1699-1777), one of the pioneers of taxonomic botany.[1] Starting from this date, and for the next two centuries, a significant number of French collectors in China would dedicate themselves to this scientific mission. Among them, at the end of the nineteenth century, one collector stands out as the most eminent in the field of Chinese plants: Jean-Marie Delavay (1834-1895), a missionary with the Missions étrangères de Paris (MEP), who spent fourteen years in Yunnan (1882-95). During his time in the province, he sent approximately 200,000 specimens to the Muséum national d'Histoire naturelle (Muséum), according to a report by Adrien Franchet (1834-1900), which still needs to be validated. This collection included 80,000 herbarium specimens, representing around 4,000 species, 1,500 of which were new to science (Franchet 1896b, 150).

The Muséum was virtually the sole recipient of Delavay's collections, to which Adrien Franchet, a distinguished taxonomist specialising in East Asian flora at the institution, made a crucial contribution as the principal botanist responsible for studying his herbarium. Situated at opposite ends of the Eurasian continent, Delavay and Franchet formed an inseparable partnership, embodying an exemplary collaboration between a field collector and a laboratory researcher. Their cooperation thus made a significant contribution to the discovery of Yunnan's flora and to the advancement of botany in France at the close of the nineteenth century. At this stage of the analysis, three key questions arise: in what context and through what mechanism did these two figures – one a Catholic missionary and the other

This article was translated by Elvis Buckwalter, associate professor at Paris Nanterre University.

This article complements another study forthcoming, entitled "Jean-Marie Delavay (1834-1895) parmi les missionnaires français collecteurs botaniques en Chine: tradition, réseaux et héritage".

1 For a historical analysis of these two types of collections in China, as well as of the major taxonomic missionary collectors between 1740 and the early twentieth century, cf. Li, forthcoming.

an institutional scientist – establish this bilateral collaboration despite their vastly different roles? By what means and how did they concretely carry out their joint work? And, finally, in what ways did their collaboration contribute to the progress of botany, which was experiencing significant growth at the time?

These topics remain largely unexplored. Existing research on Delavay mainly focuses on presenting the contributions of his collections and the outcomes of Franchet's research, without examining the course of their collaboration, which is key to understanding how these contributions and results were obtained.[2] To undertake such research effectively, it is crucial to have access to detailed documentary evidence, and Delavay's letters, especially those linked to the Muséum, represent one of the most valuable sources in this regard.

The Muséum has preserved seventy-three handwritten letters from Delavay,[3] written over thirteen years. The first letter is dated May 31, 1883, more than a year after his arrival in Yunnan, and the last one is from December 9, 1895, sixteen days before his death. Here are some essential details **[tab. 1]**.

Table 1 Recipients of Jean-Marie Delavay's letters preserved at the Muséum

Recipient	No. of letters	Date	Location
Armand David	4	May 31, 1883-October 27 1885	Dali (1), Mosuoying (1), Dapingzi (2)
Édouard Bureau	1	March 16 1885	Mosuoying (1)
Adrien Franchet	41	September 24, 1885-April 25, 1890	Dapingzi (37), Mosuoying (2), Dali (2)
	6	September 24, 1890-April 2, 1891	Hong Kong (2), a place near Lao Kay (Tonkin) (1), and Kunming (3)
	13	September 26, 1891-May 15, 1893	(France): Montbeton (12), Lyon (1)
	8	May 29, 1894-December 9, 1895	Chengfengshan (2), Kunming (6)
Total	73		

Among the recipients, Armand David (1826-1900), a Lazarist missionary and prominent zoological, botanical, and mineralogical collector

2 For the studies on these topics, cf. Franchet 1896a; 1896b; Flamary 1929; Lennon 1988, 2004; Kilpatrick 2014, 65-131.

3 AM, Correspondance Franchet, Delavay (J.-M.) 103-173, 3 Cartes & Documents sur Mong-tsé 174-177.

in China during the 1860s-70s, who acted as an intermediary between Delavay and the Muséum, received four letters. Édouard Bureau (1830-1918), a professor of botany at the Muséum, received only one. The remaining sixty-eight letters are all addressed to Adrien Franchet. Clearly, these letters represented correspondence with all three recipients. Due to the absence of letters written by David, Bureau, and Franchet, the analyses in this study can only rely on Delavay's letters.

Delavay's letters were written over the course of three different periods according to his activities. First, there were forty-six letters written over eight years from May 1883 to April 1890, at Dapingzi 大坪子 (Ta-pin-tze [in the French transcription of the time]), his main residence in Yunnan,[4] and at two neighbouring locations: Mosuoying 摩梭營 (Mo-so-yn), another Christian-administered community, and Dali 大理 (Ta-li or Ta-li-fou 大理府), a prefectural city. Next, there were nineteen letters written during the period in which he was under health care, from September 1890 to May 1893, in Hong Kong, at a place near Lao Kay (Vietnam), in Kunming (the capital of Yunnan; referred to as Yunnan-sen 雲南省 under the Qing dynasty), and in France. Finally, there were eight letters written during his return to Yunnan, from May 1894 to the end of 1895.

As one of the few firsthand documents, these letters from Delavay have provided us with rich information about his botanical collection in Yunnan and his relationship with the Muséum, particularly with Adrien Franchet. On the one hand, these letters, which go hand in hand with the herbaria and the labels attached to the herbaria, form a set of works associated with Delavay's collection: the herbaria present the physical plants, the labels provide brief collection information (date, location, soil type, etc.), and the letters give more detailed information about the collections and collected plants. On the other hand, it is only from these letters that we can recognise Delavay as a true botanist, where morphological and biotope descriptions, identifications, and discussions about plants from his collection are almost omnipresent. Additionally, in some letters, his exchange with Franchet on certain botanical theories can be read. Finally, in many letters, Delavay described his shipments of herbaria and other specimens to the Muséum, showing the trilateral efforts made by Delavay, the Muséum, and the MEP to ensure scientific collaboration between Delavay in Yunnan and Franchet in Paris.

In 1896, four months after Delavay's death, Adrien Franchet expressed his appreciation for this great botanical collector in a memorial dedicated to him:

4 For the history of the Christian community of Dapingzi and the MEP mission in Yunnan, see Li 2020.

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> Father Delavay was not only a great collector; he was also a sage observer, a true scholar, drawing often profound inferences from what he saw. His botanical correspondence, which will undoubtedly be published one day, provides undeniable proof of this.[5] (Franchet 1896a, 145)

Franchet's declaration about publishing his material 'someday' has indeed lasted a long time since it has not seen the light of day.[6] This study aims to reconstruct Delavay's collaboration with the Muséum based on the following aspects: his botanical collecting, the shipment of herbarium specimens and other types of samples; his reports and scientific exchanges with David, Franchet, and other scholars at the Muséum and in France; and the financial and logistical support provided by the Muséum and the MEP. More fundamentally, our goal is to shed light on the social and scientific mechanisms through which a botanically inclined clergyman and the religious order to which he belonged engaged in and integrated themselves into a scientific vocation, in collaboration with a state-supported botanist and research institution.

2 Before Yunnan: Delavay's Early Botanical Pursuits and Collections

Delavay's status is grounded in four closely interconnected elements characteristic of the final two decades of the nineteenth century: he was a Frenchman, a missionary, and a plant collector who simultaneously pursued his apostolic and botanical endeavours in a specific region of Yunnan, China. His remarkable success can be attributed to the dynamic interaction of these factors: within a context conducive to the advancement of natural sciences in France and the expansion of Christianity in China, his personal dedication to botany was seamlessly integrated into his apostolic mission, all within a region distinguished by its exceptionally rich flora.

5 All quotations from works originally written in French have been translated by the author, unless otherwise indicated.

6 Having remained silent for a century, Delavay's letters have seemingly drawn the attention of only three researchers: Antoine Flamary, Jean Lennon, and Jane Kilpatrick. Cf. footnote 3. In 2000, I obtained a copy of excerpts from Delavay's letters, kindly provided by Gérard Depuy, a friend from Les Gets, Delavay's hometown. I later realised that these excerpts were likely compiled by Jean Lennon. In 2019, I located the original letters in the archives of the Muséum. We are in the process of preparing a publication of these letters.

2.1 The Stakes of Botanical Collection by Missionaries in the Second Half of the Nineteenth Century

With the rapid rise of botany in Europe during the second half of the nineteenth century, scientific circles, state authorities, and religious orders jointly mobilised in a dynamic pursuit of research and discovery focused on exotic plants and animals. Their efforts were aimed specifically at contributing to the universal construction of global taxonomic systems. China, renowned for the extraordinary richness and diversity of its flora – currently accounting for 30,000 documented species of flowering plants – yet still largely unexplored from a taxonomic perspective, became a favoured destination for numerous European collectors, primarily French, British, and Russian. These collectors, whether scientists or amateurs, came from diverse professional backgrounds: botanists, merchants, doctors, missionaries, diplomats, customs officers, explorers, and others.[7] Among the French, it was the missionary botanical collectors from three major congregations who made the most significant contributions: the Jesuits, who even founded a natural history museum in Shanghai,[8] the Lazarists, represented by Armand David, and the priests of the MEP active in southwestern China. The latter, distributed across the four missions in Sichuan, Guizhou, Yunnan, and Tibet, found themselves at the heart of a true botanical kingdom – much like Yunnan, which is home to 14,500 plant species, belonging to 2,100 genera and 299 families (cf. Zhongguo kexueyuan Kunming zhiwu yanjiusuo 2000, 1). According to a non-exhaustive estimate, between 1868 and 1934, a span of sixty-six years, foreign collectors gathered more than 400,000 herbarium specimens in Yunnan alone (cf. Bao, Mao, Yuan 1995, 3), a significant portion of which was collected by MEP missionaries. From the 1880s onward, a considerable number of missionaries in southwestern China distinguished themselves as a community of botanical collectors, with their collections primarily destined for the Muséum.[9]

Through their missionaries in the field, the three religious orders mentioned above occupied a prominent position in advancing scientific activities in China. The example of Armand David is particularly

7 For an overview of European collectors in China during this period, cf. Bretschneider 1898, vol. 2, and Ma 2020, 2-29. For a general exploration of the history of botanical and zoological collections by Westerners in China, primarily between 1840 and 1940, cf. Luo 2005. For a comprehensive study on the diversity of English collectors during the Qing dynasty (1644-1911), cf. Fan 2004.

8 This refers to the Museum of Heude, founded in 1868 by Pierre-Marie Heude (1836-1902), a Jesuit and zoological collector who resided in Shanghai from 1868 until his death in 1902.

9 For the botanical collections by missionaries from these three congregations, cf. Li, forthcoming.

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telling: at the request of the Muséum and the Minister of National Education, the superior of the Lazarists granted him exemption from his religious duties during his second and third missions to China (1868-70, 1872-74), allowing him to fully dedicate himself to scientific collecting. In 1882, the year Delavay travelled to Yunnan, the Congregation for the Propagation of the Faith in Rome issued, on behalf of Pope Leo XIII, an official appeal to missionaries worldwide, urging them to "gather anything that could contribute to the knowledge of the natural history of each country, especially in botany, mineralogy, and zoology" (quoted in Zheng, Zheng 2005). As we will demonstrate here and in another study focused on the botanical collecting network within the MEP in China and East Asia (cf. Li forthcoming), a number of missionaries actively engaged in scientific collecting and in collaboration with scholars, research institutions, lay collectors, and colleagues both within their own congregation and from other orders.

In China, during this same period, the situation of missionaries improved significantly after more than a century of anti-Christian regulations (1724-1844), which were gradually lifted between 1840 and 1850. The introduction of articles granting specific privileges to missionaries in the three Sino-French unequal treaties – the Treaty of Huangpu in 1844, the Treaty of Tianjin in 1858, and the Treaty of Beijing in 1860 – allowed them to acquire expanded rights, particularly the freedom to travel freely throughout the country. This freedom of movement created particularly favourable conditions for botanical collection, whether conducted by missionaries or laypersons. However, anti-Christian religious incidents (*jiao'an* 教案) continued to occur throughout these decades. Some missionary collectors became victims of such conflicts, not due to their scientific activities but as a result of socioreligious tensions. Thus, Jean-André Soulié (1858-1905), a missionary and botanical collector from the Tibetan mission, was massacred by Buddhist lamas in 1905 as part of a religious dispute. In the case of Jean-Marie Delavay, his collections appear to have been carried out under relatively peaceful conditions. Aside from two political challenges mentioned in his correspondence – one concerning the Sino-French War over Vietnam's sovereignty, which delayed the shipment of his herbarium specimens,[10] and the other involving "the difficult situation created for us by the current governor of Yunnan", which hindered his collecting trip to Lijiang 麗江[11] – no other events are reported as having disrupted his work. Even the massacre of missionary Jean Terrasse (1848-1883) and thirteen Chinese converts in 1883 at Shafengcun 沙鳳村, a village west of Dapingzi and two days' walk

10 Delavay, letter dated May 17, 1884.

11 Delavay, letter dated March 14, 1888.

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away,[12] is not noted as having affected his activities. The only challenges Delavay faced in his plant collection were adverse weather conditions and his often fragile health, two recurring themes in his letters.

The scientific endeavours of missionaries were secondary to their primary religious mission, a task that was often particularly demanding. This is why, as we will observe in the study of botanical missionary collectors in Southwestern China (cf. Li forthcoming), the participation of many missionaries in botanical collecting was characterised by episodic activity, limited to relatively short periods during their mission. Even a minor factor, such as a shift in the political climate in China or the assignment of a new responsibility to the missionary, could interrupt their collecting efforts. However, it is true that a major botanical collector like Delavay emerged only in a context favourable to the apostolic mission, where he could dedicate more time and energy to collecting.

2.2 Delavay: Religious Vocation, Botanical Training, and Early Collections

Unlike the majority of his peers who shared an interest in botanical collecting but remained primarily missionary-collectors of plants, Delavay can also be considered a full-fledged botanist.[13] It is this distinction that enabled him to make such a significant contribution to modern botany.

Born in 1834 in the parish of Les Gets, in the hamlet of Le Chot, in Haute-Savoie, Delavay was, from an early age, chosen by his family to dedicate his life to the priesthood. He first attended the small seminary of Saint-François de Sales in Mélan, and at the age of 17, he entered the Grand Seminary of Annecy. He was ordained a priest in December 1860 and was appointed vicar at Saint-Nicolas-la-Chapelle two years later, then vicar at Allonzier-la-Caille in 1864. He continued to work in his homeland until 1866, before joining the MEP seminary.

Since the 1850s, botanical research was very active in Haute-Savoie, with Annecy and Chambéry being the central cities. Renowned botanists included Louis Bouvier (1819-1908), Baron Eugène Perrier de la Bâthie (1825-1916), Notary Jean-Baptiste Chatelain (1851-1914), Count René de Menthon (1833-1917), Venance Payot (1816-1902), among others. In the religious sphere, Cardinal Alexis Billiet (1783-1873), a confirmed botanist, was influential in the archdiocese of Chambéry and throughout Savoie. All these men promoted the movement to collect plants and study the flora of the Savoyard territory.[14] At that time, bot-

12 For an account of the incident at Shafengcun, cf. Li 2016, 68-9.

13 Regarding Delavay and his botanical studies, cf. Flamary 1929, 97-8; Benoist 1961, 119.

14 For a study on the botanists of Savoie in the nineteenth century, cf. Benoist 1961.

any was studied in all educated circles, particularly within the clergy. At the Grand Seminary of Annecy, Fathers François Puget (1829-1880) and Etienne Chevalier (1826-1914) taught botany to their disciples. As for Delavay, it appears that he began his botanical studies at the minor seminary in Mélan, and later came into contact with Eugène Perrier de la Bâthie in Annecy.[15] However, it remains unclear whether he directly attended the courses of Puget and Chevalier, as the dates of their teaching do not allow for certainty. Two letters written by Delavay, dated May 19, 1886, and May 5, 1887, show that even more than twenty years after leaving Haute-Savoie, Delavay maintained his connection with his mentor Chevalier and his Savoyard botanist friends. He sent them a number of herbarium specimens and seeds from Yunnan. In his letter dated February 4, 1893, he demonstrated his thorough knowledge of the botanist community in Haute-Savoie.

Upon leaving the Grand Seminary of Annecy and during the six years he served as a vicar in two mountain parishes in Savoie, Delavay explored the botanical sites of Northern Savoie and collected plants. E. Perrier de la Barthe's catalogue notes his discovery of eleven previously unrecorded plant sites, such as *Cyclamen neapolitanum* var. salesianum in Allonzier-la-Caille, *Hieracium Sixtinum* at La Tournette, *Phytoma botanicifolium* on Mont Joli, among others (Flamary 1929, 98). In fact, before his departure for China, Delavay was already a professional botanical collector of alpine flora. In his future collections in Yunnan, this experience contributed to his success, allowing him to apply his knowledge of alpine vegetation in the high mountains of Yunnan.

On November 19, 1866, Delavay joined the MEP Seminary. Eight months later, on July 15, 1867, he left for China, joining the Guangdong-Guangxi evangelisation mission for thirteen years (1867-80). He first went to Hainan Island for a year, then to Weizhou Island 瀨洲 (Koui-Ttchéou) and the village of Luofu 羅浮 (La-Fou),[16] until his return to France in 1880 due to his very weakened health. During this period, he collected plants and entrusted his collections to Henry Fletcher Hance (1827-1886), British vice-consul in Canton.[17] However, Hance did not give him due credit: apart from a few rare plants,

15 Barrault 2020, section "Il reçoit" (the book is unpaginated).

16 The current village of Luofucun 羅浮村 is located within the administrative office of Nanmushan Village (Nanmushan cungongsuo 楠木山村公所), situated in the town of Dongxing 東興鎮, within the city of Dongxing, part of the Fangchenggang 防城港 area in Guangxi. For the history of Christianity in Luofu, cf. Peng, Zhu 2007, 115. Jane Kilpatrick's identification (2014, 65) of La-Fou with Malu, which may correspond to Maluzhen 馬路鎮 in the neighbouring region, appears to be problematic. In the village of Luofu, the church built in the mid-nineteenth century still stands today; cf. "Dongxingshi Dongxingzhen Luofu tianzhujiaotang" 東興市東興鎮羅浮天主教堂: http://dongxinglvxingshe.com/news/view-14393.html.

17 For a study on Hance's botanical collection, cf. Fan, 2004, 68-72.

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Delavay's name was not mentioned when his collections were published. In the work of Emil Bretschneider, published in 1898, only one plant collected by Delavay at that time is mentioned, namely *Calophyllum inophyllum* L. (published in the *Journal botanique* in 1879, vol. 9), collected in Qinzhou 钦州 (Kingchow-fu) in Guangxi (cf. Bretschneider 1898, 2: 874). Furthermore, we have identified two other herbarium specimens collected by Delavay in March 1869 at Leizhou 雷州 (Loui-tcheou) in Guangdong, and preserved at the Harvard University Herbaria under the number GH: 00217454: *Solanum hainanense* Hance and *Solanum procumbens* Loureiro.[18]

2.3 Delavay, Armand David and the Muséum

Armand David distinguished himself in his time as a leading scientific collector of animals and plants in China for the Muséum.[19] Before his departure for Beijing in 1862, he established connections with two prominent scholars at the Muséum: the zoologist Henri Milne-Edwards (1800-1885) and the botanist Émile Blanchard (1819-1900). During his first mission in Beijing (1862-66), he sent the Muséum an extensive collection of diverse specimens of animals, plants, and minerals gathered in northern China (Beijing, Hebei, Liaoning, and Inner Mongolia). In 1866, he founded a museum, the *Bainiaotang* 百鳥堂 (Auditorium of Birds), within the Beitang 北堂 cathedral, where he frequently displayed duplicates of specimens sent to the Muséum.[20] Under the influence of Henri Milne-Edwards, the Minister of National Education requested that the superior of the Lazarists release David from his apostolic duties so that he could dedicate himself fully to scientific collecting in China. During his two subsequent missions (1868-70 and 1872-74), David explored and collected in regions of eastern and central China, as well as eastern Tibet in Sichuan. Designated by Rome, these regions fell under the authority of various apostolic missions, both French and from other European countries. Consequently, it was essential for David to establish cooperative ties with local missionaries, enabling him to build relationships with other foreign collectors, whether missionaries or laypersons. A notable example is the Christian mission in Muping 穆坪, located in western Sichuan, where David discovered the giant panda in 1869 with the assistance of Jean-Théophile Pinchon (1814-1891), a missionary of the MEP. The collections David amassed during his three expeditions,

18 https://kiki.huh.harvard.edu/databases/specimen_search.php?cltr=J.%2520M.%2520Delavay.

19 For a study on David and his collections in China, cf. Boutan 1993; Bishop 1990.

20 For an overview of these collections, cf. Hang 2018.

all sent to the Muséum, included an impressive array of 9,569 specimens of insects, arachnids, and crustaceans, 1,332 birds, 595 mammals, and 2,919 herbarium specimens of plants (Boutan 1993). Upon his return to France, David became a central figure in the study of China's natural history and played a pivotal role in facilitating cooperation between scientific collectors in China and the Muséum.

Delavay had met David prior to his arrival in Yunnan. Contrary to the commonly accepted date of 1881 for their first encounter, David explicitly stated that it had occurred earlier, in Hong Kong:

> It is a great satisfaction for me to think that I was the providential cause of this second vocation of Mr. Delavay, which has been a true blessing for science. During a chance meeting in Hong Kong, I had no difficulty discerning his tastes and aptitudes beneath his modesty, and I later succeeded in persuading him to become a correspondent for our Jardin des Plantes. In recognition of his significant contributions, the Professors have already awarded him a decoration and financial compensation, which will help him continue his fruitful research. (David 1888, 9)

Absent from David's journal, this encounter in Hong Kong likely occurred during one of his maritime stopovers between Shanghai and Marseille, either during his second mission to China or his third. At that time, Delavay may have been staying at the MEP sanatorium in Hong Kong while serving in the Guangdong and Guangxi regions. A pivotal moment, however, came in 1881, when Delavay returned to France after completing his mission. He met David, who had reached the height of his renown. During their exchange, Delavay shared details about his collections from Guangdong-Guangxi and voiced to Henry Fletcher Hance his frustration over the perceived injustice in the publication of the plants he had collected.[21] David advised him to send his future collections to the Muséum and recommended him to Professor Édouard Bureau and Adrien Franchet.[22] Although Delavay's selection of Yunnan for his next mission was primarily dictated by health reasons – he could no longer tolerate the subtropical climate of Guangdong and Guangxi[23] – it is not unlikely that David might have suggested he consider Yunnan as an alternative. After spending eight

21 In his letter written to Franchet on May 19, 1886, Delavay says: "Among the ferns I collected in Yunnan, 30 or at most 35 species were sent to England, including *Asplenium yunnanense Franchet*, *Scolopendrum Delavayi*, *Polypore yunnanense Franchet*, etc. But it is unlikely that these species will be published on the other side of the Channel. I told Mr. David how it all happened".

22 For an introduction to Delavay's connection with the Muséum through David in 1881, cf. Franchet 1896a, 145.

23 Cf. AMEP, 0939 J-M Delavay, letter dated May 2, 1881; Kilpatrick 2014, 66.

months in Muping, David had become very knowledgeable about the rich flora of Southwest China and knew that Yunnan was almost untouched territory for Western botanical collectors.[24]

From Delavay's first six letters from 1883 to 1885, we know that Delavay's initial contact with the Muséum was facilitated through David. Even after his first contact with Édouard Bureau (in March 1885) and Adrien Franchet (in September 1885) and after his initial shipments of specimens to the Muséum, Delavay continued to maintain his contact with David until the end of 1895. In his four letters to David, the following three points are highlighted: 1) report on his collections and shipments, 2) request David consult Franchet's opinion on his future collections, and 3) request David convey his respects to Bureau and Franchet. Thus, in his first letter to David, Delavay talked about his collection activities and his preparation for sending his first herbaria to the Muséum, noting, however, that "[he] would have needed a sum of 180 to 200 francs" for the shipment.[25] David provided him with valuable assistance by requesting a grant from the Muséum from Professor Bureau. In the letter of February 25, 1885, Delavay thanked David for his advice and assistance, and also asked him to ask for Franchet's opinion on his collection.

Delavay no longer received letters from David starting in 1886, with the exception of one letter received on March 4, 1887.[26] In several letters to Franchet, he asked for news about David and sent him his affectionate regards.[27] He also expressed great joy when he received "the splendid volumes of *Plantae Davidianae*", a work that Franchet wrote about the important plants collected by David in China.[28] And, in the letter of November 9, 1891, Delavay, staying at the Montbeton Sanatorium in France, expressed his desire to "write to Father David to ask him to send me a Russian language course", since "Russian has been in vogue for some time. I will study Russian this winter".

24 Before Delavay, only four European collectors had collected plants in Yunnan. 1) J. Anderson (English naturalist), twice in 1868 and 1875 in western Yunnan, in the Tengyue 騰越 region; the number of his collections in 1868 was 800 herbaria (the number for 1875 is unknown); 2) W.J. Gill, in 1877 in northwestern and western Yunnan, in the Deqin 德欽 region and the Dali region (number of herbariums unknown); 3) B.C. Szechenyi (Hungarian), in 1879, in northwestern and western Yunnan, in the Zhongdian 中甸 region and the Dali region (number of herbaria unknown); 4) W.R. Carles (English), in 1881 in the Kunming region. Cf. Bretschneider 1898, 2: 692, 730, 755, 950.

25 Letter dated May 31, 1883.

26 Cf. letter dated March 6, 1887.

27 Cf. letters dated December 12, 1886; January 30, 1887; December 14, 1887; April 25, 1890; April 2, 1891; and September 26, 1891.

28 Letter dated April 25, 1890.

3 Delavay's Collections in Yunnan

In 1880, Delavay returned to France from Guangxi for medical treatment. He recovered after a year of treatment. In September 1881, he was assigned to the Yunnan mission. After a three-month sea voyage, he landed in Shanghai at the beginning of 1882, then travelled up the Yangzi River by boat, arriving in March at the MEP headquarters in Yunnan, located near Chengfengshan 成鳳山 (Tchen fong chan) mountain in the Yanjin 鹽津 district, in northeastern Yunnan near the city of Yibin 宜賓 (Soui-fou [Xufu 敘府]) in eastern Sichuan. He stayed there for two months.[29] It took him another two months of walking to reach the Christian village of Dapingzi in July, located in a village 50 km north of the city of Dali in western Yunnan.[30] He acted as administrator of the village for eight years until falling severely ill at which point he left Dapingzi in mid-1890, heading to Hong Kong at the end of August,[31] where he stayed for three or four months in the MEP sanatorium. He went back to Kunming in February 1891, again fell seriously ill, and then left two or three months later[32] to return to France towards the end of August.[33] On October 29, 1893 he departed from France arriving back in Yunnan on February 20, 1894,[34] first to the northeastern region where he stayed for five months, then traveling for a month to reach Kunming in October 1894[35] where he died on December 31, 1895.

29 In the letter dated November 6, 1887, Delavay mentions that he collected plants in March 1882 from rocky areas "on the banks of the Yangtze River, opposite the city of Y-tchang [Yichang 宜昌, a port on the Yangtze in western Hubei]". In the three letters dated December 12, 1886, March 6, 1887, and May 26, 1888, he refers to collections made "in the northern part of Yunnan". For the missionaries, the northeastern part of Yunnan is referred to as the "North of Yunnan".

30 In the letter dated July 27, 1888, Delavay states that he collected specimens in June 1882 along the route between Dongchuan 東川 (Tong-tchouan) and Kunming, two nearby cities (about a 100 km apart). It took approximately 15 days to travel from Kunming to Dapingzi. According to two letters dated May 17, 1884, and February 25, 1885, the journey from Yibin to Dapingzi took 38 or 40 days, and according to the letter dated August 29, 1894, the trip from Yibin to Kunming took 23 days. Since he was still on the road between Dongchuan and Kunming in June and then took a few days to rest in Kunming (Le Guilcher 1896, 356), he would have arrived in Dapingzi in July.

31 Delavay wrote his last letter from Dapingzi on April 25, 1890, and in the letter dated September 24 of the same year, sent from Hong Kong, he mentioned that he had arrived there four weeks earlier.

32 In the letter dated February 24, 1891, Delavay announced that he had returned to Kunming, a week earlier. On April 2, 1891, he wrote his last letter to Franchet from Kunming.

33 In the letter dated September 26, 1891, Delavay said "I have been in France for a month".

34 For the two dates, cf. the letters dated September 20 and May 29, 1894.

35 Itinerary announced in the letter dated August 29, 1894.

3.1 Regions and Itineraries of Collections in Yunnan, in Coordination with His Apostolic Mission

Based on the itinerary and collection sites cited in the above letters, as well as those noted on the labels of nearly ten thousand of Delavay's herbarium specimens preserved at the Museum, we can reconstruct the regions where Delavay collected specimens in Yunnan from 1882 to 1895:

- March to June 1882: From Yichang to the apostolic headquarters of the Yunnan mission (zone 1) [fig. 1], and from there along the route to Dapingzi.
- July 1882 to mid-1890 (zone 2 **[figs 1-2]**): The region of the apostolic district of Dapingzi, encompassing the central and southern parts of the current Heqing 鶴慶 (Ho kin) district and the eastern part of the Eryuan 洱源 district (under the name Langqiong 浪穹 [Lan-Kong]). Delavay primarily collected plants during his travels between Dapingzi and Mosuoying, a route he often travelled once a month as part of his religious duties. The route taken to reach Mosuoying was always the same: Dapingzi – Jiangyin – Heishanmen – Mosuoying. For the return journey, he followed two different routes. The first led north, passing through Niujie, where one or two covered families were located: Mosuoying – Niujie – Gualapo ([fig. 2] no. 2) – Yanziya (no. 4) – Songgui – Dapingzi. The second route, taken south, followed this path: Mosuoying – Dengchuan – Shangguan – Dawangmiao (no. 5) – Jishan (no. 6) – Dapingzi. Another region where Delavay extensively collected was the Cangshan 蒼山 (Tsang chan) mountains near Dali. Together, these collecting areas cover an approximate area of 150 km². Occasionally, his collections were also made along the path between Dapingzi and the neigbouring Christian community of Pianjiao 片角 (Pienkiô) in the southern part of the Yongsheng 永勝 district (zone 2 southernmost point for these regions) [fig. 2]. He made one collection trip to Lijiang 麗江 (Li-kiang, zone 2 in the North) **[fig. 1]**.
- From mid-1890 to February 1891. On the route between Kunming and Hong Kong in Yunnan, passing through Mengzi 蒙自 (Mongtse) and Vietnam (zone 3 [fig. 1]).
- From February 1894 to the end of 1895. Six months in northeastern Yunnan during his return to Yunnan (zone 1), on the journey from Yanjin to Kunming, and finally, a few months in the vicinity of Kunming (zone 4 [fig. 1]).

Legendary Toponyms on the Map (Delavay's Notes)

1. Li Kiang xué chan (Lijiang Xueshan 麗江雪山).
2. Koua-La-po (Gualapo 瓜拉坡).
3. Hee chan men (Heishanmen 黑山門).
4. Yen tze hay (Yanziyan 燕子岩).
5. Ta ouang miao (Dawangmiao 大王廟).
6. Kichan (Jishan 雞山).
7. Lo ko chan (Luoguoshan 鑼鍋山).
8. Mao Kou Tchang (Moguchang 蘑菇場).
9. Houang li pin (Huangliping 黄栗坪).
10. Lo pin chan (Luopinshan 羅坪山).
11. Hia lo pin (Xialuoping 下羅坪).
12. (Unmarked, likely Mount Sijiaoshan 四角山).

A A A: This mountain range forms the watershed between the Mekong and the Yangtze River, and further east, between the Yangtze River and the Red River.

Toponyms on the Map (From Top to Bottom)

Pé choui kiang (Baishuijiang 白水江)
Kin cha kiang (Jinshajiang 金沙江)
Suéchan (Xueshan 雪山)
Likiang (Lijiang 麗江)
Kientchouan (Jianchuan 劍川)
Hokin (Heqing 鶴慶)
Songkoui (Songgui 松桂)
Mo-so-yin (Mosuoying 摩梭營)
Lankong (Langqiong 浪穹)
Kiangyin (Jiangyin 姜寅)
Tapintze (Dapingzi 大坪子)
Tentchouan (Dengchuan 鄧川)
Pienkio (Pianjiao 片角)
Chan fong tsen (Shafengcun 沙鳳村)
Yangpy (Yangbi 漾濞)
Tsang chan (Cangshan 蒼山)
Changkouan (Shangguan 上關)
Tali (Dali 大理)
Tchao tchéou (Zhaozhou 趙州)
Hia kouan (Xiaguan 下關)
Ho kiang pou (Hejiangpu 合江浦)

Delavay's collecting areas, as well as those along his routes, cover a vast portion of Yunnan, except for the Northwestern and Southwestern regions, where Delavay did not have the opportunity to collect.

The large quantity of herbarium specimens he gathered, representing over four thousand species, enabled Franchet and other French botanists to develop the first taxonomic system for the flora of Yunnan.

With the exception of a single excursion to collect in the alpine region of Lijiang, his collections were always carried out during journeys associated with his religious missions, regardless of the reason for travel, or of the region of his apostolic administration. Regarding the latter, the dates and place names written on the herbarium labels clearly reveal the close link between his collections and his headquarters in Dapingzi and the other Christian communities under his responsibility: it was in these areas and their surroundings, as well as along the routes to and from these locations, that he collected most of his plants. On this subject, Jean-Marie Le Guilcher (1828-1907)[36] left us some very precious memories in his obituary for Delavay, especially about Delavay's first journey from Kunming to Dapingzi in 1882, an almost month-long trip they made together:

> Mr. Delavay was a distinguished botanist; he would frequently get off his horse to pick a flower that had caught his attention. Above all a missionary, he knew how to make the most of the earliest possible moment to carry out his spiritual devotions: so, whenever we arrived at a stop, he was always in God's good graces, and while waiting for our frugal supper, he would contentedly show me the precious flowers he had filled his travel pouch with. [...] He loved botany, but it was just an enjoyable side activity for him that he pursued it with a supernatural spirit. (Le Guilcher 1896, 356)

Ultimately, his apostolic mission took priority. In the same obituary, Le Guilcher also quotes Delavay's words:

> He said to those in his confidence: When the needs of my Christians call me, I immediately think: I would go to the mountain if I hoped to find a rare plant there, and I would not rush to the aid of my Christians in need! (357)

It should be noted, however, that during the last two years in Yunnan, upon his return in 1894, he devoted himself entirely to botanical collecting, before being able to travel to Mosuoying, where he had wished to spend the remainder of his life.

36 Le Guilcher was a pioneering missionary in Dapingzi, serving as its administrator for over 20 years (1853-74) before evangelising in Dali for more than 30 years (1874-1906). Cf. Li 2020, 282-3.

3.2 The Quality and Diversity of Delavay's Collections

Delavay's collections centred on the flora of Yunnan, especially those from his apostolic region. His meticulous approach involved gathering multiple specimens, sometimes dozens, for each species. This was done not only across different seasons, years, and localities but also with careful attention to morphological variations, including the plant, flower, seed, and even root forms. Franchet's evaluation of Delavay's specimens is particularly noteworthy in this context:

> On the other hand, the condition of the specimens, always admirably chosen for study, that is to say, collected in flowers, fruits, and often with roots; the care taken in writing the labels, all bearing a number and always mentioning the exact origin, the indication of the terrain, the altitude, the color of the flower, etc., make Father Delavay's collections the most perfect model of a herbarium collection. (Franchet 1896a, 145)

Delavay's collections were distinguished by their exceptional diversity. Beyond plants, he also collected seeds and specialised samples of flora and fauna for French experts. Among these, he gathered beetles and a few butterflies for David and Franchet's son (later passed on to Fairmaire), fungi for the mycologist Patouillard, lichens for the lichenologist Hue, mosses for the bryologist Bescherelle, shells for the conchologist Heude, and small mammals for the mammalogist Milne-Edwards. While some specimens were sent to Heude in Shanghai and a few herbarium packets and seeds to Annecy, the majority were dispatched to the Muséum. In his letters to Franchet, Delavay often reported the challenges he faced in collecting specific specimens, noting the rarity of beetles in his mission area but emphasising the abundance of fungi.

Delavay, as a taxonomic collector, did not engage with traditional or popular Chinese botany, despite its potential appeal. This general tendency to disregard the practical and utilitarian dimensions of plants was typical among taxonomic collectors of his era. His correspondence contains only sparse references to locally utilised plants, categorised by their common uses. Medicinal plants he noted included *Corydalis delavayi*, *Aconitum episcopale*, and *Crotalaria capitata* Benth. Those with applications in textiles and dyeing comprised a species of *Pueraria*, *Urtica nivea*, cotton, hemp, *Gerbera delavayi* Fr., and a species of *Rubia*. Two plants were identified as sources for papermaking: a bamboo species and *Broussonetia papyrifera*. Additionally, some plants were used as food, notably the young shoots of a tree he

tentatively identified – likely *Aralia chinensis* L. – and a species of morel mushroom.[37]

4 The Muséum's Allocation to Delavay and Delavay's Shipments to the Muséum

Botanical collecting and the shipment of herbarium specimens, along with other items, were primarily a matter of economics. A recent study by Samuel Gicquel shows that Armand David was the first missionary to receive a financial allowance from the Muséum in 1862, during his first mission to China, in addition to the stipend provided by the Ministry of Public Instruction. By 1870, the total amount allocated to David by these two institutions had reached 37,000 francs. Subsequently, between 1884 and 1913, fourteen missionaries benefited from the financial support of the Muséum (Gicquel 2023, 133-5). Delavay was among the first to receive it, starting in 1884, thanks to David's intermediary role. As evidenced by the accounts in some of his letters, Delavay indeed relied on the Muséum's funding to send his collections.

4.1 The Allocation of the Muséum to Delavay

From 1884, Delavay received an annual allowance of 2,000 francs from the Muséum.[38] However, he considered this amount "too large and beyond my needs, even assuming more numerous trips and more considerable shipments", as he mentioned to Franchet in a letter dated May 19, 1886. For the 1887 allowance, he declared that "I have no need for it, as the 1886 allowance is still untouched and will only arrive here at the beginning of next year".[39] Nonetheless, the Muséum continued to deposit the money from 1887 to 1889 into his managed account, despite his annual insistence that he had very few expenses and did not need the allowance every year. For the surplus funds during these years,[40] he asked Franchet to dedicate a portion to "adding some plates" to the work on *Plantæ Delavayanæ*, which Franchet had initiated in 1886, and for its publication.[41]

37 Cf. Delavay's letters dated May 5, August 13, October 6, November 6, 1887; September 12 and October 15, 1888; January 7, April 5, and November 18, 1889.

38 Letter dated May 17, 1884; May 19, 1886; and October 6, 1887. Note that 1 franc in 1880 is equivalent to 3.80 euros.

39 Letter dated September 6, 1886. Cf. also the letter dated May 5, 1887 which expresses the same idea.

40 Letter dated October 6, 1887; June 16, 1889.

41 Letter dated July 6, 1886; March 6, 1887; and May 26, 1888.

It seems that in 1890, the Muséum did not provide the allowance to Delavay, even though he spent 200 francs on a copy of *Plantæ Delavayanæ* for "a friend to aid in the identification of plants in this country",[42] as well as a significant sum for the purchase of Hooker's *Genera Plantarum*.[43] This led him into a financial crisis in 1891 upon his return from Hong Kong to Kunming. In a letter from that year, he informed Franchet that to carry out his project of collecting in Lijiang again, "I have no money at all" and "I can only make this trip if I receive the allowance you mentioned".[44] Additionally, to send a hundred of his large herbarium packages left in Dapingzi, he announced that he needed 700 or 800 francs.[45] Franchet quickly resolved the issue.[46] His last letter on this matter dates from October 10, 1893, barely twenty days before his departure for Yunnan. In this letter, Delavay expresses his refusal of an allowance from the Société de Géographie, while also indicating that the Muséum seemed hesitant to grant a new allowance.[47] Prompted by Franchet, the Muséum ultimately allocated 900 francs to him in December 1894.[48]

4.2 The Shipments of Herbarium by Delavay and Their Quantification at the Muséum

Financed by the Muséum, Delavay seemed to be bound by an agreement stipulating that he had to send his collections. In the letters dated May 19, 1886, and June 16, 1889, he writes:

> Outside of the Muséum, I do not send any plants except for very small shipments to a few old friends in Savoy and Switzerland, shipments that contain only the specimens listed in your catalogues, and on this point, I have made an exception only for Canon Chevalier of Annecy, who also receives your descriptions.[49] (Letter dated May 19, 1886)

42 Letter dated February 27, 1890. Cf. also the letter dated September 24, 1890.

43 This probably refers to *Genera Plantarum* (Bentham and Hooker), a seven-volume work published from 1862 to 1883, presenting Bentham and Hooker's classification.

44 Letter dated February 24, 1891.

45 Letter dated April 2, 1891.

46 Letter dated October 17, 1891 and November 29, 1891.

47 Letter dated October 10, 1893.

48 He writes in the "Minutes of the Professors' Meetings" from the session of December 4, 1894, regarding this allocation: "Abbé Delavay, who is returning to China, and whose shipments have allowed for the knowledge of the two distinct floras of Yunnan and Sichuan". On the same page, there is also the mention of 1,000 francs to Faurie in Japan, 1,000 francs to Farges in Sichuan, and 900 francs to Bon in Vietnam. Cf. AM16, no. 11.

49 In Delavay's obituary, Franchet (1896a, 145) confirmed this fact: "he committed to sending henceforth to our national Herbarium all the collections he could gather in China".

Franchet confirmed this commitment in the obituary dedicated to Delavay: "He undertook to send all the collections he could gather in China to our national Herbarium". [50] However, the total number of herbarium specimens and other botanical samples sent by Delavay to the Muséum is subject to several differing estimates, which still need to be examined and clarified.

Firstly, there are the two versions reported by Franchet in his articles in tribute to Delavay, published within a short period in 1896, one on April 16, and the other after on April 28:[51]

> From 1885 to 1896, the Muséum received 7,300 plant numbers from Father Delavay, representing nearly 3,500 species, in addition to 100,000 herbarium specimens. The number of new species for the flora of China discovered by him is estimated at 2,500, and the number of entirely new types is nearly 1,800. No exploration has yielded such results, especially considering that the exploration field visited by Mr. Delavay was scarcely half the size of one of our departments. (Franchet 1896a, 145)

> Thus, the number of specimens sent exceeds 200,000, with well-prepared herbarium parts reaching 80,000, of which the Muséum retains about a quarter. The number of species, both phanerogams and cryptogams, is over 4,000, and, a surprising fact in botany, at least in our time, the number of entirely new species to science is not less than 1,500. The total number of species by which Father Delavay has increased the flora from China can be estimated at 3,000. (150)

A 'plant number' in Delavay's collection refers to a number assigned to an herbarium specimen, often accompanied by a number of duplicates. In his letter of May 5, 1887, Delavay clearly states that the five packages in this shipment contained numbers "ranging from No. 2500 to No. 2607, with a certain number of duplicates interspersed". In his letter of August 13 of the same year, he mentions that "this year I will have at least 15 large packages to send you, mostly duplicates or nearly so".[52] In the three volumes of the herbarium receipt registers of Delavay, held at the Phanerogamie Library of the Muséum, a total

50 Letter dated June 6, 1889.

51 The first, titled "Le R. P. Delavay", appeared in the *Journal de botanique*, 8, while the second, "Notice sur les travaux du R. P. Delavay", was published in the *Bulletin du Muséum national d'histoire naturelle*, 4, which includes the minutes of the "11th meeting of the Muséum naturalists" held on April 28, 1896.

52 For the duplicate herbarium specimens, cf. also the letters dated November 11, 1886; May 5, 1887, June 16 and October 13, 1889.

of 6,165 numbers are recorded,[53] whereas the "7,300 plant numbers" mentioned by Franchet likely reflect a more exhaustive accounting, including additional supplements.

It is quite possible that, if the second article was written shortly after the first, Franchet re-examined and recalculated the number of Delavay's specimens. Thus, three figures have been modified: from 100,000 to 80,000 for the number of herbarium parts, from nearly 3,500 to more than 4,000 for the number of species, and from 1,800 to 1,500 for the number of new species. It should be noted that in research concerning Delavay's contribution, the figures from the second series are most frequently cited. Regarding the total of 200,000 specimens, aside from the 80,000 herbarium sheets, the remaining 120,000 specimens must, for the most part, consist of seeds, as evidenced by the numerous shipments mentioned in his letters.

There is also a third version, initially presented in an article by Olivier Colin and Brigitte Fourier, according to which Professor Gérard Aymonin states that the Muséum owes Father Delavay approximately 33,000 herbarium sheets, currently housed in the 'Asia' herbarium of the Phanerogamy Laboratory (Colin, Fourier 2008, 223). This figure was recently refined by Samuel Gicquel, who notes that the Muséum's plant entry files record 37 shipments from Delavay, totalling 33,196 herbarium sheets. The author challenges Franchet's version in his first article (100,000 herbarium sheets), though it is unclear whether Franchet was exaggerating or relying on a different accounting (Gicquel 2023, 126).

The discrepancy between the figures for the herbarium sheets received by the Muséum – ranging from 100,000 to 80,000, and then to over 30,000 – is substantial. Which figure is the most reliable? The analysis of Delavay's letters, which detail each shipment, along with the register of Delavay's herbarium receipts, provides us with a pertinent answer.

It should first be noted that, in order to send herbarium specimens and seeds, Delavay made his own "strong boxes" that were "well tied" in two sizes: the "large package", intended for plant specimens, and the "small package", reserved for seeds.[54] For herbarium specimens, Delavay specified that each package contained between 80 and 100 species, with herbarium sheets measuring 45 cm by 28 cm and weighing about 4 kg.[55] However, he did not specify the size of the small packages, and on occasion, he inserted small packets of seeds in letters. Additionally, for certain herbarium shipments, he also used, as

53 Archive of the Bibliothèque de Phanérogamie, Muséum national d'histoire naturelle: CR-GF-124.

54 Letter dated April 4 and December 12, 1886.

55 Letter dated April 4 and December 12, 1886.

mentioned in several letters, "small postal packages" from the Chinese post. At the Muséum, the register only records the receipt of herbarium packages, on which we base the following analyses.

After receiving his first allowance in early 1884, Delavay sent his first shipment to David: "It contains about a thousand species, generally well-dried and in good condition, packed in two equal boxes forming a small load for a horse".[56] From then on, until Delavay's death, his herbarium specimens were almost entirely sent to the Muséum, "except for a few small shipments to some old friends from Savoie and Switzerland" (as mentioned above). For all the large packages sent until April 1890, he listed them in three consecutive series: first from ME·A, ME·B… to ME·Z (ME written ℳ𝐸 in the manuscripts of Delavay, including the Missions étrangères), then from ME·AA, ME·AB… to ME·AZ, and finally from ME·1, ME·2… to ME·11.[57] However, in his letters after April 1890 at the time of his departure from Dapingzi, we no longer find any mention of the enumeration of the packages: he could no longer continue this inventory system for the packages left in Dapingzi and those of the newly collected herbaria up until the eve of his death in 1895.

The shipments of herbaria and other specimens by Delavay to the Muséum were frequent and enormous.[58] Here are some examples mentioned in his letters. In the letter dated February 25, 1885, he announced the shipment of four crates (packages) containing herbaria of 1,500 species. In the letter dated November 11, 1886, he reported four shipments: four packages in March (nos 1711-2030), five packages on May 20 (nos 2031-2063), one small package on June 16 (nos 2069-2085), and one package on September 11 (nos 2086-2108). In five letters from 1887, he announced the shipment of five packages (nos 2500-2607 plus duplicates) on May 5, a package of seeds on August 13, four or five large packages on November 3, and three packages on December 30. In the letter dated March 14, 1888, Delavay noted that it was his nineteenth shipment, and five months later, he sent another 20 large packages.[59] Then, in the letter dated October 15, he announced two more shipments, one via San Francisco and the other via Suez, saying that "I still have at least 25 large packages to prepare and send". After his departure from Dapingzi, in a letter from 1891 written in Kunming, he informed Franchet "my plant

56 Letter dated May 17, 1884.

57 Letter dated November 6, November 30, December 14 and December 30, 1887, January 22, 1888, and April 25, 1890.

58 In his letters, Delavay informs us that a Chinese postal courier regularly came to Dapingzi – most likely once a month – to collect his letters and plant specimens for shipment.

59 Letter dated September 12, 1888.

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collections from Yunnan are in Tapintze and contain about a hundred large packages with many good specimens".[60] Finally, upon his return to Yunnan in 1893, the shipments during his last two years of life were also abundant: six or seven packages announced in the letter dated August 29, 1894, five packages in the one dated October 27, 1895, and another seven new packages in the letter shortly before his death, dated December 9, 1895.

In addition to his own shipments, starting in 1891, Delavay sought help from three individuals to send a significant portion of his samples. Firstly, Jean-Marie Le Guilcher and François Ducloux,[61] his colleagues in Dali and Dapingzi, were entrusted with sending his herbaria left in Dapingzi (about a hundred large packages).[62] Secondly, there was Prince Henri d'Orléans, who was exploring Yunnan in 1895. Delavay mentioned his request for assistance: "As Prince Henri d'Orléans was sending a five-horse load of several trunks and crates to the Muséum, I added one package of plants destined for the Muséum to each horse, asking the consul of Mengzi to pack these packages with the Prince's shipment".[63]

The following table gives an overall estimate of the number of packages, mainly herbaria, mentioned in his letters.

Table 2 Number of Delavay's packages (herbariums) sent to the Museum between 1884-1895 (shipments mentioned in Delavay's letters)

Period of Shipments	Number of Packages	Sender	Place of Shipment
March 1884-April 1890 (Delavay in Dapingzi)	63 (ME·A to Z, ME·AA to AZ, ME·1 to 11)	Delavay	Dapingzi
1891-1893 (Delavay in France)	100 (approximately) (specimens left in Dapingzi)	Le Guilcher and Ducloux	
1894-1895(Delavay in Yunnan)	15 (approximately)	Delavay	Yunnan
1895	5	Prince d'Orléans	Yunnan
Total	183		

The Herbarium Library of the Muséum (Bibliothèque de Phanérogamie) houses an archive titled "CR-GF-124 (1) and (2)", which contains the catalogues of Delavay's herbarium numbers, written on several large sheets and in three notebooks, as well as the register

60 Letter dated April 2, 1891.

61 François Ducloux (1864-1945), missionary of the MEP and successor to Delavay at Dapingzi (1890-93), superior of the MEP minor seminary in Kunming (1895-1908), and provicar of the Yunnan mission (1908-34).

62 Letter dated April 2, 1891, October 23, 1892, and February 4, 1893.

63 Letter dated October 27, 1895.

of herbarium packet receptions, written on a cardboard sheet, front and back **[fig. 3]**.[64]

We record 38 shipments in this register, 37 of which were sent during his years in Yunnan and 1 in 1896, after his death. The first ones primarily correspond to Delavay's mentions of his shipments in his letters. For example, in the letter of March 14, 1888, Delavay announces that this is his nineteenth shipment, and in the register, the nineteenth shipment is dated May 31 of the same year, while the last recorded package number is ME·Z. Concerning the number of herbaria in certain shipments, the figures provided by Delavay and those in the register can be either identical or, more often, different. In the former case, we can cite the example of a small postal package mentioned in the letter of June 16, 1886, containing numbers 2069 to 2085, while in the register, the herbaria received on December 18 of the same year are exactly 17. In the latter case, the number given by Delavay is often an approximate estimate, such as the 1,500 species (herbaria) in four crates announced in the letter of February 25, 1885, while the Muséum received only 1,200 herbaria on December 21. Finally, it is important to note that in the register, all duplicates have been recorded, although their quantities are often absent from Delavay's accounts. This is the case with the five packages mentioned in the letter of May 20, 1886, where only 33 numbers are listed, from 2031 to 2063, to which several hundred duplicates must be added. If a package contains a hundred herbaria, this likely corresponds to the 750 received on May 6, 1887, as listed in the register.

Thus, we can supplement certain information recorded in the register:

1. The first fourteen shipments, without numbering, correspond to some unnumbered packages and those numbered ME·A to ME·M in the ME·A to Z series. This can be explained by the fact that shipments from 1884 and 1885 were addressed to David and Bureaux before being forwarded to Franchet. Additionally, in the N to Z list of the register, one package numbered ME·U is missing.
2. In the ME·AA to ME·AZ series in the register, the numbers AP of July 23, 1888, and AC of April 1, 1889, are incorrect; they should be replaced by AF and AG. Furthermore, six packages are missing: the first five, ME·AH, AI, AJ, AK, and AM, as well as another one, AW. According to the letter of October 13, 1889, three of these packages were lost during the shipping process, while the other two must be those received on May 31, 1889, but without a number in the register. As for package AM, the reason for its absence remains unknown.

64 I had the opportunity to consult and photograph this register in October 2015.

3. The 15,600 herbaria received on April 10, 1893, came from around a hundred packages left by Delavay at Dapingzi and sent by Le Guilcher. The 795 herbaria received on January 9, 1895, seem to be those from the six or seven packages mentioned in the letter of August 29, 1894. The 1,100 herbaria received on February 25, 1896, would have come from the five packages mentioned in the letter of October 27, 1895 (sent by Prince Henri d'Orléans), as well as from the seven packages noted in the letter of December 9 of the same year. Finally, the number of herbaria received on July 4, 1896, sent after his death by the Yunnan mission, remains unknown. It is unlikely to be very high, as it was from Delavay's collection made only a few days between December 9 and 15, 1895, that is, between the date of his last shipment of herbaria to Kunming and his return to Kunming after collecting in the surrounding mountains, two weeks before his death.[65]

With the exception of the three lost parcels and the two unrecorded ones (ME·U and ME·AM), the total of 33,198 herbarium received by the Muséum through the 37 shipments from 1884 to 1896 – an amount noted in pencil and circled at the end of the reception list – is accurate and reliable. To this, we must add the final shipment from 1896, whose number must be very small. The figure of 37 shipments corresponds to the number mentioned by Delavay in his letters, while the number of specimens, even Delavay himself could not know with such precision. Regarding Franchet's estimations, his figures of 100,000 or 80,000 herbarium specimens are not reliable. They represent a rough and exaggerated estimate, without accurate accounting of the preserved specimens or consideration of Delavay's mentions in his letters. The note written at the end of the list of reception of shipments, referencing the date of Franchet's death (in 1900), suggests that he did not have the opportunity to consult this register, which was carefully drafted after his passing. In this regard, it seems necessary to reconsider Franchet's estimates of the total of 200,000 specimens from Delavay, as well as his estimates of 3,500 to 4,000 plant species represented and the 1,800 or 1,500 completely new species.

According to Professor Gérard Aymonin, the Muséum currently holds 15,000 herbarium specimens from Delavay, which are now housed in the 'Asia' Herbarium of the Phanerogamy Laboratory (cf. Lennon 2004). Another portion, of similar size (15,600 specimens),

65 In the notes on Delavay's death, Dr. Paul-Richard Deblenne writes: "Father Delavay, still unwell, had gone back to collect plants in the mountains and had returned to the mission about fifteen days ago". Cf. Deblenne, P.-R. (1895). "Notes sur la mort de Jean-Marie Delavay". AM, Correspondance Franchet, Per K 123, Delavay (J.-M.), n° 173.

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has been exchanged or sold and is held at the *Harvard University Herbaria & Libraries*.[66] These herbarium specimens often bear two seals: one indicating "EX HERBARIO MUSEI PARISIENSIS," signifying specimens from the Paris Museum, and the other "GRAY HERBARIUM HARVARD UNIVERSITY" or a similar stamp **[fig. 4]**. As for the remaining specimens, which number around three thousand, they are distributed across several herbaria in France and around the world, including China, where 303 specimens have been identified through exchanges, with 7 found in Yunnan.

4.3 Itinerary and Organisation of Shipments

According to several letters from Delavay, during his years in Yunnan, his shipments typically followed the same route, divided into four stages, taking six months or more:[67]

- From Dapingzi to Kunming (first leg, 15 days), then from Kunming to Yibin (second leg, 23 days): transport by land route (38 or 40 days).[68] Delavay first bought a horse, then rented more horses, and paid one or more men to transport his crates of samples. In Kunming, the procurator of the Yunnan mission handled the subsequent transport.
- From Yibin (near zone 1 [fig. 1]) to Shanghai (third leg): shipments ensured by the Chinese postal service along the approximately 3,000 km river route of the Yangtze River. In Shanghai, the procurator of the MEP, Mr. Martinet,[69] was responsible for sending Delavay's crates to Marseille.
- From Shanghai to Marseille (fourth leg): shipments ensured by maritime mail via Suez. In Marseille, the procurator Mr. Beauté[70] took over and sent the crates from Marseille to Paris by post.

Moreover, from the beginning of 1888 until the end of 1895, Delavay also sent a certain quantity of specimens, of seeds in particular, via

66 Search engine: HUH - Databases - Botanist Search, with the search for the name "Delavay" (`https://kiki.huh.harvard.edu/databases/botanist_index.html`).

67 Cf. the letters dated the following dates: May 31, 1883; May 17, 1884; February 25 and March 16, 1885; April 4, 1886; March 6, 1887; and October 29, 1894.

68 For transit days, cf. note 32.

69 Jean-Baptiste Martinet (1844-1905), Procurator of the MEP in Shanghai between 1876 and 1891.

70 Louis Beauté (1851-1905), Procurator of the MEP in Marseille between 1879 and 1904.

San Francisco according to Franchet's instructions.[71] Through both shipping routes, the specimens intended for the Muséum could be doubly ensured.

In 1885, Delavay encountered some difficulties with his shipments due to the Sino-French War, which took place between 1884 and 1886 and was related to the protectorate of Vietnam.[72] In a letter dated May of that year, he mentions the refusal of the prefect of Dali to grant him a travel permit for his crates, noting that without this document, "it is very difficult to pass through the numerous customs along the route". Worse still, "no caravan leader, no one, wants to take responsibility for my shipment, regardless of the price".[73] His concerns at the time mainly revolved around the potential loss of parcels[74] and the hostility of certain officers in the river post office at Yibin in Shanghai, about whom he cautiously stated, "I did not dare to put an address in European characters".[75] However, the fact that only three parcels were lost in 1889 – without knowing at which stage of the relay this occurred – gave him some confidence in the Chinese postal system: "It is not the custom of the Chinese post to lose the items entrusted to it", he asserted in a letter towards the end of his life.[76] In reality, as he expressed in numerous letters, the real problem he faced lay in the delays in shipments and the irregular duration of deliveries to the recipients.

In his letters, Delavay mentioned eleven people who assisted him with the shipment of his parcels, almost exclusively intended for the Muséum, as well as with the management of his allocation account. The list of these individuals is provided in table 3 **[tab. 3]**.

71 Cf. the following letters: January 22, May 26, and September 12, 1888, June 6, 1889, March 18 and December 9, 1895.

72 This concerns the second phase of the French expedition to Tonkin in 1884 and 1885, a war between France and China that took place in northern Vietnam for its protectorate. French missionaries in Yunnan felt strong pressure, as Delavay mentioned in the letter of May 17, 1884: "In the meantime, news arrives of the war between France and China in Tonkin, and a certain agitation of minds against Christians and missionaries".

73 Letter dated May 17, 1884.

74 Letter dated December 12, 1886.

75 Letter dated March 16, 1885.

76 Letter dated June 11, 1895.

Table 3 People who contributed to Delavay's shipments

No.	Name	Congregation and position	Service provided to Delavay	Letters
1	Armand David	Lazarist, organiser	Transferred the first shipments	May 31, 1883; May 17, 1884; February 25, 1885; October 27, 1885
2	Jean-Baptiste Martinet (1844-1905)	MEP, procurator in Shanghai	Shipment relay	December 12, 1886; November 18, 1889
3	Meugnot	Lazarist, procurator in Shanghai	Shipment relay	October 27, 1885; March 6, 1887
4	Louis Beauté (1851-1905)	MEP, procurator in Marseille	Shipment relay	April 4 and December 12, 1886; May 5, 1887
5	Maurice Chirou (1828-1911)	MEP, procurator and superior in Paris	Shipment relay; management of allocation account	December 12, 1886; October 6, 1887; September 12, 1888; February 27 and September 24, 1890; October 17, 1891; June 4 and June 11, 1895; October 6, 1895
6	Pierre Fleury (1851-1918)	MEP, procurator in Paris	Managed allocation account	November 22, 1891
7	Prosper-Bernard Delpech (1827-1909)	MEP, superior in Paris	Managed allocation account	September 12, 1888
8	Jean Joseph Fenouil (1821-1907)	MEP, vicar in Yunnan	Financial aid in 1890	September 24, 1890
9	Jean-Maire Le Guilcher	MEP, missionary in Dali	Sent the parcels left in Dapingzi in 1890	April 2, 1891 and November 22, 1891; October 23, 1892; February 4, 1893
10	Émile Rocher (1846-1924)	Consul in Mengzi	Sent from Mengzi	June 16, 1889
11	Henri d'Orléans (1867-1901)	Explorer	Transported the five parcels in 1895	October 27, 1895

The table presents a competent network responsible for Delavay's shipments and the management of his account associated with this activity, consisting of nine religious individuals – seven members of the MEP and two Lazarists – along with two laypersons. Notably, the role of the MEP procurators is highlighted. From Kunming, where the procurator's name is absent in Delavay's letters, to Shanghai, Marseille, and Paris, the four MEP procurators took turns handling Delavay's shipments to the Muséum. Even at the MEP headquarters in Paris (128 Rue du Bac), superiors assisted Delavay by performing various tasks related to financial expenses and other aspects of the collection, such as sending botanical documents and subscribing to

the *Journal de Botanique* for the year 1891.[77] Regarding the two Lazarists, Armand David acted as the intermediary for Delavay's first shipments to the Muséum, while the procurator in Shanghai took charge of sending beetles to David. As for the two laypersons, Émile Rocher, consul in Mengzi, worked to establish a new shipment route from that location, and Prince Henri d'Orléans, during his 1895 expedition, carried five of Delavay's parcels as part of the transport of his own collections from Kunming to Mengzi. More broadly, this network can be seen as a condensed reflection of the collective enthusiasm and collaborative organisation that characterised the engagement of the French elites in botanical science at the time, where individuals from diverse backgrounds united their skills and efforts for a common scientific vocation.

5 Delavay and Franchet: Interactions and Research on Delavay's Collections

Adrien Franchet was a taxonomist botanist at the Muséum. Born in Loir-et-Cher, he was a pharmacy student at the age of twelve, and in 1857 he became the curator of the collections of the Marquis de Vibraye at twenty-three years-old, a position he held until 1880. However, around 1872, he began studying Japanese plants collected by Louis Savatier, his collaborator and friend.[78] His publication on this work from 1875 to 1879, titled *Enumeratio plantarum in Japonica sponte nascentium*, caught the attention of Professor Bureau at the Muséum. Franchet was nominated to the Muséum in 1881 as an auxiliary botanist and began studying the collection of Chinese plants by Armand David, resulting in the two volumes of *Plantæ Davidianæ* published in 1884 and 1888 (Franchet 1884; 1888). In 1886, Franchet was officially affiliated with the Muséum as a lecturer as the Chair of Botany at the Laboratory of Advanced Studies (classification and natural families). From the arrival of Delavay's first herbaria in 1885, Franchet continuously worked on identifying and classifying the plants collected from Yunnan until his death in 1900. He also worked on herbaria of other collectors from Southwest China and other East Asian countries.[79]

The correspondence between Delavay and Franchet was essential for their cooperation. On Franchet's side, Delavay's letters provided rich explanatory information about plants that were often difficult

77 Letter dated December 12, 1886 and October 6, 1887.

78 For Savatier's collection, cf. Bretschneider 1898, 2: 826-7.

79 Del Castillo 1900, 158; 161; 167. For Franchet's study, cf. `http://www.rhododendron.fr/articles/article42.pdf`.

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to identify, and on the other side, Franchet's inventories of the identified herbaria were a mandatory indication for the continuation of his collection. In some correspondence, they also exchanged reflections on other botanical subjects, such as the origin and distribution of certain plants by genus and species.

5.1 On the Collection and Lists of Collected Plants

As an already experienced collector in France and in the regions of Guangdong-Guangxi where his first mission took place, Delavay was well versed in the general criteria for collection as it applied to Yunnan. Furthermore, his correspondence with Franchet discussed special criteria to complete and improve the quality of his collection and the cataloguing of flora in Yunnan. Thus, in his letter addressed to David on February 25, 1885, Delavay asked Franchet for comments on his "poorly described" herbaria: "I will be all the more pleased to receive his feedback since it makes me focus on specific points and stimulates my interest that sometimes tends to wane". On October 6, 1887, he asked Franchet to show him what plants to collect: "You would do me a great favour by indicating in the margin with any conventional sign the species you especially wish to receive in number". In the letter of March 6, 1887, Delavay echoed a request from Franchet about duplicates: "I can see from your letter that the number of duplicates is insufficient. I will make a good collection of them for you in the coming seasons".

Plant flowers represented an important phase of the collection, whose remarks from Paris Delavay took into account very early on. Already in a letter of 1885, he asked David to give him an "idea of the colour of the flowers". In the letter of May 26, 1888 addressed to Franchet, he emphasised the lack of flower collection:

> As I was convinced that many species could not be identified without the flowers, and since these always eluded my research, I indeed neglected the collection of these plants, but I will rectify this omission.

The lists of Delavay's plants established by Franchet were a recurring subject in Delavay's letters.[80] Indeed, Delavay had his own list of unidentified herbaria, which continued to grow over time. It was actually only Franchet who had the list of Delavay's identified plants;

80 Delavay, letters dated February 25, 1885; January 13, April 4, September 6 and December 12, 1886; November 30, December 4 and December 30, 1887; May 26, January 12 and September 12, 1888; January 7 and July 13, 1889; and October 23, 1890.

this list was itself constantly being updated. Delavay depended on the lists sent by Franchet to better locate a particular plant in his vast collections. Here are the two passages in question.

> I would very much like you to send me the names of all the plants I will be shipping; this will real help me navigate among the large number of genera and species that I will have to classify. It would also help me a lot in my herbarium work. Thanks to this classification, I will better recall the locations to visit for such and such a species to collect the flower or the fruit. (Letter dated February 25, 1885, to David)

> As you can well imagine, the list of new plants was particularly enjoyable. I hastened to verify and label most of the species. For some, the notes from my initial shipments were poorly recorded. I could not identify them: such was the case, among others, for *Viola hookeri*, *Polygala triphyllea*, *Guldenslactia delavayi*, *Morina delavaya*, and *Cyananthus renifolius*. These are the main species I could not find, along with a few ferns. (Letter dated January 13, 1886)

In order to carry out well-organised collections, Delavay required precise lists, including duplicate seed samples: "My attention would thus be kept more alert, and little by little I will be able to meet your request".[81] Concerning the herbarium duplicates acknowledged by Franchet, Delavay needed "the largest possible list of new species".[82] As for species like *Primula listeriaque*, *Indigofera tinctoria L.*, and *Astragalus brachycephalus*, he asked Franchet to indicate the location and date of collection.[83] In response to Franchet's request about a large *Serisia*, Delavay made a general request: "if you could send me the nomenclature of Yunnan plants – for each family in the same way you kindly did for the grass family, I would really like to have this list as soon as possible, because I am floundering in the midst of this jumble of unknown plants".[84]

Each time he received lists, Delavay could not hide his joy and expressed his thanks, as evidenced in the letter of May 26, 1888: "I sincerely thank you for sending the list of grasses and some *Compositae*. Nothing after your letters gives me more pleasure". However, it was not uncommon to encounter difficult moments of waiting, where Delavay became impatient: "You probably already know this, but I

81 Letter dated April 4, 1886.

82 Letter dated December 12, 1886.

83 Letter dated January 12 and January 26, 1888

84 Letter dated September 12, 1888.

repeat: no printed list or brochure has reached me".[85] In the following two passages, we even see a stern Delavay:

> Please send me everything you have published on the plants of Yunnan as soon as possible. You will not lose out because these publications will put me on the track of a multitude of interesting species that I had completely lost sight of. (Letter dated November 30, 1887)

> I have long desired and even somewhat hoped to receive a rough list of the plants I have sent, so that I can identify them myself, even in my spare time. (Letter dated January 7, 1889)

Such a tone from Delavay is exceptional, as in all other letters he always maintained sincere respect for Franchet, without a single unpleasant word. This highlights the importance of Franchet's work: without the identification lists, Delavay became almost blind in his collecting. It should be noted that a few months later, Delavay received three lists of *Pedicularis*, *Rosaceae*, and *Saxifragaceae*, four sheets of *Plantae Delavayanae*, the drawn and engraved plates, as well as a publication by Franchet on *Cypripedium*. In his letter of July 13, 1889, Delavay sincerely apologised for his unpleasant expressions, saying that "at that time I was a bit unwell". Ultimately, as Delavay exclaimed in a letter from 1893 shortly before his return to Yunnan, "the most important thing is that the shipments wait around too long before being studied and classified because nothing is more discouraging for collectors than not having updates of the plants they have collected and sent".[86]

5.2 On the Identification, Description, and Correction of the Collected Plants

Delavay's work in these areas demonstrates his strong skills as a botanist. The few lengthy letters between 1887 and 1888 can even be considered as botanical research articles. An example of this can be seen in the 11-page long letter from August 13, 1887 in which Delavay addressed the following four subjects: 1) a lengthy description of herbarium specimen no. 171, *Podoon delavayi*; 2) a presentation of the twelve species of the *Conifer* genus in the region of his mission, the areas of his collection, and their main morphologies; 3) a warning of an erroneous identification made by Franchet on herbarium

85 Letter dated September 6, 1886.

86 Letter dated April 11, 1893.

specimen no. 1209, a species of *Aconitum*,[87] and a dissertation on its popular use in Yunnan, where its turnip-shaped root is used as a universal antidote, on cotton in the making of cloth, and on bamboo and *Broussonetia papyrifera* in the manufacture of two types of paper;[88] 4) a geographical presentation of the Mekong in the Dali region, as well as that of Dapingzi; 5) a geographical map of the region of his collection **[fig. 2]** accompanied by an explanatory note of the eleven localities indicating their locations and altitudes, along with the latitude of the five important localities; 6) an indication on the dispatch of about fifteen drawings, most likely of plants.

Often intended to identify new species of plants, Delavay's botanical descriptions often emphasise two essential aspects, morphology and botanical geography. For certain plants, his studies are thematic, found in a single letter such as on four species of *Bauhinia*,[89] or in two or more letters such as on species of *Primula*[90] and *Rhododendron*,[91] on the species *Podoon delavayi*,[92] on five species of *Cypripedium*,[93] etc. Here are two examples:

> (On *Cypripedium luteum* Franch.) Flower colour: slipper yellow with a small number of blackish-purple spots on its upper part. These spots are often absent. Lower sepal and petals are most often streaked with yellow and a brownish-purple colour; sometimes almost entirely yellow. Lower sepal (i.e., the one supporting the slipper) is greenish-yellow finely striped with brown. This species is rare, abundant at Hee chan men (Heishanmen 黑山門) pass and also at Kou-Toui (Gudui 穀堆) in Yang iu chan (Yangyushan 羊芋山) and Fang yang tchang (Fangyangchang 放羊場). Rocky limestone terrain between 2500 and 3000 meters in altitude. (Letter dated October 6, 1887)

87 Franchet identified it as *Aconitum napellus*; it is, in fact, *Aconitum episcopale* Levl.

88 Rarely touched on this subject, Delavay's writings in this letter about the uses of these few plants present a certain ethnobotanical character, as shown by his description of *Aconitum episcopale* Levl: "Also, when they [the Chinese] go to dine with those who might poison them for one reason or another, they start by swallowing two or three roots of Tou-la, so that their treacherous friend will be at a loss. This root is held in high esteem throughout Yunnan, and I have heard several missionaries praise its effectiveness. As for me, I have not had the opportunity to use it, not having the advantage of possessing any friends in China, neither true nor false".

89 Letters dated January 22 and January 26, 1888.

90 Letters dated May 5 and July 4, 1887, October 6, 1888, and September 12, 1889.

91 Letters dated December 12, 1886, August 13, 1887, January 22, 1888, and October 27, 1895.

92 Letter dated August 13, 1887.

93 Letters dated October 6 and November 6, 1887.

> (On *Podoon delavayi*) I would ask you to send me a description of *Podoon delavayi* as soon as possible, because there has been confusion in the numbers here or there. My no. 171 is an herb 60 to 80 cm tall with alternate, oval leaves, very small flowers in a terminal cluster or spike, the fruit seemed to me to be a pod; flower and fruit hidden by bracts, first green, then fading out into a yellowish-white colour. Is this your plant, or is it the one of which I am sending you a small sample in this letter? If it's the latter, it is indeed a small tree or a shrub of 5 to 6 meters or a bit more, armed with strong and long spines (# thorns and not spines)[94] all over the lower part. I had mistaken it for a *Rhamnaceae*. This species is very common on all the surrounding hills in sandstone terrains between 1000 and 1800 meters in altitude, hardly exceeding these two limits. You will find some samples in flower and fruit of this plant in the 1886 shipments. (Letter dated August 13, 1887)

Faced with the immensity of herbaria, especially new species, identification was not simple; there were mix-ups and Franchet as well as Delavay himself inevitably made mistakes. In a single letter written on October 6, 1887, Delavay identified three such mistakes: "I believe you were wrong to give up *Ranunculus taliensis* in favor of *R. affinis*," "The *Viola platyphylla* seems to me to be a distinct species from *V. biflora* L.", or "I made a mistake in attributing it to *Cratævia religiosa* [...] Its foliage closely resembles that of *Cedrela tounia*, but I have never seen the flowers or the fruit". Consequently, the botanical descriptions that Delavay made in letters played a decisive role in rectifying problematic or erroneous identifications, such as one on a species of *Rhododendron*: Delavay corrected his own identification from a hybrid species to a genuine species.[95] Similar descriptions were also made on several errors committed by Franchet, such as on the herbarium specimens of *Parnassia* numbered 1, 2, 71, 72, 73, 74, 75, 76, and 710,[96] on two species of *Primula*,[97] on respective herbarium specimens of *Sophora*, *Lespedeza*, *Delphinium*, and *Viola*,[98] etc. In a letter from January 26, 1888, Delavay even pointed out a flaw in the shape of the leaves in Franchet's drawing of *Flemingia vestita* Benth., providing a detailed morphological description.

Compared to the simple indications of the environment of collected plants on herbarium labels (location, soil, topography, altitude), Delavay's descriptions of his collections in his letters can be considered

94 Written in the margin as an erratum, preceded by a pound sign.

95 Letters dated August 13 and November 6, 1887.

96 Letter dated January 3, 1886.

97 Letter dated May 5, 1887.

98 Letter dated January 26, 1888, and November 3, 1887.

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as a kind of botanical/geographical rendition. The information he provided extends to three categories: 1) biotopes of a number of collected plants, 2) geography of an area or region, such as those concerning mountains like Lopingshan 羅坪山 (Lo pin chan),[99] Cangshan,[100] and Heishanmen,[101] as well as Dapingzi[102] and the Lijiang region,[103] etc., 3) geographic collection maps. According to the sources at our disposal, Delavay also drew four more maps of the Dapintzi region,[104] among which two, in manuscript form, are respectively inserted in the letter of February 25, 1885, and in the letter of August 13, 1887. A third, also in manuscript form but undated, is kept in the Phanerogamic Library of the Muséum.[105] As for the fourth, a printed map titled "Sketch of the regions of Yunnan where plant collections were made from 1882 to 1894 by the late Father J.M. Delavay",[106] is inserted as "Supplement V" in Bretschneider's *History of Botanical Discoveries in China* (1898).

Finally, it should be noted that in the letter of July 13, 1889, Delavay corrected six mis-transcribed toponyms from his letters, toponyms that appeared in a register he received, with the erroneous characters underlined: "Yang-iu chan and not Yang-in chan, Nien-Kia-Se and not Mien Kia Se, Koua-la-po and not Hoa-la po, Kiao-che-tong and not Kia-che-tong, Ta-pin-tze (without an accent), Yang tze kiang and not Yang tche kiang".[107]

5.3 On the Origin of Certain Plant Species and their Distributions

This must have been a reflection initiated by Franchet before 1885 during his studies of the plants collected by David and Delavay up to that time. In his communication on July 24, 1885, to the Botanical Society of France, Franchet (1885, 264-72) presented 20 species of

99 Letter dated October 27, 1885.

100 Letter dated May 31, 1883.

101 Letter dated May 17, 1884.

102 Letter dated January 13, 1886, January 30 and August 13, 1887.

103 Letter dated November 11, 1886.

104 These maps all relate to the Paris meridian and not Greenwich.

105 In note 27 of Li's 2020 article (274), where this map was presented for the first time, an error occurred regarding its dating: the map was confused with the one in the letter from August 13, 1887.

106 The date of 1894 is incorrect because the geographical framing of the map only applies to the region of Delavay's collection during the period at Dapingzi (from July 1882 to mid-1890).

107 The six toponyms in *pinyin* and Chinese characters are: Yangyushan 羊芋山, Nianjiasi 年家寺, Gualapo 瓜拉坡, Jiaoshidong 焦石洞, Dapingzi 大坪子, and Yangzijiang 揚子江.

Primula collected by Delavay (16 new species). Then, a discussion on the botanical geography of this species followed:

> Regarding the previous communication [by Franchet], Cosson remarked that the fact of the localization of a large number of new *Primulaceae* species, noted by Mr. Franchet, is of great interest in botanical geography; because it is known that most of the Himalayan plants known to date have a very wide range. This observation is all the more important because the genus *Primula* is far from being one of the richest in species.
>
> Mr. Franchet said on this subject that the Yunnan region also has a large number of new species in the genera *Saxifrage*, *Gentian*, *Pedicularis*, and *Cyananthus*.
>
> Mr. Cosson added that the vegetation of the Taurus Mountains in Asia Minor presents similar phenomena, and he believes that one cannot account for them without tracing back to the primary causes of species distribution.
>
> Mr. Bureau believes that one might arrive at a plausible explanation for the peculiar character of Yunnan's flora by assuming that prior to the historical period, the mountains of this region were separated from the rest of the Himalayas by the sea, and this hypothesis is moreover made very plausible by the confirmed existence of Tertiary deposits in these regions. (272-3)

Franchet undoubtedly consulted Delavay's opinion, as in the letter of September 6, 1886, which responds to the three letters from Franchet written on February 24, April 8, and May 8 of the same year, Delavay expressed his hypothesis on three points about "identical species at enormously distant points from each other with all the intermediate space missing":

> The first is the invariability of the species during the current geological period, which can be made as long as desired. The state of the atmosphere and the chemical constitution of the terrain having not changed the food of the plants, I will thus constantly find the same, their form should not have varied. According to this aphorism: tell me what you eat, and I will tell you who you are. I do not believe that more or less heat and light alone can vary the plant species. The wheat I saw cultivated in the south of Guangdong at 20° north latitude is exactly the same as that cultivated in the mountains of Savoy.
>
> The second supposition is this: during the first part of the current geological period, the area of each plant species was continuous, extending all around its initial center of dissemination, and there came a time when this area was incomparably more extensive than

> it is now. The greater source of heat that existed then on the earth's surface might perhaps make this second supposition more plausible.
>
> I suppose, thirdly, that a series of revolutions and accidents on the surface of our globe, such as successive cooling, a universal flood, and excessive winters in different regions, subjected plants to such trials that several species could only be preserved in the least damaged areas. Hence these large gaps between the different habitats of the same species, such as *Cypripedium arietinum*. But then one must admit that Yunnan and North America were once connected by a mountain range that later collapsed into the Pacific. (Letter dated September 6, 1886)

Franchet's reflection took several years, with his hypotheses appearing in two articles. In 1891, he demonstrated the unique analogy between the vegetation of the high regions of Central Asia and that of the mountains of central and western Europe (Franchet 1891, 140-50). In 1896, he highlighted that

> it is indeed in Central Asia and more particularly in Western China that the specific centre of most of the genera considered rightly as characteristic of the European alpine flora is located. (Franchet 1896c, 485)

According to Franchet, it is in this area where the maximum number of species and the greatest number of accentuated forms for each genus are found, allowing them to be divided into subgenera and sections. From this hub, they branch out towards the West and the East in increasingly diminishing offshoots, while towards the North, the succession of species occurs in groups without continuous links, and towards the South, there is a sudden halt of these genera that characterise the high regions of the temperate countries of the Northern Hemisphere.[108]

5.4 Research Conducted by Other Scholars and Cultivation of Delavay's Seeds

In an 1889 letter, Delavay granted the Muséum, through Franchet as the coordinator, the exclusive right to study his collections:

> It has always been my intention to place entirely at your disposal, or that of Mr. Bureau, all the plants – both phanerogams and

108 For a study of Franchet's hypothesis, cf. Del Castillo 1900, 159-64. For a general presentation, cf. http://www.rhododendron.fr/articles/article42.pdf.

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> cryptogams – that I have sent to the Muséum, so that you may publish them yourself and with the collaboration of Father Hue, Mr. Bescherelle, Mr. Patouillard, or whomever you deem fit. I fully approve of everything you have done in this regard, and I will confirm this if the need arises. (Letter dated June 6, 1889)

In his correspondence, Delavay mentioned sixteen scientists who received, studied, or collaborated on his botanical or zoological samples collected in Yunnan. These individuals are listed in the following table [tab. 4]. Notably, for Franchet and Bureau, letters addressed directly to them are included. Similarly, letters referring to the relevant collections of Hue, Bescherelle, and Fairmaire – whether or not their names are explicitly mentioned – are also taken into account. However, Armand David, who facilitated the transfer of Delavay's herbarium and beetle collections to the Muséum between 1883 and 1885, is excluded from this list, as it focuses on scientific researchers and botanical garden experts. Likewise, Franchet's son, an amateur entomologist who received a number of beetle specimens, is not included. Nonetheless, letters in which Delavay mentions their names in connection with his beetle collections are catalogued in the section dedicated to Fairmaire.

Table 4 Scientists who received, studied, or cultivated the plants collected by Delavay in Yunnan

No.	Name	Field and institution	Letters from Delavay	Contributions to Delavay's collection
1	Édouard Bureau (1830-1918)	Botanist; Muséum	May 17, 1884; March 16, and October 27, 1885; April 4, May 19, 1886; May 5, 1887; July 27, 1888; June 16, July 13, 1889; and October 23, 1890	Organisation
2	Adrien Franchet (1834-1900)	Botanist – Flora of East Asia; Muséum	In 72 letters	Numerous studies
3	Carl Johann Maximowicz (1827-1891)	Russian botanist – Flora of East Asia	July 13, 1889; March 28, 1891	Brochure on *Pedicularis*
4	Louis Morot (1854-1915)	Botanist – Flora of Southeast Asia	November 22, 1891	Morot 1889
5	Henri Hua (1861-1919)	Botanist; Muséum	February 20, and March 1, 1893	Hua 1892a; 1892b

No.	Name	Field and institution	Letters from Delavay	Contributions to Delavay's collection
6	Henri Ernest Baillon (1827-1895)	Botanist	May 26, 1888	A note on *Rosa*
7	Ernest Cosson (1819-1889)	Botanist – Flora of Algeria; Academy of Sciences	July 27, 1888	Funding 1888
8	Etienne Chevalier (1826-1914)	Botanist; Cathedral of Annecy	May 19, 1886; May 5, 1887	Receipt of specimens
9	Narcisse Théophile Patouillard (1854-1926)	Mycologist	October 6, 1887	Patouillard 1886a; 1886b; 1890a
10	Auguste Marie Hue (1840-1917)	Lichenologist; Muséum	September 6, 1886; July 4, August 13, October 6, November 6, December 14, 1887; September 12, 1888	Hue 1887; 1889
11	Émile Bescherelle (1828-1903)	Bryologist	March 31, 1883; March 16, 1885; July 6, 1886; September 12, 1888; January 7, July 16, November 18, 1889; December 9, 1895	Bescherelle 1891; 1892; 1893
12	Léon Marc Herminie Fairmaire (1820-1906)	Entomologist	May 17, 1884; February 25 and October 27, 1885; May 19 and December 12, 1886; January 30, March 6, October 6, and November 6, 1887	Fairmaire 1886a; 1886b; 1887
13	Alphonse Milne-Edwards (1835-1900)	Mammalogist; Muséum	November 11, 1886; May 5, 1887	?
14	Pierre Marie Heude (1836-1902)	Conchyliologist, Jesuit in Shanghai	May 17, 1884; May 19, 1886; November 6, November 30, and December 4, 1887; and September 12, 1888	Heude 1885; 1890
15	Maurice de Vilmorin (1849-1918)	Nurseryman; Muséum	September 24, 1890, June 11, 1895	Planting at the Jardin des Plantes

No.	Name	Field and institution	Letters from Delavay	Contributions to Delavay's collection
16	Alphonse Beck (1822-1902)	Doctor; Société Valaisanne des Sciences naturelles	February 4, 1893	Request for seeds for the botanical gardens in Valais

The table lists eleven botanists, three zoologists, and two botanical garden experts, all of whom are renowned specialists. Among them, only Heude resided in Shanghai, and Beck in the Valais region (Switzerland), while all the others were French, affiliated with the Muséum and Paris. Regarding Delavay's collections, it was primarily David, Bureau, and Franchet, with the latter being the most involved, who received the majority of Delavay's specimens and who also requested him to collect specimens for other specialists, with the exception of those sent to Chevalier, Heude, and Beck due to personal connections.

The research results conducted by both the specialists to whom the Yunnan samples were sent and other researchers quickly enriched global catalogues and highlighted Delavay's achievements. In botany, Franchet is undoubtedly the foremost taxonomist who contributed to the discovery of Delavay's plants: the vast majority of his nearly eighty articles published between 1884 and 1900 were fully or partially dedicated to them (cf. Del Castillo 1900, 169-72). In 1889-90, Franchet published the three-part monograph *Plantæ Delavayanæ* (Franchet 1889-90), although the plants recorded in it represent only a small fraction of Delavay's collection. According to Franchet's original plan, the work was intended to consist of 20 volumes. In addition to Franchet, Hue described 139 lichen specimens in his articles from 1887 and 1889, Patouillard reported 74 mushroom specimens in 1886 and 1890, not to mention Hua's work on *Polygonatum* and *Aulisconema* from Delavay's collection, as well as Morot's studies on the genus *Podoon*.

In zoology, the entomologist Fairmaire recorded 77 new beetle specimens in a single article in 1877.[109] Regarding shells, Heude devoted a significant part of the two volumes of his work on molluscs to Delavay's specimens, marked either as collected under his name or as collected from the Dali region (cf. Heude 1885, 1; 1890, 2), which must have come from Delavay's collection. The receipt of these articles, sent by Franchet or by Heude from Shanghai, was a "true joy" for Delavay;[110] he always asked Franchet to convey his sincere thanks to the authors.

The arrival of Delavay's herbarium specimens at the Muséum and the taxonomic work dedicated to them at the same institution

109 For recent research on Delavay's beetles, cf. Deuve 2022.

110 Delavay, letter dated October 6, 1887.

promptly initiated a current of comparative botanical research on a global scale. For example, take the volumes of the *Journal of Botany* from a single year, 1890, where four studies referenced Delavay's new discoveries. Patouillard, in his research on the mycological flora of Tonkin, presented the relationships of the Balansée variety with *Polyporus delavayi* Pat (Patouillard 1890b, 16). Regarding the Mo-ku-sin (*Lysurus mokusin*), the same author indicated that since the discovery of this fungus by Pierre-Martial Cibot (1727-1780) in the 1770s, research on the *Lysurus* genus from 1822 to the 1880s had been contradictory, while "a new study of Mo-ku-sin became necessary; this is what we have tried to do with the help of specimens collected in Yunnan by Father Delavay".[111] Concerning the genus *Trentepohlia*, Paul Hariot (1854-1917) observed that the species *Trentepohlia aurea* "still exists in Africa on Ascension Island (*Gordon in herb.* Kew), in Yunnan (Delavay), and in Tonkin" (Hariot 1890, 86). Finally, Louis Morot (1854-1915) compared the anatomy of *Podoon delavayi* and *Dobinea vulgaris* to conclude that "there is reason to associate the genus *Podoon* with the genus *Dobinea*" and that these two genera "should indeed be classified in the family *Anacardiaceae*, of which they would constitute a special group" (Morot 1890, 363-4). In other words, the research on Delavay's herbarium specimens conducted by scholars at the Muséum actively integrated these specimens into the development of the botanical system. In this regard, Lu Di's assessment of the role of Mo-ku-sin specimens is quite revealing: "Cibot's article and Delavay's specimens, no doubt, had boosted novel taxonomic ideas and observations within dynamic scientific networks that crossed geographical boundaries and created intellectual connections" (Lu 2022, 101).

5.5 Seeds as Another Contribution of Delavay

Seeds represented another significant aspect of Delavay's contributions. Beyond his herbarium collections, seeds made up the majority of the 120,000 specimens he amassed. In forty-five letters, Delavay detailed his work with seeds, linking them to his botanical collections and shipments to the Muséum, where around twenty genera[112] and forty plant species were documented. Among these, seeds from the genera *Rhododendron* and *Primula* were particularly prominent,

111 Patouillard 1890c, 253-4. For a study on the history of the discovery and research of Mo-ku-sin, cf. Lu 2022, 100-2, for the section concerning Delavay.

112 For a large portion of the plants he collected, Delavay was only able to identify them at the genus level, while the identification of their species had to be completed by Franchet or other taxonomists in Paris.

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with eight and ten species mentioned, respectively. Examples include *Rh. cabrifolium*, *Rh. delavayi*, *Rh. bureavii*, *Rh. racemosum*, as well as *P. malacoides*, *P. auriculata*, and *P. bella*. Regarding other species, the list includes *Indigofera pendula*, *Indigofera delavayi*, *Musa lasiocarpa*, *Koelreuteria bipinnata*, *Paeonia lutea*, and *Clematis delavayi*. Delavay often provided cultivation notes for these plants, highlighting their adaptation to Parisian climate conditions, whether in an orangery or outdoors.[113] For certain species, such as *Primula forbesii*, he specifically emphasised the importance of carefully preserving the seeds, given their rarity and difficulty to recollect.[114]

At the Muséum, Delavay's seeds appear to have been catalogued under the account of Maurice de Vilmorin, a renowned horticulturist at the Jardin des Plantes. These seeds were subsequently sown in the Jardin des Plantes and other nurseries, such as the Arboretum des Barres in Loiret, with varied outcomes: some germinated and thrived over time, while others failed to survive. From afar, Delavay frequently inquired about the progress of these plantings in his letters to Franchet, expressing joy upon learning that certain seeds, like *Primula poissonii*, had germinated or were growing successfully.[115] Meanwhile, Vilmorin also sent Delavay's seeds and plants to Kew Gardens in England and the Arnold Arboretum in the United States. Over time, these plants became established in gardens worldwide, with several becoming familiar species. Notable examples include *Rhododendron racemosum*, *Sorbus vilmorinii*, *Corylus chinensis*, and *Ligustrum delavayanum*.[116]

6 Conclusion

The collaboration between missionary-scientific collectors, engaged in their apostolic missions in remote parts of the world, and the Muséum represented a widespread model in the taxonomic research of the latter half of the nineteenth century, particularly in botany and zoology. On a broader scale, other missionaries were also associated with various institutions that, directly or indirectly, maintained ties with the Muséum. Among these were the Heude Museum, founded by Jesuits in 1868 in Shanghai, and the International Association

113 Cf., for example, the letters dated December 12, 1886, October 6, 1887, January 26, 1888, and October 27, 1895.

114 Letters dated January 7, 1889, February 24, 1891.

115 Letters dated August 13 and November 6, 1887; February 27, 1890, and October 6, 1895.

116 For the introduction of iconic plants collected by Delavay into horticulture, particularly in France and England, cf. Kilpatrick 2014, 113-19.

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for Botanical Geography, established by Hector Léveillé, a former MEP missionary in India, in Le Mans in 1892. Through the discovery of new elements classified into families, genera, and species, these partnerships significantly contributed to the enrichment, refinement, and advancement of the universal taxonomic system. While the contributions of these other institutions were less extensive and influential than those of the Muséum, they collectively demonstrated the unwavering commitment of French naturalists, both professional and amateur, from diverse backgrounds, to the progress of botany as a modern science.

In this study, we have highlighted several dimensions of this collaboration, exemplified by the remarkable partnership between Delavay and the Muséum, with Franchet playing a pivotal role. Analysing primary sources, including Delavay's sixty-three letters – unique and invaluable documents – has illuminated the intricate details and processes of their cooperative work. In this collaboration, Delavay and Franchet take center stage as bilateral partners in collection and research, while the Muséum and the MEP provided crucial support in the background, leveraging their respective resources and expertise: the Muséum through scientific and financial aid, and the MEP through its administrative system of procurators. On a deeper level, this collaboration was facilitated by specific political and social contexts in both France and China. In France, the growing enthusiasm for natural sciences fostered such endeavours, while in China, missionaries were granted freedom of movement across the country, enabling their explorations and collections. This collaboration emerged as the product of a complex mechanism, integrating field collectors, laboratory researchers, research institutions, and religious congregations. Like a finely tuned machine, each element was indispensable, and it was through their synergy that this scientific success was realised.

Regarding Delavay, who uniquely combined the roles of missionary and botanical collector, three essential aspects stand out in the coordination of these roles. First, his botanical collections were predominantly conducted within the regions of his evangelical administration and along the routes of his extensive travels related to his mission, irrespective of their primary purpose. These dual vocations became inseparably intertwined, pursued simultaneously and harmoniously throughout his life. Second, his expertise as a botanist is particularly notable. While his meticulous herbaria and specimen labels attest to his skill and precision as an outstanding botanical collector, his letters reveal a true scholar. These correspondences include highly professional descriptions of morphological and bio-geobotanical characteristics of numerous plants, as well as theoretical exchanges with Franchet on topics such as the origin and dissemination of botanical geography. Finally, his personal qualities – modesty, integrity,

generosity, and above all, his selfless dedication to botany – played a decisive role. These traits ensured the exemplary effectiveness of his scientific collaboration with Franchet, which remains a model of cooperative research.

In the broader context of the collaborative discovery of Chinese flora during the late nineteenth century, Delavay was one of the most prominent botanical collectors among many missionaries from various apostolic congregations. These missionaries, not only in China but across Asia and the world, also devoted themselves to this scientific cause. By forming a remarkable 'entity' with the Muséum, this collective effort played a pivotal role in advancing the universal taxonomic system and establishing botany as a modern science. In this regard, the recent emergence of new research into the intrinsic collaboration among missionaries, religious orders, and scientific institutions holds significant interest (cf. Perrus 2016; Gicquel 2023). Rather than focusing solely on the scientific results of their cooperation, this approach aims to shed light on the multilateral mechanisms and processes that led to the production of these outcomes.



Figure 1 Main zones of Delavay's collection in Yunnan (1882-1895). Zone 1: Headquarters of the Yunnan mission. Zone 2: Apostolic district of Dapingzi. Zone 3: Mengzi. Zone 4: Kunming

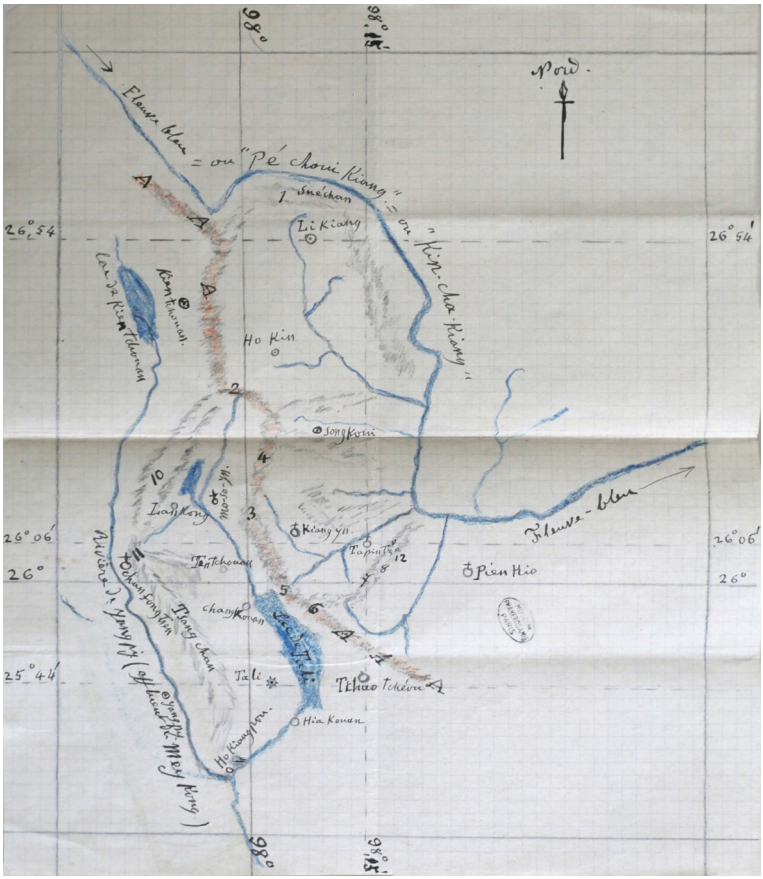
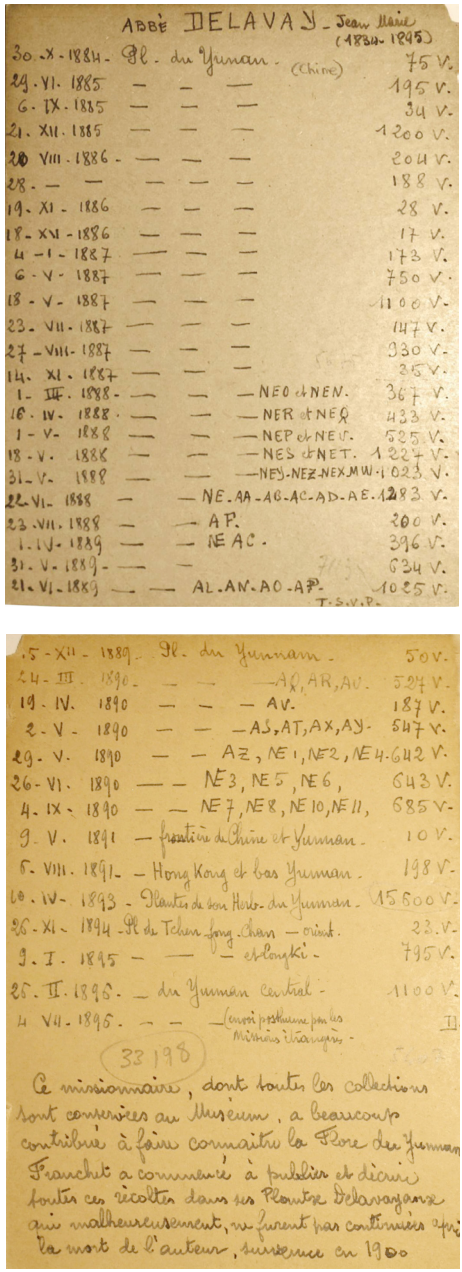


Figure 2 Delavay's collection zone in the apostolic district of Dapingzi and surroundings (July 1882 to mid-1890; area: approximately 100 km × 28 km. Map sketched by Delavay himself, in the letter of August 13, 1887)


ABBÉ DELAVAY - Jean Marie (1834-1895)

30.X.1884 - Pl. du Yunnan - (Chine) 75 V.
29.VI.1885 — — — 195 V.
6.IX.1885 — — — 34 V.
21.XII.1885 — — — 1200 V.
20 VIII.1886 — — — 204 V.
28. — — — — — 188 V.
19.XI.1886 — — — 28 V.
18.XII.1886 — — — 17 V.
4.I.1887 — — — 173 V.
6.V.1887 — — — 750 V.
18.V.1887 — — — 1100 V.
23.VII.1887 — — — 147 V.
27.VIII.1887 — — — 930 V.
14.XI.1887 — — — 35 V.
1.III.1888 — — — NEO et NEN. 367 V.
18.IV.1888 — — — NER et NEQ 433 V.
1.V.1888 — — — NEP et NEV. 525 V.
18.V.1888 — — — NES et NET. 1227 V.
31.V.1888 — — — NEY-NEZ-NEX-MW-1023 V.
22.VI.1888 — — NE.AA-AC-AC-AD-AE.1283 V.
23.VII.1888 — — AP. 200 V.
1.IV.1889 — — NEAC. 396 V.
31.V.1889 — — — 634 V.
21.VI.1889 — — AL.AN.AO.AP. 1035 V.
T.S.V.P.

.5.XII.1889 - Pl. du Yunnan - 50 V.
24.III.1890 — — — AQ, AR, AV. 524 V.
19.IV.1890 — — — AV. 187 V.
2.V.1890 — — — AS, AT, AX, AY. 547 V.
29.V.1890 — — AZ, NE1, NE2, NE4. 642 V.
26.VI.1890 — — NE3, NE5, NE6, 643 V.
4.IX.1890 — — NE7, NE8, NE10, NE11, 685 V.
9.V.1891 — frontière de Chine et Yunnan. 10 V.
5.VIII.1891 — Hong Kong et bas Yunnan. 198 V.
10.IV.1893 - Plantes de son Herb. du Yunnan. 15600 V.
26.XI.1894 - Pl. de Tchen fong chan — orient. 23 V.
9.I.1895 — — — et longki. 795 V.
25.II.1895 - — du Yunnan central - 1100 V.
4.VII.1895 — — — (envoi posthume par les Missions étrangères. II
33198
Ce missionnaire, dont toutes les collections sont conservées au Muséum, a beaucoup contribué à faire connaître la Flore du Yunnan. Franchet a commencé à publier et décrire toutes ces récoltes dans ses Plantae Delavayanae qui malheureusement, ne furent pas continuées après la mort de l'auteur, survenue en 1900

Figure 3
Register of the receptions of herbarium packets sent by Delavay. Archive of the Herbarium Library, Muséum national d'histoire naturelle: CR-GF-124. (Erratum: NE [NE] in the register is an erroneous transcription of ME [Delavay's manuscript for ME: Missions étrangères])

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Figure 4 Two herbarium specimens of *Rhododendron* collected by Delavay, preserved at Harvard University Herbaria & Libraries

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Abbreviations

BSBF: Bulletin de la Société Botanique de France.
JB: *Journal de Botanique*

Archives

AMEP (Archives MEP), 0939 J-M Delavay.
AM (Archives du Muséum national d'histoire naturelle), Correspondance Franchet, Per K 123, Delavay (J.-M.) 103-173, 3 Cartes & Documents sur Mong-tsé 174-177.
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People and Words: Spaces of Circulation and Political Encounters in the Experience of Edizioni Oriente (1963-79)

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Abstract The 16 years of experience of the Italian publishing house Edizioni Oriente and its journal *Vento dell'Est* have been an attempt to reshape Italian communist strategy through timely translations of Chinese ideological documents. The texts produced and the activities of translators attempted to forge a new society aiming at the realisation of Chinese communist practices in twentieth-century Italy. The transformation of society that these actors attempted through their statements and their translations can only be proved by following their actions and outcomes in an effort to build knowledge of China – and to spread Western political knowledge in China – while giving new lifeblood to their political ideas, which were reshaped and reconfigured. The present analysis will pay attention not only to the role of politicians and translators in transmitting existing knowledge to create a new one in a different space but also to the reactions of target readers and society as a whole (Callon, Law, Rip 1986). The means used as a link between actors and society are texts, transmitting a message that makes them agents in their turn (Latour, Hermant 1996). The importance of texts is defined in a "space of circulation" (Raj 2017) in which ideas have an impact on society in all of its aspects.

Keywords Edizioni oriente. Vento dell'Est. Translation and politics. Activism in translation. Maoism.

Summary 1 Introduction. – 2 Engaged Translations? – 3 Edizioni Oriente. – 4 *Vento dell'Est*. – 4.1 Outline of the Magazine. – 5 Agents and Translators. – 6 A Common Goal through Various Means. – 7 Target Audience. – 8 Final Remark.

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1 Introduction

The lack of governmental contacts between Italy and China in the 1960s and the turn taken by the European Communist parties after the 20th Congress of the Communist Party of the Soviet Union (CPSU) in 1956 sharpened in a group of Italian activists and intellectuals close to left-wing ideas the need and the desire to revitalise and renew the ideas of the Italian Communist Party (ICP). They wanted to take distance from the so-called revisionism derived from Khrushchev's condemnation of Stalin's deeds and escape the process of destalinisation that started in Europe.[1] It was therefore natural to turn to Maoist sources that could point a course to follow for a movement that seemed to have lost it.

This essay attempts to retrace the actions and ideological choices of a group of people, the founders of the publishing house Edizioni Oriente, who contributed personally and with their textual productions to renegotiating communist ideology in Italy. Their agency ensured cultural revitalisation and stimulated political discussion while contributing to the formation of China knowledge in Italy. Keeping contact with the Chinese Communist Party also ensured interest and curiosity on the Chinese side towards the political choices of what was then the largest European Communist Party – the Italian one. What this group of communists did in Italy, gathering their forces and enthusiasm around an editorial, political and cultural experience such as Edizioni Oriente and its magazine *Vento dell'Est*, far from being an isolated experience, can be read in the wake of a global movement – the Global Sixties – that found its expression in approaching Maoist thought in an attempt to break with pre-existing models and offer an alternative forged in activism and commitment (Lanza 2017, 12).

This essay, given the limited availability of relevant archival material on the activities of Edizioni Oriente, is based on the analysis of the magazine *Vento dell'Est*, whose editorials will be taken into consideration above all, as well as on secondary sources on the period covered and on the relations between ICP and CCP. Using the resources offered by oral history, interviews were also conducted for this study with two protagonists of the events narrated: Vittorio Regis, son of Maria Arena and Giuseppe Regis, and Silvia Calamandrei. Silvia Calamandrei, now acting as president of the "Piero Calamandrei" Municipal Library and Historical Archive in Montepulciano,

1 After Stalin's death (1953) and Khrushchev's severe criticism of his actions, a policy of distancing from the cult of personality and Stalinist policies began in the CPSU and in the countries that were close to the CPSU, which was the cause of China's estrangement from those who followed this path.

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which holds important printed materials related to the Edizioni Oriente experience, opened its doors to the author of the essay. Unpublished manuscript material was also consulted, such as the diary of Dino Morlacchi, a participant in a delegation organised by Edizioni Oriente in 1964.

Guido Samarani and Sofia Graziani review the relations between the two parties between the 1940s and 1950s and also define the role of the World Federation of Democratic Youth (WFDY) and the Italian Communist Youth Federation in building relations with the CCP before 1956 through the Chinese Communist Youth League (Samarani, Graziani 2015, 11-14). And if the lack of institutional ties between the Italian Republic and the People's Republic of China could have constituted an obstacle to rapprochement between the two parties – for example, considering that Mao Zedong did not have the opportunity to meet any Italians with institutional positions, Presidents of the Republic or the Council in office, from the establishment of diplomatic relations in 1971 until 1976, the year of his death (Pini 2011, 161) – the role played by trade, cultural and, certainly, political delegations in the contacts between the ICP and the CCP should be valued. However, much more would have been done by the PCI in weaving the network of relations with the CCP if there had not been two conditions to restrain its work, one concatenated with the other: its proximity to the Soviet Union and the consequent hostility of the United States (Pini 2011, 198-200). The CCP, as a keen observer and careful analyst, could not fail to see the shackles that held the PCI in place. Yet it welcomed it and chose it as an interlocutor precisely because its strength was being a communist party in a capitalist Western society. The testimonies of the communists allow us to make significant inroads into the halls of dialogue and negotiation, and they certainly give the Chinese communists the opportunity to speak more openly and in a language that the interlocutor was comfortable and familiar with.

The experience of Edizioni Oriente as an intermediary and privileged space for the circulation of ideas in 1960s Italy is a phenomenon whose scope has not been sufficiently investigated. The founders of the publishing house, driven by strong ideological motivations, acted as translators, writers, envoys of political delegations, and cultural intermediaries, and voluntarily or involuntarily worked to shape what is still today the context in which relations between Italy and China at a political and cultural level move in a dynamic continuity. Meetings that originated in the political and journalistic spheres played a fundamental role in strengthening cultural relations between the two countries, as underlined by Laura de Giorgi's analysis of the material of Velio Spano, the first correspondent in China in 1949 for the newspaper *L'Unità* (De Giorgi 2018, 178-95). The contributors of Edizioni Oriente worked in such a way as to create around

the publishing house and its translations of Chinese materials a sort of "centre of translation" (Callon, Law, Rip 1986, 228), a place where words and the corresponding concepts could be elaborated to give a new form to Italian communism. The Italian communists that contributed to the peculiar experience of Edizioni Oriente, and of its magazine *Vento dell'Est*, were firmly convinced of the necessity to follow the steps of Chinese Maoism, as

> an answer to the crisis of the International Communist movement, to the failure of the Soviet revolution, and the lack of revolutionary spirit of the Italian Communist Party. (Calamandrei 2017, 51-8)

During the 1960s the importance of the Communist Party in Italy was growing. From 1964 to 1972 the position of party secretary was held by Luigi Longo (1900-1980), an Italian politician who participated in the Resistance during the Second World War and that was close to Stalinist positions, and the ICP achieved a 26.9% share in the 1968 elections. In the 1970s, the ICP's policies met with the hopes and expectations of a large section of the public, who placed high hopes in the newly elected secretary, Enrico Berlinguer (1922-1984), a charismatic character with a strong impact on the history of Italian communism, who was also a proponent, among other things, of the rapprochement with China after the break of the 1960s (Bordone 1979, 282-315). In 1976, the party won the elections with a 34.4% share.

These were the launch years of the Cultural Revolution in China, and they were years in which the flourishing of publications with revolutionary intentions has been called the "Hundred Flowers publishing period" (Niccolai 1998b, 71).

In this scenario, Giuseppe Regis founded Edizioni Oriente in Milan in 1963 and it was in this sense a means, an actor in this endeavour. As an autonomous publishing structure, not controlled and not directly financed by China, it did, however, have its contacts in China and availed itself of the continuous support and collaboration of Italians who were in China and for whom it was easier to draw on first-hand material and news.[2] The business side was mainly taken care of by Fabio Matteini, the commercial agent of Edizioni Oriente and a staunch supporter of the cause. Matteini acted through a trading agency called Overtrade Srl, a brokerage firm that exported industrial products to China with the main purpose of supporting China and financing Edizioni Oriente (Calamandrei, Zazzara 2016, 10).

2 Information on Edizioni Oriente, the activities of the magazine *Vento dell'Est* and the activities of their contributors have been extracted from a conversation with Silvia Calamandrei, a contributor to the magazine in the 1970s, which took place in Montepulciano (SI) on 20-21 June 2023.

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Edizioni Oriente mainly aimed at the dissemination of CCP propaganda documents in Italy in opposition to Soviet and Italian communism and was active until the late 1970s. The publishing house translated material directly from Chinese (Pini 2011, 105) as well as published some magazines such as *Vento dell'Est*. In addition to funds coming from commercial contacts with China, the editions relied on subscriptions and distribution in a network of 'militant' bookshops all over Italy, and on the commercial intermediation activity carried out by Regis, who donated the Chinese side commissions for the purchase of newspapers and magazines from the official Guozi Shudian publishing house (Calamandrei, Zazzara 2016, 31). Articles to be translated came, from the most part, from Chinese press such as *Hongqi* and *Renmin Ribao* that Guozi Shudian sent to Italy.[3]

As exemplified by Maria Tymoczko's (2000, 23-47) theory of activist translation and Anthony Pym's (1998, 160-76) notion of embodied translators, translators might be considered as

> social being[s] embodied with variant power relationships that can considerably enhance the translator's active agency in conflicting situations. (Guo Ting 2008, 2)

We hereby consider agency as the characteristic of being able to act for change, to be the medium of messages, ideas, and theories that have the power to modify existing concepts and relationships in an intertwining space. Activism in translation, as the characteristic of a translation or of a translator to be engaged in something, is seen as a "speech act" that participates in social and political changes (Tymoczko 2000, 26). The relationship between translation and politics has been analysed in both its meanings of translation as a contributor to the evolution and transformation of political practices on one side, and of the place of translation as a politicised object on the other (Evan, Fernandez 2018, 1-12). We will consider the first aspect of the question and pay attention to the intersection of translation with politics in a way determined by its providing accessibility to political information, and becoming an agent of political ideas. When a translation becomes a political act, it needs to reach its audience, otherwise its task will not be accomplished. Translation becomes then the way to fulfil

> the need to establish a shared political language that allows understanding between a variety of social agents while encouraging social transformation, (8)

3 Interview with Vittorio Regis, Rome, 8 July 2023.

an idea well present in the work of Antonio Gramsci, the major Marxist leader of the ICP interested in the relation between language, translation, and politics. Gramsci noted the untranslatability between different systems, thus attaching great weight to translation as a means and agent of creating the political system. Gramsci's idea took into account what Lenin had previously stated on translatability: the need to

> make the Russian experience available to foreigners with a translation that was meant to be a cultural and political work, (Lacorte 2018, 22-3)

a way to instruct and educate both the translators and the users of texts in a way that could make effective the work of transmission of knowledge. That also happens because Marxist ideas on translation have been seen as focused on translation as a passage between praxes (activities) and not only between linguistic structures (17) and, in Gramsci's opinion, each Communist party should undergo a "thoroughgoing translation" (26). This view will be taken into account in considering the role of the translations published by Edizioni Oriente, whose aim is the unity of theory and practice, and the possibility of the one being translated into the other.

Dominique Kirchner Reill (2014) in his essay *Partisan Legacies and Anti-Imperialist Ambitions: The Little Red Book in Italy and Yugoslavia* analyses the development of the Maoist wave that interested Italy during the 1950s and 1960s in all of its multifaceted manifestations. Stemming directly from the break between the Italian and the Chinese Parties, the whole range of events, recriminations, and activities organised by the Italian Maoists was part of a single project with which they attempted to bring the ICP back into the ranks of an anti-bourgeois and revolutionary struggle. A movement and a 'feeling' that wanted to counter the revisionists with various manifestations such as the organisation of Maoist marriages outside religion or the state, the press, leafleting, translations of texts that recounted Chinese communism, an ideology to be inspired by and put into practice.

2 Engaged Translations?

To decide if translations of the Edizioni Oriente fulfil or not what Tymoczko sees as the requirements of translator activism and engaged translations, we need to ascertain a few points. To be politically engaged, translations should have a "clear set of shared goals"; and should be produced by a group of translators that operate in the context of a wider cultural and political movement

> which might include the production of other textual forms (theatre, literature of various types, pamphlets, speeches, manifestoes); (Tymoczko 2000, 42)

the audience should be wide enough as to ensure the spreading of the ideas conveyed through translations and texts should be chosen with clear political goals in mind, without excluding the possibility to manipulate them to make them closer to the target culture; translation methodology should be varied and flexible and chosen just to fulfil the final task and the immediate needs (42).

The essay will try to give evidence to these points and to show to which extent texts translated in *Vento dell'Est*, one of the major publications by Edizioni Oriente, were directed towards the same end, were working towards a common goal and were moving within the broader context of the Italian communist movement, with clear political intentions. We will consider in which way translations could reach a broad audience, helped by which other means of communication, and how they were enhancing a change, trying to reshape society, or at least the part of it involved in the creation of knowledge. We will notice, whenever possible, if terminology and lexicon have been 'manipulated' to fulfil the task of reaching a large Italian public.

Recalling Gideon Toury's assumption that "translations are facts of one system only: the target system" quoted in Tymoczko (2010, 3), we will have a close look not at the way translations in *Vento dell'Est* were done, but at the social change they were made for and at the society they were directed to. This leads us directly to the consideration of how *agency* in translation and translation studies means choices made and carried on by translators, visible both in what they choose to translate and in what they consciously omit, choices that come from acts of *resistance* and *engagement* in translation (8-11), and we find this particularly true when translations are political ones, made to operate social and political changes and to inform on political doctrines that are due to change the course of events. As Jean-Paul Sartre advocated, writing could be used to help effect certain changes in the Society that surrounds us (1948). It is of no use then to enquire into acceptable-adequate, domesticated-foreignisated, literally-free translations when we talk about translations made to act a change. Those translations will necessarily end out as complex translations, adequate more to the target culture than to any linguistic paradigm (Tymoczko 2010, 16). Their complexity is strongly due to the very tight link with the target context. Activist translations are thus context-sensitive, linked to specific time, space, and political limits, and culturally structured. No escaping from a close look at all of these aspects is possible when dealing with translations that move from *resistance* and *activism* (234-5).

In a 1963 typewritten unpublished document on the Chinese general situation by Emilio Sarzi Amadè (1925-1989), foreign correspondent

of the Italian communist newspaper *L'Unità*, who had been living in China for a few years from 1957 to 1961, we find an interesting note on communist translations from Chinese to Italian (Sarzi Amadè 1963).[4] In Beijing, he writes, in 1963 there were pro-China and anti-China Italians. Among the pro-China people, he counts two translators who were working at Radio Pechino, and who were probably the authors of the translations of Chinese articles in Italian, since no Chinese was still able to render Chinese texts into good Italian. The level of those translations, remarks Sarzi Amadè, was far superior to the level of translations from Edizioni Oriente.

Among the translators in China in the 1950s was a group to which Maria Arena, wife of Giuseppe Regis and co-founder of Edizioni Oriente, belonged. To the activities of these translators is dedicated an essay by Xu Lanjun in the volume that tells the story of the translations and dissemination of Mao's *Little Red Book* (2014, 76-96).

The relationship between Chinese-Italian political delegations, cultural relations on the one hand, and publications on the other around the half of the twentieth century was close and bidirectional (De Giorgi 2017, 170-93). Organisations for the dissemination of ideas such as *Servire il Popolo*, *Nuova Unità*[5] or the much more significant enterprise of Edizioni Oriente were the voice of political, ideological, and cultural ties between Italy and China, and made use of a specific vocabulary and popular material that is interesting to analyse. Maoist propaganda, Boria summarises in *Between Dreams and Power Struggles: Maoist Propaganda in China and Italy in the Years of the Cultural Revolution* (2014), produced three types of material: that published in China for Chinese use, that published in China for international dissemination, and that published abroad for foreign use. Leaving aside the first category, it is interesting to see which words and slogans China used abroad to export its propaganda, or how foreign publications translated concepts and terminology of purely Chinese phenomena into their languages. Mao's *Little Red Book*, for example, was published by the Beijing Foreign Language Publishing House in Italian in 1967 shortly after the Chinese publication and was republished in Italy by the publishing houses Feltrinelli, Einaudi, Avanzini and Torraca, Edizioni Oriente, Lara, Samonà and Savelli, Dedalo or Il Quadrato, Mondadori, Newton Compton, and Longanesi. Alongside the official publications, a large group of publications proliferated, free from national conditioning and, although of more

4 Sarzi Amadè, E. (1963). *Situazione in Cina (fine ottobre 1963)*. APCI, Archivio Partito Comunista Italiano, MF 492, f. 2329, 1963. Roma: Fondazione Gramsci.

5 *Servire il Popolo* is the title of a publication started in 1968 that tried to convey the contents of Maoism to its readers. The publication was alive until 1975. *Nuova Unità* started to be published in 1964 and brought the subtitle of *Rivista di politica e cultura comunista* (Communist Culture and Politics Magazine).

restricted circulation in the circle of followers, certainly more authentic and with a stronger impact on the conscience of individuals (Castelnovi 2014, 7). Xu Lanjun (2014, 76-96), in his essay *Translation and Internationalism*, gives a well-informed account of how translations of Mao's works were carried on and of how translations committees were arranged, in China and abroad. The need for an ideological exchange was felt on both sides. Not only would the Italian communists undertake a systematic and passionate translation of Chinese documents, as we shall see in the experience of the Edizioni Oriente publishing house, but also the Chinese Communist Party (CCP) would manifest the need to know the material produced in Italy. It was in March 1961 that the CCP requested that various materials and documents produced by the ICP be sent to Peking. The documents requested, as we read in an archive document of the ICP, would be: the collection of the newspaper *L'Unità* from 1944 to 1954; the complete collection of the magazine *Rinascita* from the beginning of its publication to 1956; pamphlets with Togliatti's speeches;[6] materials of the fifth, sixth, and seventh ICP Congress and materials of national Party conferences in 1945, 1947, and 1955. It is therefore presumable that extensive translation and analysis of Italian documents was underway in Beijing, which would then be used to tackle any bilateral discussions with texts in hand.[7] The Chinese, in fact, and Mao himself will always be described as 'well informed' about the Italian situation, the activities of the ICP, and the political debate in Italy.

Wang Ning (2018, 467) notes that in twentieth-century China translation is closely related to revolution and has played a pivotal role in the democratic revolution before 1949, in the socialist revolution after 1949, and in the post-socialist revolution since the beginning of the 1990s. Translation, Wang assumes, is and has always been the key to China's modernisation, the construction of the Chinese cultural new world, and the transmission of Western concepts to China in a way meant to shape Chinese ideology without setting aside the Chinese cultural base. Mao Zedong himself received Marxism through the words of translators who had embedded it with Chinese Confucianism, to transform it into what has been called Maoism.

6 Palmiro Togliatti (1893-1964) was an outstanding Italian politician, and secretary of the ICP from 1927 until the year of his death in 1964. Togliatti worked hard to transform the ICP into a mass party, adhering to a democracy based on widespread participation and mobilisation of citizens. He hoped that the entire communist movement worldwide could work together to overcome the division of the world into opposing blocs. Togliatti considered the common interests of the entire human race to be of paramount importance, which had to be put before class and state interests, and gave importance to achieving global peace. According to Togliatti, states were to aim for peaceful coexistence, working together to promote disarmament and to pursue political and economic goals.

7 *Appunti sui rapporti fra il PCC e il PCI negli ultimi anni* 1963.

The pragmatism in this operation highlights the agency of translators and translated texts.

The importance given by the PRC to translation has been emphasised on several occasions. In the above-mentioned essay on the influence of Mao's *Little Red Book* on the world, Xu Lanjun writes:

> From its founding in 1949, the young People's Republic of China fully recognized the importance of translation and treated it as a significant part of its cultural diplomacy and exchange. In hopes of creating a global language of the Maoist revolution, the Chinese government subsidized the publication and distribution of numerous foreign-language publications, such as *China Pictorial*, *China Reconstructs*, and *Peking Review*. But none of these could rival Mao Zedong's *Little Red Book* in visibility and influence. (2014, 76)

Xu continues:

> I further argue that the Chinese Communist Party (CCP) treated systematic translation as an important way to transcend and transgress the boundaries of First World capitalism, Second World socialism, and Third World development, and as a result, one essential element of the monumental project to 'export Chinese revolution to the world' was to transmit to a global audience a wide range of Chinese literature, and in particular Mao's writings. (76)

The choice of languages to translate into often depended on the availability of experts who mastered those languages. Until 1954, for example, only English, Russian, German, and French translators were available in China, and this constrained the choice of the target audience for translations by the Chinese Foreign Languages Press, which, to find a solution to the impossibility of exporting translated materials, planned recruitment campaigns for translators in India, Indonesia, Latin America, and Arabic-speaking countries in 1959. The available translators belonged to three different categories:

> overseas Chinese who came back to New China; foreign experts from both capitalist and socialist countries and short-term foreign translators. (82)

Not everyone in Italy was happy with the way the ideas of Chinese communism and the terms used to delineate and describe them were transmitted and reworked. Franco Fortini,[8] in a speech at the Milan

8 Franco Fortini is an intellectual and poet who first came to China in 1955 as part of an important cultural delegation led by Piero Clamandrei. Fortini is the author of *Asia*

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conference *Il Punto sulla Cina* (4-5 November 1972), lamented the Italian side's uncritical acceptance of Chinese terminology:

> For example, we uncritically accepted the term 'ultra-left' which, as you know, has a very precise meaning in China compared to the definition of 'ultra-left' during the Cultural Revolution. During the Cultural Revolution, the ultra-left were fairly well-determined and precise groups whose documents, by the way, have also been published. Well, when the Chinese today speak of 'ultra-left', they do not only mean the ultra-left, they do not only refer to those groups that were so called in 1968-69. Theirs is an ideological extension (I don't want to judge it, but I must point it out) of the concept of ultra and left. And so I don't know if we behave correctly by assuming that terminology equally and believing we are covering the same ground. While it may be that those theses that the Chinese now call 'ultra-left' were not classifiable as such, even just two or three years ago.[9]

Besides the Chinese Foreign Languages Press, the other Chinese actor in establishing and maintaining international contacts and cultural exchanges through translations and dissemination of Chinese material was the International Bookstore 中国国际书店, whose official transcription was Guozi Shudian. The Guozi Shudian was founded in 1949 and its main task was to carry out "cultural exchanges between the new China and other countries" (Xu 2014, 83). In the 1950s, the agency acted mainly as a 'trade organisation', carrying out mainly commercial activities. The turning point came in 1959, when Guozi Shudian detached itself from the Ministry of Culture to belong to the Foreign Affairs Committee of the China Cultural Council and to be engaged in more purely political cooperation and distribution activities, to enter capitalist countries with content and ideology to accelerate the socialist revolution in the world. The International Bookstore's activity was massive and had a huge international impact:

Maggiore, a report of his trip to China. Cf. Yang 2022, 159-72.

9 "Per esempio, abbiamo accettato acriticamente il termine di 'ultrasinistra' che, come voi sapete, in Cina ha un significato ben preciso rispetto alla definizione che di 'ultrasinistra' si dava durante la rivoluzione culturale. Durante la rivoluzione culturale gli ultrasinistri erano dei gruppi abbastanza ben determinati e precisi e qualificati i cui documenti, tra l'altro, sono anche stati pubblicati. Ebbene, quando i cinesi oggi parlano di 'ultrasinistra', non intendono soltanto dire *quella* ultrasinistra, non si riferiscono *soltanto* a quei gruppi che così erano denominati nel '68-'69. La loro è una estensione ideologica (non la voglio giudicare, ma la devo rilevare) del concetto di *ultra* e di *sinistra*. E quindi non so se noi ci comportiamo correttamente assumendo pari pari quella terminologia e credendo così di coprire la medesima realtà. Mentre può darsi che quelle tesi che i cinesi oggi denominano di 'ultrasinistra' non siano state classificabili come tali, anche solo due o tre anni fa" (Fortini 1972, 92-6; italics in the original). If not otherwise stated, all translations are by he Author.

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> International Bookstore claimed that it had established a business relationship with 738 agencies in 91 countries and offered 75 exhibitions in 37 countries to broaden the influence of Chinese books and journals. (84)

Creating an international network of distributors of Chinese material abroad was one of the goals of International Bookstore, both by establishing branches abroad and by forging links with bookshops and agents interested in promoting the revolution. In this, Guozi Shudian was certainly a very important driver for the founding of Edizioni Oriente, which will necessarily tie the story of its survival to its history.

3 Edizioni Oriente

In 1955, the original anthology of Mao's writings was made available by Rinascita Press, but in general, there was little commitment to understanding and exploring Chinese reality (Calamandrei, Zazzara 2016, 29).

The reason also lies in the fact that after the 20th Congress of the PCUS and the Soviet turn against Stalinism, pro-Chinese orientations became an intolerable ideological deviation within the ICP and there was no interest in following the developments of the Chinese experiment. Maoism then became a way to engage in anti-revisionist and anti-reformist polemics, to interpret communism in an orthodox manner, even if always remaining in a minority position. But China became a way to keep the hope of a utopia alive, and Edizioni Oriente appealed to all those who felt the need for China's knowledge. The publishing house also tried to give a new course to Italian communism, which was suffering from the Soviet turn. Translating timely Maoist documents was an attempt to change the course of events in Italy and give a new shape to communist thought at a time of crisis and sectarian splits.

Giuseppe Regis, founder of Edizioni Oriente,[10] was an economist, and he had previously been in China[11] with his wife Maria Arena from 1957 to 1961, when Arena had been invited by the Ministry of Foreign Trade to teach Italian to party cadres, to cultivate a diplomatic class

10 Edizioni Oriente is the name of the publishing house but also of a magazine that was published from 1963 to 1966. In 1966, the title of the magazine changed to *Quaderni delle Edizioni Oriente* which came out from 1966 to 1977. As a publishing house, in addition to *Vento dell'Est*, which came out from 1966 to 1979, Edizioni Oriente also published other books.

11 Cf. Deng, X. (1957). *Letter by Deng Xiaoping* (January 30, 1957) in reply to a letter by Velio Spano (December 19, 1956). Fondo Spano Gallico, s. 6, b. 17, f. 110. Roma: Fondazione Gramsci. Deng agrees to welcome Giuseppe Regis to China.

capable of interacting with Italians with a view to greater openings (Samarani, De Giorgi 2011, 120). The two were supported by the ICP with a commitment to support and strengthen the position of the People's Republic and the CCP Party in Italy. They began working more directly for the Chinese cause since relations between the two parties broke down in the 1960s (Calamandrei 2016, 39).

The very activity of Edizioni Oriente, that played an important role in maintaining relations with Mao's China at a time of crisis in relations between the two Communist parties, was viewed with great suspicion by the ICP because taking an interest in China was not considered an orthodox activity within the ranks of the party, so much so that Fabio Matteini, who at the ICP congress in 1966 said that the door to dialogue with China had to be kept open, was expelled from the Party. The expulsion from the Party, and Matteini's consequent dismissal, brought him closer to Giuseppe Regis, who offered him to collaborate with Overtrade Srl.

"There was an enormous curiosity to learn about his [Mao] thought and work, to be inspired and taught, to learn about the policies and positions of the Chinese Party and government", says Regis in an interview (Niccolai 1998a, 70-6), and the lack of information on contemporary China was the reason for founding Edizioni Oriente and starting the publication of nine editorials from 1963 on the divergences in the international communist movement and the magazine *Vento dell'Est* which reproduced documents, travel reports, surveys and articles translated from the Chinese language, on developments in China. Another major attempt of Edizioni Oriente was the publication from 1966 to 1978 of *Quaderni della stampa cinese* (Chinese Press notebooks) with translations by Grazia Cerchi[12] of Xinhua articles. In addition to this, several volumes of Mao's works and other books on other topics were published (Niccolai 1998a, 70-6). The purpose of Edizioni Oriente, which is well reflected in the magazine *Vento dell'Est*, was precisely to publish authentic material, official texts, and the voice of the CCP that was to speak unfiltered to Italian communists to educate them and mark the new course.

Edizioni Oriente stopped his activities in 1979, after Mao's death. The reason, as explained by Regis, was that after the political turn of Deng Xiaoping, the opinions of the publishing board changed and became less homogeneous.

After all, the new leader's openness to 'getting rich is glorious' put those who had championed the cause of Chinese communism in great difficulty. In addition to ideological and political reasons, already by

12 Grazia Cerchi (1937-1995) was a communist journalist and writer, founder of the journal *Quaderni Piacentini*, one of the magazines that gave most impetus to the development of Maoism in Italy (Gabbas 2022).

the early 1970s, with the establishment of diplomatic relations between Italy and China and China's subsequent entry into the United Nations, the economic intermediation activities of Regis and his group were no longer of any use to the Chinese. China's membership of the United Nations made it a less mysterious country and access to sources of information became easier and more immediate.

As early as 1973, Edizioni Oriente had transformed itself from a publisher into a political-cultural institute, continuing to publish *Vento dell'Est* and the *Quaderni*, but this time alongside publications on China by major publishers such as Feltrinelli and Einaudi, giants and mainstream publishers on the Italian scene (Calamandrei, Zazzara 2016, 34). The new board of the publishing house consisted of Maria Arena, Filippo Coccia, Mireille De Gouville, Paola Forti, Gigi Lodigiani, Edoarda Masi, Fabio Matteini, Giuseppe Regis, and Nicoletta Stame, who were joined by Silvia Calamandrei, Luca Meldolesi and Alessandro Russo from 1975. However, this was the phase in which trust in the CCP began to falter, and the scholars in a work of reconsideration of their experiences and rethinking no longer felt that they belonged to that thought in which they had believed so much. In Fabio Matteini's private archive, we read:

> Whatever decision is taken, it must be taken without fear of the possible consequences and therefore without being opportunistic to avoid them. They [CCP] may publicly label us as a poisonous herb or whatever, they may stop sending us newspapers and books, they may refuse us any delegation or invitation, they may even hinder the commercial work that some of us do with China, but none of this should affect us at all. I am not for sale. All this, while reaffirming our friendship for the Chinese peasants and workers and our faith in the Chinese revolution. (Calamandrei, Zazzara 2016, 35)

Edoarda Masi's writings and opinions have also always been characterised by a strong and far from blind intention to learn more about China and evaluate it critically (Gabbas 2022). Matteini will express in his writings a strong disappointment with the Chinese turnaround after Mao's death and will do so by describing the social and economic change he personally experienced in so many small contacts with the Chinese: from not even accepting a cigarette to becoming corruptible, from the desire to progress all together to the widening social gap. The disappointment expressed is the same as that of Edizioni Oriente and is the reason why the work of disseminating Chinese ideology and knowledge about what was happening in Maoist China has come to a standstill and disillusionment (Calamandrei, Zazzara 2016, 15).

4 *Vento dell'Est*

In 1966 the publication of *Vento dell'Est* began on the initiative of Maria Arena. The title was taken from Mao's phrase 'the east wind prevails over the west wind', a thesis in which Arena believed. The magazine published historically conditioned documents, but Regis took pains to ensure that the magazine was not an expression of the political line of a few and that it continued to give space to Chinese affairs. For this, she was also often challenged, so much so that it once happened that Arena and her contributors were sequestered in the editorial office for two days. However, she wanted to give space to intellectuals with no ties to anyone such as Aldo Natoli, Silvia Calamandrei, Lisa Foa, Edoarda Masi, and Enrica Collotti Pischel, who were sidelined by all the sectarian groups in Italy. Arena wanted to give voice to different positions, as long as they were in favour of moral principles and social goals in line with Mao's thought. Arena was strongly convinced that the east wind could enrich the west wind, which mistakenly believed itself to be the holder of truth. She wanted at all costs to give a voice to what came from China that did not find sufficient space in the Italian society of the time, and in this, she was an important figure in the work of encounter and exchange between Chinese and Italian politics (Collotti Pischel 1988, 346).

Vento dell'Est systematically wrote about China, aiming for the least possible stereotypical analysis of Chinese facts. The depth to which magazines like *Vento dell'Est* were led came precisely from the attempt to go beyond the common viewpoint and in line with the ICP (Niccolai 1998b, 71).

The editorial board consisted of Maria Arena, Filippo Coccia, Mireille De Gouville, Edoarda Masi, and Giorgio Zucchetti. The composition of the editorial board, which would change several times over the years, is important to understand how the relationships between the magazine's promoters evolved and how their ideological outlook and commitment to the content to be conveyed changed. From issue 4, Mario Cannella would take over the editorship, he would only be on the editorial staff until issue 7. From issue 8 onwards, the editorship remained with Arena, De Gouville and Coccia. The year 1977 was to be a turning point for the magazine and one of the great changes that, although they presaged an improvement in the editorial conditions and an increase in the quality of the content, would instead be the last flashes of life for a magazine that could no longer find the motivation to go on. In 1977, from issue 44 to issue 50, the editorship was enlarged with new members – Silvia Calamandrei, Luca Meldolesi, and Alessandro Russo – who were very active in translating and choosing the material to be published. From issue 51 **[fig. 1]**, with a new publisher (Gabriele Mazzotta from Milan), Maria Arena, Mireille de Gouville, and Silvia Calamandrei will remain in

the editorship. Issue 53 of September 1979 was to be the magazine's last issue. Matteini's commercial activities, aimed mainly at financing Edizioni Oriente, were interrupted and there were no longer the conditions to continue the publishing experience. Mao's death also marked a period of internal ruptures within the CCP in China. The Foreign Language editions, which had leaned on one or the other figure, no longer had the conditions to survive at the time of the changing of the guard. Edizioni Oriente, for example, relied logistically on Guozi Shudian, and with its closure, the activities of the Italian publisher can no longer survive either.

4.1 Outline of the Magazine

The journal, a quarterly, opens with a first issue in which out of a total of seven articles, three are translations of texts written by Mao Zedong, one is by Shoici Sakata, one by Wu Guanhui, and one by Liu Danian (the conclusion is signed by "c.p."). Browsing through the index of the 53 issues, it is evident how the contents move from translations from Chinese to original studies, reflections, and criticisms by the journal's contributors.

The journal's tasks were to spread knowledge and disseminate not only Maoist theoretical texts but also material on an incredible variety of topics, from the class struggle and the differences between the capitalist and socialist ways or the critique of structuralist linguistics in the second issue to scientific experiences and philosophy for the masses in the third. Silvia Calamandrei, in an article about the magazine, writes:

> *Vento dell'Est* wanted to educate these young people and let them understand better the complexity of the history of the Chinese revolution, but did not stand against this wave of juvenile enthusiasm: Mao, Giap, Ho Chimin and Che Guevara were mixed in the slogans of the student demonstrations, as references to the willingness to change radically the world and the system. (2017, 51-8)

From the critique of thinking in images or revolution in the historiographical field in the third issue to a selection of documents on the Cultural Revolution in the first issues of 1967 and the rural and industrial experiences of Dazhan and Daqin or the work of foreign missionaries in China in the second half of the nineteenth century, *Vento dell'Est* covers a variety of topics on China and on the need to be inspired by it. It is in issue 6 that the first literary texts appear with Lu Xun and the fate of nationalist literature. Issue 7 sees articles by non-Chinese authors for the first time: Sidney Rittemberg and Helene Marchisio. Issue 8 is entirely dedicated to agrarian and

industrial economics and focuses on Maoist experiences. Issue 9 of 1968,[13] a year of upheaval and revolution in Italy too, begins with an article on the Cultural Revolution and one on education and sees the collaboration of Francoise Paron on the editorial board. It announces the publication of an anthology of Mao's writings and volume IV of his selected works by mid-year, while many texts have already been translated and published by Edizioni Oriente. Issue 10 carries an article entitled "Fen Shui Ling - Dialoghi del film" (Fen Shui Ling - Movie Dialogues).[14] The opening to the cinema is a sign of an experience of theoretical commitment that openly fits into the wake of activist translations. Issues 11 and 12, in a single volume, continue the discussion on the Cultural Revolution and open up to Chinese foreign policy, with articles on Chinese support for revolutionary movements around the world and a statement by Mao on supporting the struggle of African Americans against violence. Issue 13 presents a dossier on teaching and intellectuals in China, and the more target-reader-oriented line is expressed in an article on Nenni's initiatives and the "stunts of the Italian revisionists and China". Issue 14 presents a fairly theoretical layout of Lin Biao's report to the IX Congress of the CCP, the experiences of criticism, struggle, and transformation in Maoist China and opens up to France ("The Anti-Authoritarian Revolt in France") and Japan ("The Struggle of the Japanese Students"). It is interesting to note in issue 15 for the first time the appearance of an article on the workers' struggles at the Italian automotive factory Fiat, in a clear attempt at comparison and sharing. Issue 17 bears the index of the fourth volume of *Mao's Selected Works* and translates documents on revolutionary methods. It also talks about the economic crisis in Italy. Issues 19-20 present *Importanti direttive del Presidente Mao* (Major directives from Chairman Mao) with an interesting layout of articles and commentary notes, continuing the structure already begun at the end of year III with *Documenti di lotta-critica-trasformazione* (Struggle-critic-transformation documents), *Note informative* (Information notes) with a story from Magneti Marelli, *Rettifiche e discussioni* (Corrections and discussions) and *Schede* (Datasheets), with articles on Italian events. Issue 21 is the diary of the Edizioni Oriente delegation with its visits and meetings. Issue 22 continues to study the Chinese experience through the study of Maoist documents from the selected works of Mao Zedong. The information note this time concerns Campania region. Issue 23 offers a focus on the factory and its management. Commentary and

13 Issue 9 of the journal is preserved in two different versions, both bearing an essay on the Cultural Revolution as the core of the publication.

14 Fenshui Ling (分水岭) is a propaganda movie by Jun Li produced in 1964 by the August 1st Fillm Studio.

study articles appear alongside the translations. Issue 24, in addition to notes on Chinese international politics, offers a focus on medicine in China and Mao's views on medical and health aspects. In addition to an interview with Zhou Enlai, issue 25 reports on the political debate in China and other articles by Jacoviello, Palmierini, and Spazzali, a red relief lawyer. Again, a delegation is presented in issue 26 with its visits, interviews, and remarks. Issue 27, in addition to notes on the political debate in China, reports foreign scholars' articles on China and communism. Issue 28 of *Vento dell'Est*, from page 43 to page 183, bears the proceedings of a conference organised by Edizioni Oriente in Milan on 4-5 November 1972. Invited to the conference were all those who had taken part in delegations to China from 1970 to 1972, to take stock of their knowledge of China based on the direct experiences of those who had visited the country at a time of transformation and change, at the height of the cultural revolution, and to be able to organise future work on a more solid and shared basis. Among those attending the conference were delegates from Edizioni Oriente, as well as delegates from *Il Manifesto* and the Italy-China Association. The conference was therefore an opportunity both to reflect on issues of methodology in the encounter with China and to make more concrete observations based on data and snapshots from travels. The hope, writes Maria Arena in the preface of the Proceedings, was to build a common understanding of China's current development during the Cultural Revolution and to avoid mistakes in future encounters. The tenor of the interventions is that of a useful discussion both on the contemporary Chinese situation and on how to make the experience of those who participated in delegations to China as useful as possible for the dissemination of knowledge about China and its people. Edizioni Oriente is certainly identified as an instrument for the dissemination of real and fact-based knowledge, and some speakers (e.g. Barbara Nogara) hope that it can be as less dogmatic as possible to reflect on the China they touched and knew. More travel notes in issue 29, which is meagrer. Issue 30 reflects in the round on popular communes and world history. Issue 31 reports documents by Chinese political leaders on the Communist Party with forays into the Chilean question.

From issue 44 of 1977, a turning point for the journal, the names of the translators appear at the end of the articles. Thus we have the signatures of Silvia Calamandrei, Alessandra Lavagnino, Filippo Coccia, Alessandro Russo, Claudia Pozzana, Marco Müller, Giorgio Casacchia, Nicoletta Stame, Giuseppe Regis, Mireille de Gouville and Flavia Pansieri. The focus on translation work had certainly always been secondary in order of priority to the importance of the group working together for a common cause. A group of collaborators, often chosen for their ability to be more in touch with things Chinese, such as Calamandrei who published a letter from China in issue 37,

would always take precedence over the individuality of the translator, who did not work for personal lustre or individual activity, but to fulfil his duty as a member of a group working in the ranks of a larger movement. In issue 37 of *Vento dell'Est*, Calamandrei writes:

> Dear Maria, I waited a while to reply to you because I wanted to send you something concrete and instead I am quite behind in my work. The language course has now become quite burdensome […] on the other hand, learning the language better is indispensable for following the debate better and understanding reality better. So I find myself in a bit of a vicious circle because if I do my homework I don't have time to read newspapers and magazines well, but on the other hand I still spend too much time reading and so I need to study […] there is a mine of things that would be worth translating and putting together. The main risk is to be overwhelmed by it, so the effort I wanted to make is to pull together some of the impressions gained in this month and a half to set the work in a more orderly manner. (1975, 146-7)

This can be seen as a relevant aspect of activist translation: considering the general cause more important than the individuality of translators.

5 Agents and Translators

The translators and contributors of *Vento dell'Est* were often in China, from there they selected the material and sent it to Italy for publication. However, they did not always do this with satisfaction. Indeed, Calamandrei continues:

> Setting up work here is rather difficult because you understand China better but you lose the sense of what is needed and what is understandable in Italy. In short, one can no longer do that work of translating (in the best and broadest sense) the Chinese experience into the Italian one, which is one of the greatest merits of *Vento dell'Est*. That's why I think it's not good to stay here for too long, even though for me it is a very valuable educational experience. But I feel that the most urgent things are in Italy. (1975, 146-7)

The editorial board, although in different configurations, consisted of people who were able to select material in Chinese and, above all, translate it. In editorial meetings, they discussed how to translate into Italian concepts with Chinese characteristics and tried to unravel all the allusions behind the selected essays. They used to choose texts from a great variety of journals and magazines as *Renmin Ribao* 人民

日报, *Guangming Ribao* 光明日报, *Hong Qi* 红旗, *Wenyi Bao* 文艺报, *Jingji Yanjiu* 经济研究, *Lishi Yanjiu* 历史研究, *Xin Jianshe* 新建设, *Kexue Tongbao* 科学通报 (*Vento dell'Est* 1965, 88). In *Vento dell'Est*, there was a strong need to process the texts and decode every facet of them. Vittorio Regis, son of Maria Arena and Giuseppe Regis, says that what was perhaps missing from the magazine was an exchange and comparison with scholars and translators from other countries. The debate remained essentially in Italy and the only time when an opening to the outside world took place was the delegations sent to China. These were experienced as a moment of study, training, and discussion. Maria Arena, whenever she had the opportunity, interacted with her Chinese comrades to clarify doubts and verify interpretations of Chinese texts.[15]

Silvia Calamandrei recalls that Regis encouraged people to go to China, especially to see the Chinese reality. For this reason, *Vento dell'Est* constantly organised trips that always had a preparatory moment in which Regis made people think about what the right questions to ask would be, taught them to go beyond stereotypes to investigate reality more deeply, invited them to dig into the apparent mediation of official Chinese documents to search for the contradiction from which the mediation stemmed. The delegations organised by *Vento dell'Est* were not "visits to an ideal country", but "an attempt to make contact, to verify, to confront", to check theory in practice and, above all, in a very diverse practice and reality (Collotti Pischel 1988, 347).

Contributors such as Mireille de Gouville and Filippo Coccia had access to the Chinese press and chose the texts to be published from the many that they read and sifted through on the spot. Mireille de Gouville leaves an important testimony of the translation activity within *Vento dell'Est*:

> Sources of information on China were non-existent here in Italy, which is why the magazine *Vento dell'Est* was created. Everything that was published in China was not brought to Italy, there was nothing. I started working on it straight away, from France, as I could translate directly from Chinese: within the magazine, Filippo Coccia and I were the main translators. Masi also translated some things […]. We had the presumption of being a competent, professional, and qualified source of information, at the service of the left in general, with the hope of maintaining this authoritative character. (Niccolai 1998b, 77)

Coccia's skills, it is also said in the presentation of the first issue of the magazine, help to ensure the quality of the translations.

15 Interview with Vittorio Regis, Rome, 8 July 2023.

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Correctness in the use of technical terminology is a concern of the journal, and sinologists help to ensure this. We speak here of sinologists because the editorial board of *Vento dell'Est* was made up of people who went on to play a very important role in the dissemination of knowledge about China and research on China: Filippo Coccia (1934-1997), for example, was a professor of contemporary Chinese history at "L'Orientale" University in Naples and author of some of the most important studies on the policy of reforms implemented by Deng Xiaoping since 1978; Mireille De Gouville taught Chinese language at the University of Bergamo; Edoarda Masi (1927-2011) was a translator and essayist, a profound connoisseur of Chinese culture and lecturer of Chinese at various Italian universities; Silvia Calamandrei is a scholar, translator and an expert on Chinese matters. Students, or collaborators in China, also had the power to propose monographic issues according to the needs of the moment, either for urgency felt in the field as during the Cultural Revolution, or, as in the case of the last issues (45-46 and 46-47) to delve into aspects of the past when the present was not yet decipherable. In issue 44 of January 1977 it is said that time was needed to process what was happening. Issue 44 of *Vento dell'Est* marks a turning point for the fortunes of the magazine. The death of Mao, and the arrest of the Gang of Four, brought confusion among the magazine's contributors, who tried to figure out which side was the 'right' one, that Chinese 'right side' that they had pledged to know and pass on to the Italian public.

A significant signal in this issue, writes Silvia Calamandrei, was a box of the Guozi Shudian (the worldwide distributors of the Chinese press and publications) announcing that the magazines *Xuexi yu Pipan* 学习与批判 and *Zhao Xia* 朝霞 had been suppressed and that other magazines would suffer delays. The first two were publications edited by the Chinese Leftists, from which *Vento dell'Est* had translated a lot of materials. The apologies for the delays and the announcement that subscriptions would be refunded showed that the Regis were still in touch with the official Chinese channels, and used this transitional period (the Hua Guofeng phase) to publish two double issues (45-46 and 47-48) (Calamandrei 2017, 51-8).

The texts were chosen from magazines and newspapers, sometimes also from what was perceived during the talks of various delegations that collaborators such as Maria Arena, Filippo Coccia, or Mireille de Gouville followed as interpreters. In the small group of editors that lasted the longest in the journal's history, Maria Arena represented the most charismatic personality and was able to engage scholars and contributors to offer contributions to the journal, while Coccia and de Gouville, who were younger, ensured the selection of essays and articles directly from the Chinese press, without necessarily having to go through the Guozi shudian's decisions regarding materials for foreign countries. This gave *Vento dell'Est* a degree

of autonomy from Chinese priorities (Calamandrei 2017, 51-8). The presence of student-collaborators in China, who were able to have access to news as soon as it was published in the Chinese press, on the one hand, guaranteed *Vento dell'Est* a high degree of reliability about sources and first-hand material, but on the other hand, somehow did not foster the emergence of a critical sense about the events analysed, and carried forward a biased and aligned point of view, because it was also strongly emotionally involved in the events. Silvia Calamandrei continues:

> A lot of fresh documents and interviews on this struggle were provided by a group of Italian students that were living at the time in Beijing, to whom I belonged and with whom I kept contacts after coming back to Italy. I would mention especially Alessandro Russo and Claudia Pozzana, who are now teaching at Bologna University. The involvement in this battle was passionate: we were not observers, but wanted to be part of this struggle, defending the results and the continuity of the Cultural Revolution that the capitalist roaders wanted to dismantle. (2017, 51-8)

Maria Arena could be described as an unconventional sinologist. She had studied Chinese in the 1940s and 1950s and, once in China, "became a highly sensitive point of reference for Chinese social and intellectual reality" (Collotti Pischel 1988, 344). She was extremely interested in the real life of China of which she always had a keen perception and was always ready to offer a point of view and support in understanding China to those who managed to get to Beijing and were lucky enough to meet her (344).

Arena began working at Edizioni Oriente around 1963-64, doing documentation work and disseminating in Italy documents that the Chinese were publishing, and that constituted material that could give rise to stimulating considerations since it was only obtainable by subscription to the Beijing Review, a magazine published in English, not easy to access in Italy.

> Maria translated the Chinese texts and published them in poor Italian, but when she spoke of her work she had the look of a person engaged in a task of universal value: this consciousness was in her. (Collotti Pischel 1988, 345)

In addition to the above-mentioned Giuseppe Regis and his wife, the French sinologist Mireille De Gouville (Samarani, De Giorgi 2011, 122), Aldo Natoli, Lisa Foa, Luca Meldolesi, Nicoletta Stame, Silvia Calamandrei, Gianni Sofri and others collaborated with Edizioni Oriente. Contributors mainly came from the Communist Party, the left wing of the Socialist Party and Catholic circles, and other minor

formations. Several members of the Giambellino "Luglio '60"[16] group began working for Edizioni Oriente to disseminate in Italy political material produced by the Chinese and other revolutionary movements such as the Vietcong.

An unpublished testimony of the activities of the "Luglio '60" group is that of Dino Morlacchi, who left a diary of his participation as a member of an Edizioni Oriente's delegation to China in 1964 together with other comrades such as Gino Montemezzani.[17] The trip to China had been organised with the support of the publishing house, and its feasibility was proof, for the participants in the delegation, that the group of ICP dissidents had taken the right, orthodox path, close to the correct positions for full adherence to communism and a revival of a revolutionary perspective in Italy (Morlacchi 2015, 63). The support of Edizioni Oriente had also enabled the opening of a group office at Giambellino in Milan.

The delegation thus ends up on the front page of *Renmin Ribao*, which headlines: *Chairman Mao Meets the Italian Delegation of Edizioni Oriente*, and shows a photo of the delegation immediately below the photo of the meeting with Sudan's Head of State Ibrahim Abboud. Present at the meeting were, among others, Wu Xiuquan 伍修权 and Zhao Yimin 赵毅敏, members of the CC of the CCP. The delegation of the Edizioni Oriente publishing house was, it is said, invited to China by the Chinese People's Association for Friendship with Foreign Countries for a friendly visit, also in view of its participation in the International Labour Day celebrations on 1 May. The head of the Italian delegation was Dino Livio Frangioni (*Renmin Ribao* 1964, 1).

Morlacchi's testimony is didactic and chronicle-like and does not report the contents of the discussions during meetings, maybe written in a different notebook or, probably, torn from the diary (Morlacchi 2015, 64).[18] What we may notice is the resemblance between the formalities and agenda of this delegation and those of the institutional delegations of ICP members. At the time of the break between the ICP and CCP, groups like "Luglio 60" kept the Chinese Communist Party's relations with Italy alive and were treated with consideration

16 The group "Luglio '60" was a minor extremist political formation that detached itself from the ICP and gave rise to an autonomous movement in the Milan outskirt named Giambellino.

17 Gino Montemezzani, a truck driver, was an official of the PCI from which he left together with other comrades to found the "Gruppo Proletario Luglio 60" of Lorenteggio, an autonomous communist movement that pursued extra-parliamentary relations with the CCP. Montemezzani is the author of *Come stai compagno Mao?* (How are you, Comrade Mao?), an autobiography of the years 1927-70 published by Edizioni LiberEtà, Rome, 2006.

18 Manolo Morlacchi refers in his volume to "three diaries". The author was shown two small notebooks, one with detailed notes of the trip (and with the remains of some pages torn out), and a diary.

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and respect, if even Mao himself wanted to meet them. Certainly, Morlacchi and the other participants in the delegation were aware of the political weight of their undertaking in the Italian context, and yet there are not many traces of this in Morlacchi's diary, perhaps, as Manolo Morlacchi suggests in his volume *Fuga in Avanti* (Escape Forward), for fear that confidential information about the talks with the CCP's top leader would leak out to the Soviet Union during the return trip from China (2015, 65).

The participation of figures such as Dino Morlacchi and Gino Montemezzani in a delegation organised by Edizioni Oriente testifies to the breadth of the publishing house's interests since such trips had little to do with the publishing world and the publication of translations of Chinese texts. Edizioni Oriente nourished, with Chinese support, the interest in Maoist China of Italian intellectuals, politicians, and dissidents who wanted to get closer to ideas considered more orthodox and introduce them in Italy to feed those groups that had broken away from the ICP.

And yet the way 'foreigners' visited China, whether for long residencies or short trips on the occasion of organised delegations, fit the script of what Paul Hollander, in his essay *Political Pilgrims*, calls "techniques of hospitality": "techniques of hospitality" refers to the measures taken so that guests were persuaded, through sense evidence and lived experiences, that what they were seeing was good and right; attempts were made to influence guests' perceptions by convincing them that their eyes were seeing a reality that fully represented the country they were visiting (1988, 463).

6 A Common Goal through Various Means

Vento dell'Est was not an isolated experience, it did not work without more general coordination and a broader purpose. In the editorial of issue 17, for example, we find a document against repression signed by other journals such as *Corriere del Vietnam*, *Ideologie*, *Quaderni Piacentini*, *Resistenza*, *Giovane Critica*, *Nuovo Impegno*, *Rendiconti*. The magazine was therefore part of a circuit working for the same cause. As pointed out by Marco Gabbas (2022), Maoism in Italy, during a period defined as the "Long Sixties",[19] developed through numerous small groups and different parties that often tried to win over the peasant world as well as Italian emigrants who had moved abroad in search of better living conditions. The delegations to China that

19 Cf. Gabbas 2022, 4: "The phrase 'Long Sixties' has become usual to define radical movements in the Western world spanning approximately from the Fifties to the Seventies".

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were periodically organised were study and fact-finding occasions to learn about and convey the Chinese reality. Participants were not only members of the editorial board but came from the most varied backgrounds, or rather, they gathered communists working in other areas of the country's cultural and political life, who through their participation would then disseminate content and participate in the Chinese cause. In issue 39 of the magazine, there is a testimony of Nobel Prize winner Dario Fo and his wife Franca Rame's participation in a delegation: the world of theatre entered the Chinese cause, as did the 1975 delegation.

An attempt was also made to disseminate material and testimonies through the visual arts. In 2011, Matteini himself published a three-volume book of photographs taken during the years of the Cultural Revolution entitled *1966-1970 Xin Zhongguo shi nian-sheying jiben* 一九六六 一九七零年新中国十年-摄影记本 (*1966-1970 Ten Years of New China – Photographic Records*) to spread the image of a pure, concrete, essential China through shots that convey hope, love and a strong attachment to the Chinese people and society. On the cover, the character *wang* 望 'look far, hope'. Dissemination of the magazine and other materials produced by the Edizioni took place through subscriptions and direct sales in bookshops. Cities all over Italy were involved in the sale, from Milan in the North to Bari in the South.

The Edizioni were also a conduit for requests for editions of Chinese materials such as a book on China at the UN. *Richiedetelo presso le librerie o alle Edizioni Oriente* (Ask for it at bookshops or from Edizioni Oriente), read the editorial advertisements in the magazine. It claims to be the most real window of knowledge on China, to pass on knowledge and to be in a common movement in complete agreement with the Chinese for the choice of materials and contacts to follow. As described by Fabio Lanza (2017, 14) in his work *The end of Concern*, the so called Long Sixties was a period in which the creation, translation and transmission of knowledge about China and Maoism globally took on the tones of an attempt to look at China as a centre of propulsion for intellectual and political change to be adapted and modelled on different local experiences.

7 Target Audience

Undoubtedly distorted and enamoured of China, the knowledge passed on by the contributors to Edizioni Oriente was nevertheless a way to bring people closer to China, to make relations more feasible, even at the government level, because it was the result of passion and interest.[20]

As Vittorio Regis recalls,[21] the magazine's users were members of the political landscape and especially activists. *Vento dell'Est* was not a mass-circulation magazine, but as there were no other sufficiently well-informed media, and above all no other media interested in the Chinese world, it certainly was an important means of knowledge and dissemination of the experience of Chinese socialism in Italy, capable of offering a space of circulation for the formation of a China knowledge that would be useful to the subsequent development of China-Italy relations.

The target audience of the magazine was undoubtedly wide, not one of specialists. In the presentation of the first issue, it is clearly stated that the magazine aims to fill a knowledge gap about China for a wide audience and to educate and help the public opinion that needs to be informed to know and understand. The readers to whom the magazine addresses its essays are those who have not had the opportunity to acquire knowledge about China, since the ICP, which had

> the task of fostering acquaintance and friendship with the Communist Party, the Chinese state and the Chinese people, has essentially run out of possibilities to continue this work due to its alignment with the positions of the CPSU. (Regis 1965, 4)

The Italian public and scholars who are not specialists in sinological disciplines, and therefore cannot read Chinese, are unable to find study material.

> Presenting material in Italian to fill this serious gap in the documentation is no easy matter. More often than not, texts bristling with lexical difficulties have to be translated from the original language for those who are not specialists in the various techniques. (4)

The undertaking is difficult, but Edizioni Oriente feels it is urgent to carry it out, choosing Chinese material and presenting it in Italian to the public that is unable to have sufficient knowledge of such a relevant political experience from such a large slice of the world.

20 Interview with Silvia Calamandrei, Montepulciano (SI), 20-21 June 2023.

21 Interview with Vittorio Regis, Rome, 8 July 2023.

> Here, then, the audience of *Vento dell'Est* reads about
>
> the middle peasants, the poor peasants, the rich peasants, the commercial bourgeoisie and the industrial bourgeoisie, (text by Mao Zedong translated in *Vento dell'Est*, 1965, 11)

in a rigorous and precise lexical choice. Reading translations from the Chinese press, however, one often gets the impression that the desire to be attentive to the source message also leads to very little detachment from idioms and idiomatic language, so dear to Chinese leaders. Idioms like *feng xiyu fangfa* 风细雨方法 (*procedere col metodo della brezza e della rugiada*, the 'wind and rain' method), *zou ma guang hua* 走马观花 (*ammirare i fiori stando a cavallo*, a fleeting glance in passing), *shede yisheng gua, gan ba Huangdi laxia ma* 舍得一身剐, 敢把皇帝拉下马 (*a rischio della vita, avere l'ardire di far cadere l'imperatore da cavallo*, one who does not fear the death of thousand cuts will dare unhorse the emperor) risk not being effective and having an alienating effect on the reader. These are certainly evocative expressions but with little impact on Italian society. Since the group of translators is made up of several people, we have, however, in some cases a punctual explanation with notes to the text of some otherwise obscure and unintelligible political formulae, as is the case, for example, for *si ge di yi* 四个第一 (*i quattro primati*, the four firsts), *san ba zuofeng* 三八作风 (*lo stile di lavoro detto del 'tre-otto'*, March-8-style behaviour), *san da minzhu* 三大民主 (*tre democrazie*, three great democracies) and *si hao liandui yundong* 四好连队运动 (*le compagnie delle quattro perfezioni*, four good companies campaign) (*Vento dell'Est* 1968, 27).

Important, however, is the role of the editorials, the introductions that open each issue of *Vento dell'Est*, because it is here that it is explained how the proposed translations and texts can and should have an impact on Italian society. Knowing China has, for the magazine's authors, the purpose of changing Italy. The Chinese experience must have an impact on how the Communist Party acts on and with the masses and how the masses operate in society (*Vento dell'Est* 1967a, 4-7).

In the spring of 1968, the magazine began to concern itself with ascertaining what kind of following the Cultural Revolution had in Italy. The magazine then became more and more the place to try to correct opinions, explain facts, and provide an inside point of view close to the Chinese sources (Niccolai 1998b, 87). The point that the issue of 6 April 1967 of the journal highlights the most in the editorial is the strength of the Cultural Revolution to take power to defeat the bourgeoisie and capitalists in a struggle "against old and new bourgeois tendencies". This is reflected in the choice of translated texts which concern the struggle between the reactionary bourgeois line

and that of the masses (*Hong qi* editorial of 1 January 1967), the relationship between revolution and production understood in a broad sense, also as cultural production, development, transport (*Renmin ribao* editorials of 7 September 1966 and 6 December 1966), or the need to extend the struggle to all sectors of activity (*Hong Qi* and *Renmin ribao* editorials of 1 January 1967). The desire, expressed in the connecting passages between the various translations, to offer examples to follow and programme documents is clear and strong. The need to make economic choices that run in the grooves traced by the revolution is stated several times and brings out China's leading role globally.

The importance of the target audience for the development of the magazine and the dissemination of Chinese ideas and documents presented emerges in the *Rettifiche e discussioni* (Corrections and Discussions) section, where we can see how the contents were reworked and understood through the lens of readers' experience. In this section of the journal we find opinions and reactions of those who want to express their point of view in response to the Chinese situation presented and, most importantly, want to draw a line to link the Chinese and the Italian experience:

> *Vento dell'Est* has opened its columns to a debate on the positions taken by various groups on the Cultural Revolution taking place in China and on the contribution that the themes that emerged from it can make to deepen the ideological debate and to clarify the political line within the Italian workers' movement. (*Vento dell'Est*, 6, 1967b, 97)

In the issue of 6 April 1967, for example, we read Vittorio Rieser's opinion on how the Cultural Revolution's implications could be applied to the Italian situation, "while waiting for others to present their point of view in as much depth for publication in future issues". This is a clear example of the fact that *Vento dell'Est* fed a debate, brought content through translations, and received opinions in turn.

The process of knowledge circulation thus also finds in the textual production of *Vento dell'Est* and in a redefinition of the role of the party and of its protagonists agents capable of defining and redefining the role of the masses, the physiology of the party, the sense of building a socialist society and a shared destiny that must move away from terms such as 'bourgeoisie' or 'capitalism' and must approach 'socialism', the 'dictatorship of the proletariat' in the ways that China was operating in its revolutionary process.

The issues presented by the magazine resonate with the reading public, and the magazine publishes their opinions to open a dialectical debate on the Chinese situation and its possible applications to Italian society. In issue 9 of the magazine, after three years of

publication, the editorial states that the magazine's effort has yielded results and that the spirit of the Cultural Revolution

> has begun to germinate and take root here too, and to present itself as an element of ferment in the class struggle taking place in Italian society. (*Vento dell'Est*, 1968, 3)

The reference is undoubtedly to the 1968 riots and the political turmoil of those years. Also in issue 9, readers are presented with a satisfaction questionnaire asking for feedback on the magazine's activities, the type of articles presented, the choice of topics, and even the graphic form.

8 Final Remark

The essay sought to show how much the experience of *Vento dell'Est* made the magazine's contents and its authors and translators true "go-betweens" (Schaffer et al. 2009) capable of creating, imitating and innovating China knowledge through a punctual analysis that starts from and goes back to texts, to make them protagonists in a shared space of circulation of knowledge. As Kapil Raj states:

> spaces of circulation suggest a fabric with topographical unevenness, (power) asymmetries, and also the possibility of tapping into an already existing continuum, or cloud, of relations, rather than merely building individual linkages. […] Also, circulation does not entail the smooth flow of knowledge between individuals, communities, civilities, and institutions, and does not imply any synonymy between circulation and fluidity. (2017, 52)

We tried to highlight how politically engaged the translations of *Vento dell'Est* were, and how the translators involved in the publishing operation had a "clear set of shared goals", led by Giuseppe Regis' intention in founding Edizioni Oriente, as communicated in an interview with Niccolai:

> at the time little was known about Mao and China. Academical sinologists continued to deal with old China; no correspondent from Italian newspapers had followed people like Snow, Smeedley, Belden during the Liberation War and in the first years of people's power. Only *L'Unità* had correspondents: Velio Spano, who covered the final period of the Liberation War and then Emilio Sarzi Amadé, who was in China when I also was there. Apart from that, like today, news came from reactionary Hong Kong, American, and British agencies. That is why together with other comrades and

> friends we founded Edizioni Oriente with the intent to present in our country the most lively things that appeared in the Chinese press. (Gabbas 2022)

Regis' statement thus fulfils one of the basic assumptions underlying Tymoczko's theory of activist translation: translators worked with a clear set of shared goals, and this goal was undoubtedly political. It was in order to meet a political need that texts were chosen and selected for translation. The articles submitted by Edizioni Oriente concerned the crisis in the relationship between China and the USSR, Chinese positions on war and peace, philosophical content, social sciences, law, education, culture, industry and agriculture. Everything had to contribute to highlighting the rightness of the official Chinese position. Instead, *Vento dell'Est*, taking a further step towards the elaboration of content, presented essays, articles and research papers with theoretical elaborations (Gabbas 2022).

Another basic requirement of activist translations is the adherence to a broader network connected to cultural and artistic movements, as shown by the interest of the collaborators of Edizioni Oriente in Chinese matters in general, the willingness to settle in China, and the fact that many participants in the delegations frequently organised by the publishing house belong to the world of literature, art, cinema. Organising delegations was, in fact, one of Edizioni Oriente's activities, perhaps no less important than the publication of material translated from Chinese: delegations were an opportunity for inquiry, knowledge, and dialogue with a not infrequent request for clarification on concepts to be translated and disseminated in Italy.

The work that the translators of *Vento dell'Est* did through their commitment and front-line presence in Chinese affairs sought to shape the political line of the Italian left, giving the ICP clear signals of detachment and dissidence in favour of an unabashed orthodoxy. Nor was publishing alone the terrain in which admiration for China and research into its ideology unfolded:

> The various forms through which interest in China manifested itself included the ever-increasing enrolments in Chinese courses in colleges, interest in theatre, music, dance, medicine, history and even Chinese fashion. (Hollander 1988, 408)

About the need to reach a broad audience to fall within the canons of activist translation, if we read in the presentation of the first issue that the journal wanted to make up for the lack of knowledge about China for a broad, non-specialist audience, we realise, from the requests made to readers for example with a questionnaire in issue 9 of the journal, that they wanted to 'improve the distribution work' which was, therefore, still not sufficient for a broad circulation and

the network of 'militant' bookshops all over Italy where the magazine could be bought was not sufficient for wide distribution.

Finally, we can state without hesitation that, between the 1960s and the 1970s, *Vento dell'Est* was a field of debate, discussion, and knowledge; we can state it because of the large number of contributors, the wide range of topics that were covered, from literature to politics, from mathematics to philosophy, we can state it because of the attempt to stimulate discussion and open dialogue with readers through questionnaires, invitations to collaborate and interlocutory editorials that were deeply focused on penetrating the readership with ideas and knowledge.

The political experiences that the essay focused on, trying to interpret the experience of Edizioni Oriente and its magazine *Vento dell'Est*, tell of actions with shared intentions and aims, which had their roots in the 1950s and 1960s and were fundamental to the left-wing movements that later led to 1968 (Gabbas 2022).

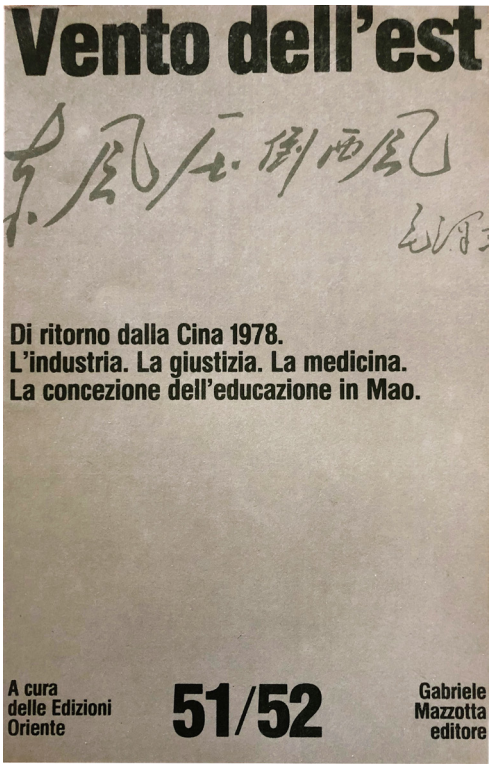


Figure 1
Vento dell'est, nr. 51/52, cover

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The 'French Connection' – Chinese Linguists in Paris

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Abstract Five linguists (Liu Bannong, Chao Yuen Ren, Wang Li, Chen Dingmin and Gao Mingkai) studied at Paris University during the 1920s and 1930s and shaped Chinese linguistics decisively. This paper frames them as "go-betweens" (Raj 2017) who were able to travel between the two spaces of circulation, Paris and Chinese academia. Specifically, this paper examines how their roles changed from student to expert, as reflected in their respective relationships with the French professors, how their studies in Paris contributed to their shaping of Chinese linguistics, especially phonetics and grammar, and why this 'French Connection' may have been overlooked up to now.

Keywords China. France. Linguistics. Phonetics. Grammar.

Summary 1 Introduction. – 2 Phonetics. – 2.1 Liu Fu (Liu Bannong). – 2.2 Zhao Yuanren. – 2.3 Wang Li. – 3 Grammar. – 3.1 Chen Dingmin. – 3.2 Gao Mingkai. – 4 Back in China. – 5 Conclusion.

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1 Introduction

"Spaces of circulation" (Raj 2017) are not, and never were, equally permeable in both directions. In the case of Western/Paris academia on the one side and Chinese/Beijing academia on the other, the twentieth century started off with a clear imbalance. While Western academia was bleeding out towards the 'East', with Chinese scholars receiving, studying, and learning Western science on a large scale, their voices were only sporadically heard – or listened to – in Europe. "Go-betweens" were able to pierce through the membranes of the spaces of circulation, a task not only intellectually but also physically challenging, as the journey had to be undertaken by ship or train. This paper argues that Chinese students at the University of Paris from 1920 to 1940 evolved from mere pupils absorbing knowledge in France and transporting it to China to eye-level dialogue partners, or "interlocutors" (Krämer 2023) for the French professors. In this way, the Chinese linguists reclaimed explanatory power over their own language.

The title of this paper alludes to the 1971 film with Gene Hackman (1930-2025), in which he impersonates a policeman and is trying to find out how drugs are smuggled from France into the USA without anybody noticing. As silly as this allusion may be, it illustrates that the crucial role of Paris-trained linguists in China, or of French influence in Chinese linguistics, has long been overlooked. One reason for this may have been the terrible repressions some of the linguists had to endure during the Anti-rightist-campaign and the Cultural Revolution, during which Western teaching was labelled as "bourgeois", the intellectuals had to renounce them, and subsequently self-censored themselves and their French experience.

The protagonists, the "go-betweens", are five linguists who studied at the University of Paris in the period between 1920 and 1940 and who have shaped the discipline decisively:

1. Liu Fu 劉復 (Liu Bannong 劉半農, 1891-1934), in Paris 1921-25
2. Zhao Yuanren 趙元任 (Yuen Ren Chao, 1892-1982), in Paris in 1924 and 1925
3. Wang Li 王力 (Wang Liaoyi 王了一, 1900-86), in Paris 1927-32
4. Chen Dingmin 陳定民 (1910-85), in Paris 1934-39
5. Gao Mingkai 高名凱 (1911-65), in Paris 1936-41

Zhao Yuanren, in contrast to the other linguists, did not write a doctoral thesis but went to Paris for a shorter period to converse with linguists and sinologists and audit some of their classes. Due to his immersion in the discourse on phonetics, his close contact to Liu Fu while in Paris, and his role for Wang Li to decide to study there, too, he is included in this study. The other four, Liu, Wang, Chen, and Gao, each completed their doctorate at the University of Paris in topics

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in Chinese linguistics, i.e. linguistics of the Chinese language in the narrower sense. They were chosen based on Yuan Tung-li's bibliography of doctoral dissertations (Yuan 1964).[1] Adjacent disciplines, such as palaeography or literature studies, are not included. This paper examines how the setting of Chinese academics in Paris enabled exchange of ideas and contribution to the study of the Chinese linguistics to a large extent. This will not only reveal that they were increasingly able to shrug off their roles as students and become dialogue partners, or interlocutors. It will also reveal that this development went hand in hand with a shift of research focus from phonetics to grammar.

This shift from one linguistic subdiscipline to the other has come to be a focus of this paper as virtually all secondary literature about Wang Li's time in Paris claims that he originally wanted to write a thesis on grammar but was dissuaded to do so by Paul Pelliot (1878-1945).[2] Instead, Wang Li graduated with a thesis in experimental phonetics on his home dialect. All five protagonists had set out to France not as inexperienced students but as scholars with a certain amount of experience and expertise. While Wang and Liu had already written theses and treatises on grammar, both scholars would later graduate with works in phonetics. It should be noted that Liu specifically worked on the tones of several dialects. Only the younger generation was able to move more towards grammar. Chen tackled particles from a phonetic angle but pursued the question if they have a grammatic or emphatic function. Gao, then, stayed with the question of particles, but clearly focused on their grammatical value. With this gradual disciplinary shift came a shift from description to analysis.

The five linguists were neither the first nor the only Chinese in Paris. It was a popular destination for Chinese students, especially Anarchists, and the Paris commune of 1871 became a well-cited example of an early attempt of a communist government in later PRC history textbooks. Many students had been organised in the Work-Study-Movement (or 'diligent work and frugal study movement', *Qingong*

1 I am grateful to Olivia Wenzel for directing me to this bibliography. Sun et al. have presented a research paper that also discusses the roles of Cen Qixiang 岑麒祥 (1903-1989) and Wang Lien-Tseng 王聯曾 (?-?) who obtained a "licentiate" in phonetics at the University of Paris. They also mention the doctoral candidate Tao Yumin 陶燠民 (?-1934) who died before he could defend his dissertation (Sun et al. 2024, 58).

2 Groeling-Che 1984, 17. Von Groeling-Che based her book on personal interviews with Wang Li. The Chinese biography by Zhang and Wang implies that it was Marcel Granet 格拉奈 (1884-1940) who insisted Wang writes on phonetics (Zhang, Wang 1992, 42). Wu's article in the magazine *Renwu* 人物, however, blames Henri Maspero (Wu 1981).

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jianxue yundong 勤工儉學運動, 1912-27).[3] In Lyon and Beijing, Sino-French organisations such as the Sino-French University were established. Interestingly, already Ma Jianzhong 馬建忠 (1845-1900), famous for creating the first grammar of Chinese as a Chinese native, the *Mashi wentong* 馬氏文通 from 1898, had sojourned in Paris from 1876 to 1880. However, even though he was an inspiration to virtually all five linguists of this paper, he did not study linguistics but law, namely at École Libre des Science Politiques (known today as Sciences Po)[4] (Mair 1997, 5, 7-8). For Wang Li, for example, Ma was an important inspiration. Since Ma relied extensively on Western grammar concepts to explain Chinese grammar, Wang warned time and again against a wholesale adoption of Western theories (cf. Münning 2017, s.v. "Wáng").

This paper aims at describing and questioning the network(s) of linguists and the knowledge transfer between them. Research questions include: what was the relationship shared by the French and Chinese actors? Was this relationship one between teacher (French) and student (Chinese)? Did the Chinese actors merely serve as informants for the French professors? Was the role of the Chinese to transmit knowledge (maybe only to partial extent) between 'two spaces of circulation' in both directions? Or was the explanatory power of Chinese linguistics underestimated by the French teachers and the knowledge transfer was unidirectional? Or can we find a development from a mere student-teacher to an eye-level interlocutor relation? What sources can we use to find out? And finally: What role does the "French Connection" play for nowadays' Chinese linguistics and "languagescape"?

This paper proceeds as follows: First, Liu, Zhao and Wang as the three protagonists who studied phonetics in Paris and their contributions to the discipline are discussed. After that, the same is done for the grammar specialists. This paper attempts to highlight their contributions to the field, their impact and their role in the discourse. The section "Back in China" describes the events occurring after their sojourn in France, with a focus on their treatment as targets of the anti-rightist campaign. It gives an outlook on their impact on Western sinology. A conclusion will answer the research questions raised above.

3 Liu Fu criticised the *jianxue yundong* in his "Ou you huiyilu" 歐遊回憶錄 (1926): it is impossible to work enough to fully finance yourself.

4 Ma Jianzhong's older brother Ma Xiangbo 馬相伯 (1840-1939) apparently helped in the compilation to an unknown extent. Ma Jianzhong was well versed in French, Latin, Greek and German.

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2 Phonetics

Four of the five protagonists of this paper studied phonetics in Paris. In Europe, research of tonal languages was just beginning. Tones per se were known in China for centuries but their physical qualities were unclear. Three major conceptual and technological innovation bids came from the West: First, the idea that the tones were pitch tones, i.e. like a musical melody, which can be notated with musical notation. Second, technological devices that recorded sound waves either as graphical representations or in audio form for playback. Third, Bernhard Karlgren's (1889-1978) idea to combine the traditional Chinese phonological scholarship with these modern methods.[5] To yield the desired, meaningful and reliable results, however, Chinese native speakers were needed as go-betweens to adapt these innovations and apply them in the field. Liu Fu, Zhao Yuanren and Wang Li were these go-betweens. Their results, such as Zhao's representation of tones with numbers that indicate pitch levels, came to be accepted in Chinese linguistics and language learning worldwide. The main section of this paper presents their role as go-betweens between Europe and China, between Paris and Peking (if the reader allows this cheap alliteration), carrying back and forth knowledge from the respective spaces of circulation.

2.1 Liu Fu (Liu Bannong)

Liu Fu, or Liu Bannong 劉半農 (1891-1934), born in Jiangyin 江陰, Jiangsu Province, was not only a linguist but also a poet, essayist, translator, teacher, language planner as well as photographer[6] and inventor. Like the other protagonists of this paper, he was not just concerned with describing and researching the Chinese language, but also with reforming it. He was a vernacular language (*baihua* 白話) enthusiast, whose article in the May Fourth journal *Xin Qingnian* 新青年 (New Youth) was so impressive that it prompted Cai Yuanpei 蔡元培 (1868-1940) to invite him to come to teach at Peking University.[7] Among the many scholarly endeavours he undertook was the collection of folksongs from 1918 onwards, a movement which was born out of the wish to understand and preserve oral (and vernacular or

5 This enumeration is not chronological.

6 Liu himself describes that the second phase of his photography studies and experience began in 1923 in Paris, when he was insomniac and bought himself a small camera to "play around" (*wan wan* 玩玩) and read whatever he could get a hold on the topic. Liu 1927, 1.

7 Boorman 1968, 2: 394. Cai Yuanpei's calligraphy adorns Liu's doctoral thesis.

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"vulgar", *su* 俗) modes of expression as source for a modernised language and which opened up paths to dialectology and the question of how to best record oral speech.[8] Liu is often credited for creating the female personal pronoun character *ta* 她, but it had already appeared in Kang Baiqing's 康白情 writings. However, Liu definitely popularised it, not least with his poem "Jiao wo ruhe bu xiang ta" 教我如何不想她 (Tell me how I can forget her) written in London in 1920, which was later set to music by Zhao Yuanren and became a hit.[9] "Her" or "she" in the case of Liu's poem/song refers to China. Liu remarked in 1926, after his return to China in 1925, how much he missed his home country, even though he saw many social problems there (Liu 1926). That studies abroad were seen as a deliberate effort to develop and strengthen a perceived backwards China is a recurring theme among the Chinese intelligentsia of the time.

Liu was sent to study in London by the Ministry of Education in 1920 (Wei 2001a, 498). To have enough time to prepare his journey, he had stopped his Peking University grammar class on December first, 1919 (Xu 1989, 67). That year, he had already published his *Zhongguo wenfa tonglun* 中國文法通論 (General discussion of Chinese grammar).[10] The funds allocated to Liu just covered for himself and his studies at University College London (UCL; Wei 2001a, 498). He joined the phonetics laboratory which had been established in 1912 (Xu 1989, 10) and was led by Daniel Jones (1881-1967, who had been able to obtain his position thanks to his studies with and support by the French phonetician Paul Passy, 1859-1940; Chang, 183). As Liu had taken his wife and daughter along, his budget was very tight.[11] In the summer of 1920, his wife bore twins (a boy and a girl) in London, aggravating the financial situation and motivating him to relocate to Paris with his wife and then three children, where the cost of living was lower, and continue his doctoral studies at the University of Paris in June 1921[12] after an entrance exam or test (Wei 2001a, 498). Liu also felt that he and his family stood out less as foreigners there (Liu 1926). Research often stresses the economic motivation to relocate, but the academic reason should not be underestimated. Zhao Yuanren recalled that Liu considered the UCL methods for analysing tone languages to be crude (Chang 2021, 194). Paris, in contrast, was home to Paul Passy, who held the first chair of General

8 Cf. Tam 2020, 114 ff.; Hung 1985, 1 ff. One of Liu's brothers, Liu Tianhua, was a musicologist.

9 Huang, 2023. I am thankful to Jérémy Biehler for directing me to this resource.

10 For the publication date of the first edition, see Xu 1989, 68. Peverelli (2015) translates the title as "Comprehensive Discussion of Chinese Grammar".

11 Liu 2000, 11. Liu Xiaohui (Liu Yuhou 1916-?) was Liu Bannong's oldest daughter.

12 Bao 1988, 76-7 and Xu 1989, 78.

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and Experimental Phonetics, created especially for him at École des hautes études d'histoire et de philologie, from 1894 until 1926. He was also the founder of the International Phonetic Association and one of the inventors of the International Phonetic Alphabet (IPA).[13] At Collège de France, abbé Pierre-Jean Rousselot (1846-1924) had founded the first experimental phonetics laboratory in 1897 (Brock et al. 2021, 301).

In retrospective, Liu Fu felt he had too much "ambition" (*yexin* 野心) when he planned to study abroad and had to tone down his expectations step by step. His initial plan to study both literature and linguistics turned out too large (二者不可得兼 – you cannot have both/ you cannot have the cake and eat it), so he decided to concentrate on linguistics. However, even this turned out to be too broad, so he decided to concentrate on general phonetics (*putong yuyinxue* 普通語音學). Self-ironically he confessed that even that was still too much for his talents (*tiancai* 天才). Therefore, he settled with experimental phonetics (*shiyan yuyinxue* 實驗語音學). His advice, therefore, was to concentrate on less but to do it more thoroughly, especially given that time abroad is limited for a foreign student. The focus of his studies was to learn new methodologies to substitute for the old ("dead", *si* 死) ones, which he could then apply once returned to China, only this would constitute the "correct" (*zhengdang* 正當) way of studying abroad.[14]

Liu's activities in Paris, as have been recorded in his *nianpu* 年谱 (annalistic biography), as his diary was allegedly burnt during the Cultural Revolution (Koller 1993), testify to the wide scope of his interests and talents. He frequented lectures of Collège de France (Wei 2001a).[15] Numerous essays, poems, and translations of his appeared in Chinese magazines. He studied and copied the Dunhuang manuscripts in the French National Library. Informing the Chinese readers about Chinese sources in France and taking part in the literary and linguistic debates of the time (on language reform, for instance), his motivation was to transport knowledge from France to China, his home country's development and progress always in mind. In 1921, he wrote to Cai Yuanpei with a plan to establish a Chinese experimental phonetics laboratory (Xu 1989, 80, *passim*). In the letter, which was published in the *Peking University journal*, vol. 893, he lays out a concrete working plan for the lab that should be part

13 Cf. Fallon 2006, 239. See also Ashby 2015, 118 and Ashby 2011. The film discussed by Ashby shows (probably) Stephen Jones using the apparatuses, speaking into a mouthpiece, recording sound waves on a kymograph, etc. See also Chang 2021.

14 Liu 1925a, 81. In this speech at an academic reunion, his widely lauded witty style is evident, spiced with self-irony.

15 Unfortunately, there are only attendance booklets in the archive of Collège de France from later years.

of Peking University, including what apparatuses to purchase (such as the kymograph and instruments developed by European scholars, like Rousselot), who should staff it and that it should not only investigate, but also store and interpret Chinese language data,[16] and, if the circumstances allow, also other languages.[17] This laboratory was indeed established upon his return (Cai 1934, 2) and accommodated and trained young researchers, such as Wei Jiangong 魏建功 (1901-1980), from whom we know that at least some of the instruments requested by Liu were indeed used there (Wei 2001a; Münning, 2022).

In 1922, Liu Fu wrote to Cai Yuanpei again to report about his progress and to invite interested readers to correspond with him. He described the European academia as compartmentalised ("sectarian", *menhuzhijian* 門戶之見), i.e. that the scholars stick to colleagues in their respective discipline and are reluctant to accept someone who would endeavour into too many different fields. Therefore, Liu decided to concentrate on experimental phonetics, which was best to study in Paris (while applied phonetics was best in England); and as Humboldt University in Berlin was a good address for experimental phonetics, too, he spent a few months there. From the letter, we know "Monsieur Fu Liu" lived in 5, rue des Feuillantines, Paris (Liu April 20, 1922). He would move at least one time within Paris, Zhao Yuanren located him in Rue de l'Estrapade in 1924 (Zhao 1934).[18]

Even though his studies in Paris focused on experimental phonetics, the work Liu had already done on grammar stayed with him, as did his involvement in the language reform discourse.[19] In 1923, he wrote a postface to his *Zhongguo wenfa tonglun* for its third edition in which he adds to some aspects of it and makes some corrections, much of it indebted to his new ideas gathered in France. The work itself is based on Henry Sweet's *New English Grammar* (1891-98) and argues that most grammatical features of Chinese are expressed in its syntax (Peverelli 2015, 73-4). Its influence on Li Jinxi 黎錦熙 (1890-1978), a trailblazer of modern grammar studies, is important (31). It also opens a connection to the last protagonists of this paper, Chen Dingming and Gao Mingkai, as it touches the question of particles (or to only Gao as it discusses the preposition (or verb) *zai* 在).

16 It is possible that "Zhongguo yuyan fanyuan 中國語言範圍" also includes non-sinitic languages spoken in China.

17 Liu Fu: "Tiyi" 1921.

18 To confirm the addresses and possibly find others in case he moved, I have tried to locate Liu's student file at Archives Nationales, but it is not available for consultation because of its brittle state. I hope to receive a scan at some point in the future. I extend my gratitude to the archivers for their help.

19 Liu was a member of the Guoyu tongyi choubeihui 國語統一籌備會(Preparatory Committee for the Unification of the National Language), for example.

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It also opens a connection to Wang Li (other than experimental phonetics) as it touches the question of Europeanisation *Ouhua* 歐化 (Liu 1923, 121). Last but not least, as Liu would revise his grammar after his return to China and publish it as *Zhongguo wenfa jianghua* 中國文法講話 (Lectures on Chinese grammar) in 1932, so grammar is also starting and ending point for him.

The two main questions Liu tackles in his *Zhongguo wenfa tonglun* postface are first (1) the difference between spoken and written language and the new writing style as in between the two and (2) what role the study of foreign grammar can play for the study of Chinese. (1) Liu's deliberations about the difference between the spoken and the written are indebted to the wish for reform of the time: the implementation of a standard language, i.e. pronunciation (his complementary thesis hits the same note) and the unification of the spoken and the written language (*yan wen heyi* 言文合一, Liu 1923, 119, *passim*). Nevertheless, Liu states that linguists should not try to be politicians (*zhengke* 政客, a derogatory term). Under the impression of phonetics, he describes vividly how many aspects of the spoken language are not represented in writing and according to him can never be (Liu 1923, 119). This is particularly true in the case of prosody, where a sentence can be completely altered semantically depending on which syllable is stressed (114). As he advocates to study spoken and written grammar distinctly, Liu clarifies that his grammar deals with the written language modelled on the spoken, *yutiwen* 語體文 destined to replace the classical written language *wenyanwen* 文言文. He locates its grammatical features between conservative (Chinese) and Europeanised grammar (Liu 1923, 120-1). Later, also Wang Li would "blame" grammatical features of the modern language on European influences,[20] but this view was corrected or attenuated by Alain Peyraube (Peyraube 2000), Ruth Cordes (Cordes 2014) and others.

(2) As literally anyone writing about grammar, Liu refers to Ma Jianzhong as pioneer for the study of written grammar. However, Liu states that Ma only put a veneer of western clothing on classical Chinese scholarship (Liu 1923, 116). So, what use can the study of foreign grammar have? The comparison with and translation into other languages can help pinpoint, explain and name features and functions of modern Chinese grammar, such as parts of speech, that have hitherto not been studied. He comes to the conclusion, for example, that *zhong* 中 is a noun (in the middle) by comparing it with English, French and Sanskrit, deciding that the Sanskrit rendering of *Zhongguo zhi zhong* 中國之中 is the most suitable, discarding the

20 Wang [1943] 1985, 460 ff. This grammar is based on his Xinan Lianhe Daxue 西南聯合大學 (United South-Western University) lectures, it was first published in 1943.

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prepositions "in" and "à" of English and French (129-39). At the example of the term *zai* 在, he shows that even though it expresses a position (*diwei* 地位), it cannot be simply equated to "at" or "à" (130-4). While the study of Western languages can be helpful, the influence of them should not be too strong so that either particular Chinese grammar phenomena are obscured by it, or the language develops into Pidgin English (121-2).

Liu Fu graduated with two doctoral dissertations. *Étude expérimentale sur les tons du chinois* (Experimental study of the tones of Chinese) was his primary thesis, which earned him a reward (récompense) of 500 Francs of the Commission du prix Volney in 1925. Erroneously, secondary literature usually claims he received the actual prix Volney, which is not the case ("Informations diverses" 1925). His complimentary thesis (a requirement that applied to some doctoral candidates and that was dropped in 1969, (cf. Durry 1969) was *Les Mouvements de la language nationale en Chine* and it testifies to the entanglement of linguistics and language planning in twentieth century China. Just as or even more than the "correct" pronunciation of English was to be taught in British schools and gave impetus to phonetics as a discipline (Chang 184), Chinese scholars and educators fought for a nationwide promotion of a standard language. In contrast to most scholars of the time, who advocated for choosing the Beijing dialect as the standard, Liu advocated for the eclectic pronunciation standard that he conceptualised as a developed imperial Mandarin (*guanhua* 官話). He criticised one of the earliest proponents of the language of Beijing, Zhang Shiyi 張士一 (1886-1969), for copying Daniel Jones' approach that the standard pronunciation should be modeled on a Southern English person educated at a public boarding school (Jones 1922, 4; Liu 1925d, 52). Zhang Shiyi's phrase *you jiaoyu de Beijing bendi ren suo shuo de hua* 有教育的北京本地人所說的話 (language of an educated native of Beijing; 1920, 35), however, was to become part of the official definition of the Chinese standard language as *shouguo zhongdeng jiaoyu de Beijing bendi ren de hua* 受過中等教育的北京本地人的話 (the language spoken by a native of Beijing who has received middle school education) (Wei 2001b) and similar wordings for years to come. The thesis is directed at a Western audience, clarifying Chinese terminology and presenting Chinese actors. However, Liu always stays in dialogue with the Chinese audience, for example by publishing his dissertation abstracts (Liu 1922c; 1925c) or contributing to the discussion on the national language (Liu 1922b).

And he did more than just staying in dialogue: Everything learned abroad was to be used to modernise and strengthen China and the newly born nation. Therefore, Liu published the findings of his primary thesis *Étude expérimentale* in Chinese in China as *Sisheng shiyanlu* 四聲實驗錄 (Experimental Study of the Four Tones) in 1924, before the French version was published in Paris. In his role as go-between, he

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targeted the Chinese and the French readers differently and chose the content accordingly. In the following paragraphs, I attempt a summary and comparison of the two works.

Consulting the thesis *Étude expérimentale* makes the reader understand why the commission of the prix Volney may have thought Liu Fu merited a reward, and it also fuels the argument that Chinese linguists like him were much more than mere students but also informants, innovators and discourse participants. Liu acts as informant by presenting the history of tone research in China and by providing the phonetic source material. He acts as innovator by developing new methodologies. Lastly, he participates actively in the discourse by addressing existing scholarly opinions and providing solid research evidence for the nature of the tones in the Chinese language: They are expressed by pitch, i.e. different frequencies, just like music (not absolute, but relative to each other).

In the introductory paragraphs of *Étude expérimentale* – the entire book is structured in numbered paragraphs, like his other scholarly works, too – Liu summarises the historical discourse about tones. He presents the Chinese debate to the Western reader, beginning with the earliest, probably unconscious, manifestation of tones in pre-imperial times, criticising several Chinese approaches to historical sources (such as Qian Xuantong's 錢玄同, 1887-1939, and others). Only European scholars and their "musical ear" (oreille musicale) were finally able to grasp the true nature of the Chinese tones from the second half of the nineteenth century onwards: their "pitch" (hauteur musicale). He mentions M. de Michels ("Du système des intonations chinoises et de ses rapports avec celui des intonations annamites", *Journal Asiatique*, 1869) and M. Courant (*Langue chinoise parlée*, Paris, 1914) who were able to apply a "scientific method" (méthode scientifique). But the greatest innovation was introduced by Bernhard Karlgren in his *Études sur la phonologie chinoise*, 1915, aided by methods from the new science of experimental phonetics (Liu 1925d, 9). Liu Fu criticises Karlgren for basing his findings on single speakers as informants, such as a certain Ts'i Lien-teng (Qi Liandeng) living in Paris and being the source for the four tones of the Beijing dialect. Still, Liu is obviously following on Karlgren's footsteps. Karlgren admitted that it would need a much more thorough study and more data, preferably obtained by the modern methods of experimental phonetics and its devices invented by Rousselot and others. Karlgren basically suggests the methodology that Liu would then employ for his thesis and admit being inspired by him (10-11). However, as man's life is short, Karlgren decided to make use of his ears (Karlgren 1915, 224-5) and only discusses the use of recording devices such as the phonograph by Lioret and the artificial palate in theory. He also makes extensive use of existing literature, such as Courant's *La langue chinoise parlée* (1914) and its rendering of the

tones in musical notation (Karlgren 1915, 258).

For the Chinese audience, Liu proceeds differently. He begins with his research question "What are the tones" and clarifies that he is of course aware that in many regional languages, there are more than four tones. In the Chinese version, 12 dialects are presented,[21] in the French thesis, he concentrates on Pekingese (Beijingese), Cantonese and his home dialect of Jiangyin and only occasionally mentions examples from the others. The Chinese readers get a crash course of the definition of sound and its physical properties, as well as about pitch and music with an introduction to musical theory, the physics behind it, and notation. The Chinese version is written in a more essayistic style, spiced with anecdotes.

The Chinese version of the thesis then proceeds with an introduction into acoustic physics (Shengyin zhi duanding 聲音之斷定, definition of sound) and omits the historical overview over past research. For the Chinese readers, he dives right into the methodology, presenting the different devices with images. In the French thesis, images are shown in the appendix. Liu used the following devices:

- To record sound: electric device with a rotating cylinder (Liu 1925b, 11), this is the kymograph (*langwenji* 浪紋計) in the Chinese thesis
- To measure time: electric tuning fork (électro-diapason, *dianlang yincha* 電浪音叉; Liu 1951, 25)
- Vibrations of nasal sounds: manometric mask (masque manométrique) that Jean Poirot (1873-1924)[22] had specially made for Liu
- To record the vibrations of the voice: small drums
- To measure the traces made on the cylinder and drums: a construction with a magnifying glass and a ruler invented by Liu (Liu 1925b, 12)

The last two items merit a special discussion: the mask that Poirot had made for Liu was attached via a tube system to a magnalium needle that would draw the waveform of the vibrations of the voice on a revolving drum. This setup was a special invention of Liu. The other invention was a construction with a ruler and a magnifying glass that indicates directly the logarithm of the pitch (*zhijie liang duishu de yin'gao tuiduanchi* 直接量对数的音高推断尺). Cheekily, it came to be called "Liugraph" among the colleagues, analogously to "Liore[t]

21 Dialects with four tones: Beijing and Chengdu (with the entering tone ru-sheng 入聲 in parentheses), Nanjing, Jiangyin (Jiangsu), Jiangshan (Zhejiang), Jingde (Anhui), Tengyue (Yunnan), Wuchang, Changsha; dialects with eight tones: Fuzhou, Guangzhou, Chaozhou. Liu also mentions the names of the speakers. Note that nowadays' classification into big dialect groups was not yet complete.

22 Poirot had taken over the phonetics institute and the Archives de la Parole from Ferdinand Brunot (1860-1938) in 1920.

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graph", Lioret's phonograph (Zhao 1934). Liu's work under the direction of Poirot came to be received as pioneering in the history of the Phonetics Institute: "J. Poirot came in 1920 with his labiograph, and he directed the doctoral research of Liu Fu, using a recording cylinder (built by Boulitte),[23] equipped with an electric tuning fork and a manometric mask. The result was a pioneering thesis on the phonetics of Chinese tones" (Fougeron et. al. 2023, 4). Liu was able to prove that "tones corresponded to specific patterns of the fundamental frequency's variation over time" (Yeang 2019, 104). Even before the publication of his thesis, in December 1922, Liu was accepted into the Société Linguistique Française after Poirot's recommendation.

2.2 Zhao Yuanren

Zhao Yuanren, together with Wang Li, who will feature in the next section, was one of the most important Chinese linguists of China. He went to Paris for shorter stays in 1924 and 1925 while staying in England during his extensive research travels in Europe. He was a close friend of Liu Fu and connects Liu and Wang. Zhao was a veritable polyglot and polymath, voice of the national language[24] and stands out among the protagonists of this paper as he did not complete a doctoral dissertation in Paris (and never intended to). He toured Europe for research as a more "accomplished" scholar and audited the classes of Antoine Meillet (1866-1936), Vendryès, Maspero and Pelliot (Chao 1976). He was a frequent lunch and dinner guest at Liu Fu's house, for instance, on January 8, 1925 (Zhou 2022).

Zhao Yuanren gives us an impression of how he and maybe also other Chinese students may have perceived the language competencies of their teachers. Meillet quoted all languages with a "perfect French accent". Vendryès and Maspero each spoke French with their respective local accents (Vendryès from the Northeast, Maspero from Paris). However, Zhao concludes: "But the lectures of these scholars were clear and systematic, and whenever necessary they could make good use of native informants or recordings" (Chao 1976, 18). After he went to a lecture of Pelliot on Central Asia on January 15, 1924, he noted about Pelliot's Chinese pronunciation that "his intonation was terrible for a philologist" (Zhou 2022, 233). Most of the diary in that time is written in English. He frequented Hubert Pernot's (1870-1846) class in general phonetics. Zhao noted that even though the lectures are

23 Georges Boulitte was the instrument manufacturer of the institute of phonetics in Paris. Cf. Amelot et al. 2024.

24 Zhao's *A Phonograph Course in the Chinese National Language* came accompanied with records of his voice realising the old, eclectic national pronunciation standard.

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good, Pernot "can't pronounce a ɦ (or ʃʮ?) or a pʰ" (January 16, 1925).

On March 17, 1925, Zhao attended Liu Fu's thesis defense at Salle Louis Liard. The professors there were Vendryès, Granet, Meillet, Pelliot, Maspero and Pernot. Poirot, to whom Liu would dedicate his thesis, had already passed away. What Zhao learned in London and Paris – not only from the professors, but also from his friend Liu – was to shape his dialect research and in consequence Chinese linguistics decisively.

2.3 Wang Li

Wang Li, born in Bobai 博白, Guangxi, was one of the most influential linguists of twentieth century China. He authored scientific standard and reference works that should not be missing on any sinological bookshelf. He also participated in language planning in the PRC, such as in the promotion of the standard language, the development of the Hanyu Pinyin 漢語拼音 transcription system and in the simplification of the Chinese characters.

Like the other protagonists, Wang received his scientific training both in China and in France. He studied at Qinghua University (1926-1927) with teachers such as Zhao Yuanren and Liang Qichao 梁啟超 (1873-1929) and he graduated with a thesis on the classical Chinese grammar *Zhongguo guwenfa* 中國古文法 (Grammar of classical Chinese). Grammar was to remain one of Wang's most prominent research topics. After his graduation, he sought Zhao Yuanren's advice about what to do next. Zhao recommended him to go to Paris to study linguistics (Xia 1988, 18).

Wang Li followed Zhao's advice and studied at the University of Paris 1927-1932. He studied with the theoretical linguist Vendryès, and the sinologists Pelliot and Granet. To earn money, he translated French literature (including Molière and Baudelaire, but also French translations of Greek and Roman literature) into Chinese. He sent his translations to Ye Shengtao 葉聖陶 (1894-1988) at the Commercial Press (Shangwu Yinshuguan 商務印書館) to be published, a connection made possible by Li Shicen 李石岑 (1892-1934),[25] who was impressed how fast Wang, with no prior knowledge, had learned French (Xia 1988, 19). Wang also made a translation of the introduction of Vendryès' *Le Langage* (Wang 1934).

Wang Li graduated from Paris University with a PhD thesis on his native Bobai 博白 dialect: *Une prononciation chinoise de Po-Pei*

25 Zhang, Wang 1992, 40. Ye Shengtao was later to play another important role as catalyst for the advancement of linguistics when he enabled Wei Jiangong to publish the first edition of the pocket dictionary *Xinhua zidian* 新華字典 in 1953.

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(province de Kouang-si): étudiée à l'aide de la phonétique expérimentale. Wang Li had originally intended to write about Chinese grammar. Pelliot (who had introduced him to Granet, chair of the Institut des hautes études chinoises), however, advised Wang to focus on the Bobai dialect from Guangxi and focus on empirical methods.[26] To put it bluntly, Wang was demoted from an expert to a specimen whose sole quality was that he was a native speaker. His thesis is heavy in the use of technology. Unlike Liu who measured the quality of the sound emitted by the speaker, Wang also investigates what the speaker needs to do to produce this sound, i.e. especially the places of articulation.

For the printing of his dissertation, Wang Li received a grant by the Institut des hautes études chinoises de l'université de Paris. It is noted on the cover page, and the archive of Collège de France[27] has preserved Wang's receipt. According to this receipt, the 3000 Francs were to be paid back. His acknowledgements give us an idea who advised him scientifically. He first mentions Pelliot, who also made the printing grant possible. Furthermore, Pierre Fouché,[28] rapporteur de la these (examiner), Marcel Granet (administrateur de l'Institut des Hautes Études Chinoises), and M. l'Abbé Millet, "qui a bien voulu mettre à sa disposition son experience et son laboratoire".[29]

In the Préface to his dissertation, Wang Li mentions his predecessors Yuen Ren Chao and Liu Fu. He writes:

> Mon maître Yuen-ren Chao, servi par une science approfondie de la linguistique et une finesse d'oreille remarquable, a publié une étude très aprécíée sur « le dialecte du Wou moderne ». Cette œuvre originale, en ce sens qu'aucun Chinois n'avait pu avant lui fournir une étude aussi documentée, nous fait pressentir qu'elle en eût été la perfection si l'auteur avait pu recourir à la phonétique expérimentale, c'est ce qu'a fait M. Fu Liu pour son travail sur « les tons du chinois ». (Wang 1932, XI)

26 Groeling-Che 1984, 17. As mentioned above, other authors claim that it was not Pelliot but another French professor who dissuaded Wang Li from grammar and made him work on phonetics.

27 I am very thankful for the help of Delphine Spicq and Claire Guttinger.

28 "Le LPP et son histoire". On the history of the Phonetic Institute and the Archive de la parole, see Fougeron et al. 2023.

29 Wang Prononciation XII. I suspect said abbé Millet is Adrien Millet, who authored *Étude expérimentale de la formation des voyelles* (cf. `https://gallica.bnf.fr/ark:/12148/bpt6k38604j.r=Abb%C3%A9%20Millet?rk=21459;2`) and *Précis d'expérimentation phonétique. L'oreille et les sons du langage*. He was the assistant of l'abbé Rousselot. Cf. Bordato 1939, 382.

Here, Wang Li refers to Chao's book "Studies in the modern Wu-dialects" *Xiandai Wuyu de yanjiu* 現代吳語的研究[30] from 1928. It had by no means been carried out without all technological apparatus. As described above, Zhao was familiar with Liu's work and knew the phonetic apparatuses. However, as Chen Pang Yeang has analysed, Chao's approach relied much more on the ears of the investigator. The machines he employed could only be operated by "human data collectors with 'musical ears'". The accurate sensory perception not only enabled Chao and his team to discern the pitch, but also an accurate phonetic transcription of the sounds. To this end, he would play the phonograph backwards, for example (Yeang 2019, 97).

Wang Li continues that additionally to employing Liu Fu's methodology, he used the artificial palate (palais artificial, palatography) and photography. In the thesis, Wang pronounces every phoneme in the Bobai dialect, takes a picture of himself doing so, and prints a schematic rendering of the artificial palate. The artificial palate shows where the tongue meets the roof of the mouth, i.e. it shows the places of articulation. Wang Li later stated that the aspect of natural sciences, such as, for example, the anatomical study of the vocal tract, was key to his success as a linguist and that it would play an integral part in advancing the linguistic sciences in China (Wang 1980, 77).

3 Grammar

Both Liu Fu and Wang Li would have merited to appear prominently in this section, but as their main activities in Paris fall in the field of phonetics, they were treated above. As it is especially known from Wang Li that he would have preferred to write a thesis on grammar, we turn to look at the next generation of PhD students who were actually able to study grammar in Paris: Chen Dingmin and Gao Mingkai. I argue that their study of grammar as a more 'analytical' subject represents a shift in the role of the Chinese students in France and shows that they were increasingly accepted as specialists and partners in dialogue. This is also reflected by the fact that both Chen's and Gao's theses are prefaced by their French professors, namely by Maspero and by Demiéville, respectively.

3.1 Chen Dingmin

Chen Dingmin, born in Ningbo 寧波, Zhejiang province, but living in Beijing since he was four years old, can be considered the "missing

30 The 1956 reprint is available in the Chinamaxx database.

link" between phonetics and grammar. In Paris, he wrote the dissertation *Étude phonétique des particules de la langue Chinoise* (1938) in which he pursues the question if the particles are emphatic or grammatic in nature. He also occupies a singular role among the protagonists because of three reasons: First, his main field of study came to be the French language; second, his work as a linguist was much less influential; and third, because he can be considered a communist. Before departing to France in 1934, he studied at the Chinese department of Institut Voltaire of the Sino-French University (*Zhong fa daxue Fu'ertai xueyuan guowen xi* 中法大學伏爾泰學院國文系) in Beijing (Xu Youchun 1991).

In Paris, Chen did his research for two years at the Institut de Phonétique under the supervision of its director, Pierre Fouché. In the preface of his thesis, he also thanks the assistant in the Institut, Miss M. Durand. He acknowledges the support and guidance of three other professors: Henri Maspero, Joseph Vendryès (whose course on general linguistics Chen frequented), and Paul Pelliot. In terms of finances, his thesis was printed with funds from Institut franco-chinois de Lyon,[31] for which Georges Dubarbier had given his recommendation (Tchen 1938, 5-6).

Why do I consider Chen's dissertation as the 'missing link' between phonetics and grammar? While his measurements of the language of Peking and of Ningbo are done with a purely experimental phonetics methodology, i.e. he measures the changing pitch in a phrase, he does much more. He discusses the grammatical structure of Chinese as a whole and the role of final particles in particular. Maspero authored a preface that could be perceived as contradictory to Chen's argument. I argue that Chen did indeed learn and apply a lot from his French professors, but he also considered his predecessor Liu Fu's work a lot and recurs to Wang Li's thesis. Most importantly, however, he also emancipates himself from his French teachers by coming to different conclusions than them.

Maspero claims that particles are used almost never for their grammatical, but nearly always for their affective function ("à peu près rien de grammatical, il est presque purement affectif", Maspero 1938, IV-V). The interrogative final particle *ma* 嗎[32] is the most salient example to show that Chen is of a different opinion: With *ma* at the end of the phrase, it becomes a question. Chen compares the use of interrogative particles with the change in syntax in English

31 For more on the Institut franco-chinois, see Villard 2014.

32 Today's *ma* was pronounced mə at Chen's time, as he points out discussing the shifts of pronunciation occurring among final particles away from the vowel of phonetic compound of the character towards the schwa (Tchen 1938, 142). For *ma*, however, this tendency would be reversed.

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and French. He reaches the conclusion that an interrogative phrase can be marked by a particle, but also, like European languages, by a raising of the voice (and no particle). The particles, however, play an important role, as the pitch tones of Chinese limit the possibility to modulate the pitch of a sentence. Relying on Vendryès and Meillet, he compares the Chinese and Latin particles (Tchen 1938, 47).

Chen addresses existing prejudices on the Chinese language and script, such as monosyllabism[33] and ideography. For the question of monosyllabism, something Maspero believed, too, he points out that there is a huge difference between the classical written (mostly monosyllabic) and the modern spoken (largely polysyllabic) language. In the latter, a word "mot" comprises more than one monosyllabic Chinese character. Chen identifies the script as source for this misunderstanding (Tchen 1938, 9-10, 23). He debunks the "ideographic myth"[34] with the example of phono-semantic compound characters (he calls them "idéogrammes phonetiques", "l'idéogramme devenant phonogramme", 141). He points out that the phonetics are key, i.e. that a character was created for a certain pronunciation, and that its meaning is also accessed by this pronunciation. Furthermore, Maspero believed the Chinese language does not have parts of speech (parties du discours) as they are not morphologically marked (Maspero 1934, 482).[35] Chen contradicts him by clearly speaking about substantives, verbs and adverbs (Tchen 1938, 29 ff.).

Chen Dingmin investigated Chinese final particles in the spoken languages of Beijing and Ningbo from a phonetic angle, but his overall discussion of the Chinese language and its grammar cannot be neglected. The next and final protagonist of this paper, Gao Mingkai, was to focus on the grammatical value of prepositional particles.

3.2 Gao Mingkai

Gao Mingkai 高名凱 (1911-1965) from Pingtan 平潭 in Fujian 福建 province, graduated in philosophy from Yenching University in Beijing in 1935 (Xu 1991, 738). He studied in Paris 1936-1941 and completed

33 On the "cliché" of monosyllabism, cf. Behr 2018.

34 Proponents of the concept that the Chinese characters are ideographic reduce them to mere visual representations of an "idea". The conceptualisation as "myth" goes back to DeFrancis 1984. It is to be noted, however, that Chen does not debunk this myth completely, he still employs the term and sees the characters as only loosely representing sound and the phono-semantic compound characters as exception. See Tchen 1936, 16 fn 2.

35 Kurhofer describes how Maspero perceived Chinese as monosyllabic, isolating and that it has no morphology and no word classes. Chen would contradict all these (Kurhofer 1998, 382).

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his PhD thesis *Essai sur la valeur réelle des particules prépositionnelles en chinois* under the supervision of Henri Maspero in 1940.

Like Liu Fu and Wang Li, Gao Mingkai's finances in Paris were tight. Additionally, World War II influenced daily life (Gao 1941). Gong Xiangrui 龔祥瑞 recalls getting to know Gao in Paris in 1938. Gong himself studied in London but spent the summer vacation in Paris. They first lived in Cité Internationale Universitaire de Paris, which is outside of the city center and therefore moved into Quartier Latin, closer to the university. To save money, they cooked themselves and bought cheap ingredients. Gao would not let any food go waste (Gong 1992, 43).

The idea to write about prepositions (*jieci* 介詞) came from Maspero. Their existence was debated (Gong 1992, 44). Gao, like Chen, first makes general observations on Chinese grammar before treating his examples. He describes the language as morphology-less, so that all grammatical operations need to be done in the syntax. He points out that Chinese has no word classes – at least none that are morphologically marked – and that only their position in the sentence can reveal their role. The starting point for Gao's dissertation was an article by his teacher Lu Zhiwei 陸志韋 (1894-1970, C.W. Luh) on the use of verbs in Chinese and European languages (Lu 1937), in which Lu states that some Chinese verbs blend in with prepositions. Gao concludes that prepositions are quasi-verbs. But the technicalities of grammar are only an access point to the much bigger question that Gao, who was originally a philosopher, pursued: How does language influence thought? For this question, he draws on writings by Lu Zhiwei,[36] Maspero, Granet and de Saussure. The latter's quote "Les moeurs d'une nation ont un contre-coup sur sa langue, et, d'autre part, c'est dans une large mesure la langue qui a fait la nation" adorns the cover of Gao's dissertation (Kao 1940).

The Avant-propos by Gao himself, the Préface by Paul Demiéville and the introduction furnish us richly with sources and influences on Gao Mingkai, among them Vendryès' *Le Langage* (1921). It is likely that Gao knew Wang's translation. Vendryès, himself no speaker of Chinese, uses the Chinese language as example in his *Le Langage*. He describes how in East Asian languages,

> Quant à la hauteur musicale, nous en avons de remarquables exemples dans les langues de l'Extrême-Orient, où l'intonation seule suffit à distinguer le sens et la valeur de mots autrement

36 Lu Zhiwei had studied psychology in the USA (Vanderbilt and Chicago). He was to become the first Chinese commentator of the Sapir-Whorf hypothesis in 1948 and rejected it (Münning 2017). The idea that language influences thought and vice versa is older than Whorfianism, though.

> homophones. En chinois, tel monosyllable, s'il est prononcé sur six tons[37] différents ou différemment intoné, peut designer six objets différents. (Vendryès 1921, 35)

He continues how the languages of East Asia have few "elements grammaticaux" but that the tone still (encore) plays a more important role (Vendryès 1921, 72). He claims that even though the word (mot) in Chinese can be defined without problem, but without context, it is unintelligible ("mais dégagé de son context, il perd toute valeur expressive et n'a plus qu'un vague sens abstrait qu'on ne peut rapporter à aucun emploi", Vendryès 1921, 82). It seems that he speaks of classical grammar but modern pronunciation. It is remarkable how well informed he was, he mentions the noun-verb tone change (*hǎo* vs. *hào* 好) that we nowadays assume as developed out of an affix (-s) in Old Chinese (Vendryès 1921, 106) – which had no pitch tones (Pulleyblank 2000, 30).

It goes without saying that the knowledge acquired by Gao Mingkai (and the other protagonists) in Paris played a key role for their research and terminology. Chen Dingmin and Gao Mingkai adopted the categories semantème and morphème from Vendryès for mot plein (*shici* 實詞) and mot vide (*xuci* 虛詞). Vendryès knowingly received some Chinese grammatical theory: "les mots vides et les mots pleins, pour employer la terminologie chinoise" (1921, 98). And indeed, the Chinese distinction between "full" and "empty words" had been introduced to Western linguistics by Joseph Henri Marie de Prémare (1666-1736) in 1727 in his *Notitia Linguae Sinicae* (Robins 1967, 105).[38] In the nineteenth century, Abel-Rémusat formulates it in French in his *Élémens de la grammaire chinoise*:

> Les Chinois appellent 實字 *chĭ tseu* [mots pleins], les mots qui ont une signification propre, comme les noms et les verbes; et 虛字 *hiú tseu* [mots vides], ou 助辭 *tsoú thseu* [termes auxiliaires] les particules qui ne servent qu'à modifier le sens des premiers, ou à marquer les rapports qui les lient entre eux.[39]

Gao's philosophical conclusion is that the prepositions[40] as quasi-verbs indicate actions and not relations. "Pour un Chinois, le monde

37 Vendryès does not indicate which variety he refers to. Cantonese as spoken in Hong Kong and Macau has six tones. Vendryès quotes Granet 1920 in his avant-propos (Vendryès 1921, XV), who, although mentioning tones in general in his article, does not mention a certain number.

38 I am thankful to Chen Wei for directing me to this information.

39 Abel-Rémusat 1857, 35. On page 77 it says: "particules ou mots vides".

40 The prepositions Gao treats are, for example, *zai* 在, *bei* 被, *yu* 與 and many others. To discuss their different roles would go beyond the scope of this paper.

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est composé d'événements atomiques" (Gao 230) and he only wants to express a real action of the concrete world, and no abstract rationalised relation. His argument that there is a distinct Chinese way of thinking characterised by this atomism that shows itself in the language draws on Vendryès, Bertrand Russell's *Outline of Philosophy* and Bernard Bosanquet's *Logic or the Morphology of Knowledge*. "La difference entre le mode de la pensée chinoise et celui de la pensée européenne est remarquable" (Kao 1940, 230). It is furthermore characterised by "représentationnisme" (representationism), which aims to represent the actual world as closely as possible (232). Relations are perceived as actions: *gei* 給, for example is different from "pour" (for), as it comes from the action "donner" (to give; 233).

While the question of how to grasp accurately the unique features of the Chinese language has occupied Chinese linguists for decades (Wippermann 2003), this view would cause a lot of trouble for Gao Mingkai after his return to China.

4 Back in China

What happened to the five protagonists in the long run after their return to China? Liu held several positions at Peking University, the Université Franco-Chinoise, and Fu-Jen University. In addition to his aforementioned grammar *Zhongguo wenfa jianghua*, he authored several important scholarly works and essays, including studies based on materials gathered in European libraries (Boorman 1968, 2: 395). He also served as chairman of the Chinese committee for the Sino-Swedish Expedition, led by Sven Hedin (1865-1952; Walravens 2003, 245; see also Hedin 1943). Unfortunately, he passed away at a young age in 1934 from an illness he contracted during a field trip to collect folk songs in Suiyuan 綏遠 province (Boorman 1968, 2: 395), which is now part of Inner Mongolia.

Chao Yuen Ren's massive contributions cannot be underestimated. He applied and developed experimental phonetics in dialect research, shaping decisively how we classify the Chinese dialects today. For him, however, the title "back in China" is not quite fitting: he went to live in the USA from 1938 onwards, teaching at Hawaii, Yale, Harvard, Berkeley and others. Nevertheless, he "continued to serve China" and the study of the Chinese language. His achievements accepted worldwide include his textbooks *Cantonese* and *Mandarin Primer*: Especially the introduction of the *Mandarin Primer* is innovative because of its accurate description of the linguistics of modern

spoken Chinese.[41] He was elected President of the Linguistic Society of America and chosen as a member of Academia Sinica. His "Questions of linguistics" *Yuyan wenti* 语言问题 became the first Chinese book on general linguistic theory in 1960 (Boorman 1968, 2: 151-2).[42]

Most activities of Chen Dingmin after returning to China are in the study of the French language. He also served as French interpreter on several world events, such as the World Youth Festival in Hungary in 1949, the conference of the World Federation of Trade unions in Beijing, the Asian Women's Congress or the Asia-Pacific Peace Conference. He accompanied Guo Moruo 郭沫若 (1892-1978) to the World Peace Council and Zhou Enlai 周恩來 (1898-1976) to the Geneva Conference in 1954 and to the Bandung Conference in 1955. He joined the Communist party in 1956. In 1957 he transferred to Paris as Xinhua News correspondent, where he stayed for three years. Upon his return to China, he participated in the translation of Mao Zedong's and Liu Shaoqi's works (Xu Youchun 1991, 1035). However, Chen was not spared during the Cultural Revolution despite his contributions to the Communist cause.

Wang Li and Gao Mingkai were also to author many linguistic works which were to decisively shape the discipline in China, especially in Wang's case. Their fate in the PRC political campaigns,[43] however, merits a special look. Not only were science and research increasingly politicised after 1949. Both linguists became victims of the Anti-Rightist Campaign (*fan-you yundong* 反右運動), which was, like the Cultural Revolution, detrimental to academia as a whole. It targeted mostly intellectuals, many of which were labelled as rightists, criticised by their peers and forced to write extensive self-criticisms.[44] In these, Wang and Gao had to renounce their French teachers and their ideas (Gao, 1958, Wang 1958). Ironically, only few years ago Vendryès, de Saussure and Meillet had appeared on a list of key authors to be translated into Chinese to advance the linguistic sciences.[45] In 1958, however, they and their theories were labelled as bourgeois and picked apart. The same was the case for French sinologists like Maspero and Granet. Following their scholarly footsteps became

41 Zhao's *Mandarin Primer* "introduced the methodology of structuralism" and had a notable impact on Chinese linguists (Norman 1988, 177).

42 As late as in 1957, Wang Li blamed the backwardness of Chinese linguistics on the lack of general linguistics (Masini 1985, 11).

43 In the Cultural Revolution, Wang Li was forced to work in a factory, humiliated and beaten with a metal rod. Groeling-Che 1984, 23.

44 Many victims were imprisoned, some even executed.

45 Secret document in Wei Jiangong's manuscript collection, presumably dating from 1956 with a bibliography of linguists to be studied and translated ("Fazhan yuyanxue" 1956).

a "wrong attitude".[46] Especially the idea that the quality of Chinese and Western thinking could be inherently different drew criticism. To defend himself, Gao tries to argue that he was a victim of Western imperialism and got the wrong scholarly influence that led him astray. What has been summarised above, the atomism (*yuanzizhuyi* 原子注意) and representationalism (*biaoxiangzhuyi* 表象主义) Gao proposed as specific Chinese way of grammatical thought in his French thesis on prepositional particles, had to be condemned now. He reconfigures his reading of Granet, for example, to mean that the different grammatical phenomena in Chinese and European languages simply mean that things need to be expressed differently (Gao 1958).[47]

But not all rethinking of Western grammatical theory was induced by censorship and political pressure. Wippermann writes how Western sciences were increasingly perceived as some sort of "corset" (Wippermann 2003, 209). The Emancipation from the Western gaze on the Chinese language produced important foundational research results, such as the definite rebuttal of monosyllabism. Wang Li, Gao Mingkai and Lü Shuxiang 呂叔湘 (1904-1998) defined the word in the 1940s as smallest semantic unit (*add zui xiao yiyi danwei* 最小意義單位) that may very well transgress the limit of the single character. They were of course familiar with Bloomfield's definition of word as "minimal free form". Still, wordhood in Chinese remained and maybe remains an important topic. Bound and free words are discussed by Lü Shuxiang. The definition of word as free morpheme by Wei Jiangong and its realisation as lexical item results in the compilation of the concise yet encompassing *Xinhua Zidian* 新華字典 (1953). Lu Zhiwei pursued the question of word formation in his *Hanyu de Goucifa* 汉語的构詞法 (1964).[48] It remains to be noted that the question of word boundaries has important implications for Pinyin orthography, compare Li Jinxi's "writing words together" (*cilei lianshu* 詞類連書, as early as 1923; Münning 2022, 171).

Nevertheless, the reception of Western linguistic science did not end in the late 1950s. Gao Mingkai authored a Chinese translation of de Saussure's Cours de linguistique génerale, along with an extensive explanatory introduction, before his premature death from illness in 1965. These works contributed significantly to the development of linguistic terminology in Chinese and became the main source for Saussurian thought in China after their publication in 1980 and 1982

46 Zhao Shikai 1958, 128. Zhao's criticism appeared in a collected volume with numerous criticisms of him and even more of Wang Li.

47 Much more could be said about how linguistic theories (or scientific theories as a whole) were or had to be reframed in those highly politicised times. For the permutations of Saussurean thought, see Masini 1985.

48 Also earlier, in 1960, Lu clarified "The Status of the Word in Chinese Linguistics" (Lu 1960).

(Grych 2020, Masini 1985, 19).[49] According to Masini, interest in de Saussure arose because of Gao's and others' stays in France and had a profound influence on Chinese linguists. Their works can be seen as the result of Chinese linguistic tradition encountering ideas from abroad (Masini 1985, 24). Also in 1980, during the Reform and Opening period and the Four Modernisations, Wang Li advocated the study of foreign languages and Western ("traditional") linguistic theory in a speech (Wang 1980, 77).

However, we can by no means speak of a unidirectional transfer of knowledge from France or the West to China. Zhao Yuanren and Wang Li became key references for Chinese linguistics and Chinese studies. For example, Wang's *Gudai Hanyu* 古代漢語 ("Classical Chinese") became the standard textbook for generations of sinologists. Its impact was already clear at the Second Chinese Linguistics Conference in October 1967 on "Problems of Content and Form in the Teaching of Chinese". Discussions covered its use in the classroom, its role as the basis for a students' glossary, and reviews of the book published in the PRC periodical *Zhongguo Yuwen* 中國語文. Additionally, Chinese scholarship was recognised on a broader scale, and the question of which grammar books should be translated into English was deliberated (Mote 1967).

In a sense, the direction of knowledge exchange about the Chinese language shifted. The French sinologist Robert Ruhlmann (Yu Rubo 于如伯, 1920-1984), listed as observer at the conference, would later visit Wang Li in China (Wu 1981). Similarly, Alain Peyraube met Wang Li in China for the first time in 1973 – still during the Cultural Revolution – when academic activities were still suspended and Wang Li was forced to work in a factory. Peyraube himself studied under Zhu Dexi 朱德熙 (1920-1992), who had once helped Wang Li retrieve his glasses when he was mistreated earlier during the Cultural Revolution. This act led to Zhu's own arrest but earned him Wang Li's lifelong gratitude. Peyraube, like most sinologists and specialists in Chinese linguistics, regards Wang as the most important figure in the field, with the most comprehensive body of work.[50]

49 The reception of de Saussure in China merits a longer discussion. I direct the interested reader to Masini, who interestingly describes that Cen Qixiang, mentioned already above, had published an unofficial, maybe even secret translation of de Saussure's Cours by "disguising" it in Stalinist linguistics (Masini 1985, 14-15). See also Zhang and Zhang 2014.

50 I extend my gratitude to Alain Peyraube for telling me about his experience and to Cathérine Jami for making this meeting possible.

5 Conclusion

What role did the "French Connection" play for Chinese linguistics – or – how important was France in the formation of the Chinese languagescape? What ideas traveled from Paris as one and China as the other space of circulation via the five go-betweens or interlocutors? What quality did the exchange between Chinese and French linguists and sinologists have and how did it change over time? Were the Chinese linguists able to leave a mark in Paris?

This paper can only offer a tentative answer to these questions, as well as a tiny glimpse in the rich lives and achievements of the five linguists. Learning from Paris was characterised by both reception and rejection. Receiving Western scholarly achievements constituted the largest part. The methods of experimental phonetics acquired by Liu Fu, Zhao Yuanren and Wang Li were to shape dialect research in China. Liu and Zhao, however, also contributed to the field with new inventions and approaches. Liu, in particular, left a mark on the French academic world with his prize-winning thesis and experiments. Chen Dingmin and Gao Mingkai then entered a state of dialogue with their supervisors, visible from their prefaces to their dissertations. In the long run, some aspects were also rejected. Some silently, such as monosyllabism, by simply offering a new grammar that clearly showed how most words in the modern language are made up of several syllables/characters. Some openly and politically induced, such as in the self-criticisms of the anti-rightist-campaign, which can at least partly explain why the 'French Connection' has often been overlooked, downplayed or even concealed by the go-betweens themselves for self-protection. Maybe both can count as emancipation from Western explanatory power. Since all protagonists were active in twentieth century language planning, their influence cannot be downplayed.

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Texts

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The German-Chinese University in Qingdao as a Space of Circulation During the Late Qing and Early Republican Era
The Case of the Reform of Chinese Penal Law

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Abstract This paper reconstructs and analyses the dialogue between conservative German legal scholars and Chinese officials involved in the reform of Chinese penal law during the late Qing period. It shows that, to some extent, the colonial setting – and the German-Chinese University in Tsing-tao as a very special space of circulation – offered opportunities for a surprisingly multi-faceted Sino-German intellectual exchange. It also makes clear that not only progressive Chinese scholars could thrive by appropriating 'Western' ideas, but that this could be true for more conservative officials and scholars as well.

Keywords Colonialism. Law reform. German-Chinese university. Tsing-tao. Translation.

Summary 1 Introduction. – 2 Translations at the German-Chinese University. – 3 Legal Reform. – 4 Ritual and Law. – 5 Gutherz, Jiang Kai, and the Conservative Response to Legal Reform. – 6 An 'Expert Opinion'. – 7 A Defence of Chinese Family Law. – 8 Conclusion.

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1 Introduction

The German-Chinese University in Qingdao, which was founded in 1908, is considered by some to be among "the best researched institutions in Kiautschou" (Mühlhahn 1998b, 131).

Indeed the process of establishing the institution, known in German as *Deutsch-Chinesische Hochschule* and which in Chinese had the rather cumbersome name Qingdao tebie gaodeng zhuanmen xuetang 青島特別高等專門學堂 (Qingdao Higher School for Special Sciences) has been systematically documented and studied (Franke 1911; Reinbothe 1992, 192-209).

However, the educational practices and interactions at the university are often framed by researchers within the concept of 'cultural imperialism' (Pyenson 1985) or analysed through Foucauldian perspectives, emphasising disciplining and punishment (Mühlhahn 1998a). Most approaches to date have not fully explored the multifaceted interactions that inherently occur within any university setting. On one hand, universities foster an academic public – a space where individuals from different regions can communicate and exchange ideas, ideally in a non-hierarchical environment. On the other hand, it is essential to consider the intellectual curiosity generated by the vast social, political, and cultural differences between China and Germany during the early twentieth century, even in a colonial context. Unsurprisingly, Germans involved in the project viewed the university as promising and lamented its demise following the Japanese invasion and occupation (Wirtz 1928).

To better understand the university and the roles played by sinologists, scientists and Chinese scholars, I propose viewing it as a 'space of circulation'. As described by Kapil Raj, such spaces are composed of "conduits and heterogenous networks of exchange through which transfers of knowledge passed", "acquired meaning" and "finally were appropriated and were grounded in specific localities" (2007, 22).[1]

In this paper, I will first demonstrate the significant role sinologists played in the process of the founding and the running of the university. I then will focus on a not very well-known case of interaction in the realm of legal studies, which involved a number of German and Chinese actors.[2] I will briefly look into the issues at stake, namely the legal reform of the late Qing empire, will show how actors

I would like to thank two anonymous reviewers for their helpful comments.

1 I am aware, of course, of recent criticism of the 'circulation' metaphor by Gänger 2017 and others, but think that for our present purposes its works quite well.

2 The best discussion in any language is by X. Chen 2016. The issue is briefly mentioned in Heuser 2008; Meijer 1948 and Chen 2017.

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from the university became involved and on this basis will argue that the German-Chinese university provided an environment which indeed facilitated the actions of 'knowledge brokers' or 'intermediaries' (Schaffer et al. 2009), whose role should not be underestimated when dealing with Chinese-Western interaction during this particular period.

2 Translations at the German-Chinese University

While we do not need to delve deeply into the process of the founding of the German-Chinese University, it is important to have a basic understanding of its institutional framework. The complex negotiations which were carried out between Zhang Zhidong 張之洞 (1837-1909) and Otto Franke (1863-1946) led to the creation of a university jointly managed by German and Chinese authorities, whose diplomas were recognised in China. The university offered both elementary education as well as a specialised (academic) education across four branches: law and economics, sciences and engineering, agriculture and medicine. A planned fifth department for history and philosophy, however, never materialised. The university was the first foreign educational institution to be formally recognised by the Chinese government, with part of the funding provided by the Chinese side.

The administrative structure of the university was complex, with a German director and a Chinese 'inspector of studies' (*jicha* 稽查). The teaching staff was a mix of German and Chinese educators and the language of instruction was German. This leads us directly to one of the most significant challenges faced by nearly all institutions teaching 'modern' subjects in China: textbooks and terminologies, which could effectively link newly appropriated foreign concepts to Chinese technical terms. This issue is closely related to the broader question of translating of Western and Japanese texts, which was primarily carried out by individuals or small groups. Increasingly, however, this work became institutionally tied to educational entities – in the case of the German-Chinese University, this role was filled by the so-called *Übersetzungsanstalt* (translation office). There is no doubt that translations at the German-Chinese University – and, related to these, technical terminologies – where among the most crucial factors in transforming intellectual life in late nineteenth and early twentieth century China. Their influence on Chinese political, social and administrative spheres cannot be overstated, as even a brief look into the translations of Yan Fu confirms or as seen in Liang Qichao's deep fascination with the German state-theorist Bluntschli (Yong 2010). German administrators and sinological observers were well aware of this, and made considerable efforts to counter the perceived dominance of translations from English-language books by

emphasising that the German political and administrative tradition was better suited to China's needs. Kurt Romberg, head of the law department at the German-Chinese university, is quoted by Reinbothe as asserting: "German jurisprudence marches at the very front of the great nations" (1992, 214).[3] Another commentator in 1909 remarked:

> The conditions of the German state, which are based on monarchy as well as the constitution based on it, are much more fitting than English or American models. (Reinbothe 1992, 216)

He further emphasised that Germany's strong

> monarchical sentiment, like in China finds its societal foundation in the institution of the family, which allows less room for individualism. (216)

Romberg, in particular, highlighted the importance of terminology, clearly expecting that German terminology would in some way influence the reform of Chinese law.

The problem of terminologies was addressed by the Übersetzungsanstalt, which proved to be quite productive. As Romberg had advocated, it aimed to counter the Anglo-American dominance in the development of technical terms. At the same time, it tackled the problem of standardising terminologies, an issue that had hindered Chinese scientific practice – particularly in science and technology education – since the mid nineteenth century, and actually only was partially resolved after 1949. The translation department published at least two dictionaries. The more well known was Richard Wilhelm's (1873-1930) rather voluminous *Deutsch-englisch-chinesisches Fachwörterbuch* (*De Ying Hua wen kexue zidian* 德英華文科學字典), which was published in 1911. As Dorothea Wippermann's paper in this volume shows, however, its compilation had been carried out largely independently from the university. Although the dictionary remained quite obscure, we know that Karl Hemeling (1878-1925) used it for his famous *Guanhua* dictionary of 1916, though not all terms were adopted (1916, iii). The second known dictionary compiled at the translation department was the *German-Chinese Glossary of Technical Terms of Physics and Related Areas*, which was published in 1910 and did not have a Chinese title. It was compiled by Hans Wirtz (1867-1942), a German Indologist and sinologist, who worked at the university and who was, according to Pyenson (who mistakenly identifies Wirtz as a physicist) giving physics lectures at the university as well (1985, 259). In fact, Wirtz's main job was head of the translation department

3 All translations from the Chinese if not noted differently by the Author.

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(Walravens 2016). However, his dictionary was not particularly innovative in terms of terminology, as it was largely based on the *Wulixue yuhui* 物理學語彙 (Vocabulary of Physics), which had been compiled by the Ministry of Education's compilation department in 1908 (Amelung 2001). It did offer some additions, mainly in the realm of meteorological sciences, which played a significant role in the agricultural department, and on the whole were considered crucial by German colonisers.

I mainly mention these activities in order to demonstrate that sinologists like Wilhelm and Wirtz played an important role as 'intermediaries' in this 'space of circulation' not least because of their involvement in producing dictionaries and books, which themselves became the key non-human agents in the production of knowledge at that time. Other sinologists connected to the German-Chinese University included Otto Franke, who had negotiated with Zhang Zhidong to establish the school (although the negotiations took place in Beijing), Ferdinand Lessing (1882-1961) who joined the University in 1909 and Wilhelm Othmer (1882-1934), originally a history scholar who directed the preparatory school. Also significant was Erich Michelsen (1879-1948), who held a doctorate in law, but had studied at the *Seminar für Orientalische Sprachen* and was a certified translator of Chinese.

3 Legal Reform

Despite its recent establishment, the university was remarkably productive from the outset. Particularly notable was the work of the agricultural department under Wilhelm Wagner (1886-?), which carried out numerous experiments regarding fertilising local grain crops, assessing the impact of climate conditions on agriculture etc. The results were published in German and in Chinese. Equally important was the law department. The German professor there was Kurt Romberg, who was supported by a lecturer named Harald Gutherz (1880-1912). The importance of law, of course, stemmed in part from its importance for colonial governance. There was an expectation to produce Chinese legal specialists who would support the administration of the colony. However, its importance went beyond this, as the Qing state since the beginning of the twentieth century had embarked on the modernisation of its legal system. This was partly due to the necessities of modernisation – China lacked commercial laws, intellectual property protection etc. More importantly, however, was the vexing issue of extraterritoriality, which had been imposed on China in the unequal treaties with the Western powers since the mid-nineteenth century. One important means of justifying extraterritoriality was to denigrate traditional Chinese law and especially

its penalties, which were considered too harsh and inhumane. The blueprint for legal reform to eliminate extraterritoriality was Japan, which had succeeded in this endeavour. In 1902, there was also a British promise to relinquish its extraterritorial privileges once the legal system was reformed (Cheng 1976, 35; Heuser 2008, 195).

Legal reform thus was quite high on the agenda, and began in 1903 with a reform edict by the Empress dowager. In 1904, a reform institution was established, namely the famed 'Office for the Compilation of Laws' (*falü bianzuan guan* 法律編纂館), which in 1907 was transformed into the 'Office for the Revision of Laws' (*xiuding falü guan* 修訂法律館). This office was headed by two senior officials: Shen Jiaben 沈家本 (1840-1913) who had worked in the 'Board of Punishments' (*xingbu* 刑部) and Wu Tingfang 伍廷芳 (1842-1922), the first foreign-educated Chinese lawyer.

It was clear that large parts of the new legal canon needed to be appropriated from Western models. For this reason, one important part of the endeavour was translations. According to incomplete calculations, more than 400 works related to different aspects of law as it was practiced in different countries were translated into Chinese during the late Qing dynasty (Liu Yi 2011). At the same time foreign advisors were hired. In respect to criminal law, which was at the core of the reform process, the foremost person was Okada Asataro 岡田朝大郎 (1868-1936) who at the same time was working as a professor at the newly founded law school in Beijing. This Japanese influence not only made sense because of linguistic affinity (newly coined technical terms at this time in Japan still were written with Chinese characters) but also, of course, because Japan had demonstrated how to successfully reform its legal system and, by doing so, eliminate extraterritoriality.

A rather simplified characterisation of the work of the Office for Law Revision would be that it was in charge of evaluating the Chinese legal tradition in comparison with foreign models and proceeding to draft codes, which to some extent can be considered as synthesis of Western and Chinese laws. The most important issue was the reform of the penal code, since it was here that a supposedly unwieldy tradition met with the need of reform. The new code thus was expected to meet Western standards in order to attain the coveted goal of revoking the extraterritorial privileges of the Western powers. These standards, however, never were made explicit and thus somehow constituted a moving target.

The process of compiling a new penal code was rather confusing. While a new code was drawn up, its early versions (first published in 1907) were rejected by most of the institutions and individuals asked for advice, necessitating revisions. Shen Jiaben, at the same time, continued to work on a revision of the old code – doing away with supposedly harsh penalties, removing many of the substatutes

etc. – in order to make it more modern and, more importantly, to convince foreign observers that the Qing court was serious about reforming the code.

This revised code was called 'Penal Code of the Great Qing Currently in Practice' (*Da Qing xianxing xinglü* 大清現行刑律). It was, as the name suggests, provisional, and was supposed to be superseded by the 'New Criminal Code of the Great Qing' (*Da Qing xin xinglü* 大清新刑律). As mentioned above, this process had started in 1907, and the new code was mainly based on the Japanese model. It came, however, almost immediately under fire from conservative officials. The 'New Criminal Code' was thus further revised and was to be evaluated by the newly established National Assembly (*zizheng yuan* 資政院). The assembly discussed the first part of the draft in early 1911 and adopted it with minor changes. Even before the whole code was revised, the emperor promulgated the code, to be valid at the beginning of the next year, while at the same time asking the National Assembly for comments of the second part. Due to the revolution, this never happened, and before the new code became valid, the Qing dynasty had ended.

This highly complex and at times rather chaotic process provided the opening for many discussions, and as we will see in a moment, it was here that ideas from the university in Qingdao played a role. Before going into more detail, we should briefly point out that the newly founded Republic enacted the Criminal Code without further revisions, which now was called *Zanxing xin xinglü* 暫行新刑律 (New criminal Code Temporarily in Force) and remained valid until 1928. For civil cases, interestingly, the civil law part of the old Qing law (the *Da Qing xianxing xinglü*) was adopted (Huang 2001, 15-30).

4 Ritual and Law

I here will refrain from discussing the judicial system, which, of course, was a very important topic as well, but whose establishment played a considerably minor role in the discussion (Xu 2008). It is important as well to be aware that, despite all divisions, there was almost consensus that the Chinese legal codes needed to be changed, since this would be the only way to revoke extraterritorial clauses. The main issues were different. One was the question of consistency of the new code – 'reformers' such as Shen Jiaben attempted to achieve this by adopting the new code from Japan in more or less a whole-sale fashion. Shen was supported by a considerable number of younger (and lower ranked) officials. The second issue involved several matters related to women and family which, according to an influential group of officials and scholars commonly considered as 'conservatives', should be kept more or less unchanged from the old

code. This controversy has been termed as the 'battle between ritual and law' (*li fa zhi zheng* 禮法之爭) and in recent years commanded considerable scholarly attention (Liang 2015). The reduction on the ritual aspect, however, does not fully address the complexity of the issue; we, in fact, are dealing with a crucial controversy, which, as some participants such as Yang Du 楊度 (1875-1931) recognised, was decisive for China's path to modernity. He stressed the incompatibility of the family-values based system, which the conservatives (or 'ritual faction') wanted to cling to, with modern statism, which in his eyes was the basis for constitutional government (Gao 2003, 95).

The most well-known representative of the conservative camp was the Minister of Education Zhang Zhidong, one of the most influential Chinese officials during the last years of the Qing dynasty. He was supported by lesser, but still quite influential Qing officials, such as especially Lao Naixuan 勞乃宣 (1843-1920). When the first draft of the 'New penal code' was circulated, Zhang Zhidong heavily criticised it. The main objections of the conservatives were, first, that there were no special penalties for perpetrators against Confucian values (especially filial piety) and, second, that it failed to punish consensual sex of unmarried women.

Regarding the legal reforms, Zhang Zhidong argued:

> What cannot be changed is the moral order; this is not part of the legal system, but relates to the kingly way, it isn't an apparatus, it is the 'art of the heart' and not a craft. (2015, 74)

Most of the responses of the law reformers stressed that these issues were not the business of the courts, but private matters related to education. Moreover, they were not enforceable and thus, in the eyes of law reformers, constituted dead letters. When Zhang Zhidong died in 1909, his role as the main proponent of conservative criticism or, to use the words of the times, the head of the ritual faction, was taken over by the aforementioned Lao Naixuan, who after the fall of the Qing Dynasty relocated to Qingdao and collaborated with Richard Wilhelm.

Lao Naixuan, who at this time was secretary of the newly founded National Assembly, argued:

> All provisions in the law, like those of the ten abominations, the concealment of faults of relatives, offences against the 'names' and violations of social duties (i.e. impeachment of superior relatives Code ch. 28), allowing only sons to stay at home to take care of the old, impudicity between relatives, theft and quarrel among relatives, violation of graves, impudicity (in general), cannot be thrown away as worthless trifles. (Quoted in Meijer 1949, 112)

Lao was not alone in this view and found his position strengthened when the Ministry of Justice, in response to numerous complaints, appended 'five regulations' (*wu ze* 五則) to the new draft of the code. These regulations aimed to address concerns about abandoning the 'ritual' aspect of the law, which conservatives deemed necessary for maintaining the social fabric. The ministry's compromise was to apply these 'five regulations' temporarily to Chinese citizens only, with the intention of eventually removing them from the code. Among the most significant were rules concerning consensual sex of an unmarried woman, punishable by detention of the fifth degree, and regulations addressing disobedience towards elder family members (Huang 2010, 1, 360). However, the 'ritual faction' argued that incorporating articles – even if termed regulations – into the code, solely applicable for Chinese, contradicted the original intention of the code reform. This intention was to subject Chinese and foreigners in China to the same laws (*ying fucong tongyi falü* 應服從同一法律). Consequently, the regulation was viewed as a quintessential case of 'putting the cart before the ox' (*benmo daozhi*, *mo ci wei shen* 本末倒置, 莫此為甚) (quoted in Liang 2015, 48). Thus, demand arose that at least these five crucial regulations would be directly integrated into the revised code, thereby applying to all. Reformers naturally resisted, not only due to uncertainty about acceptance from the Imperialist powers, but also because it in their opinion they threatened the heart of the legal reform potentially allowing 'old' values to infiltrate the reformed code through the backdoor. Against this backdrop, Lao Naixuan in 1910 published a book which was titled *Xin xinglü xiuzheng an huilu* 新刑律修正安彙錄 (Records of the Revision of the New Penal Law). The collection – particularly its preface – reveals the complexities of maintaining a conservative stance in a rapidly transforming China.

Conservative viewpoints were undeniably influenced by foreign views as well. Some of Lao's arguments strikingly resemble Montesquieu's theory of geographical determinism as presented in his *Spirit of the Laws* (translated into Chinese the previous year). However, the differences in terminology make it difficult to prove Lao's direct familiarity with the work. Regardless, Lao Naixuan's writing is replete with neologisms such as 'statism' (*guominzhuyi* 國民注意) and 'familism' (*jiazuzhuyi* 家族主義), which he used to delineate the different poles of legal policy in China at that time. Lao Naixuan begins the book with a rather programmatic statement:

> How is law born? It is born from the form of government. How is the form of government born? It is born from the ritual teachings. How are the ritual teachings born? They are born out of customs. How are customs born? They are born out of [the needs for] livelihood. (1927, 1a)

5 Gutherz, Jiang Kai, and the Conservative Response to Legal Reform

Lao Naixuan's book holds significance for us because it preserves Gutherz' views on Chinese legal reform, as the first printed version of Gutherz's text from 1910 is apparently lost. Gutherz states that it was his commentary on the draft German penal code which garnered Lao's attention (1911, 21). This most likely occurred through the services of Jiang Kai 蔣楷 (1853-1913) the first Chinese inspector of the German-Chinese University. A seasoned mid-level official, Jiang had collaborated with Zhang Zhidong in the 1880s already and belonged to the 'ritual faction' during the penal code reform controversy. He actually taught Chinese law in the law department of the school himself. A book, seemingly based on his lecture notes, reveals his familiarity with Western law. He had read translations from the Beijing law reform office, as well as Yan Fu's translation of Montesquieu (Jiang 1911). Hans Wirtz, the translator of Gutherz's commentary, was quite clear in his preface about how he viewed his role as a translator – specifically, as someone responsible for resolving terminological challenges:

> In recent years, China has revised its criminal laws by referencing various foreign legal codes through translation. However, to fully capture the intent of the criminal law, it is crucial to carefully examine the terms used in these translations, as the terminology employed by different translators has not always been consistent, and some terms are difficult to interpret. This text, based on the latest regulations and academic doctrines from the past year, is a translation I compiled after consulting the German criminal law translated by the Office for the Revision of the Laws in Beijing, the German criminal law translated by Judge Mootz from the Qingdao Police Department, and the Qing Dynasty's draft criminal law. Together with Assistant Minister Jiang [Kai] and Prefect Dou [Xueguang], I have repeatedly revised and refined the text. However, if there are still parts that are difficult to interpret, it is due to the inherent limitations of the German language, as I have not dared to stray even slightly from the original meaning. Nonetheless, I hope that those familiar with German law will read this and gain a general understanding of its essence, which was my primary intention. China's revision of its criminal laws may also benefit from this. (He 1910, 3b)

It is also evident that Jiang Kai was involved in the translation of Gutherz's commentary and was therefore familiar with the latter's ideas on legal matters, particularly his expectation of a convergence of different legal traditions, which was expressed in universalist terms (He 1910).

One outcome of these interconnected relationships was the inclusion of records from a dialogue between Jiang Kai and Gutherz in Lao Naixuan's book. It is unclear how this dialogue might have actually looked like since Gutherz to our knowledge did not speak Chinese, and Jiang Kai did not have any command of the German language. The romantic image of two legal scholars from different continents strolling through the garden of the university in Qingdao and exchanging views on legal traditions certainly is not correct.[4] It is more likely that either the sinologist Hans Wirtz provided translation, or that it was Dou Xueguang 竇學光 (1873-1938), a translator-turned-official, who succeeded Jiang Kai as the Chinese inspector of the school after Jiang's death. In any case, it is significant to observe, that the newly founded university and the Übersetzungsanstalt in this way had a considerable impact on Chinese discussions of this period.

The dialogue begins with Jiang Kai inquiring about differences between Western legal systems. Gutherz responds that these differences have diminished over time, arguing that laws are rooted in the 'sentiments of the people' (*minqing* 民情). Since Western nations adhere to Christian doctrine, the variations in their laws are minimal. Furthermore, their legal systems share a common origin in Roman law. Gutherz then briefly mentions translations of the original Qing code, specifically the French and the English translations of the code, with which he seems familiar. Crucially, upon learning that the contemporary revisions of the Qing code are based on the Japanese code, Gutherz asserts that 'this effort is bound to fail' (*jianglai shou xiao bi nan* 將來收效必難). When Jiang Kai asks why Japan's adoption of a new code proved successful, Gutherz presents his central argument:

> Japan did not originally possess its own legal system. Historically it adopted Chinese legal codes. Subsequently it emulated French law and, more recently, German law. Lacking an indigenous legal tradition, Japan readily appropriated foreign legal systems. In contrast, China possesses its own distinct legal system comparable to Roman law. Abruptly discarding this established system and compelling the population to adopt a foreign one would inevitably lead to significant resistance, hindering its effectiveness compared to its implementation in Japan. (Lao 1927, 44)

This argument, suggesting that the appropriation of new contents and its application is more seamless in a society accustomed to appropriating foreign elements (as exemplified by Japan's adoption of

4 This portrayal is presented in a new biography of Shen Jiaben, which employs several fictional elements. It identifies He Shanxin as the Chinese name of Kurt Romberg, which clearly is incorrect, cf. Shen, Cai 2022, 486-95.

the Chinese script from China), was pretty widespread during the late Qing. However, this instance represents to my knowledge its first application to the discourse on legal transplantation.

Gutherz held a rather positive view of Qing law and urged his interlocutor to retain the fundamental principles of the existing legal framework. Possible referencing ideas initially presented in Staunton's 1810 translation of the Qing-Code, he suggests that Western legal systems might eventually incorporate elements of traditional law.[5] Asked by his interlocutor about the relationship between 'society' and 'ritual order', Gutherz wholeheartedly embraced the concept of a ritual order asserting that "Confucius's words are applicable universally" (Lao 1927, 45).

Gutherz alignment with conservative viewpoints is evident throughout the dialogue – reading through the whole dialogue, one almost could speak of a meeting of minds. Gutherz's position, however, appears rooted less in staunch conservative beliefs and more in his theory of 'legal techniques' (*Gesetzestechniken*), the subject of his German doctoral dissertation. In this work, he primarily explored the correlation between means and ends in law, a connection he believed was intrinsically linked to the collective 'psyche' of a society (Lao 1927, 45).

6 An 'Expert Opinion'

In addition to the previously mentioned dialogue, Lao Naixuan's book also included a text that Gutherz referred to as 'expert opinion'. Lao, through Jiang Kai, had sought evaluations of two opinions on two issues that were central to the 'ritual faction' and at the heart of the disagreement between traditionalists and legal reformers. Zhang Zulian 張祖廉 (1873-?) described the situation as follows:

> In the past year (1909, the first year of the Xuantong reign of the Qing dynasty), the revised draft was finally completed. An

5 This seems to allude to Staunton's translator's preface (1810, XXIV): "there are other parts of the code which, in a considerable degree, compensate these and similar defects, are altogether of a different complexion, and are perhaps not unworthy of imitation, even among the fortunate and enlightened nations of the West". Li Chen (2016, 143) has pointed out that "in 1811, for instance, a former member of Parliament published a pamphlet, *Hints for a Reform in Criminal Law*, addressed to Romilly, offering advice on how to reform the British legal system. Echoing Romilly's speech in the House of Commons that had just been published, this pamphleteer criticised British law for its ineffective severity and lack of uniformity and consistency. He cited Blackstone in declaring that no distinction in the gradations of the penalty meant no distinction in the gradations of the guilt, and thus no sense of justice. He recommended the newly published TTLL to all who were interested in the criminal jurisprudence of Britain. The fact that no one but the emperor himself could alter the punishment of any capital offense in China illustrated the value of limiting the discretion of judges in Britain".

> edict was issued to the Institute for the Preparation of Constitutional Government [*xianzheng bianchaguan* 憲政編查館] to review it and submit a memorial. In response, Education Commissioner Lao Naixuan expressed dissenting ideas, while Grand Secretariat Academician Chen Baochen offered a more balanced perspective. Jiang Kai, who was also well-versed in criminal law, discussed the matter with them. Regarding Lao's and Chen's ideas, they believed that the opinion of the German legal scholar Gutherz could offer a middle ground in their arguments. Subsequently, the Institute for the Preparation of Constitutional Government submitted its memorial to the National Assembly for consideration and decision hoping to establish standards for implementation. It is hoped that they will learn from wise and virtuous gentlemen who are not bound by preconceived notions, deceived by worldly conventions, or swayed by superficial discussions and opinions. They should thoroughly study Mr. Gutherz's writings so that their state of mind may become as clear and refreshed as melting ice. Jiang Kai brought a copy of Gutherz's translated text from Qingdao and presented it to Lao Naixuan. He already had printed 200 copies of it. I had the privilege of accessing it from him, making copies, and distributing them to others. (Lao 1927, 55-6)

This was an almost campaign-like approach to solving the problem. The passages Gutherz was asked to evaluate were proposals submitted by Lao Naixuan himself and by Chen Baochen 陳寶琛 (1848-1935).

Specifically, Lao Naixuan's proposal stated:

> 1. Consensual adultery is punishable by imprisonment of the fifth degree. If the female offender is married, the punishment will be imprisonment of the fourth degree. The offense is punishable only upon the complaint of the parents or the husband.
> 2. Anyone who disobeys their grandparents or parents, violates their instructions, or fails in their duties of filial piety shall be subject to detention. Those who repeatedly offend shall receive a first-degree fixed-term imprisonment. If the grandparents or parents personally request a reduction in the sentence or pardon on behalf of the offender, it shall be considered. (Lao 1927, 56)

Chen Baochen proposed the following:

> 1. Consensual adultery will be classified as an offense punishable by fourth-degree imprisonment. The offense is punishable only on complaint by the parents of the woman, the in-laws of the widow or the husband. However, no prosecution will be initiated if the complaints facilitated or profited from the adultery.

> 2. Anyone who disobeys the legitimate orders of his immediate superior among descendants shall be subjected to detention. Those who commit acts leading to insubordination will be sentenced to imprisonment ranging from the fourth to the fifth degree, contingent upon a formal complaint filed by the direct superior within the descent line to initiate prosecution. (56)

Gutherz noted that these passages correspond to paragraphs 366 and 338 in the original Qing code. As mentioned above, both proposals, in a sense, endorse legal modernisation since they accept the newly established prison penalties rather than insisting on traditional punishments.

In his 'expert opinion', Gutherz offered qualified support for Chen Baochen's proposals.

However, he went beyond these specific issues, providing not only a methodological framework for analysing the suitability of legal provisions, but also highlighting his ideas on legal reform by addressing question of the sociology of law.

Gutherz explicitly emphasised the necessity of law being accepted by the majority of a nation's population. He argued that this should be the primary consideration when reforming the law, independent from the issue of extraterritoriality, which, as he correctly pointed out, was a matter of international law. This perspective, however, largely ignored the motivation for legal reforms, on which most Chinese scholars and officials had agreed. Furthermore it was based on the view that traditional law provides a foundation for development and that in any case convergence of laws was to be expected.

Gutherz, unlike many other legal thinkers, believed that traditional Chinese law was highly sophisticated. He was well versed with the translations of Staunton and Philastre, stating:

> The Great Qing Code, which is highly respected by every serious European Legal Researcher and from which we Europeans until very recently could have learned much, contains the sprouts for those basic ideas from which the last European Penal Codes such as those of Switzerland, Austria and the German Empire have been developed. (Lao 1927, 49)

In Gutherz' opinion, this meant that it was possible to develop the Qing code into a 'Chinese' and 'appropriate' (*hehu shiyi* 合乎時宜) legal code. Gutherz explicitly considered extraterritoriality as 'secondary' and stressed that in all cases when a legal code is compiled it is necessary to consider carefully the moral standards of one's own people. For Gutherz, the sole criterion for a law's quality was whether it benefited one's own people; if so, it should be adopted. Gutherz had already made this point explicit in the preface to his commentary on

the German penal code, where he emphasised the supposed importance of a positively defined 'national character' (*guomin zhi xingzhi* 國民之性質) in all efforts to compile legal codes:

> Before drafting a comprehensive legal code, thorough legal research is essential. Those responsible for revising the law must study their own country's past and current laws and fully understand the strengths and weaknesses of these laws, as well as the nature of their citizens. This is a crucial task that cannot be overlooked. Indeed, only a perfect law can be swiftly implemented, and only laws tailored to the national character will be widely adhered to by the people. (He 1910, 1)

In his text, Gutherz also emphasised that passages on adultery of an unmarried woman and disobedience toward elders are essential to preserving the societal order in China, which is founded not on the individual but on small family farms. Gutherz also related the question of whether adultery should be punishable to the differences in marriage age in China and in Europe. In essence, Gutherz's argument foreshadows debates surrounding 'Chinese characteristics' or 'Chinese peculiarities' revolving around questions of collective rights and duties ('familiarism') against individualism. Unsurprisingly, the question of who is entitled to promulgate laws, and who can understand the essence of Chinese identity, is not raised. Gutherz clearly envisions this task as belonging solely to lawyers, whom he considers the only experts capable of addressing matters of *Gesetzestechnik*. His ideas likely appealed to conservatives like Lao Naixuan, particularly given his use of quotations from the Confucian canon. He begins with a quotation from the *Shujing* 書經 (Book of Documents): "Through punishments there may be no punishments and the people may accord with the path of the mean", and also referring to Confucius' words: "I am not worried about not being known by the people", which applies to those compiling laws (Lao 1927, 46-56).

7 A Defence of Chinese Family Law

Gutherz's influence did not extend further. Interestingly enough, however, this did not mean that the developments did not have any further impact on the discourse at the German-Chinese University. For unknown reasons, in 1912, the *Deutsch-Chinesische Rechtszeitung* (German-Chinese Law Review) published an article titled *Bemerkungen zum Familienrecht* (Notes on Family Law). Written by Jiang Kai, who had died shortly before publication, it was partially translated by Hans Wirtz as a tribute to the deceased. Regrettably, only Wirtz's translation survives, the Chinese original being lost. Unsurprisingly,

the article offers a staunch defence of Chinese family law. Jiang Kai, however, frames the issue as a 'universal' problem stemming from individualism and the development of property rights.

He thus took a position directly opposed to Yang Du, whose position I have mentioned above. Although much of his essay is rambling and unoriginal – for instance, the lengthy explanation of the different degrees of mourning seems primarily intended for Western readers unfamiliar with the concept – he does, at one point, adopt Gutherz's argument defending the family system:

> In economies based on small landholders, people are tied to fixed residences. The family itself provides the means of production. Consequently, strict family-discipline is necessary. The shared profession among family members strengthens their bonds […]. In economies based on more developed industries, individuals need to extend beyond the family for their enterprises [….]. Therefore, it can be argued that China's current family ethics align with the demands of its present economic model. (Tsiang 1912, 69-70)

While this idea has merit, neither Jiang Kai nor Gutherz address how the situation might evolve with the advent of industrial development. Nevertheless, this case demonstrates that German aspirations to find common intellectual or cultural ground with China in order to counter a perceived Anglo-Saxon predominance, were not merely wishful thinking of German imperialist politicians. These aspirations had some basis in broader German and Chinese circles. All of this was short-lived, ending with the Japanese occupation of Qingdao in 1914-15. The idea of some special Chinese-German commonalities, however, would re-surface periodically.

8 Conclusion

The legal historian Wang Boqi 王伯琦 regards Gutherz's intervention as inconsiderate and a factor for delaying the Chinese legal reform. However, the view seems to greatly overstate the influence which Gutherz actually had in the debate (Wang 2005, 28).

In fact, there is no convincing evidence that Gutherz had any impact on the outcome of the reform. While intellectual contributions to ongoing debates should not necessarily be expected to have direct tangible consequences, Gutherz influence appears minimal.

Following an altercation with the head of the German-Chinese University, Gutherz soon left Qingdao and, after a brief stay in Shanghai, returned to Germany and passed away in 1912 already. In many respects he can certainly be considered as a marginal figure.

However, in this article, my goal is not to suggest that Gutherz played a significant role in the development of Chinese law. Rather I aimed to demonstrate that even an institution like the German-Chinese university– clearly a product of high imperialism's civilising mission and thus deserving of critical evaluation – could, under certain circumstances, constitute a 'space of circulation'. For our purposes, it is not crucial to determine whether Gutherz's intervention had positive or negative consequences – an assessment that would be quite difficult to make in any case. Instead, I wanted to focus on the conditions that enabled his involvement in the first place.

The university provided a physical space that clearly offered opportunities for contact between scholars and students from very diverse backgrounds and cultures, who nonetheless shared common interests – in this case, law.

As we have also seen in the developments briefly analysed here, sinologists played a significant role. They were not only essential in establishing the institution, but also served as specialists and translators, without whom interaction would have been severely limited. Legal scholars like Gutherz and his Chinese colleagues were clearly dependent on their services and expertise. It can be claimed that their role went beyond acting as 'intermediaries' and that they had considerable – even timeless – agency. In Gutherz' writings we see a considerable amount of 'China-Knowledge', which he, as he acknowledges, derived from earlier sinologists and proto-sinologists, particularly George Thomas Staunton. Without resorting to the work of sinologists – most likely Legge's translations, although not mentioned by name – Gutherz would not have been able to frame his 'expert opinion' in a way that resonated with his Chinese readers, and thus would have not achieved the same level of attention.

In any case, Jiang Kai's article, written by a Chinese legal scholar using ideas about Chinese law first proposed by a German lawyer, and published in a Sino-German law journal, clearly demonstrates the value of the 'spaces of circulation' concept. It suggests that it has its merit and hopefully can be applied to better analyse and understand other cases as well.

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Inscriptions in Texts
Epistemic Encounters in Giovanni Vacca's Sinological Library

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Abstract This article considers texts in G. Vacca's (1872-1953) library as vertices in a sinological network. I analyse his annotations inscribed into books, offprints, maps, brochures, which he mainly collected during his sojourn in China (1907-08). Focusing on mathematical books, I argue that inscriptions and printed texts together not only materialise Vacca's turn from mathematics to sinology but also produce new forms of knowledge that resulted from translations between languages spoken in his network: Chinese, universal languages, and the languages of logic and algebra. Far from being an isolated stronghold of piles of paper transported from China to Europe and extended thereafter in scale and content, Vacca's documentary legacy is a continuous space of circulation in itself.

Keywords Spaces of circulation. Translation. Scientific terminologies. Agency. Mathematical symbolism.

Summary 1 Introduction. – 2 Learning (by Translating). – 3 Transcribing (into Numbers and Symbols). – 4 Inscribing. – 5 Conclusion.

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1 Introduction

If you were the owner of Martino Martini's *Sinicæ historiæ* (1658), would you scribble your notes in the back cover, add markings such as Chinese characters or formulaic transcriptions in blue ink, add underlining in red, complement biographic information and bibliographic references to other books in the margins of the beautifully typeset pages of an original Renaissance edition? Probably not. But Giovanni Vacca (1872-1953) did. The different kinds of ink colours, pencils, seals, and crayons he used attest of his reading, interpreting, and ownership[1] practices. By his continuous and intense engagement with texts throughout his life, he built up new links between texts, authors, languages, and epistemic cultures. Through Vacca's practices of transcribing, translating, and cross-referencing, as I will argue in this article, his defiled (or sanctified) books, now on the shelves of different libraries in Italy, become nodes in a network of printed material. Besides building up his own knowledge about China, Vacca created publicly accessible spaces of knowledge where mathematics met with sinology.

This unusual combination of disciplines stems from Vacca's early career as a logician and mathematician. In Turin, he was the Assistant of Giuseppe Peano (1858-1932), well known for his oeuvre in mathematical logic and contribution to the axiomatisation of arithmetic. Vacca's historical research on the 'inventors' of specific mathematical truths assembled and expressed in the symbolic language of logic for Peano's multi-volume and multilingual collection of formulas published between 1895 and 1905 (Vacca 1932; Luciano 2011) went together with reflections upon universal languages. Leibniz' ideas of using Chinese for the creation of a philosophical language also played a decisive role in the so-called Leibniz Renaissance at the turn of the twentieth century (Bréard 2016).

Mathematicians[2] and logicians[3] were particularly enthusiastic about universal languages during Peano's lifetime. They published numerous memoirs in Volapük[4] and Peano corresponded in Latino

1 On types of explicit ownership inscriptions in Vacca's Western language collection of books and offprints, cf. Bréard 2023. For dedicatory inscriptions, cf. Bréard, Olivotto forthcoming.

2 In particular mathematicians from the Renaissance of Italian mathematics around 1900, such as Giusto Bellavitis (1803-1880) in Padua, Federigo Enriques (1871-1946), Tullio Levi-Civita (1873-1941) et al. Cf. Bellavitis 1862; Enriques 1921; Roero 1999.

3 Cf. for example the contribution "De interlingua in Mathematica" in *Academia pro Interlingua. Discussiones* (1912) by Philip E.B. Jourdain (1879-1919), a British logician and successor of Bertrand Russell.

4 For example Rudolf Mehmke, Ordinary Professor for Mathematics from 1884 to 1894 at the TU Darmstadt, then University of Stuttgart, cf. Reich 1993.

sine flexione with many of them.[5] There were also some contacts with China and Japan, yet, judging by the archival documents, they were limited to the exchange of publications[6] despite the great popularity of Volapük and Esperanto there.[7] Rather disconnected from the debates on language reform, and unaware of new modes of indexing Chinese characters by Chinese intellectuals,[8] Peano – and more so Vacca – attempted in their own mathematical way to incorporate elements of Chinese into their considerations of a truly universal language – readable by humans, including the blind, and by machines (Bréard 2019).

It was in 1905, when most Italian 'sinologists' worked with little support and encouragement,[9] and of whom many had never visited China (Bertuccioli, Masini 2014, 266-7), that Vacca decided to study Chinese thoroughly under Carlo Puini (1839-1924) at the Istituto di Studi Superiori of Florence and to move to new intellectual horizons.

During his sole sojourn in China from April 1907 to October 1908, Vacca systematically bought mathematical books – on mathematics and astronomy, Vacca had purchased more than two hundred volumes alone (Vacca 1908).[10] Yet, after returning to Italy, he gradually lost sight of his original intention to work on the basis of these books specifically

5 Cf. the letter by R. Mehmke to Peano, dated 14 May 1907 (Universitätsarchiv Stuttgart SN 6/113):

> Die in Ihrer neuen Sprache abgefaßte Karte habe ich natürlich ohne Mühe verstanden, aber es wäre mir ohne großen Zeitverlust nicht möglich, in derselben Sprache zu antworten, weshalb ich um die Erlaubnis bitte, deutsch antworten zu dürfen.

6 For example, as president of the Academia pro Interlingua, Peano received a request to make his publications available for the National Library of China in Nanjing in 1933 (Chiang Fu-tsung, librarian of the National Central Library – *Guoli zhongyang tushuguan* 國立中央圖書館 – in Nanjing, to G. Peano, 13 December 1933), while the Japanese chief delegate of the UEA (Universala Esperanto-Asocio) expressed his admiration for Peano and thanked him for receiving the special edition of *Schola et Vita*, which was published on the occasion of Peano's seventieth birthday (Yoshi H. Ishiguro to G. Peano, 15 October 1928). Cf. Roero, Nervo, Armano 2008, nos 102677, 100125.

7 On Esperanto in China, cf. Müller-Saini 1998; Müller-Saini, Brenton 2006. Volapük had mainly taken in Xiamen, where employees of the Chinese Maritime Customs Service were engaged in its dissemination. Cf. van Aalst 1888.

8 For the "indexical anarchy" which raged in China during the two decades preceding the Pacific war, cf. Kuzuoğlu 2018, 354-5.

9 The fact that sinological work in Italy before the twentieth century remained more often in manuscript form than finalised in a publication is mentioned in Tucci 2005, 188-9. For example, in the case of Giuseppe Gaetano Calleri (1810-1876) and Antelmo Severini (1828-1909). On the scarce presence of Italians in early twentieth century China, cf. Samarani 2014.

10 After Vacca's death, his wife Virginia sold or donated his Chinese books to the Vatican Library. Unfortunately, no records are preserved which list the content of the acquisition. Most titles are nevertheless included in Takata 1997, but not associated with Vacca's name. For Vacca's Chinese mathematical book collection now held by the Vatican Library, cf. the reconstruction of the content of his former library in Bréard 2023.

on the history of the mathematical sciences in China.[11] Although Vacca's early publication on the history of Chinese mathematics had given rise to much optimism about his future contributions in academic circles,[12] no substantial study of a Chinese mathematical text by Vacca appeared after the constitution of his Chinese mathematical book collection. He rather continued to publish on little details from European history of mathematics and never accomplished a larger book project of a universal approach to the *Elements of a History of Mathematics*, outlined and projected with the Turinese editor Bocca in the spring of 1903 (cf. Roero 2012, 102-4). As one of Vacca's students, Giuliano Bertuccioli, astutely framed it, Vacca was "a walking library of books on sinology",[13] or a "wholesaler of what may be called 'non-commonplaces'" according to his close friend Giovanni Vailati (1971, 419).[14]

Peano certainly was well aware of Vacca's eclectic disposition, his "broad but chaotic knowledge".[15] He doubted Vacca's suitability for an academic career if he were to undergo the disciplinary turn that he wished for. When in December 1904, Vacca announced his departure to Peano, he received a lesson – and some insults – from his patron:[16]

> For some time now, it seems that our occupations no longer have any common traits, and we therefore hardly understand each other any longer.
>
> I currently deal with questions of mathematical linguistics, which I consider for myself highly interesting. Up to now you have not yet taken a look at my published booklet, nor manifested the desire to see the manuscript.
>
> You had the intention to write the history of mathematics. Splendid work, in which we would understand each other, and for which

11 Cf. the report in the *South China Morning Post* under the title "Ancient Chinese Mathematics. Researches by Professor Vacca" (9 October 1908) and the "Atti del Comitato italiano dell'Associazione internazionale per la esplorazione dell'Asia centrale e dell'Estremo Oriente" (1907) in *Rivista Degli Studi Orientali*, 1(1), 117-21.

12 Cf. the cynical yet optimistic review of Vacca 1905 by Berthold Laufer (1874-1934) in Laufer 1907, 184-5.

13 "A living encyclopaedia, a mine of anecdotes, a walking library of books on sinology, a Gotha almanac of European Orientalism [Enciclopedia vivente, miniera di aneddoti, biblioteca ambulante di libri di sinologia, almanacco Gotha dell'Orientalismo europeo]", in Giuliano Bertuccioli, *Le confessioni di un Sinologo (Capitolo 1). Dedicato a mio Figlio Bruno, Scritto di getto tra il 31 Dicembre 1993 e il 2 Gennaio 1994*, unpublished typescript, Roberto Vacca private archives.

14 "[U]n vero grossista in quelli che si potrebbe chiamare i 'luoghi non comuni', di lieux non-communs", cf. the letter by Vailati to Giovanni Papini dated 16 October 1906.

15 Letter from Giuseppe Peano to Giovanni Vacca, 19 February 1905. Archivio Peano-Vacca, Università di Torino. Transcribed in Osimo 1992, no. 70.

16 Letter from Giuseppe Peano to Giovanni Vacca, 7 December 1904. Archivio Peano-Vacca, Università di Torino. Transcribed in Osimo 1992, no. 67.

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> You have all the qualifications to carry it through. Amodeo obtained a professorship in the history of mathematics in Naples, for his work on the University of Naples itself. It is highly probable, that You would have obtained the same professorship in Turin. Instead, You abandoned the idea.
>
> Yesterday, You expressed to me Your intention to write a book [of exercises] in calculus. An excellent idea, useful for the students, and in consequence a honor for You, which can also open the door to paid or honorary positions, according to Your preference. But when will you do it? […]
>
> In short, in order for You to be useful to yourself, in the scientific field, in schools, and to me, who can also be useful to You in this field, it is necessary that you dedicate ALL your activity to mathematics. (Author's transl.)

In self-defence and determined to change directions, Vacca responds apologetically, explaining his own vision of life:[17]

> The last conversations I had with You were painful beyond what You can surmise. Above all, it made me suffer the affirmation that You don't understand me, nor do You understand what I want or desire. […]
>
> In any case, I think it is my duty to try to tell You here, as best I can, what my method of studying and living is that You find so terrible. I love research and mathematics in a special way, in the most selfless way possible.
>
> I had, and I expressed it to You then, two years ago for a moment the desire to try the experiment of a professorship. Today I no longer have this one desire: neither this one nor others of such kind. I only wish to know, and in so far as I am able, without hastening for any purpose not purely scientific, to publish those few things that may result from my studies. […]
>
> You also told me once again that my method is that of dilettanti, not of scientists. I will tell you that I am not a dilettante because I devote most of my activity to research: that I am a scholar who produces little, even a little because I love science, and I do not expect material advantages of any kind from it. (Author's transl.)

In spite of Peano's harsh criticism when Vacca decided to quit mathematical logic and, in Peano's eyes, joined the group of "dilettanti

17 Translated from the draft of a letter from Giovanni Vacca to Giuseppe Peano, 17 February 1905. Archivio Peano-Vacca, Università di Torino. Transcribed in Osimo 1992, no. 4.

allo sbaraglio",[18] Peano remained in close contact with him. On both themes, mathematics and linguistics, sometimes even related to Chinese,[19] Peano read Vacca's notes and publications with great interest, considering, *in fine*, his work of "utmost importance".[20]

The exchange of publications or preprints, a common scholarly practice, certainly allowed Vacca to build and extend his vast network of colleagues and texts beyond the Peano School: lending and borrowing among each other, going to libraries all over Europe with colleagues to read books on the history of mathematics in European libraries,[21] or inviting readers to send in corrections and addenda to the *Formulario*,[22] all strengthened ties between different actors in a scholarly network where not only people, but also texts and commentaries easily circulated.[23] Traces of the circulation of texts can still be found in abundance in form of dedications on preprints which Vacca collected and annotated extensively,[24] or in form of proofs which he corrected and amended for others before publication. The proofs of Paolo Desderi's[25] multilingual *Little Dictionary in Chinese-Italian-French-English Language with Explication of 10.000 Characters Disposed After a New Morphological Classification and with Indication of Radicals and of Phonetics* (Desderi 1933), for example, still carry Vacca's traces before official publication in 1933 and attest of his interest in alternative structural approaches to Chinese characters.[26]

18 Expression borrowed from a TV show entitled *La Corrida – Dilettanti allo sbaraglio* (The Corrida – Dilettanti jeopardised).

19 Cf. Peano's letter to Vacca dated 1st November 1920 in Osimo 1992, no. 118: "Se lei mi traduce in interlingua qualche pezzo di cinese, p. es. Dei proverbi, io li potrò pubblicare nelle Discussiones dell'Ac. [*Academia pro Interlingua*]".

20 Cf. the postcard sent to Vacca on 29 September 1916 in Osimo 1992, no. 117. Cf. also no. 120, a postcard from 26 March 1921.

21 As for example with Giovanni Vailati (1863-1909). Cf. Carteggio Vacca (1899-1907) in Vailati 1971, 161-259.

22 Cf. Peano 1893, 185: "*Nota*. Preghiamo vivamente i lettori di inviarci tutte quelle aggiunte e correzioni che possono farsi sia al *Formulario* che alle *Note storiche*".

23 On how print and manuscripts not only disseminate and construct knowledge, but at the same time also organise scientific communities, cf. Yale 2011.

24 For an analytic and bibliographic description of Vacca's legacy of sinological secondary literature in non-Chinese languages, cf. Bréard, Olivotto forthcoming.

25 At that time, P. Desderi was Docente in Igiene alla R. Università di Torino and Direttore dell'Istituto Biologico e del Laboratorio di Istologia e Batteriologia all'Ospedale Municipale, Torino, also teaching Chinese language classes to a group of appr. 20 students. Cf. his letter to Vacca dated 21 May 1932.

26 Cf. the title page with Desderi's note to Vacca:
Charissimo Professore e Maestro,
甲 Giunto quasi a metà del mio lavoro me permetto presentarglielo nella disposizione a rubrica, fiducioso che Ella possa guidicarlo di pratica utilità.
divotissimo P. Desderi 21.5.1932/X
乙 Eccoci alle ultime pagine dell'ultima parte: tratti incrociati. 23.XII.32/XI

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Given the abundance of Vacca's library and archives, I will, in the following, focus on the printed mathematical literature in Vacca's book collection and the spaces of knowledge circulation that they embody. The article has three main parts: Learning, Transcribing, and Inscribing. In order to contextualise the latter part, which looks at the inscriptions found in the Vatican Library collection of Vacca's Chinese mathematical books, it is important to understand the approach which Vacca had to the Chinese language, and the options of transcription and translation which he chose in his manuscript annotations. These first two sections are based on Vacca's scattered notes and Adversaria, which, together with the printed material discussed in the third section literally form a library in the acceptation of a Latourian "computing center",[27] where knowledge is accumulated, stabilised, and eventually validated through circulatory movements.

2 Learning (by Translating)

Besides being motivated to learn more about China in relation to his work with Peano on historical and linguistic aspects of mathematics,[28] and in particular on Leibniz' work in logic (Vacca 1899; 1903),[29] one event must have left a strong impression upon Vacca. It was the General Italian Exhibition (Esposizione generale italiana) held in Turin in 1898. There, at the religious art exhibition, Vacca met two missionaries who were preaching in China (Cassina 1953a, 190). They showed Chinese books and gave lectures in Chinese. In the same year,[30]

> Come distrazione, nelle vacanze d'autunno ho cominciato lo studio della lingua Cinese. Mi ha spinto a ciò il desiderio di vedere come le cognizioni matematiche si sono sviluppate in questo popolo, quando ancora tutte le nazioni europee erano in uno stato di barbarie. Inoltre ho voluto profittare della occasione favorevole che mi si era presentata qui a Torino; essendo stato qui per alcuni mesi un missionario italiano che conosce molto bene questa lingua.

27 Considering a library as "a node of a vast network, in which not signs nor matter, but matter turned into signs do circulate" was an approach taken by Bruno Latour in 1996, cf. Latour, Hermant 1996, 23. Renewing the history of libraries, he put forward a reading of libraries as "computing centers". For this notion, cf. also Latour 1989, 515-623.

28 Cf. Vacca 1902-03 and his account of historical work in Peano's oeuvre in Vacca 1932.

29 Another aspect that intrigued Vacca were Leibniz' ideas on a connection between hexagrams and binary arithmetic. Cf. Bréard 2008; Luciano, Roero 2004.

30 Cf. the letter from Vacca to A. Vassiliev, 28 December 1898-9 January 1899 (BSM Torino, *Fondo Peano-Vacca*, corrispondenze di G. Vacca), quoted in Luciano, Roero 2010, 101 fn. 4.

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> As a distraction, during the autumn vacation I began to study the Chinese language. I was prompted to do so by the desire to see how mathematical knowledge developed in this people, when all European nations were still in a state of barbarism. In addition, I wanted to take advantage of the favourable opportunity that had presented itself to me here in Turin; an Italian missionary who knows this language very well had been here for several months. (Author's transl.)

In the absence of a specialised dictionary, Vacca seems to have autodidactically tried to understand and translate Chinese mathematical and astronomical texts. Drawing on a variety of existing bilingual dictionaries, Vacca, after he moved to Florence in May 1905 to study with Carlo Puini, compiled his own one for technical terms.[31] And he clearly marked it as his own compilation by adding his labyrinth-shaped *ex libris* **[fig. 1]**. In July 1905 he already finished a first note "on the mathematics of the ancient Chinese" which was published the same year in Gino Loria's *Bollettino di bibliografia e storia delle scienze mathematiche*.[32] It included an Italian version of a short passage from one of the earliest Chinese mathematical texts. Based on three existing translations (a German, an English and a French one) which he confronted to Puini's copy of the original Chinese text, Vacca (1905, 98) gives "to a large part credit to Puini for the new translation".

Vacca also tried to understand mathematical terminology by directly reading passages in original texts, such as the *Unified Lineage of Mathematical Methods* (*Suanfa Tongzong* 算法統宗, 1592) of which, according to his notes, he had consulted publications in French by Edouard Biot (1839) and Guillaume Libri (1838). From this work, he copies on one sheet a short lexicographic section on multiplication and division and attempts to understand terms such as *shi* 實 (dividend) and *fa* 法 (divisor) by literally translating the explanations given. That this was little conclusive can be seen in figure 2 **[fig. 2]**. Neither does Vacca understand how *fa* 法 can mean both 'rule' and 'formal number' – the latter is his translation of the gloss of *fa* 法 as *yang shu* 樣數 –, nor what sense he should make of the explanation that *gui* 歸

31 Most of the vocabulary therein is accompanied by a number corresponding to entries in Giles' *Chinese-English Dictionary* (1892). For a few other words, Vacca refers to Séraphine Couvreur (1835-1919), a French missionary and sinologist who compiled several dictionaries for Classical Chinese.

32 For the date of redaction, cf. Vacca 1905, 102. The publication was well received, cf. Moritz Cantor's letter from 15 January 1906 in Nastasi, Scimone 1995, 32 and the positive review by the anthropologist Berthold Laufer (1907).

is both a conversion and, curiously, the 'proper number of a man'.[33] For the gloss of *yin* 因 'multiplication of single digits', Vacca seems to not understand at all what the explanation (*fa zhi danwei zhe you you ye* 法之單位者又由也) could mean. For *shi* 實 he translates literally the gloss *ben shu* 本數 (original number) as "numero radicale", thus a 'number with a root'.

Besides his notes on vocabulary, Vacca also attempted the translation of entire math problems in the same Chinese text from 1592. One way to do so was to directly transcribe calculations into modern mathematical formulas, an option we often see in his annotations of mathematical books. Another way, very similar to Peano's idea that Chinese was akin in structure to the universal language *Latino sine flexione*, which he promoted as a universal language scheme for scientific communication, was to proceed word by word,[34] change their order and fill in only articles, prepositions and other auxiliaries. Instead of translating this way into simplified Latin, Vacca practiced what he called "scrittura sinico-italiana" (Chinese-Italian writing) for the Confucian *Lunyu* 論語 (*Analects*; composed during the Warring States Period, 475-221 BC) and mathematics alike.[35]

As can be seen in figure 3 **[fig. 3]**, which shows a problem, again from the *Unified Lineage of Mathematical Methods*, Vacca only adds auxiliaries (transcribed below in red) to his otherwise literal translation:

今有勾二十七尺股三十六尺問弦斜若于

Ora avendo la base (uncus, 勾) di 27 piedi, e l'altezza di 36 piedi (股, gamba) si domanda l'ipotenusa (弦斜 hien sie, arcus obliquus) quanto è lunga (若于 jou iü come dice).

答曰 弦斜四十五尺
Risposta 答曰 (rispondere-dire) l'ipotenusa è di 45 piedi.

La regola dice: Prendi la base di 27 piedi, per se stessa moltiplicatala, otterrai 729 piedi. Separatamente moltiplica egualmente per se stessa l'altezza 36 piedi: otterrai 1296 piedi. I due numeri

33 Vacca transcribes the gloss as 人己之數, whereas the correct reading would be 入己之數 implying that the operation *gui* 歸 relates to the inverse procedure which one 'enters with the already (obtained) number'.

34 Literal translation transformed into prose was also what structured Severini's *Dialoghi Cinesi* (1865) of which Vacca had a partial handwritten copy in which he put Chinese characters next to their transliteration and literal meaning, adding entire grammatically correct sentences in between.

35 Cf. for example the pages entitled "Tentativo di una scrittura sinico-italiana" in his 1908 Notebook from Chengdu (Roberto Vacca private archives) in which he translated from *Lunyu* VII.15.

> insieme fanno 2025 piedi che formano l'operando (cioè si cerca come eguale ad un numero per se stesso moltiplicato)? avrai l'ipotenusa moltiplicata per se stessa (eguale) al numero stesso. Apri ora il quadrato colla regola della ~~sottrazione~~ divisione (除) della prima esperienza/tentativo (商 chang, consultare). Poni 40 a sinistra e parimenti poni 40 a destra: sarà il numero operatore del quadrato. 法 = operatore, opposto a 實 = operando). A sinistra 4, accanto a destra 4 formano 4x4 ossia 1600 piedi che sottratti dell'operando (2025) danno 425 piedi.

In Vacca's notes, we see also the inverse. He attempted to translate certain Western technical terms into Chinese, possibly to explain them to a Chinese interlocutor. Word by word was his approach there, too. In figure 4 (right) we find expressions such as *zi che* 自車 – probably for 'auto-car' – or *shiyou huo ziche* 石油火自車 for a 'petroleum-fired autocar', which Vacca obviously created without consulting a dictionary.

Spoken language seems to have been secondary to Vacca, both in his own way of studying Chinese[36] and in his teaching. As he clumsily expresses in rudimentary vernacular Chinese in one of his notes **[fig. 4, left]**,[37] he "read Chinese books for two years before being able to speak since one month" (*cong liang nian wo kan Zhongguo shu cong yi yue wo ke hua* 從兩年我看中國書, 從一月我可話). Regarding tones, to which no particular attention was paid by Vacca,[38] he recommended "to beginners of Chinese to use a small artifice, that is to speak in a rather low voice, in which case the tones are not heard at all and you are generally understood anyway".[39] Two of Vacca's students, Pirro

36 From his annotations in Thomas Francis Wade's *Wen-chien Tzŭ-erh Chi* 文件自邇集 (A series of Papers selected as specimens of Documentary Chinese designed to assist students of the language as written by the officials of China, London: Trübner & Co., 1867), we can see that Vacca mainly used one part, the *Han Tzŭ Hsi Hsieh Fa* 漢字習寫法 (Writing exercises designed to accompany the colloquial series to the *Tzŭ-erh Chi*) to learn to write characters. Besides Wade's work, he extensively used and annotated Wilhelm Schott's *Chinesische Sprachlehre zum Gebrauche bei Vorlesungen und zur Selbstunterweisung* (Berlin: Ferd. Dümmler, 1857).

37 Similarly **[fig. 4, right]**, he says incorrectly: *wo yuanyi wo xinwen bu zhong, wo bo* [*pa*?] *bu ke dao yuan zai Zhongguo* 我願意我新聞不重, 我伯 [instead of 怕?] 不可道遠在中國, probably expressing his fears that it will not be possible for him to stay in China for a long time. Cf. also two pages in his diary ("Diario 12 Novembre-31 Dicembre 1907 in Chentu", Roberto Vacca private archives) for an attempt to explain Western and Chinese numeral systems, with corrections added to the Chinese text by a different hand.

38 In general, Vacca did not indicate tones in his alphabetic transcriptions or symbolic encodings of Chinese characters. Cf. also his copy of Severini's *Dialoghi Cinesi* (1865), fn. 36.

39 Cf. Vacca's entry "Cina" in the *Enciclopedia Italiana*, vol. 10 (Treccani, 1931; emphasis added): "Le parole della lingua cinese, come quelle delle lingue imparentate, siamese, birmano, ecc., hanno delle modulazioni caratteristiche chiamate *toni*. Questi,

Marconi (1897-1938)[40] and Giuliano Bertuccioli (1923-2001), vividly record how they were left alone with Classical Chinese texts and their Latin translation in Angelo Andrea Zottoli's (1826-1902) four-thousand page work *Cursus Litteraturae Sinicae* to study the Chinese written language:

> Ma come si studiava il cinese a quel tempo? […] Vacca però come insegnante di lingua si limitava di raccomandare lo studio dei cinque volumoni del *Cursus Litteraturae Sinicae* del gesuita Zottoli, in cui i principali autori classici cinesi sono tradotti in un latino talmente ostico e incomprensibile da lasciare il lettore incerto: servirsi della traduzione latina per capire il testo cinese stampato a fronte, o fare piuttosto il contrario? Mi raccomandò: "li studi, possibilmente a memoria…" ma senza dirmi da dove cominciare, senza interrogarmi poi per accertarsi se li avessi veramente letti e studiati. Insomma, mi lasciò completamente solo con me stesso. Feci' così lo sforzo di apprendere a memoria il primo passo del primo volume: una frasetta di 13 caratteri, che non ho più dimenticato e fu tutto.[41]

che sono quattro in Pechino, cinque a Nanchino, otto nel sud della Cina, corrispondevano originariamente a variazioni di senso, da nome a verbo, ecc. Questa varietà di accento corrispondeva a fenomeni analoghi delle lingue classiche, specialmente del greco. Noi li trascuriamo nelle trascrizioni, sebbene il non tenerne conto possa produrre equivoci; maggiore importanza del tono, per l'intelligenza d'una frase, ha l'accento di senso, che cade sul monosillabo più importante. I toni nelle parole bisillabe, si sentono soltanto nella sillaba su cui cade l'accento. I Giapponesi e anche in parte i Cinesi delle provincie dell'ovest, i Mongoli, sbagliano spesso i toni, avendo difficoltà a percepirli. **Un piccolo artificio per chi comincia a parlare cinese è quello di parlare a voce piuttosto bassa, nel qual caso i toni non si sentono affatto e generalmente si è capiti lo stesso.** L'eccessiva importanza data ai toni dai vecchi missionarî i quali vivevano a corte, corrisponde piuttosto al desiderio di evitare l'effetto sgradevole che una cattiva pronuncia produceva alla capitale, che non alla difficoltà di farsi capire".

40 Cf. Privitera 2007: "Nacque a Verona il 1° genn. 1897 da Pietro, violinista, e da Antonella (Nella) Levi. Dopo essersi iscritto alla facoltà di lettere a Roma, interruppe gli studi nel maggio del 1915 per arruolarsi come volontario tra gli alpini. Divenuto ufficiale di complemento, rimase in servizio per tutta la durata del primo conflitto mondiale".

41 Quoted from Giuliano Bertuccioli, *Le confessioni di un Sinologo (Capitolo 1). Dedicato a mio Figlio Bruno, Scritto di getto tra il 31 Dicembre 1993 e il 2 Gennaio 1994*, Roberto Vacca private archives. Cf. also the letter from Pirro Marconi to Vacca, dated 2 January 1915. Transcribed (with minor errors) in Nastasi, Scimone 1995, 122):

> Domani mi metterò subito, come Ella mi ha consigliato, al lavoro. Però, secondo me, lo Zottoli, se pure eccellente, presenta un difetto grave: quello d'essere troppo facile, troppo accessibile. Quella traduzione lì vicina al testo è molto, troppo comoda, sì da impedire la lunga applicazione e il lungo studio che è quello che veramente affina e giova. Io vorrei che quando ci ritroveremo pelle lezioni, Lei mi desse in mano un testo cinese ed un vocabolario, e mi dicesse – Arràngiati – così ch'io potessi veramente provare quello che posso e quello che non so.
>
> Ad ogni modo per ora, in queste due settimane che rimangono, farò studio di scrittura, e di riconoscere le radici; cercherò d'imprimermi nella mente il numero

> […] Fu così che sprecai cinque anni della mia vita facendo scarsi progressi nello studio della lingua classica o parlata, ma leggendo in compenso un sacco di libri di sinologia, contagiato irrimediabilmente dal mio maestro Vacca, che quanto a bibliomania non scherzava.
>
> But how was Chinese studied at that time? […] Vacca, as a language teacher, only recommended the study of the five large volumes of the *Cursus Litteraturae Sinicae* by the Jesuit Zottoli, in which the main classical Chinese authors are translated into a Latin that is so difficult and incomprehensible that it leaves the reader uncertain: to use the Latin translation to understand the Chinese text printed in parallel – or rather to do the opposite?
>
> He recommended: "study them, if possible by heart…" but without telling me where to start, without questioning me afterwards to make sure I had really read and studied them. In short, he left me completely alone with myself. I made the effort to memorise the first step of the first volume: a 13-character sentence, which I have never forgotten, and that was all.
>
> […] It was in this way that I wasted five years of my life making little progress in the study of the classical or spoken language, but reading a lot of books on sinology, irremediably infected by my teacher Vacca, who as for bibliomania was no joke. (Author's transl.)

Books and texts were indeed more than central to Vacca. They were the vertices in a network to which he added the edges. Vacca connected items from his own or another personal or public library by annotating his own copies of books[42] and preprints and adding precise bibliographic references to related writings or concepts. As for linguistic annotations, Vacca translated what he read into other natural languages and, for mathematics in particular, he transcribed texts into modern mathematical and logical symbols.[43] This allowed him to connect texts from different mathematical cultures by linking various modes of expression through a single 'formula'.

maggiore delle 214 fondamentali, ciò che mi è molto di bisogno. Poi, leggerò di quei libri ch'ella m'ha indicato e ripasserò quello che in questo mese ho fatto con Lei, attendendo di cominciare il lavoro veramente fruttuoso col Suo aiuto al ricominciare delle lezioni.

42 Cf. for example his copy of his monograph of 448 pages dedicated to China and Japan and published in the *Geografia universale illustrata* (Vacca 1936) preserved at the Fondazione Cini.

43 I consider transcription into symbolic language equally as a translation of a mathematical text, even if it can lead to misinterpretations. About mathematics' "uneasy relationship with language" and problems of translation, cf. Blåsjö, Hogendijk 2018.

3 Transcribing (into Numbers and Symbols)

Besides sharing Peano's desire for an International Language for the spoken, familiar language, Vacca and Peano were also in search of a philosophical, scientific language, thereby following in Leibniz' footsteps in the search of a universal characteristic. Chinese could have been a solution to Leibniz' project according to Vacca.[44] This belief was at least his early motivation for studying in particular Chinese mathematical texts. Among Vacca's books, transferred to the Vatican Library after his death,[45] we see his efforts to decode the Chinese text in a process of understanding by 'doing'. Often separate sheets with his calculations are inserted at the relevant page of a problem he tried to solve algebraically or geometrically, and the margins are filled with symbolic translations and few text. Given the dispersion of his marginalia, it is unclear if he transcribed passages of particular importance or if he came across a page fortuitously whenever he opened a book.

His structural approach to textual knowledge – Vacca regularly numbered paragraphs with Arab numerals – was not limited to mathematics; Vacca also engaged with the semantic structure of Classical Chinese[46] and the characters themselves. Question of classifying them, or 'word-cataloguing', was a very popular topic of debate in the early twentieth century and many isolated individual projects were in circulation.[47] Vacca's notes suggest his engagement

44 Louis Couturat (1868-1914) did not share this opinion. Cf. his letter to Vacca, dated 18 August 1901, in Nastasi, Scimone 1995, 48-57:

> J'accepte volontiers vos renseignements sur le chinois. Mais il ne faut pas oublier qu'il ne s'agit pas de la langue idéale et parfaite, mais d'une L.I. [Langue Internationale] pratique et aussi facile que possible pour nous Européens. Il faut donc que la L.I. se rapproche autant que possible de nos langues, tant par sa grammaire que par son lessique [*sic*]; elle doit se borner à simplifier et à régulariser l'une et l'autre, et cela, pour pouvoir réussir. J'ajoute (v. p. 5 de ma brochure) qu'elle doit être à la fois (et la même) parlée et écrite, ce qu'exclus les langues idéographiques comme le chinois. Si les anciens projets de L.I. ont échoué, c'est qu'ils aient été trop ambitieux, et voulaient être des langues philosophiques. Soyons plus terre à terre !

45 An overview of more than forty Chinese language mathematical books which I have so far identified in the Vatican Library as part of Giovanni Vacca's former library is provided in Bréard 2019, 72-4.

46 Cf. Vacca's manuscript, *Notizie sulla struttura della lingua cinese* (Roberto Vacca private archives), inspired by his reading of G. de Humboldt, *Lettre à M. Abel Rémusat sur la nature des formes grammaticales en général et sur le génie de la langue chinoise en particulier*, Paris, 1827.

47 Cf. Chu 1930, 55: "Mr. Y.W. Wong (王雲五), one of the foremost Chinese word-catalogers of the day, stated in an article in *The Eastern Miscellany* Vol. XXII. No. 12, that there have been altogether nine devoted workers who sought to replace the aged Kang Hsi system. They are Messrs. P. Poletti, J. M. Callery, W. P. Wassiliew, O. Rosenberg, M.T. Kao (高夢旦), Y.T. Ling [*sic*] (林語堂), K.K. Ho (何公敢), H.S. Waung (黃希聲), and Y.W.

with these schemes – he particularly liked Pietro Poletti's scheme (Poletti 1881) –, to which he adds his own symbolic-numeric one. By encoding Chinese characters with numerals and a set of four symbols **[fig. 5]**, Vacca went a step further towards an artificial language and envisioned a machine-readable typographic transcription based purely on the geometric shape of characters.[48]

When it comes to the syntax of Chinese, rapprochements with logic and mathematics abound as well. On the cover page of Vacca's manuscript of a Chinese grammar, we find the following logical reflections:[49]

> Logica
>
> ab.=. a⊃b
> 白馬 = il cavallo bianco.
> 馬白 = il cav. è bianco.
> ab non è eguale a ba.
> La verità è che nell'aggettivo c'è un giudizio.
> il caval bianco .=. il caval che è bianco
> L'implicaz. cinese è sottintesa, mentre non lo è di solito la congiunzione e ∩.

It is unclear what the implication a⊃b reflects here since neither 'the white horse' nor 'the horse is white'[50] carries an implication, even if we assume such logical connection to be implicit in the Chinese language, as Vacca claims. There is also some confusion about what a statement (*giudizio*) is, 'the horse which is white' certainly is not. Vacca thus justifiably barred the entire attempt to philosophise about the grammar of Chinese; such traces inscribed on paper and stored in a repository nevertheless give us a glimpse into his thoughts about a

Wong himself. I read over that article with much interest; and right from that moment I set to work for a system of my own".

48 For an explanation of Vacca's own scheme, cf. Bréard 2019, 24-6. On alphabetic schemes, based on Vacca's reading of Forke (1906), cf. his short draft *Sopra un nuovo tentativo di trascrizione fonetica del cinese*, Roberto Vacca private archives, transcribed in Lioi 2016, 437-8.

49 *Grammatica cinese*, Roberto Vacca private archives.

50 Reference is made here most likely to the well-known paradox of the white horse not being a horse *bai ma fei ma* 白馬非馬 (a white horse is not a horse) in a dialogue attributed to the third-century-BC philosopher Gongsun Long. One possible interpretation in terms of an implication would be to say that 'being a white horse implies not being a horse'. Given Peano's formalism in his *Formulario Mathematico* ed. V (1906, III), Vacca's formalisation here, stating that the implication '*ab* is not the same as *ba*' does not make sense here: 'horseness implies whiteness' is certainly not the same as 'horseness implies whiteness is a true statement', but this is unrelated to Vacca's translations of *ab* 白馬 'white horse' and *ba* 馬白 'the horse is white', or more explicitly 'the horse which is white'.

possibility to transcribe the Chinese language into universal logical symbols[51] and thereby create new epistemological contact zones.[52]

4 Inscribing

Speaking more specifically about Chinese mathematical texts, of which Vacca had bought more than two hundred during his stay in China, it is interesting to take a closer look at the incremental process of translation and of construction of meaning. 'Understanding by doing' describes well this process. It is not simply a pun to 'learning by doing' – Vacca was no professional historian of mathematics, nor a translator as many other sinologists at his time, and he started learning Chinese autodidactically by decoding mathematical texts. 'Understanding by doing' also hints to Hans-Georg Gadamer's (2006, 385) point "that the experience (Erfahrung) of meaning that takes place in understanding always includes application" even if "this whole process is verbal".

The relevance of the aspect of application in understanding the original text through translation processes becomes clear when we look at the choices Vacca made in translating mathematical text. Numerous sheets left in his books attest of how he reconstructed arithmetical procedures. He 'did' the calculations following the steps of the prescribed algorithms by using symbolic algebra or written arithmetic, sometimes adding diagrams of geometrical constellations.[53] Yet, he rarely translated a passage in its entirety. As shows an example from a late Qing work which reconstructs arithmetic operations with counting rods for a large number of problems from ancient sources, Vacca lays out the calculation of the square of 81 with Arab numerals in the way he had learned to perform multiplication **[fig. 6]**. His 'translation' of the shown text maintains the structure of the problem: givens, question, answer, 'reasoning' (his logically tainted translation of *shu* 術, lit. 'procedure'). But it is not what we would expect from a scholarly translation. It is an amalgam of Chinese characters, numbers, and words, picking up mainly the final historical commentary that "this is the rule of multiplication. The ancient

51 An inverse attempt to translate into Chinese Peano's *Formulario Mathematico* (1905) can be found in Vacca's personal copy, Peano archives, Turin. Cf. Bréard 2019, 28-30.

52 Similar attempts by Vacca were made with binomial expressions in Chinese, for which he vaguely sketched a *teoria delle parole composte* (theory of compound words) linked to rational functions in algebra. Cf. the folder *Grammatica cinese (Lettera a Peano)*, Roberto Vacca private archives.

53 Cf. for example Bréard 2023, fig. 8 from Li Ye's *Ceyuan haijing* 測圓海鏡 (Sea Mirror of Circle Measurements, 1248).

rule is preserved up until today. This is very clear".[54] Vacca skips the following five pages of detailed counting rod images and commentaries, which, had he studied them in detail, could have provided a good start for understanding the layout of calculations and the early importance of the positional decimal system in Chinese arithmetic.

The use of algebra further alienated Vacca's translations from the content of the original Chinese mathematical books which Vacca read. Algebraic symbols are just the final trace left of his understanding by doing, since symbolic transcriptions necessarily follow an intermediary step of literal translation of mathematical rhetoric. But it was from the universal characteristic of a formula that Vacca could more easily make comparisons with other authors and other mathematical cultures. He also saw that certain procedures expressed in natural language could be simplified, shortened, or performed with less constants. *C'è un pasticcio di costanti inutile* (There is a useless mess of constants), he writes in the margins under the expansion of the function *log* (1+x) in the Chinese translation of the *Encyclopædia Britannica* entry on Fluxions (Fryer Hua 1875).[55]

'Shortcuts' in mathematical translation, as the ones just described, have the advantage of being legible to the mathematically trained reader. But they also trivialise the content of the original by flattening out all the subtle particularities that lead to a universally true result, commensurable with inscriptions from another time and place. This might be one possible reason why Vacca finally found no particular interest in studying ancient Chinese mathematics in depth and why he began to ponder – before Needham – about the Needham question: why did China not develop science?[56] By standard historical accounts this puts Vacca in the rank of those scholars who have not left a significant legacy. Yet, first of all, one should not forget Vacca's enormous output in terms of publications on matters both Chinese and the history of (non-Chinese) mathematics (see the Bibliography of Vacca in the Appendix). Some concerned minor details of little impact, such as one short note in *Nature* on Chinese names for certain colours (Vacca 1906), but others are major overview articles or entries on China and Japan in encyclopaedias (Vacca 1936) which reached thousands of Italian readers at a time when China knowledge was not readily available. All of these contributions, informative in character, and often digests of the vast literature Vacca had read in Italian, German, English, and French, have a purely historical value

54 Vacca's translation of the phrase: *ci chengfa ye. Gu fa zhi cun yu jin zhe. Ci wei zui xiang* 此乘法也。古法之存於今者。此為最詳。

55 BAV R.G.ORIENTE.III.1127 微積溯源.

56 In a talk given on 25 April 1945, at the Centro di Sintesi Scientifica in Rome (Vacca 1946). For a more optimistic vision, cf. Vacca 1912.

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today. In an overview piece entitled *Science in the Far East* published in 1912, for example, Vacca does not go beyond what he had found in Alexander Wylie's[57] *Jottings on the Science of the Chinese Arithmetic* (1897).[58] All the original sources to which he had access by then and which he had obviously partially read, did not seem to add anything new, but rather repeated the stereotypical lack of a demonstrative approach to mathematics and even geometry (understood as a discipline following Euclidean norms) in its entirety.[59]

5 Conclusion

From the above, it might seem that Vacca's contribution to the history of mathematical sciences in China was rather limited. Even that his inscriptions in books and notebooks were intended as a means of conveying information to later readers is doubtful. Yet, by being placed in a library, they form an intellectual space where mathematics met and continue to meet with Chinese texts, and on which sinological knowledge can build up, both critically and cumulatively.

The truly sustainable value of Vacca's scholarly life therefore lies in his former book collection in which his own world of thought has been inserted and eternalised in the form of marginal notes and sheets that remained between the pages. Even his own publications were no exception from Vacca's inscription and insertion practices. Gradually updated with translations and content from further readings, new insights, intercultural comparisons, and connections in which exchanges with Chinese scholars were strikingly absent, they were dynamic spaces of thought experiments, epistemic encounters, personal views, and errata.

57 A. Wylie (1815-1887), British Protestant missionary and sinologist, wrote a first serious short history of Chinese mathematics correcting some of the pejorative judgements Jesuit missionaries had perpetuated.

58 Wylie's *Jottings on the Science of the Chinese* were first published in several instalments in the *North China Herald*. For "Arithmetic", cf. no. 108 (21 August 1852), no. 111 (11 September 1852), no. 112 (18 September 1852), no. 113 (25 September 1852), no. 116 (16 October 1852), no. 117 (23 October 1852), no. 119 (6 November 1852), no. 120 (13 November 1852), no. 121 (20 November 1852). Vacca's own offprint copy has a handwritten date '1904' which might hint to the date of purchase. In 1905, Vacca had bought (in Florence) a copy of Wylie's *Notes on Chinese Literature* (1902) which carries extensive annotations (often biographic or bibliographic with indications of possession) of the "Astronomy and Mathematics" section.

59 Cf. Vacca 1912, 238. Already when in China, Vacca sounded little optimistic to find something "nice" in the books he had bought. Cf. his letter to Vailati, dated 1-2 September 1907 in Vailati 1971, 256 (italics in the original): "Ho comprato molti libri cinesi di matematica, che mi preparo a studiare nelle ore tranquille dei mesi che verranno appresso. *Perlomeno* se ne possono estrarre molti problemi sul genere di quelli che ti ho fatto vedere a Firenze, egualmente graziosi. Ma spero di trovarvi dentro qualcosa di più".

Manuscript annotations, as shown through the example of what Vacca has left to posterity, can be seen as the intermediaries, the "go-betweens"[60] in a network from vertex to vertex, from text to text. Like the printed pages, inscriptions enfold the author's individuated knowledge into a community of readers.

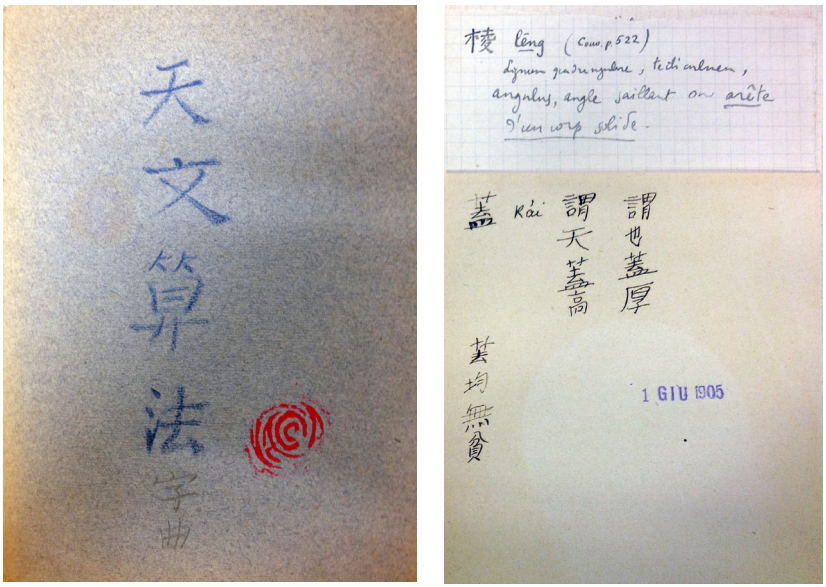
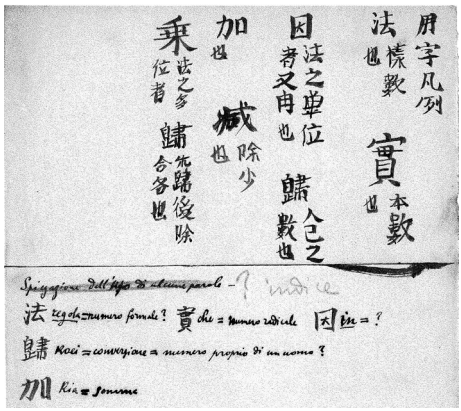


Figure 1 Vacca's notebook entitled *Tianwen suanfa* 天文算法 (Astronomy and Mathematics, ca June 1905), carrying his labyrinth shaped *ex libris* on the cover page (left). Fondo Bertuccioli, Bibl. Di Studi orientali, Sapienza Università di Roma

60 For the importance of human 'go-betweens' as cross-cultural translators in processes of global knowledge construction, see Shaffer et al. 2009.

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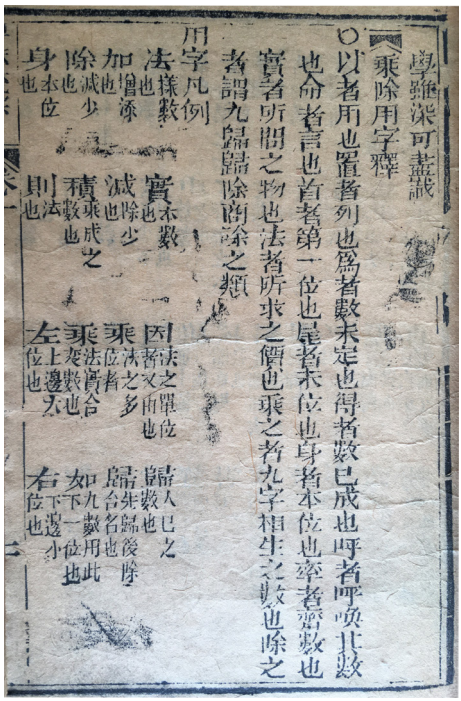


Figure 2
Top: Fondo G. Bertuccioli, Sapienza Università di Roma. Bottom: corresponding page in Cheng 1592, scroll 1, 2A

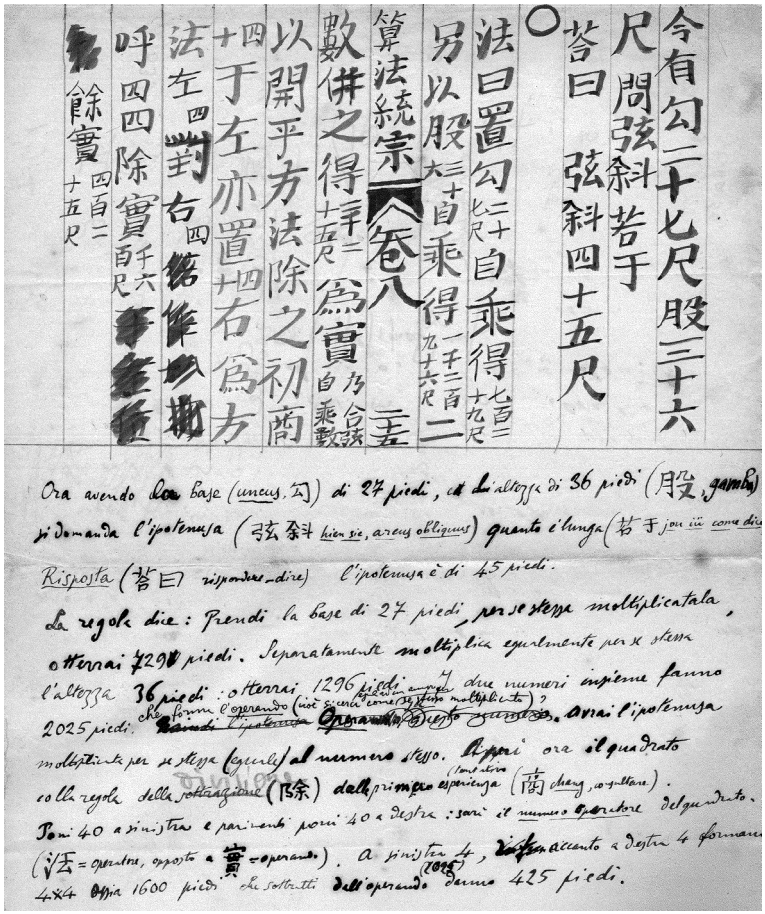


Figure 3 G. Vacca, transcription and translation of a problem asking to calculate the hypotenuse in a right-angled triangle from Cheng Dawei's *Suanfa tongzong* 算法統宗 (*Unified Lineage of Mathematical Methods*) (1592). Fondo Bertuccioli, Bibl. di Studi orientali, Sapienza Università di Roma, undated but presumably from Vacca's early studies of Chinese

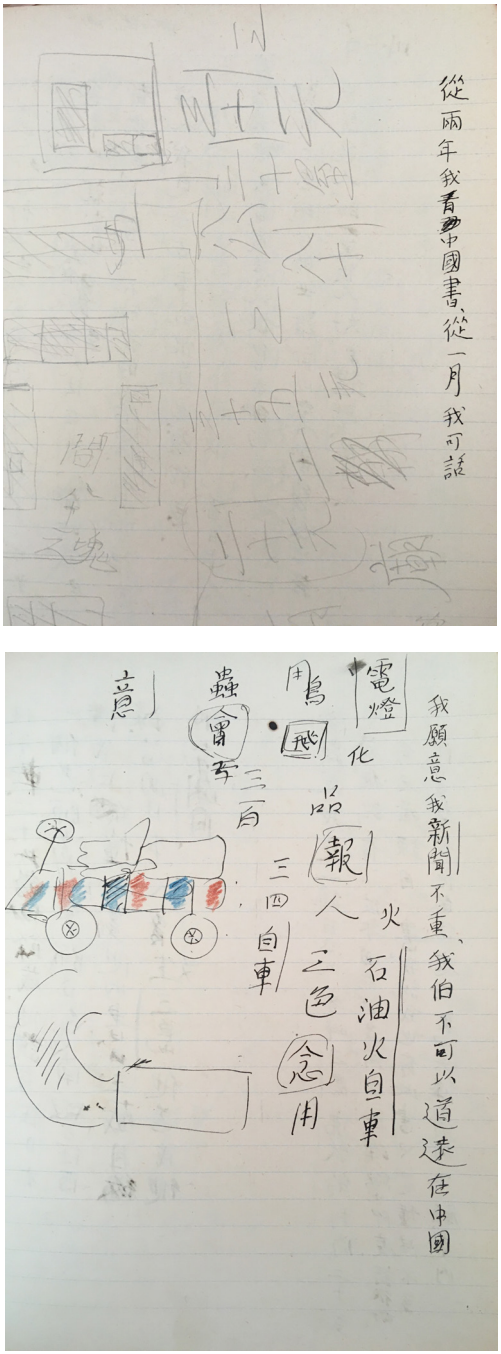


Figure 4
Pages from Vacca's Diary ("Diario 12 Novembre-31 Dicembre 1907 in Chentu"). Roberto Vacca private archives

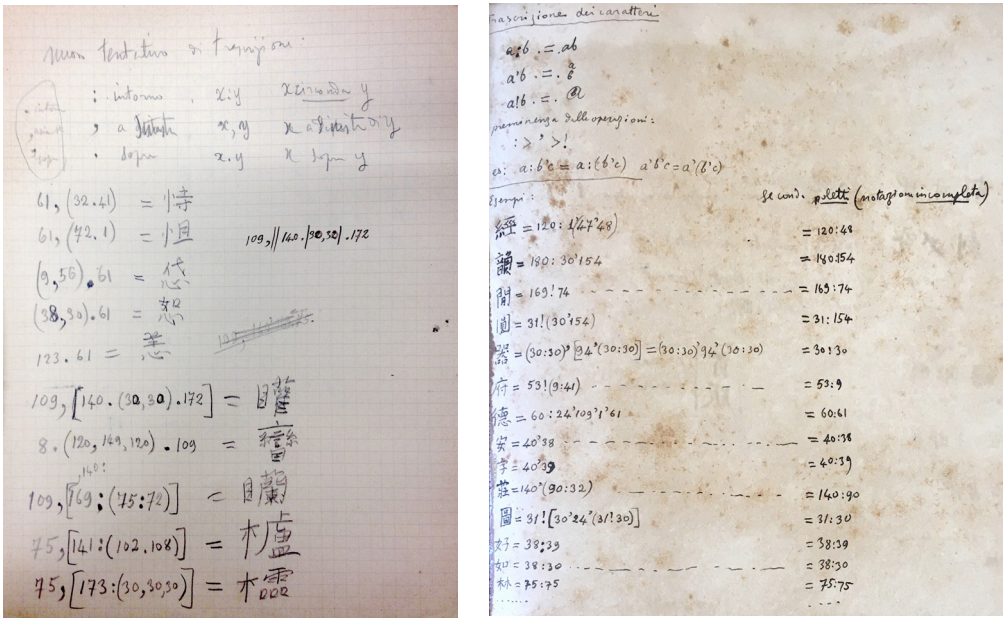


Figure 5 G. Vacca, “Nuovo tentativo di trascrizione”, Fondo G. Bertuccioli, Sapienza Università di Roma (left); G. Vacca, “Trascrizione dei caratteri” in A. Wylie, *Notes on Chinese Literature*, 1902, Fondazione Cini (right)

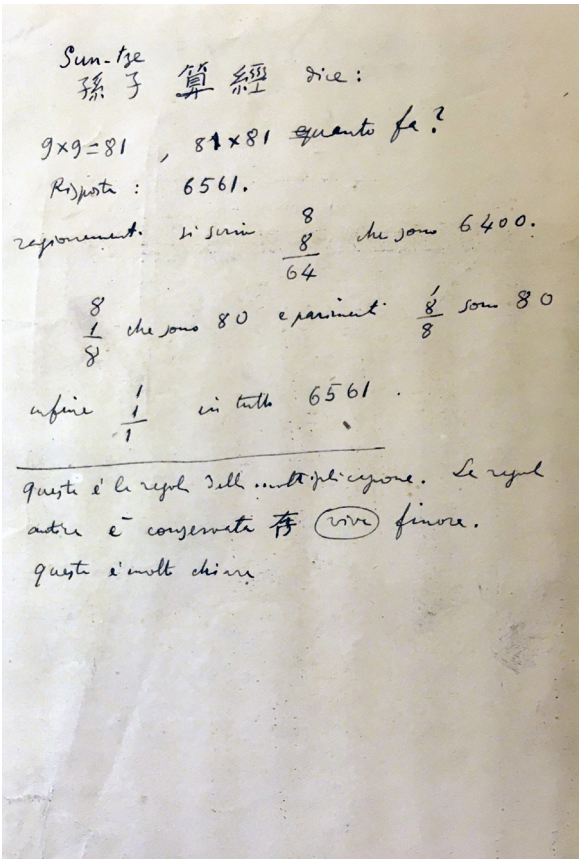
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孫子算經曰九九八十一自相乘得幾何答曰六千五百六十一術曰重置其位以上八呼下八八六十四即下六千四百於中位以上八呼下一一八如八即於中位下八十退下位一等收上位八十以上位一呼下八一八如八即於中位下八十以上位一呼下一一一如一即於中位下一上下位俱收中位即得六千五百六十一

此乘法也古法之存於今者此爲最詳依法演草繪圖於左以明古人籌算之用

古籌算考釋卷一 六 矩齋所學



Sun-tze 孫子 算經 dice:

9×9=81 , 81×81 quanto fa?

Risposta : 6561.

reponement. si serie 8 8 64 che sono 6400.

8 1 8 che sono 80 e pariment. 8 8 sono 80

infine 1 1 ci tutto 6561.

questo è la regol della multiplicazione. La regol altra è conservata 存 (vive) finora.

questo è molt chiaro

Figure 6
Lao Naixuan [桐鄉] 勞乃宣(撰), *Gu chousuan kaoshi* 古籌算考釋 (Explanations of Ancient Rod Calculations, 1897). Baoyang: Weiwen Shuju 保陽蔚文書局存板 (BAV, R.G.ORIENTE.III.1577)

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Roberto Vacca, Rome, private archives.
Sapienza Università di Roma, Biblioteca di Studi orientali, Vacca papers.
Universitätsarchiv Stuttgart, Nachlass Rudolf Mehmke.

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Perny's Imprint: Knowledge of China and Printing Chinese, Between Guizhou (1861) and Paris (1869-1872)

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Abstract Paul Perny, a missionary in China and an antagonist of the Parisian academic sinologists, was also a botanist and author of linguistic works, which he often edited himself. Archives illustrate how he constructed his knowledge of China and how his specific skills operated in circuits of different scales, sometimes overlapping and permeable, sometimes instead mutually impermeable. His printing activities demonstrate that the dissemination of knowledge (in this case of the Chinese language) required technical and material support, which were all circulating on a global scale at that time. This paper therefore portrays printing presses as 'spaces of circulation', where information and materials converge, and people of different statuses interact.

Keywords Paul Perny. China. Guizhou. Paris. MEP. Sinology. Printing.

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1 Introduction

Paul Perny (1818-1907) was a French missionary to China who left a number of important linguistic works on the Chinese language.[1] Among these works are two dictionaries, one printed in China, the other in Paris. Production of multilingual dictionaries and lexicons of the Chinese language began around the year 1600 AD, initially between Southern China and the Philippines, and then continued thanks to the activities of missionaries. However, unlike in Japan, where the printing of missionary texts dates back to the beginnings of the presence of Europeans, dictionaries on Chinese-European languages continued to be transmitted only in manuscript form up until 1813 (Bussotti, Lachaud 2023). In this context, Perny is of note as one of the few Europeans to have first used xylography, for a bilingual work printed in China (1861); then around 1870, with the spread of new typographical printing techniques, he produced publications including Chinese texts in France. His work at these two moments (1861 and 1870) corresponded to two very different contexts. The first work in 1861 was born in the 'traditional' context of practical sinology rooted in missionary networks, where the discipline was an 'accessory' to conversion that developed in missionary lands. During this period, Perny must have been in contact with locals, although in the documents I consulted the help of native intermediaries for his linguistic works is not mentioned. Then, once he returned to France in 1869, he became one of the representatives of a 'practical sinology', that had not yet been reconciled with the 'cabinet tradition' (Fabre 2018). Thanks to his status with the Missions étrangères de Paris (MEP, Paris Foreign Missions), he was, on the one hand, an 'agent' of 'traditional sinology', carried out by the missionaries in the field, and, on the other hand, his prioritisation of the Chinese language and his use of the printed word – both stabilising and normative – rather than the manuscript tradition made him firmly of his era. His concerns also extended to the publication of his works, which were aimed at an audience other than missionaries, converts, and a few scholars, at a time when a community of scholars was forming around sinology – albeit

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1 It would be beyond the scope of this study to discuss such works, which are, however, included in the bibliography. Cf. e.g. *Vocabularium latino-sinicum* (1861), *Dictionnaire français-latin-chinois de la langue mandarine parlée* (1869a) and its *Appendice* (1872b), *Proverbes chinois* (1869b), *Dialogues chinois-latin* (1872) and *Grammaire de la langue chinoise orale et écrite* (1873; 1876).

in sometimes conflicting ways. In the following pages, I will discuss these issues based on my readings (in 2022-23) of Paul Perny's letters in the Archives of the Institut de recherche France-Asie (IRFA, The French-Asia Research Institute) of the MEP,[2] on documents I collected at the Imprimerie nationale (National Printing Office, henceforth IN) before 2017,[3] as well as on my direct observation of his publications. The conclusion situates Perny's case within the places, spaces, and networks of circulation of both the abbot himself and his works, which overlap with those of the production and dissemination of sinological knowledge.

2 "When He's in a Bad Mood, He Has a Nasty Tongue and a Nasty Pen"

Paul Perny, ordained as a priest in 1843, entered the MEP in Paris in 1846 and left for China the following year. Initially based in the province of Guizhou 貴州 at Xingyi fu 興義府 (1848-62), he undertook a number of different roles, culminating in his appointment as interim superior of the provincial mission. He then settled in Guiyang 貴陽, and transferred the seminary 'to the city gates', i.e. to Lou-tsong-koan (Launay 2002, 1: 328).[4]

> He has many of the qualities required for this task: prudence, tenacity, general views. He lacks a few others that are more necessary.[5]

Perny had many interests and abilities, but also a complex personality. He did not hesitate to write to his superiors in order to achieve his aims, sometimes with comments about colleagues that were

2 Verónica Trujillo-Gonzalez and Xavier Lee of the University of Las Palmas de Gran Canaria, together with Richard Walter (ITEM) and Annie Salavert (MEP) are stated to be the authors of a forthcoming online publication of Perny's correspondence: EMAN platform, https://eman-archives.org/EMAN/items/show/51. However, so far, this electronic publication has not been completed or, if it has, it was not available to readers during my research at IRFA. Cf. also Lee, Trujillo-Gonzalez, Walter 2018.

3 At that time, I was visiting the IN in Flers-en-Escrebieux with my colleague Isabelle Landry-Deron, with whom I co-authored an article on Chinese movable type in European style (Bussotti, Landry-Deron 2020).

4 I am grateful to Eugenio Menegon for pointing out this reference. By cross-referencing other information, we are able to locate the district of Guanshanhu 觀山湖, now incorporated into the conurbation of the city of Guiyang. The problem of identifying place names exists for other mission sites (Li 2020, 274-9).

5 Cf. https://www.irfa.paris/fr/notices/notices-biographiques/perny, for a positive assessment of Perny's activities in the mission, despite the disadvantages of his temporary status (Launay 2002, 2: 529). Unless otherwise stated, translations of quotations are by the Author.

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neither eulogistic nor peacemaking, in contrast to what one might expect from a man of the Clergy. Louis Simon Faurie (1824-1871), his successor as head of the mission in Guizhou, but also – at that time – an opponent and detractor of Perny, wrote of him that "all those who know him know that when he is in a bad mood, he has a nasty tongue, and a nasty pen".[6]

2.1 Interest in Chinese Language and Culture

Perny's correspondence also reveals, very early on, educational projects as well as a remarkable interest in the Chinese language and culture. In 1853, he wrote that "a normal school would be an essential part of this new mission".[7] The following year, he pointed out the importance of developing Chinese language teaching for the Chinese: "It's their language… they need to learn [it] to a passable level".[8] A few years later, admittedly for religious reasons, he went even further in affirming the importance of Chinese culture:

> our catechists must be well versed in religious controversy. Knowledge of the books of Confucius, the history of China, the history of idols, etc., etc., is just as necessary and just as indispensable for them.[9]

6 Faurie, Letter to M. Legrégeois (28 October 1861) from the IRFA-MEP archives (hereafter abridged as AMEP) Guizhou 6A08/05-2: Pastorale 546-2, 88. Faurie refused to take over as head of the mission when the Apostolic Vicar Albran died in 1853 (Launay 2002, 1: 345-54). The simple and modest tone of Faurie's early correspondence, who at the beginning of the 1850s was "not yet sufficiently fluent in Chinese" (Perny, Letter to M. Albrand [24 June 1854] AMEP Guizhou 6A08/05-2: Pastorale 544, 380), contrasts with the combative, sometimes malicious tone of Perny. But over time, as Faurie's position evolved, his comments became more critical of Perny. In 1860, while Perny was in Europe, Faurie accepted the leadership of the mission and became Apostolic Vicar of Guizhou. For details on the biographies of the four missionaries mentioned here (Louis Faurie, Pierre-Louis Legrégeois [1801-1866], Étienne Raymond Albrand [1805-1853], François-Antoine Albrand [1804-1867]) and the others mentioned below, cf. the biographies on the website: `https://irfa.paris/missionnaire/`.

7 Perny, Letter to the Directors of the Seminary (15 November 1853) AMEP Guizhou 6A08/05-2: Pastorale 544, 321-2. Cf. Launay 2002, 1: 372.

8 Perny, Letter [to a confrere] (22 April 1854) AMEP Guizhou 6A08/05-2: Pastorale 544, 345-50. On the importance of learning Chinese, the teaching of which was limited to one afternoon a week, cf. Charbonnier 2015, 112.

9 Perny, Letter to Albrand (19 February 1860) AMEP Guizhou 6A08/05-2: Pastorale 544, 906.

More directly, he wrote to a peer:

> Do you read Confucius? Have you studied the 4 Choū [*Sishu* 四書, Four Books]? This is necessary to be [a] good Chinese. You're not bad already. […] They say you speak the local language well. You have grasped the Chinese way of doing good. But if you haven't studied Confucius, your education isn't perfect.[10]

Moreover, in 1861, after learning of Perny's intention to leave Guizhou, Faurie commented:

> He is currently working on the memoirs of his trip to France,[11] and it is always [the] same spirit. Ridiculing France, exalting China. Before his trip to France, he was anti-Chinese, but since his return he has gone to the opposite extreme, I don't know why.[12]

Perny's awareness of the 'Chinese cause' is announced in several letters, which include criticism of the aggressive policies of the English and Napoleon III, and a denunciation of the 1858 Treaty of Tianjin (allowing missionaries to settle freely in the territory of the Empire) and the Peking Convention: "Should we count on a religious peace won at the sharp edge of the sword and in the name of politics?".[13] Apart from Perny's opinion about French policy in China, his attitude can also be explained by the fear of direct repercussions: violent actions were taking place in the provinces of the Empire, with missionary lands ravaged by a succession of rebellions[14] and, particularly

10 Perny, Letter to Father Amat (10 August 1863) AMEP Guangdong 6A08/03-2: Pastorale 555, 639-47. Charles-Pierre-Anne-Jean Amat (1820-1863) died a month later.

11 Two notebooks of a *Mémoire sur mon voyage d'Europe fragmentaire*, including a few pages of *Jeunesse de M. Perny par lui-même*, are in AMEP Perny file 0532-DG 231.

12 Faurie, Letter to Albrand (15 May 1861) AMEP Guizhou 6A08/05-2: Pastorale 546-2, 885-9.

13 Perny, Letter to Thomine (24 February 1861) AMEP Guizhou 6A08/05-2: Pastorale 546-2, 831-85. He expressed a negative opinion of the French expedition also in another letter to Thomine-Desmazures (1 June 1860) AMEP Guizhou 6A08/05-2: Pastorale 544, 938. The Peking Convention of 1860 is the agreement of the unequal treaties that China was obliged to conclude, with Great Britain, France and Russia.

14 'Miao rebellion' is a general expression that refers to a much more complex reality, with rebellions involving Miao, Han, and Hui people as protagonists. Often due to economic reasons (poverty of the local populations) and bad government, these movements were linked to religious practices (millenarianism) and encouraged by the Taiping rebellion, which exposed the fragility of the Empire, forcing authorities to move militias to the areas concerned, e.g. outside Guizhou province. In this context of instability and suspicion, anti-Christian violence became more frequent, particularly against French missionaries (Jenks 1994, 139).

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in Guizhou, by anti-Christians persecution.[15] Still in 1861, Faurie accused Perny of "preparing a work to prove the superiority of China over Europe: government, industry, trade", an "absurd and dangerous" text, which he asked his Parisian colleagues to keep an eye on, so that the book would never be published.[16] Indeed, this point on Chinese superiority would later take shape in Perny's works, in the opening pages of his *Projet d'une académie européenne au sein de la Chine* from 1874,[17] and, even more so, in his last book, which he signed with his Chinese name and titled *La Chine supérieure à la France* (Tong 1905; Charbonnier 2015, 131).

2.2 Mission Projects and Activities

In addition to conversions, the creation of schools and a press, the establishment of rules for new clerics, etc., one of Perny's priorities was the creation of pharmacies, seen as places of action for 'baptisers', whose presence is confirmed in the archives.[18] Meanwhile, he developed an interest in botany and, as early as 1854, he sent plants and silkworms to the Lyon Council.[19] In 1855 Perny was made an honorary member of the Société d'acclimatation (Charbonnier 2015, 114; Launay 2002, 1: 454) and, writing in 1856, he mentions the Société

15 Launay 2002, 1: 354-63. Perny wrote about the martyrdom of Jean-Pierre Néel (1832-1862) in *La salle des martyres* (1874).

16 Faurie, Letter to Albrand (15 May 1861) AMEP Guizhou 6A08/05-2: Pastorale 546-2, 885-9.

17 The proposal to open an academy in Hankou "run by a few old missionaries well versed in the Chinese language, customs, and habits" could be seen as a solution to Perny's personal difficulties, but it was also coherent with his approach to Chinese culture.

18 *Journal de la Mission de Kouy-Tcheou, janvier 1857* AMEP Guizhou 6A08/05-2: Pastorale 544, 588-94. Four pharmacies were set up by E.R. Albrand: they may be regarded as sites of preaching, as much as the schools, and in fact the latter were less regularly run due to a lack of staff and money (Launay 2002, 1: 302-3, 306). The model was imported from Sichuan; in 1858, seven pharmacies existed in the form of a traditional shop, while Perny's plan to build a church-like pharmacy represented a novelty (Masson 2019, esp. 39).

19 Perny, Letter to Mr. Barran (10 October 1854) AMEP Guizhou 6A08/05-2: Pastorale 544, 417. For other shipments of plants in 1850 and 1853: AMEP Guizhou 6A08/05-2: Pastorale 546-1, 172 (15 July 1850) and 310 (29 January 1853). On his trip to Europe, Perny brought cocoons with him, but during the journey they hatched, while he lacked "oak leaves (*sic*.) to feed these insects, which were thus only born to die within 24 hours": AMEP file Perny 0532-DG 231 *Mémoires sur mon voyage d'Europe* notebook 2, 38. On this subject, cf. a letter to Libois (20 November [?] 1862) about the shipment of 700-800 cocoons to Paris, via Hong Kong, AMEP Guizhou 6A08/05-2: Pastorale 546-4, 1137-8. Perny's contributions to silk and self-worming are mentioned in the bulletin of the Société impériale zoologique d'acclimatation and the Société nationale d'acclimatation de France, between 1855 and 1888 (Guo 2022, 215 fn. 27).

impériale de zoologie.[20] The following year, during his trip to Europe (autumn 1857-spring 1859), he visited Lyon and brought the Lyon Faculty of Sciences materials on plants and products from Guizhou[21] as well as writing a brief description of the province and its products, mainly its plants and fruits (Perny 1859).

At that time, his relations with Stanislas Julien (1797-1873), an important member of Parisian institutional Sinology, seemed cordial, since the two had made a deal. In a letter addressed to the person chosen to act as an intermediary, Perny wrote:

> Being in Paris, I met quite often with Mr. Stanislas Julien, the famous sinologist, curator of the Chinese library in the rue Richelieu. This library has religious books, which we do not have here, and it often has these Chinese books in two copies. It was difficult for me to have them copied in Paris. So Mr Julien made me this proposal: to send him from here the Chinese works he does not have in the Imperial Library and, for his part, he will give me the religious works that they have in duplicate.[22]

Perny, who was 'hyperactive' in the 1850s, developed a project for a Mission Library: in 1854, he exposed his idea to François-Antoine Albrand (1804-1867), director of the seminary in Paris.[23] Two years later, the project was detailed as follows:

> We have resolved […] to create a Mission Library. All the books we have here will form the funds of this library, which will gradually be increased by the works of our new confreres and by the annual purchase of some good works in Europe. Knowledge quickly becomes 'rusty', especially as most of the young people who arrive at the mission do not have a strong scientific background. To maintain the necessary theological and ascetical knowledge among the missionaries of Kouý-tcheoū, I made this project […] In the future, the new missionaries of Kouý-tcheoū will not bring with them certain basic works that we already have in sufficient numbers, such as the Bible […] [but rather, they] will be informed from you about

20 Perny, Letter to Albrand (15 July 1856) AMEP Guizhou 6A08/05-2: Pastorale 544, 514. These societies and the Musée du Jardin des plantes are also presented as privileged interlocutors in another letter, to Jules Ferry, in which Perny asks to be sent to the Miao people (Mai 1884: AMEP Dossier 0532).

21 Perny, Letter to the Directors of the Seminary (11 March 1857) AMEP Guizhou 6A08/05-2: Pastorale 544, 744.

22 Perny, Letter to the Director [Albrand?] (20 October 1862) AMEP dossier Perny 0532-DG 231.

23 Perny, Letter to Albrand (20 February 1854) AMEP Guizhou 6A08/05-2: Pastorale 544, 344.

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> our catalogue and bring with them only excellent works that would not be found in the Kouý-tcheoū library.

As this passage shows, the collection was to be built up year by year, with books arriving in the luggage of new missionaries. In the same letter, however, Perny also talks about images:

> In our Orations, when we display our beautiful images at feasts, the neophytes wonder what kind of saint it is [...] This arbitrary variety of images distracts and confuses them.

So, just as the Chinese produced images of divinities and represented them in a recognisable way, whatever their size and the colours used, Perny wanted to have some portraits typified for each saint. For this, he proposed a method similar to the one he devised for the library, i.e. to notify Paris of inappropriate images, so that he would no longer receive them and would only receive 'useful' ones.[24] Sometimes the requests for books were more specific, as in 1854[25] or in 1864, when he had left Guizhou for Sichuan.[26]

2.3 The Return to France

Sichuan seems to have been a fallback option. On his return to Guizhou in January 1860 (Launay 2002, 1: 483), Perny was confronted by Faurie, who had taken over the mission and was unhappy with Perny's previous financial management. As a result, Perny quickly decided to leave Guizhou.[27] After an abortive attempt to be appointed to Guangxi,[28] he spent some time in Canton and then in Sichuan (1862-69). He returned to France in 1869, the year his dictionary

24 Perny, Letter to Albrand (15 July 1856) AMEP Guizhou 6A08/05-2: Pastorale 544, 514-16.

25 In February, Perny asked for "a Chinese dictionary (De Guignes) for the college", and French books for young teachers (by Gervé Gougnet?). A few months later, he asked for "[*Pratique de la*] *Perfection chrétienne* by R.P. [Alphonse] Rodriguez [of the Society of Jesus], *Jardin de la langue latine* [by Barthélemy Morand, 1836], manuals for winemakers and Oriental paintings, as well as *L'art de faire les vins de fruits*". Perny, Letters to Albrand, AMEP Guizhou 6A08/05-2: Pastorale 544, 329-32 (15 February 1854) and 411 (1 October 1854).

26 E.g. fifty volumes from the 'Migne library' – presumably the texts of the Fathers of the Church, published by Abbé Jacques-Paul Migne (1800-1875) – to be sent to him in Sichuan via Hankou. Letter to Libois (2 February 1864). AMEP Sichuan 6A08/07-3: Sichuan oriental 530-2, 1619-21.

27 Perny, Letter to Libois (14 April 1861) AMEP Guizhou 6A08/05-2: Pastorale 546-2, 701-2.

28 Perny, Letter to Libois (10 August 1863) AMEP Guangdong 6A08/03-2: Pastorale 555-3, 639-47.

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Dictionnaire français-latin-chinois was printed, and was imprisoned during the Commune (1870). He then published a memoir on this experience (1871): the contents of the first version, in which he revealed the inglorious conduct of the vicar-general of Paris, led to his expulsion from the MEP in 1872 and a canonical ban from the archdiocese of Paris.[29]

As a person with some twenty years of practical field experience, Perny had a difficult relationship with the academic world of Parisian sinology: a militant for the 'practical mastery' of the Chinese language (Fabre 2018, 19), he came up against "the first 'Sinisants' who occupied institutional positions in Paris conferring sinological authority on them".[30] In France, away from his order, he tried to make a name for himself and was outraged that the positions at Langues O' were occupied by Julien, who did not speak Chinese, or – even worse – by his pupil Marie Jean Léon d'Hervey de Saint-Denys (1822-1892) (Fabre 2015, 254). He is said to have run for the Collège de France against the latter, i.e. Julien's successor, in 1874.[31] He was certainly found guilty of having 'defamed' the elected candidate and his predecessor[32] – an event that has been the subject of recent studies (Fabre 2018; Guo 2022). Beyond these facts, this confrontation testifies to the existence of tension between the Parisian 'academics' and 'sinophones' like Perny, during the period of formation of the sinological epistemic community – although the conflict faded away over the following decade, as the 'sinophones' reconciled with institutional

29 According to Charbonnier (2015, 122-3), the text of *Deux mois de prison sous la Commune* was most heavily amended, meaning it is now difficult to find references for the case in question.

30 Jean-Pierre Abel-Rémusat (1788-1832) and Julius Klaproth (1783-1835), trained in classical languages, as well as their 'heir' Julien and the unlucky Guillaume Pauthier (1801-1873), all displayed an 'analysis and syntax' approach to written language (Fabre 2018, 16, 18). The latter, ostracised by Julien, maintained good relations with Perny; we find his name in an undated list of recipients of geographical maps (1864?; Perny file 0532-DG 231). Pauthier, as a member of the Société Asiatique, also intervened on Perny's behalf when the clergyman was imprisoned during the Commune (Perny 1871, 64).

31 According to an account of an AIBL meeting (Charbonnier 2015, 124) and a letter from 16 February 1873 to the Director of the Collège de France (Fabre 2015, 258 fn. 202). However, Lina Guo (2022) follows the text written by Perny (see the following notes) and does not confirm this candidacy. Moreover, given that the Collège proceeded by cooptation, this possibility may well rather be the case.

32 Under the pseudonym of Leon Bertin, Perny published the pamphlet *Le Charlatanisme littéraire dévoilé* in 1874. Recognised as the author of the pamphlet, he was condemned by the Versailles magistrates' court (30 September 1874) first, followed by the Paris court in December 1874 and again on 29 January 1875 (Cordier 1894, 423). The pamphlet was partly dedicated to the Annamite and Abel des Michels (1833-1910). Next came the observations on sinologists, notably on Julien's immodesty and his tendency to regard sinology as his 'property', without really training disciples; then his pupil Saint-Denys is described as incompetent, having a Chinese pawn at home (François Li Chao-Pee, who could be spotted in the rue du Bac) to help with the work (Bertin 1874, 17).

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sinologists by adopting some of their methods (Fabre 2015, 255-7). Regardless, Perny's candidacy was not taken into account in 1893 either (Cordier 1895, 121-2),[33] when Éduard Chavannes (1865-1918), the first academic to also carry out fieldwork, was elected. In his pamphlet against d'Hervey de Saint-Denys, we can read Perny's views on the Chinese language: that there is no 'learned' language, but a spoken language and a written language, and that the latter includes varieties of style (Bertin 1874, 14).[34] However, Perny did not support a didactic approach based entirely on practice and developed linguistic tools, such as dictionaries and grammar. In 1861, Faurie asserted that if the new arrivals to the mission wanted to learn Chinese, they should have left their studios and "put aside books, dictionaries, quills, and papers" in order to practice the oral language. In Guizhou, this would have taken the form of learning the local pronunciation, which was different from official Chinese – the need for which was, on the contrary, advocated in Perny's writings. Faurie's correspondence also mentions 'Latin interpreters', i.e. Chinese polyglots:[35] these 'mediators' are rarely mentioned and, when they are, remain anonymous in all the writings of Perny that I have been able to check. Despite his professed Sinophilia, local people are not always named in Perny's correspondence[36] and their help with linguistic work is never explicitly mentioned. This does not mean that local intermediaries did not exist, but rather, it shows a certain 'impermeability' between networks. Although Perny's missionary 'microcosm' was southern China, surrounded by the 'barbarians' who were the focus of his proselytising activities, in particular the 'Miaôtsè' (*Miaozu* 苗族?), Perny as both a teacher and an author had his 'roots' in France. He often wrote to the director of the Paris Seminary, sent botanical material to Paris and Lyon, and had books in French bought and sent to him.

33 However, Perny's name does not appear among the 1893 candidates in the file on the Chairs of the Collège de France, Archives nationales: F/17/13556-F/17/13557. On the contrary, there is mention of Amieu (?), but not by Cordier.

34 Different conceptions of the Chinese language persisted in nineteenth-century Paris: spoken and written, learned and vulgar, etc. (Fabre 2017).

35 Faurie, Letter to Albrand (15 May 1861) AMEP Guizhou 6A08/05-2: Pastorale 546-2, 885-9. This paragraph does not refer to Perny.

36 Perny wrote about his "former Catechist, Simon Hià Yŭ cheñ", tasked with delivering letters and retrieving a crate of books in a Letter to Libois (28 October 1861) AMEP Guizhou 6A08/05-2: Pastorale 546-2, 771.

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3 Different 'Impressions'

As already mentioned above, Perny was the author of two lexicographic works, which we cannot describe here in detail. Let us just mention that the *Vocabularium latino-sinicum, ad usum studiosae juventutis sinicae, auctore Paulo Perny. Anno post partum Virginis 1861* (Chinese Latin vocabulary, for young Chinese, by the author Paul Perny, in the year 1861 AD), was reprinted in 1888 (Cordier 1904-07, 1603-9). One copy of each edition is in the MEP library, and they are similar in format layout, i.e. with Chinese without pronunciation, which means that the dictionary was addressed to people who knew Chinese or who could decipher the Latin text and the translation. The second *Dictionnaire français-latin-chinois de la langue mandarine parlée* (1869a), presented as a work for general use, was instead an encyclopedic dictionary with a great variety of content, brought together in an appendix published in 1872 (1872b). The most important part of this appendix is on natural history: it lists thousands of entries associated with a double index without characters in which Chinese is transcribed according to Mandarin pronunciation (different to that used in the regions where Perny stayed).

One feature that the two publications have in common is that they were intended to be printed, even though in completely different forms, as the first was a traditional Chinese xylograph. In a short article on missionary printing in Guizhou, Cordier (1905) briefly mentioned the centres where Western printing was used for Chinese. These centres were Macao, with the presses of the East India Company, where from 1815 the volumes of Morrison's dictionary were printed; Shanghai, where many other presses were in operation in addition to the American Presbyterian Mission Press (Reed 2004; Drège 1978); and the missions of Shanghai, Beijing, Hejian 河間 (Hebei), etc.[37] In our case, in addition to the local dimension of the Guizhou mission and the 'national' Chinese dimension,[38] it is also important to consider the 'global' but also specifically local dimension of Paris. Indeed, the city of Paris had played an important role in the development of Western typography for the Chinese language since the eighteenth century (Bussotti, Landry-Deron 2020). Printing activities in general remained intense, with an increase in the number of private printing houses alongside the IN, using types produced locally – through punches done by the decomposition of characters, thanks

37 Macao and Hong Kong, Shanghai, Ningbo, Xiamen, and Fuzhou are mentioned by Zhang and Han (2006, 444-7).

38 For China, we should rather speak of the imperial scale of the territory of the Empire, but the field of Book History in Europe is accustomed to talking about 'national' scale; cf. Bussotti 2015 unpublished.

to the work of Pauthier and Marcellin Legrand (Legrand 1859; Bussotti, 2001) – or imported. After decades when the major concern was the unsuitability of type sizes (the types of Chinese characters produced in Europe were too big in size), the 'market' seemed to be highly mobile and in search of solutions to reduce prices and times.[39]

3.1 Guizhou and Sino-European Impressions

In his brief article on this topic, Cordier (1905) only provided three titles: Perny's *Vocabularium*, an *Elementa Grammaticae Latinae* (1867) by Faurie and an *Alphabetum Lingua Latina typis missionis Kouiy-Tcheou* (1856); however, I have been unable to locate original copies of the last two titles. Nevertheless, there is evidence of other publications in missionaries' correspondence. In 1857 Perny printed the *Ki jen che pien* (*Ji ren shi pian* 畸人十篇, i.e. Ten dialogues on religious or moral subjects) by Matteo Ricci and the *Pa je me xiang* (*Ba ri mo xiang* 八日默想, i.e. Eight-Day Retreat, a book that was based on the teachings of Saint Ignatius),[40] for 'virgins', catechists and Christians.

> After the printing of these two works, Perny remarked, our presses will immediately publish two more, which we owe to the pen of a confrere in Kouy-tcheou. [T]he first is a treatise on the Holy Angels […] written in very simple language, and almost intelligible when read aloud. The second work is a treatise on the festivals of the year according to the order and division of the Chinese calendar, which could be used especially for Sunday reading […] Finally, he envisioned the publication of 'an apology of Christianity' in the vein of Tertullian. (Launay 2002, 1: 453-4)

At this time, Faurie and Perny were not yet in conflict, as printing and publishing activities were still combined. Xylography was used to produce paper sheets with a printed base (often in red) – for example, mission registers –[41] and alternated with elementary typography, which was used to publish the *Journal de la mission*.[42] In 1858, a no-

39 Fabre (2015, 80-3) gives an overview of the proliferation of these activities, despite some factual errors: for example, Perny did not donate his types to the IN as he claims, but rather quite the contrary.

40 *Journal de la mission* of June 1857, AMEP Guizhou 6A08/05-2: Pastorale 544, 659-60 "Publications d'ouvrages nouveaux".

41 Perny, Registre de fidèles (1857) AMEP Guizhou 6A08/05-2: Pastorale 544, 536-7.

42 Journal (September 1856-September 1857; the fascicule for February is missing) AMEP Guizhou 6A08/05-2: Pastorale 544, 548-715. On the printing of the journal at the mission, cf. Perny, Letter to Thomine-Desmazures (11 August 1857) AMEP Guizhou 6A08/05-2: Pastorale 544, 544.

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tice on the needs of the Mission of Kouy-Tcheu was printed in France to raise funds: these funds were to be partly used to

> help set up the religious printing works of the Mission. The Chinese print by woodblocks. The process is simple and inexpensive. An ordinary volume costs 80 to 100 francs to engrave. With woodblocks, an incalculable number of copies can be printed.[43]

However, Faurie, who in 1856 was in charge of the press, wrote to Albrand:

> During the first few years, we have tried to create a small 'xylographic typography' [wooden type?] for ourselves, and we are beginning to obtain fairly satisfactory results, when Providence, through the enterprise of Mgr de Sinite [Desflèches?], has provided us with a few kilos of movable type of which you have a sample at the head of this letter. However, as these typefaces are in very small quantities, and cannot be used to compose even 4 pages in 12-point font, this acquisition in no way alters the request for typefaces that we made to you in our previous letters.[44]

Again, a few months later:

> The printing type order will be completed when you receive this letter. Please accept my thanks in advance. The small quantity of movable type which arrived so unexpectedly is doing us a great service for the college and the mission. And those which you will send to us, if it has been possible to sort them as we wish, will be of even greater service to us […] I shall send you by mail a copy of our complete works. We have done some marvellous indigenous typography. We will soon be competing with Firmin-Didot.[45]

But things did not go so well. In October 1861, Albrand in Paris was sent a very miscellaneous list of items required for the mission: books and subscriptions to church periodicals, two clocks, writing paper, and 10 reams of paper, preferably in rolls (the equivalent of about 5000 sheets), vinegar essence, purple cloth for cassocks and, finally,

43 Perny, *Notice sur les besoins généraux de la mission de Kouy-Tcheou (Chine)* (May 1858) AMEP Guizhou 6A08/05-2: Pastorale 549D, 21-4 (page 3: VI of the booklet).

44 Faurie, Letter to Albrand (17 August 1856) AMEP Guizhou 6A08/05-2: Pastorale 544, 528-9.

45 Faurie, Letter to Albrand (25 February 1857) AMEP Guizhou 6A08/05-2: Pastorale 544, 539.

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> a printing press. We have a good supply of new types, with which we would like to print our classics. We can't do it without a press, because the type would degrade too quickly, as happened to us once. As I know neither the price nor the weight of this item, I only ask on condition [...] that it is not too great an expense, [and] that it can be transported here.[46]

We therefore conclude that attempts were made to use the types – probably those that arrived from Sichuan or those requested by Faurie in the letter quoted – but these attempts were unsuccessful and even damaged the types in question. It seems that no press arrived following this request, but further research would be necessary to confirm this point. This is perhaps why the *Vocabularium* was a xylographic imprint.

3.2 Perny's Sino-European Printed Works in France: Texts and Typefaces

The *Dictionnaire Français-Latin-Chinois* was published in 1869 by Didot, but as early as 1864 Perny had begun to work towards its publication, in the hope that this would be done at the highest level. In a letter to his director, he wrote:

> You have no doubt become acquainted with the [honorable?] naval captain [?], Mr. De Maisonneuve. He is a friend of Fr. Libois. This excellent Captain is very devoted to the missi(ons). I turned to him to get the emp. Nap. III to print a French, Latin, and Chinese dictionary with characters, etc. You know that letters sometimes get lost. When you have the opportunity to see Mr. de Maisonneuve, would you ask him confidentially how the matter is progressing? He is seeing Mr. Drouyn de Lhuys; it is through him that we must go to the Emperor.[47]

The *Dictionnaire* was not an imperial edition, despite its dedication to Napoleon III, and the project even changed publishers between the publication of the dictionary (1869) proper, and the volumes of the appendix (1872) and the grammar (1873-76)[48] – as, in the mean-

46 Anonyme, Letter to Albrand (27 October 1861) AMEP Guizhou 6A08/05-2: Pastorale 546-2, 871.

47 Perny, Letter to the director [Albrand?] (15 April 1864), file Perny 0532-DG 231. Édouard Drouyn de Lhuys (1805-1881) was a French diplomat and politician. Text also mentions Napoléon Libois (1805-1872).

48 The first was published by Didot, the others by Maisonneuve et Cie, which was in the process of establishing itself as an Orientalist publishing house, with Ernest Leroux

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time, the days of the Commune and Perny's removal from the MEP were taking place. Despite these changes, the graphics and composition of the frontispiece of the volumes maintained a formal unity. Moreover, the same graphic design was also used in other of Perny's publications, such as the *Vestiges des principaux dogmes chrétiens tirés des anciens livres chinois avec reproduction des textes chinois* (1878),[49] giving his productions a distinctive visual identity. This last project was probably carried out over many years, as correspondence reveals exchanges between China and France. The preparatory work for publishing the text was complex, involving copyists of Latin and Chinese:

> Mgr Faurie wrote asking us to be so kind as to complete the copying of a manuscript by (M.) Prémare [Joseph-Henri Marie de Prémare, 1666-1736]. The illness I suffered in Paris did not give me time to finish it. I plan to annotate this manuscript, according to the Bull of Benedict XIV, on the subject of rites, and to publish it, if the occasion allows. You will easily find copyists for Latin, but [not for] Chinese! Mgr. D. told me that he had given you the necessary instructions on this subject. It goes without saying that we will pay the expenses. There were five or six Chinese in Paris in my time. I don't know if there are as many now. I would be very grateful if you could help us to complete this copy. You will at last be doing a valuable act for Chinese *belles lettres*. We are already making good use of your services. However, I promise not to abuse your kindness. Please send the copy to Libois so that I can receive it wherever I am.

This letter should be addressed to Albrand, dated 4 (October?) 1861; in another letter from the following year, still addressed to the 'director', Perny wrote: "I don't know if the manuscript you had kindly copied has arrived, I haven't seen anything yet".[50]

The Preface by Bonnetty to Prémare's work, published in 1878 (Prémare 1878, I-XIV), as well as Perny's prefatory remarks to the dictionary (1869) and Pauthier's presentation of it in the *Journal Asiatique* (1871), provide information on its printing and the phases of preparation required. Although the need to synthesise forced me to

having just moved in 1871 and thus beginning his career. By this time, Didot had already lost its foundry (Jammes 1998, 61) and the Parisian publishing world was undergoing constant development and transformation (Barbier 2007, 247-8, 290-1).

49 Besides this work, Perny collaborated with thinker and writer Augustin Bonnetty (1798-1879) on the *Annales de philosophie chrétienne* and founded the *Nouvelles annales* after his death; because of the latter publication, he ended up in conflict with the Bonnetty family (Charbonnier 2015, 125-31).

50 Both letters are in Perny's file, AMEP Dossier 0532.

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shorten my research on Perny's early stay in France and his second return from China (which turned out to be definitive), I have nevertheless found some interesting archives at the IN. The materials I found there offer additional insights into what is already more well-known information and enable us to understand the different stages in the production of Chinese types in Paris. Thus, we can grasp another facet of the character of Perny – both abbot and sinologist, naturalist and typographer.

First of all, it seems that, at least for the dictionary, publication costs were considerable, "far exceeding the meagre resources of a simple missionary" (Perny 1869a, 3). At the end of his preface, Perny thanks the Presidents and Members of the Central Councils for the Propagation of the Faith, for

> their generous and benevolent assistance […] Religion and science will be indebted to them for this service. We would also like to thank our printer, who has shown the greatest zeal in making this Dictionary a model of typographical elegance and accuracy. (8)

This trilingual edition was possible because, as Pauthier (1871, 354) explained, Perny

> came to France to have his book printed, after having obtained from the American Presbyterian Mission Press in China[51] a set of Chinese characters called diamond characters, which he had cast again in Paris, and which he composed himself, supplying them successively to the printer with his copy.[52]

The explanation of the affair itself was more extensive in the Preface to the *Vestiges* (1878?):

> The IN did have a collection of typefaces, wooden types that Mr. St A. Julien had sent for. Julien had brought them in. But they were shapeless. There were also those engraved by Mr. Legrand under the direction of Mr. Pauthier, [which were] more graceful, more exact; but they were incomplete and besides these two typefaces, [they] were larger than those of our ordinary printing typefaces.[53] So we needed a typeface that would work with the usual [Western]

51 Also mentioned by Trujillo-Gonzalez, Walter 2018.

52 "as I did myself to print the first issue of my *Dictionnaire étymologique chinois-annamite-latin-français*", Pauthier concluded, explaining that the first issue of this dictionary, comprising the first ten radicals, was the only one published.

53 The text includes a note referring to the *Annales de philosophie* which provided specimens of these characters in their t. XVI, 227 (fourth series) for those of Julien, and t. I, 126 (fifth series) for those of Pauthier.

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> characters. Moreover, the costs of this publication, made by the official printing house, exceeded our resources. Providence provided. The Anglican missionaries had had a very fine typeface engraved in China for the printing of their books. But it had to be brought to France. The IN, encumbered with its shapeless typefaces, had no intention of obtaining them. A simple missionary brought about this reform. With astonishing constancy, Abbé Perny, of the Congrégation des Missions-Étrangères, and a missionary in China for 25 years, came to Europe with the project of filling a gap in the Chinese missions, by providing the missionaries with the books they needed to carry out their apostolate completely and more easily. On his own initiative, with infinite trouble, and in spite of countless obstacles, he brought from China a set of matrices, and it was with the help of characters cast in France on these molds that he became not only the author, but also the material composer of the volumes we will quote below. (Prémare 1878, IV-V)

Indeed, Perny had already written of his dictionary that

> I had above all to resign myself to becoming, at my age, the typographer of the whole part of my work in Chinese and to devoting two whole years to this material task. (1869, 3)

From his account of the personal misadventures he experienced under the Commune, we are given to understand that the work was carried out at the press of Adolphe Laîné, 19 rue des Saints-Pères,[54] who was also the publisher of *Deux mois de prison* (1871). Here, the worker who helped with Chinese was named Michel: Perny forged such a close relationship with Michel that the latter tried to help the abbot when he was imprisoned during the Commune.[55] However, as in 1869 Perny also published his work on Chinese proverbs (Perny 1869b) with the same publishers and printers, we do not know

54 In addition to the names Didot and Laîné, the cover of the dictionary mentions Adolphe Labitte, 4 rue de Lille, a descendant of a family of booksellers and auction catalogue experts (Fontaine 2014).

55 "A worker at the press [?] of Mr. Ad. Laîné, 19, rue des Saints-Pères, had learned of my arrest. Without wasting a minute, this generous worker planned to secure my release. He visited all the offices of the prefecture and pleaded on my behalf but was refused permission to see me. He wrote to Raoul Rigault, the delegate for general security. His touchingly simple letter tells me what he is doing and his hope that I will soon be released. I would like to give you the name of this generous worker. Mr. Michel did most of my sinological work. I shall remain sincerely grateful to him. Mr. Michel is, moreover, a serious and honest man. Mr. Laîné himself made the most active efforts to Madame Jules Andrieux, whose husband was a member of the Commune, and who had great obligations to him, but to no avail". (Perny 1871, 28-9)

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whether Michel worked on this last small book, on the large dictionary, or both.[56] Moreover, at that time, Perny was already preparing the large characters that would be used for *Le livre des Cent familles* included in the 1872 appendix, so in the Preface to the Dictionary (1869, 7-8), he stated that "we have chosen and engraved, for these names, a particular form of Chinese characters". About ten years later, for the *Vestiges*, it was instead a question of "engraving, at our own expense, the ancient characters so numerous in this work" (Bonnetty's preface in Prémare 1878, V).

3.3 Documents at the IN

The IN has many unclassified archives of its Oriental typefaces. Among them, a quite recent report on IN Chinese characters (1913?) lists four complete series of IN characters, sizes 10, 16, 24, and 40:

> of the four series, the most widely used is the 10-point series.[57] Its engraving is excellent and produces very sharp impressions.[58]

That this last series of types was linked to the typefaces introduced to Europe by Perny cannot be excluded.

In other documents, we read that in 1903, Perny had an intermediary write to the IN proposing the purchase of around 8000 well-catalogued matrices: this figure gives quite a precise idea of the number of different typefaces that were considered sufficient for publication. The reason for this proposal was explained as follows:

> Around 1876-1877 Father Perny […], at the express request [of the IN], allowed a font [of the typefaces] that he had needed for printing his works. I even believe that the IN took advantage of this opportunity to have matrices made from those with which it had been entrusted. In any case, since that time, no one has ever asked Father Perny for any Chinese characters.[59]

Thinking that, in the long run, he had been injured by this operation, Perny hoped for 'compensation' for the losses he suffered because of

56 In the brief preface to *Zhonghuo suyu* 中國俗語 *Proverbes chinois*, the author explained that "it was by conversing with the Chinese that we collected most of the Proverbs in this booklet; we extracted the others from the work 增廣俗語 (*Zeng guang suyu* ?)".

57 These typefaces were reproduced in an IN catalogue, *Catalogue des signes chinois: corps 10* (1889).

58 Note for the office of the Under-Secretary of State for Finance (1913?), unclassified archives of the IN, collection of oriental types.

59 Letter to the Director of the IN, undeciphered signature, 27 January 1903.

the low number of requests for use (and rental) of his typefaces from French users, who could instead have turned to IN. Hence, the IN should purchase the original typefaces to compensate. But the IN's response was negative: they explained that between 1873 and 1883 they had been authorised to cast typefaces from matrices at Perny's request. Perny had supplied 7725 matrices for this purpose and the matrices with the cast typefaces were returned to him: the typefaces, 9.5-point size, did not correspond to the IN standard.

According to this response, there should have been a document[60] explaining that the IN had obtained permission to take impressions of the 7725 signs to produce electrolytic matrices, which were completed in 1883: as these matrices were still in good condition for use, the IN could not accept Perny's proposal.

IN sources from 1890 stated that in exchange for Perny's provision of 7712 matrices (dated 3 March 1873), he received 1200 kg of cast iron (fused type); and that Perny's typefaces (the "diamond typefaces" mentioned by Pauthier) were the same ones reproduced in the *Price List and Specimen Book of Types, Comprising Chinese, Japanese, Manchu, English, and Music* (Shanghai, 1872) of the APMP, American Presbyterian Mission Press (Meihua shuguan 美華書館; cf. Barnett 1971; Drège 1992). The APMP was the press where William Gamble, who applied electrotype to print Chinese texts, worked, and where he established that a set of 8000 characters was sufficient for a newspaper, while less was needed for religious publications, around 6000 in a standard font (McIntosh 1895, 21-3). Finally, in 1879, the equivalence of typefaces was verified on 'Chinese groups' sent from Shanghai by Camille Imbault-Huart (1857-1897).[61]

Some information in the IN archives is contradictory: contrary to what the preceding document attests, elsewhere we read that

> M. l'abbé de Perny did not give any matrices; it was with the help of lead types, coming from the cast iron made for the account of [–] Abbé Perny, that IN took electroplated impressions. See the 1878 specimen. A catalogue of these signs was published in 1889 in 8°.[62]

In addition to the complete specimen of these typefaces, the IN also holds an annotated version of the specimen, with information on

60 Still among these documents, we find a small note saying that this file has not been found.

61 "Liste des types étrangers de l'Imprimerie nationale" (1890, 8); the IN archives contain the proofs of this publication, and specimens of typefaces sent by Imbault-Huart to use for the *Journal Asiatique*.

62 This could be the *Catalogue des signes chinois: corps 10* (1889). Handwritten note on the folder containing a dossier entitled "Chinois Corps 10 (Chinese Size 10)", unclassified archives of IN on oriental typefaces.

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the storage of the types – which were divided into groups according to their graphic components, and with each typeface being assigned a number. However, these documents require verification for the actual presence of these typefaces at the IN, made from those of Paul Perny, and clarification on the related technical issues.[63] But it would be especially interesting to understand how they were actually used for contemporary and later works printed by the IN, or by publishers who borrowed the IN types, and to confirm whether or not Perny's purchase of the APMP types had any concrete effects on the discipline of sinology, given the importance of printing in the dissemination of knowledge. Last but not least, as Zhang Xiumin 张秀民 and Han Qi 韩琦 (2006, 444-52) explained in their history of printing in China, the French decomposed typefaces of Pauthier and Legrand provided models for the types used by the APMP between 1844 and 1860. As such, a few years later, the story came full circle with the characters being reintroduced to Europe from China by Perny and his contemporaries.

4 Epilogue

Paul Perny died in 1907, and the following year several books from his library were sold during the auction of the collection of Gustave Delondre, a specialist in Oriental languages and former attaché to the Consulate and librarian of the Société d'Ethnographie (*Bibliothèque* 1908). Some features of the sale catalogue seemed to emanate directly from Perny's personal trajectory, as they reflect someone who had been away from China for forty years, who was of modest means and with a small personal library, where he kept a few copies of his own works and a set of Christian books in Chinese, including an incomplete dictionary by Gonçalvez.[64] The list of Chinese books is more surprising. We reproduce it below, respecting the contents and description of the works, but having updated the transcription of titles and names, with the addition of Chinese:

> 207. *Da Qing lüli tongzuan jiquan* 大清律例統纂集全 (Complete and Assembled Compendium of the Code of the Great Qing, 1824).

63 Might the typefaces have moved from a 9.5-point size, unsuited to IN standards, to a 10-point size through the production of matrices via galvanoplasty?

64 The items included works by Perny, including linguistic works (lots 198-206); a number of Christian works in Chinese (lots 222-224), as well as "a large collection of handwritten Christian works in Chinese, around twenty volumes, with a Chinese dictionary (incomplete) by Gonçalvez, in sheets"; and several volumes relating to the Christian religion (*Bibliothèque* 1908, 27).

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208. *Bencao gangmu* 本草綱目 (Chinese Herbarium). By Li Shizhen 李時珍, Ming dynasty.
209. *Qinding shoushi tongkao* 欽定授時通考 (Complete Treatise on Agricultural Arts and Sciences, Imperial Edition of 1742). Written by imperial order. With numerous figures.
210 *Qiqi tushuo* 奇器圖說 (Illustrated Description of the Curious Machines of the West). One volume in-4, illustrated with numerous figures. Interesting work on arts and crafts.
211. *Shan hai jing guangzhu* 山海經廣注 (Classic of Mountains and Seas). With commentaries. 4 *ben*, in-4, curious figures. Poor condition.
212. An abridged edition of the same work. 2 *ben*, in-12, one with figures.
213. *Voyage d'un Chinois en Occident, à travers toute l'Europe*. 1 *ben*.
214. *Qinding [xingming] wannian shu* 欽定星命萬年書 (Chronological Book Used to Establish the Annual Calendar). 3 *ben*, in-8.
215. *Lidai di wang nianbiao* 歷代帝王年表 (Chronological Abridgment of the Kings and Emperors of China). By Qi Zhaonan 齊召南 (1703-1768). 4 *ben*, in-8. Worm pitting. This work begins with Fuxi 伏羲 and ends in 1644. It is a convenient manual to consult.
216. *Kangxi zidian* 康熙字典 (The Kangxi Dictionary). 30 *ben*, in-8.
217. *Wufang yuanyin* 五方元音 (Tonic Dictionary of the Chinese Language). 2 parts in 1 *ben*, in-8.
218. *Zihui* 字彙 (Chinese Dctionary). 13 *ben*, in-12.
219. *Other dictionary.* 3 *ben*, in-12 in poor condition.
220. *Zheng yin cuo yao* 正音撮要 (Manual for the Study of the Mandarin Language, 1850). For the use of the Chinese, including vocabularies, collections of sentences, dialogues, pronunciation tables, etc. 4 *ben*, in-12.
221. [*Ts'eu hou fa tch'eng*]. Model letters from members of the Hanlin Academy (翰林院). 1817 edition, 8 *ben*, in-12.[65]

Some of these books were of evident utility for Perny, such as the Chinese dictionaries and the Chronology, which was probably used for his appendix to the dictionary (1872), as well as the Code, on which Perny had a translation project mentioned in his letters. As for others, their presence can be explained by considering them as a reflection of the practices of someone who had spent time in China calculating calendars and practicing calligraphy. But we should also note a *Voyage d'un Chinois en Occident* – perhaps the *Chengcha Biji* 乘槎

65 *Bibliothèque* 1908, 25-6. The term *ben* 本 is probably the equivalent of *ce* 册 and it indicates the number of fascicles. The last title in brackets is the original transcription in the French text, as it has not been identified.

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筆記 (Notes taken on a boat) of Binchun 斌椿 (1803-?), cf. Day 2018 – and two copies of the illustrated *Shan hai jing* 山海經 (Classic of Mountains and Seas) which, with its myths and unlikely creatures, featured everything a missionary had to dread the most. The technical and scientific books are numerous, which is logical for someone who was active in these learned circles and who compiled the natural history section found in the appendix to the dictionary (1872). But sometimes the gaps are equally eloquent: there were no 'classical' Chinese titles in his collection. Did he not bring them back from China? Could he have sold them earlier? Could they have been kept or sold in some other way? On the one hand, this lack is quite astonishing for someone who once wrote to his colleague: "Do you read Confucius? Have you studied the 4 Choū [*Sishu* 四書, Four Books]?" On the other, however, it is less so if we keep in mind the 'European' networks to which Perny was already addressing himself in his letters analysed above.

5 Concluding Remarks

Through some of his attitudes, including that of always putting himself forward as the protagonist of all adventures (i.e. in the creation of schools, the library, the mission's printing works, the compilation and printing of the multilingual dictionaries, his imprisonment under the commune, his confrontations with some of his colleagues and with the most influential of his fellow sinologists), Perny appears to be the main 'actor' in his own story and therefore – as far as the themes touched on in this contribution are concerned – he was regarded as the author of the dictionaries, the tireless supplier of plants and silkworms to Europeans in search of information and technical solutions, and the paladin of practical sinology against the untouchable academic barons. However, historians now recognise the complexity of the logic of knowledge production (Romano, 2014, § 18), which forces us to question the works he left behind in such terms as well. The linguistic books bear Perny's name, but it is likely that local people played a role in them, particularly in the case of the first compilation, the *Vocabolarium*, which was produced entirely in Guizhou. Furthermore, this *Vocabolarium* was printed by the Zhongjiazi 仲家子 native tribe who, according to the missionaries themselves, knew no Chinese. These 'barbarians' acted as intermediaries between the missionaries and China. Moreover, in 1884, Perny sent a memorial to Jules Ferry (1832-1893), then President of the Council, because he wanted to launch an inquiry into the Miaôtsè (Miao), whose 'tribes' resided between Tonkin and China as well as in the provinces of Yunnan, Guangxi, Guizhou, and Sichuan. About them, he wrote: "I already possess numerous documents collected on the spot during my

thirty-year stay in China".[66] There is no reason to believe that local people – whether Han Chinese or not – were never involved in the long and tedious process carried out by Perny or his colleagues of compiling dictionaries, copying them in preparation for engraving woodblocks, and then printing and binding the books, despite the reigning silence about them. Nevertheless, this practice was also shared by other compilers of dictionaries who preceded Perny, as sometimes the characters used, traced by hands far too skilful to be European, betray the existence of these nameless collaborators. At the same time, however, it must be said that missionaries did not always sign copies of the dictionaries they transcribed or compiled themselves, although sometimes their identity and authority as authors could be established, while the indigenous go-betweens, despite their importance (Shaffer et al. 2009), remained condemned to anonymity.

Perny operated in multiple circuits, which intersected without necessarily communicating. Firstly, as we have said, there was a continuous exchange with Paris and France (an exchange that, we feel, is amplified by the fact that written correspondence has survived, while oral exchanges have not): he was in contact with the director of the seminar, but also with learned societies in Paris and Lyon. This exchange at a 'global' scale, in a colonial world, was echoed in Perny's correspondence through his (very) critical reflections on the actions of France, and to a lesser extent England, in China, during the dramatic years of the sack of the Summer Palace and the unequal treaties. Obviously, Perny was also active in the mission and church circuit, a subject we have not discussed here. But his trip to Europe included a stop in Rome, where he claimed to be the translator of a papal bull, and so on. At the same time, exchanges between missionaries were taking place at the regional level (province to province), but also inter-regionally, between the countries of East Asia: for instance, in Annam, i.e. in the mission in Vietnam, where he sold some copies of his *Vocabularium*.[67] Finally, on a smaller scale, there were ongoing exchanges on the spot, between missionaries – as in the case of Perny's conflicts with Father Faurie – but also between missionaries and locals, even if we have not mentioned this point in this contribution. Indeed, Perny interacted with converts, Mandarins, and the Chinese authorities, with whom he constantly had to seek mediation, but also with rebels, etc.

An important element of his biography to be considered from his time in Guizhou, and which also involved his participation in multiple

66 AMEP file Perny 0532-DG 231. For this mission, which did not take place, he asked for 6000 francs.

67 Perny, Letter to Libois (2 February 1864) AMEP, Sichuan 6A08/07-3: Sichuan oriental 530-2, 1619-24.

and asymmetrical circuits, is that he was a botanist. As well as linguistic skills, knowledge of certain areas of the natural sciences seemed to be the rule for missionaries, who were invited to collect materials useful for natural history – but also for land use – in those places where they went on mission, particularly in China, as many studies have already documented.[68] In addition, French missionaries lived for long periods *in situ* and formed networks in territories that were often remote and rural: these were ideal spaces for plant collection, which was rich and repeated over time, without the need for long journeys (Fan 2004, 73, 80, 131). I will not dwell on this subject, as I have no specialist training in the field, but let us at least read what Perny wrote much later, in his letter to Jules Ferry, to justify his request for a mission to the Miao people:

> The results of this scientific mission would be greatly appreciated by the learned societies of France and, I dare say, would do the greatest honour, Minister, to the cabinet of which you are the president. But apart from this main objective, my mission would provide services to the Learned Societies of our country which deserve to be taken into account and to weigh in the balance of considerations to be put forward in favour of the so-called Miaôtsè mission. The Société d'Acclimatation would receive valuable shipments of plants and flowers. Our medicine would be enriched by the knowledge of a host of medicinal plants unknown here. I won't forget the Museum of the Jardin des Plantes, which already has several million plants sent by me. (MEP Perny file 0532-DG 231)

Perny therefore proposed to return to China to take up a position and act as a mediator between holders of local botanical knowledge (he also stated in his appendix to the dictionary that some plants were named according to their customary name in Chinese) and the Parisian institutions and learned societies, as the Société d'Acclimatation and the Museum of the Jardin des Plantes. These institutions all played a role comparable to that of the 'library', 'collection', or 'laboratory' theorised by Latour (1996) and Callon, Raw and Rip (1984).

But Perny also used his skills and offered services that would "weigh in the balance of considerations" for the politician. Perny went from gathering samples to botanical classification, offering useful knowledge for a colonial power because of the practical repercussions that plants from China could have on medicine, for example. His plans for a mission to the Miao people failed, but it was as a scientist, and not as a man of letters or the church, that Perny attempted

68 Cf. Fournier 1932; Dumoulin-Genest 1994; Zheng, Zheng 2005; Li 2020 and the article in this dossier.

to negotiate with politicians (Callon, Raw, Rip 1984, 14 and ff.). Let us recall yet another aspect correlated with the collection of plants and the possibility that the activity claimed by Perny was in fact collective and carried out by or with local people: we mentioned the networks of pharmacies and pharmacist-baptisers who mastered the rudiments of Christian religion but also, above all, traditional pharmaceutical principles. For once, there were identifiable go-betweens of local knowledge destined for European recovery, who were named by Perny as in the writings by other missionaries (Masson 2019). Finally, we should quote another sentence from the letter to Jules Ferry:

> So far, no sinologist has been able to translate Chinese medical and natural history books because the synonymy of the plants has not yet been established. I shall take the greatest care to establish this synonymy, which is so important for science. (MEP Perny file 0532-DG 231)

A dozen years earlier, in the appendix to his *Dictionnaire* (1869-72), he explained the need to establish this 'synonymy'. What we consider here is not so much whether Perny actually did a good job of the work he claimed was necessary (first of all associating local plant names with those in standard Chinese, and then translating them into French and Latin, with the latter language being used because of its universality). Instead, we emphasise his awareness of the need to do this, and the production of a double index (one in Latin and one in the transcription of official Chinese) for his naturalist lexicon in the appendix of 1872. This was his way of creating tools for consulting, but also for interfering with and questioning the material produced (Callon, Raw, Rip 1984, 224), as well as making it available to as many readers as possible. It was also a realisation of the power of a global scientific language, by a churchman, who was already accustomed to spreading the universal word of his god.

But our botanist abbot was also a sinologist: it is his output as such that we have studied here. This activity took place at a time when an epistemic community was being created in Paris, initially asymmetrical and extremely polemical – all of which has recently attracted the attention of researchers.[69] As early as the turn of the eighteenth century, there were numerous conflicts between sinologists, crystallising around the issue of printing a Chinese-French-Latin dictionary, which was eventually published in 1813 by the Imperial Printing Office (i.e. the IN; Bussotti 2015; Bussotti, Landry-Deron 2020). This was a highly political project: not only its printing was decided by Napoleon, but the presence of sources to compile the dictionary in

69 Cf. Guo 2022; Fabre 2015; 2017; 2018.

Paris, as well as the Oriental characters that were used in the same years to produce other Orientalist imprints, was largely due to Napoleon's campaigns in Italy (Bussotti 2015). Many scholars would have liked to be entrusted with the task of printing the dictionary, which was the first of its kind; and the chosen one, De Guignes Jr (Chrétien-Louis-Joseph de Guignes, 1759-1845), could only suffer from the criticism of all the other contestants, which persisted as Perny also made a critical reference to the dictionary.[70] One year after the publication of the dictionary, Jean-Pierre Abel-Rémusat was elected to the Collège de France. Polemics continued on other subjects among his disciples, for example between Stanislas Julien (1799-1873), who was to succeed him at the Collège, and Guillaume Pauthier (1801-1873), notably because of the former's intervention against the publication of the latter's translation of the *Dao de jing* 道德經 (Classic of the Way and the Virtue) (Pauthier 1842; Julien 1842). As we have explained, Perny was close to Pauthier, even though during his Chinese years he had tried, with Julien, to set up an exchange of books between China and those in duplicate at the Bibliothèque nationale, where Julien was assistant curator from 1854. However, in addition to the Collège, the Académie, and the Bibliothèque, Julien also substituted for his pupil Antoine-Pierre-Louis Bazin (1799-1862) at the École nationale de langues orientales (Drège n.d.). This latter responsibility proved to be too much, especially as Julien's oral knowledge of the language was insufficient to match the prerogatives of teaching at this École, and Perny was the defender of practical knowledge. When Julien gave way to Hervey de Saint-Denys, Perny took up the torch of controversy again, before the conflicts subsided towards the end of the century (although the Parisian sinological network has remained strongly asymmetrical, at least until recent times). Excluded from the mission and academic spaces, Perny was also interested in the printing of his works: in the previous pages, I explained how, in the nineteenth century, techniques, tools, and depositories of Western metal typography, eventually applied to Chinese, circulated from one part of the globe to another, and returned to Europe from China partially modified (Markovits, Pouchepadass, Subrahmanyam 2003, 2-3). These printing practices, which for Chinese characters were initially concentrated on dictionaries or a few classical texts (Bussotti, Landry-Deron 2020), started to spread and, in Paris, they went beyond the confines of the IN and also became operative through the activities of private publishers and printers. We know little about them, and even less about the workers who processed Oriental languages in these small enterprises. Indeed, the name of Mr. Michel, a worker

70 Perny, Letter to Libois (6 June 1848) AMEP Guizhou 6A08/05-2: Pastorale 546-1, 97-8.

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who helped Perny with Chinese at Laîné Press for at least two publications, transpired from Perny's writings not because of his work, skills, and knowledge, but because he took an interest in the destiny of the clergyman when Perny was arrested during the Commune. What's more, in the digital age, we have lost touch with the tangible nature that was a book on paper and with everything that went into creating this medium. It was through this process that knowledge became matter, that texts (including those in Chinese) were fixed and shaped, and that (sinological) knowledge was thereby transmitted. In this context, printing presses played a role in the constitution, fixation, and transmission of information that is not entirely dissimilar to that of collections and libraries (Latour 1996), while their complex structure and operation, which brought together tasks of multiple nature, is reminiscent of those of scientific laboratories (Callon, Raw, Rip 1984).

Acronyms

AMEP, Archives des Missions étrangères de Paris (Archives of the Paris Foreign Missions)
IN, Imprimerie nationale (National Printing Office)
IRFA, Institut de recherche France-Asie (The French-Asia Research Institute)
MEP, Missions étrangères de Paris (Paris Foreign Missions)

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Translations

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Troubled Mining: John Fryer and the Difficulties of Cross-Cultural Knowledge Transmission in Late Nineteenth-Century China

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Abstract John Fryer (1839-1928) was the most prolific translator of Western scientific and industrial works into Chinese. This article uncovers previously unexplored connections between his translation projects and the challenges in Chinese mining during that period. It demonstrates how difficulties in accessing both books and teaching experts shaped the development of mining education in China. These setbacks reveal two overlooked pathways for cross-cultural science communication beyond translation. The obstacles invite us to rethink how China was dis- or re-connected with the West in cultural practices in its pursuit of industrial power and wealth.

Keywords Mining. Education. Late Qing China. John Fryer. Knowledge transmission. Science communication. Book purchasing.

Summary 1 Introduction. – 2 Trade Agents and Overseas Book Purchasing Practices Before 1870. – 3 The Pathway to John Weale's Rudimentary Series on Mining. – 4 A Path Not Taken: Mining Education at Guangfangyanguan Around 1870. – 5 Persistent Efforts in Advancing Mining Education at Shanghai Polytechnic. – 6 Interrupted Convergence of Mining and Educational Practices, 1888-95. – 7 Conclusion.

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1 Introduction

Missionary translators played a crucial go-between role in disseminating Western scientific knowledge to China in the early modern and modern periods. Concepts such as 'trading zones,' or 'contact zones' (e.g. Huang 2005; Schatz, De Giorgi, Ludes 2020), imply that Chinese and Western collaborators in translation projects were challenged by difficulties in communication and coordination.[1] In late Qing China's 'Western Learning' (*xixue* 西學) wave during the Self-strengthening Movement (1861-95), more than 500 books were translated from Western languages into Chinese by missionaries, including those by the missionary-turned-translator John Fryer (Chinese name: Fu Lanya 傅蘭雅) (1839-1928). Scientific and technical subjects accounted for over 70% of all translations into Chinese (Xiong 1994, 11-12). John Fryer was the most productive translator. This Englishman, who had taught at the missionary Anglo-Chinese school before initiating the translation project, translated more than one hundred works,[2] especially from 1868 to 1896, when he worked at the Translation Bureau in the Jiangnan Arsenal in Shanghai.[3] After 1896, he left China for the University of California at Berkeley where he was the first Agassiz Professor of Oriental Languages and Literatures, and where his translating continued. As being widely studied in existing scholarship,[4] John Fryer contributed extensively to the early translations of scientific and technical textbooks, in particular to the formation and standardisation of early terminologies.

A prevailing view suggests that the Western scientific books translated and introduced to China were often outdated, incomplete, or of low quality. This perception holds that the inferior quality of the translations hindered the successful transfer of Western technology that could have otherwise facilitated China's early modernisation (Wright 2000). Wang (2022, 102-4, 122-3), for instance, points out that outdated knowledge about steam engines and heat was introduced to China in the 1870s. This text-centred approach, which evaluates the quality and effectiveness of 'missionary' translations, is heavily influenced by late Qing 'failure' narratives of the Self-strengthening Movement. However, Gow (2023, 108-10), in his study of missionary-sinologist Alexander Wylie (1815-1887), challenges the 'incomplete' or 'Jesuit conspiracy' views by examining the motivations behind

1 E.g. Xiong 1994; Wright 2000; Lackner, Amelung, Kurtz 2001; Lackner, Vittinghoff 2004; Elman 2005; Hsia 2011; Zhang 2015; Wong 2017; Bréard 2019; Song 2024.

2 There is no agreement on the exact number of works translated and composed by Fryer.

3 E.g. Dagenais et al. 2010, 2: 639-44; Wang 2000, 126-33; Tola 2021, 12.

4 Bennett 1967; Xiong 1994, 567-86; Wang 2000; and Tola 2021.

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translating Euclid's Elements in the 1850s. He argues that the selection of works for translation was largely driven by the needs of Chinese intellectuals. To gain a fuller understanding of translation history and knowledge transfer, a contextualised investigation is necessary – one that reveals the political, economic, and cultural contexts in which these translated works were embedded, and the processes through which knowledge was adapted, localised, hybridised, or appropriated within Chinese society. Concrete case studies are still much needed.

This article, focusing on the intersection of John Fryer's translation project and educational practices in late Qing Shanghai, reveals two often-overlooked pathways of cross-cultural science communication for mobilising mining knowledge beyond translation: first, purchasing books and second, hiring teaching experts from the West. It examines how challenges in accessing either books or qualified engineer teachers shaped the trajectory of mining education in late Qing China. Expanding on my previous research on mining education, which explored textbooks, mining literacy, and the institutionalisation of global mining knowledge (Chen 2022; 2023b; 2024), this study delves deeper into the cultural practices that transformed Chinese mining during this period.

Drawing on evidence from corresponding letters and personal papers of John Fryer and Sheng Xuanhuai's 盛宣懷 (1844-1916) archival documents, along with late Qing regulations, and various Western newspapers and book catalogues, this article traces the development of mining education through Fryer's involvement in late Qing 'modernisation' and 'industrialisation' projects in Shanghai. Unlike conventional studies that focus on the curricula or regulations of individual schools, this article investigates the very basic starting points of how books on mining – a loose term used in this article for the Chinese term for 'study of mining' (*kuangxue* 礦學), including mining, metallurgy, and mineralogy – were randomly chosen and purchased with the aid of book catalogues.

This article further reveals Fryer's 'invisible' involvement in two plans for mining education that did not immediately materialise: teaching mining-related subjects at the Jiangnan Arsenal around 1870, and attempting to hire expensive foreign mining engineers from the US to establish a mining school either at Yantai or Shanghai around 1888-89. Fryer laid the foundation for translating and spreading Western mining knowledge in late Qing China (Chen 2022). He translated and compiled nearly all the relevant works (excluding, initially, those by D.J. Macgowan on geology and mineralogy) before departing from the Jiangnan Arsenal. In May 1895, one month after China's defeat in the Sino-Japanese War, he also published a set of engineering curricula (including mining) for the renowned Shanghai Polytechnic (Gezhi shuyuan 格致書院; officially founded in 1876).

Fryer's departure from China following this turbulent period in Chinese history left the implications of his curricula, especially in relation to mining education and China's broader educational reforms, underexplored. Despite a few references, little detailed information has been available. This article argues that these two interrelated plans not only laid the groundwork for the 1895 mining curricula but also reveal the significant obstacles in recruiting 'proper' foreign mining experts – another troubled dimension of cross-cultural science communication that hindered the establishment of institutional technical education in late Qing China.

2 Trade Agents and Overseas Book Purchasing Practices Before 1870

By 1867, after six years in China, John Fryer had so fully integrated into Chinese society that he referred to himself as "almost a Chinaman" (Dagenais et al. 2010, 1: 265). In May 1868, he began his translation work at the Translation Bureau of the Jiangnan Arsenal in Shanghai and made significant efforts to acquire books and apparatus to support the translation initiative. Translation did not begin from scratch; the books to be translated first had to be identified and purchased. Tola (2021, 11-12), for example, points out that Chinese officials initially selected book orders for the Arsenal, and that Fryer took over this role later, after gaining their trust, as reflected in his earliest order stating he was commissioned to procure books and equipment.

A closer examination of Fryer's correspondence regarding book purchases (discussed further below) indicates that his letters, often, if not always, specified that the book orders were placed by the Jiangnan Arsenal or its officials. This phrasing served to underscore the seriousness of the business, ensuring payment guarantees and shipping insurance, while signalling that a larger and more sustained demand was anticipated for future cooperation. As noted later, Fryer had already begun sourcing catalogues and purchasing scientific instruments as early as 1867. It is, therefore, highly possible, that Fryer was directly involved in selecting books for his initial orders, though it is also possible that he sought advice from foreign engineers or trade agents in Shanghai or other Chinese ports at the time.

As Fryer later revealed, the translation project aimed to introduce and disseminate Western practical knowledge through a series of one hundred treatises (*congshu baizhong* 叢書百種), similar in scope to the *Encyclopedia Britannica*, a copy of which had been ordered for Chinese officials in 1867 (Fryer 1880, 78; Guo 1984, 922). The following analysis of a British book publisher John Weale's scientific series, dating back to the 1850s, demonstrates Fryer's sustained interest in

choosing the rudimentary scientific series, supporting the notion that he was involved in book selection from the outset.

A previously overlooked aspect is the fact that, in 1867, when Fryer began seeking references for Western books on science and technology, Shanghai's cultural and commercial infrastructure, such as libraries and media presses for the foreign community, was still being developed. How, then, were foreign residents like Fryer informed about the latest Western publications on these subjects during this period? In the following, I outline the three primary trade agents with whom Fryer collaborated between 1868 and 1870.

During the period from 1868 to 1870, John Fryer ordered over two hundred items, including books, apparatus and other materials for the Jiangnan Arsenal through foreign trade agents.[5] One of the foreign agents (*yanghang* 洋行, lit. '[trans-]oceanic agent') involved in these transactions was Mackenzie & Co. (Chinese name: Longmao 隆茂), managed by James and David Mackenzie. This firm, initially operating as ship chandlers and storekeepers in Shanghai by 1862,[6] evolved into a general agency by 1865, with four to eight employees during the 1860s and 1870s.[7] Fryer's first contact for book orders was Mr. John Battison, a co-director at Mackenzie & Co., in 1868. At that time, the firm was based at 10 Sichuan Road, Shanghai. However, Battison advised Fryer to direct the order to another agent, Smith, Elder & Co. (Dagenais et al. 2010, 1: 348).[8]

Smith, Elder & Co., a family-owned publishing house founded in 1819, became one of the prominent agencies (as bankers and publishers) in British overseas trade, particularly in India, after 1860. Initially focused on exporting books and stationery for East India Company officers, the firm issued its own *Smith, Elder & Co.'s Monthly Circular*, which included both literary reviews and "A Catalogue of

5 Dagenais et al. 2010, 1: 348-52, 374-8, 384-6, 392-9, 419-20, 424-6, 428-34, 458-9.

6 James Mackenzie and David Mackenzie possibly refer to 'J. McKenzie' and 'D. McKenzie', respectively, whose names have been found registered as storekeeper and assistant at a Shanghai ship chandler agent 'Richards, P. F. & Co' (Longtai 隆泰) in 1856 and 1857 (*Shanghai Almanac for the Bissextile or Leap Year 1856 and Miscellany* 1856; *Shanghai Almanac for the Year 1857* 1857). Cf. Fung 2024, 173.

7 *The China Directory for 1862* 1862, 43; *The Chronicle and Directory for China, Japan and The Philippines for 1865* 1865, 211.

8 The editors transcribed the name 'J. Bathson' and 'Mr. Bathson' in the current edition of *Fu Lanya dang'an* (*The John Fryer Papers*), including in a letter dated February 1, 1870 (Dagenais et al. 2010, 1: 427). But the Shanghai directories suggest that 'John Battison' had registered at Mackenzie & Co since 1862, especially in 1868, except for the year of 1863, which appears as 'John Batteson' (*The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1868* 1868, 219; *The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1869* 1869, 229; *The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1870* 1870, 231; *The China Directory for 1862* 1862, 43; *The China Directory for 1863* 1863, 44). This article adopts the name 'John Battison'.

Miscellaneous Articles", illustrating and describing everything at 'home' that could be exported to the East (Huxley 1923, 9-31, 164-5; Finkelstein 2020, 517). In the 1850s, Smith, Elder & Co. was commissioned to purchase books for the Shanghai Library (Wong 2011, 34-35), which possibly continued until at least 1861, given that it printed a catalogue of the Shanghai Library in 1862.[9] After the dissolution of George Smith's partnership with Henry King in 1868, Henry S. King & Co. took over the firm's Indian and export operations, continuing its role as a bookseller for both domestic and export markets (Huxley 1923, 177-8).

Fryer's collaboration with Henry S. King & Co. was short-lived, likely ending with his last order in January 1870 (Dagenais et al. 2010, 1: 424). As indicated in Fryer's letters, several issues led to his growing dissatisfaction with the firm: delayed deliveries, such as the anatomical plates ordered on July 31, 1868, which did not arrive until early May 1869 (385, 388); some apparatus arrived either defective or poorly packed (381, 420); the firm's local receiving agents, Fogg & Co., mistakenly opened a package, damaging the books (388, 398);[10] the firm's slow response to orders, forcing Fryer to turn to other suppliers for urgent items (408);[11] and the failure to honour a promised ten percent discount on book prices, which would have reduced the cost by approximately £10 (381, 452-3). The delays may have been partly due to the reorganisation of business between Smith, Elder & Co. and Henry S. King & Co. However, it is clear that the overseas ordering process for books and apparatus, especially shipping various items to China, presented a new challenge for the trade agents, even for well-established firms like Smith, Elder & Co. and its successor.

The uncertainties associated with remote mail communication prompted Fryer to seek more reliable avenues. With the Arsenal's demands no longer permitting delays, and in order to gain the trust of the Qing government and secure his new position, Fryer returned to working with Mackenzie & Co. in the latter half of 1869 to order books, machinery, and apparatus (Dagenais et al. 2010, 1: 419-20). Several letters from this period suggest that personal meetings during social occasions played a significant role in strengthening Fryer's relationship with Mackenzie & Co. In his postscripts attached to the goods ordering letters, Fryer mentioned social interactions with the firm's clerks. For instance, he met Mr. W.H. Devine on a

9 A book catalogue, titled *Catalogue of the Shanghai Library. Comprising all books included in the collection up to December 1861*, was printed by Smith, Elder & Co. in London, in 1862. The supplement to this catalogue, containing books added to the Shanghai Library from January 1862 to May 1865, was printed by another agent, Lucy and Gregory, also in London (Cordier 1880, 1: 1071).

10 The firm Fogg & Co. was Henry S. King & Co.'s local agents in Shanghai.

11 Fryer's complaints on delays in one letter were dated August 26, 1869.

Friday evening (420)[12] and shared an afternoon tea with Mr. James Buchanan (427),[13] as well as with John Ute, a foreman at the Jiangnan Arsenal.[14] Fryer also invited Mr. Battison, co-director of Mackenzie & Co., to join one of these meetings (427).[15]

Prior to 1868, selling scientific books and apparatus to China was not the primary business of the aforementioned trade agents. John Fryer had requested catalogues from various overseas publishers and booksellers, emphasising that subjects such as "machinery, navigation, naval architecture, gunnery, metallurgy, [and] photography" were of growing interest to Chinese officials and their friends (i.e., private persons outside of Qing government). His letters emphasised that these "illustrated lists of articles and goods" were specifically requested by officials at the Jiangnan Arsenal, who might place much larger orders in the future (Dagenais et al. 2010, 1: 386, 392).

3 The Pathway to John Weale's Rudimentary Series on Mining

Before examining Fryer's selection of mining book catalogues, it is important to note that the widespread reception of scientific and technical learning did not unfold smoothly in Western education systems, even by 1870. The promotion of science education, particularly technological subjects as opposed to classical literature and philosophy, was a lengthy process that involved overcoming cultural prejudices and resistance from elite circles in Europe and the United States (e.g. Fox, Guagnini 1993, 3-4). This previously overlooked aspect of a 'culture in transition' denotes the novelty of modern education and mass consumerism of reading materials in the West during the 1860s. The rapid growth of publishing practical how-to manuals, guidebooks on science, engineering, and the practical arts, as opposed to classical or religious literature, was driven not only by the professionalisation of science but also by the rise of mass education. This shift sought to meet

12 W. H. Devine was registered as clerk at Mackenzie & Co. *The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1869* 1869, 229; *The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1870* 1870, 231.

13 The family name 'Buchnnan' (transcribed in Dagenais et al. 2010, vol. 1) should be 'Buchnan', see registered clerk names of Mackenzie & Co. in *The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1869* 1869, 229; *The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1870* 1870, 231.

14 Dagenais et al. 2010, 1: 427; *The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1870*, 230.

15 As noted earlier, Battison, instead of Bathson, should be the right family name (*The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1869* 1869, 229; *The Chronicle and Directory for China, Japan, and the Philippines, for the Year 1870* 1870, 231).

the growing demand for school textbooks and cater to the emerging middle and working-class readers interested in popular science (e.g. Eliot 2020, 471-84; Mollier, Cachin 2020, 485-97).

John Weale (1791-1862), a prominent British book publisher, gained recognition for distributing popular instructional and guidebooks on scientific and practical knowledge. Beginning in 1849, he published a rudimentary dictionary covering architecture, fine arts, and various branches of engineering, including civil, naval, mechanical, and mining. Designed to guide the "student and the operative workman in the onward path of knowledge" (Weale 1849-50, vi-vii), the dictionary was a success, with 10,000 copies sold by 1860, including distribution to British colonial markets like India. By the fifth edition in 1876, sales reached 20,000 copies (Weale 1860, viii; 1876, vii-viii).

Weale expanded his success by transforming the dictionary into a series of concrete treatises, known as the rudimentary (scientific) series. Launched in the early 1840s, these affordable, illustrated volumes targeted beginners and covered a wide range of scientific and industrial topics. The volumes were priced at just one shilling initially (later rising to between one and two shillings) and aimed to make technical education accessible.[16] By 1861, over one hundred volumes had been planned. The series was widely praised, with reports claiming that "every schoolboy knew the merits of Weale's rudimentary series". It garnered further acclaim by winning the prize medal at the International Exhibition in London (1862) and in Philadelphia (1876).[17] Weale's rudimentary series was regularly updated and continued to be advertised and sold by publishers even after John Weale's death, first by Virtue & Co. (under James S. Virtue) and later by Crosby Lockwood & Son, remaining available at least until 1896.[18]

16 The price of each volume in the 1849-50 version of Weale's rudimentary series was one shilling, see the four pages of "Mr. Weale's New Series of Rudimentary Works for Beginner", appended to Allen 1849-50. Allen's treatise, as noted later in this article, was purchased by the Shanghai library in 1852. Note on advertisements of book catalogues cited in this article: book catalogues were often included as advertisements in volumes published by the same or affiliated publishers and typically appended to the end of the main text. Many of these catalogues have been digitised along with the books by Google Books and other online library platforms. Consequently, when accessing a book such as Allen (1849-50) via Google Books, the accompanying catalogues are often found at the end of the digital volume.

17 Advertisements of Weale's series are commonly seen in almost every book published by Crosby Lockwood & Co from the 1870s to 1890s. For example, "A Catalogue of Books", published by Crosby Lockwood & Son in January 1888, is appended to Michell 1881 (digitised via Google Books) as an advertisement of "Weale's Rudimentary Series". The different publishing years – 1881 for the book and 1888 for the advertisement – showcase that the books were well received and continued to sell steadily years after their initial publication.

18 E.g. the advertisement of Weale's series announced that the series were in the property of Mr. J.S. Virtue since 1862, cf. *The Bookseller: A Handbook of British and*

Many of the well-received treatises in Weale's series were published in the late 1850s and early 1860s, yet they remained in circulation through the 1890s. This enduring popularity, exemplified by Warrington W. Smyth's work on coal mining, aligns with the rise of technical and mass education in the West. Originally intended for Weale's rudimentary treatise, Smyth's treatise was first published by Virtue Brothers & Co. in 1867. However, it continued to appear as part of Weale's series,[19] which by 1891 had reached its sixth edition. Advertisements for the work often emphasised the academic credentials and professional titles of authors, such as Smyth being described in the US book trade journal as "President of the Geological Society, and Chief Inspector of the Mines of the Crown and of the Duchy of Cornwall".[20] These marketing strategies underline the continued importance of authority and reputation in the publishing industry, particularly in the creation of authoritative technical works. When Fryer and other missionaries in the 1860s selected works for translation, such as those published in the 1850s, it is essential to understand this within the context of the slow updating process in best-seller markets, rather than simply labelling their choices as 'out of date'. This perspective provides a more nuanced view of the selection process, highlighting the enduring relevance of older works in the evolving landscape of technical education.

Did John Weale's rudimentary series influence Qing China? This question has been largely overlooked in previous scholarship, with only a general reference to Weale appearing in John Fryer's book-purchasing list. However, the answer is certainly affirmative, and the influence began earlier than typically acknowledged. Evidence suggests that parts of Weale's rudimentary series reached Shanghai no later than 1852. This early introduction of Weale's series played a crucial role in shaping the development of technical education and knowledge transfer in late Qing China, marking the beginning of a broader process of integrating Western scientific and industrial knowledge into Chinese learning and practice.

As Western foreigners began settling in Shanghai after 1843, the city saw not only an influx of foreign commodities to meet the daily needs of its new residents but also the development of cultural

Foreign Literature 1862, 50, 155; *The Publishers Circular and General Record of British and Foreign Literature* 1859, 22(528), 465.

19 For example, Smyth's work appears in both advertisements appended to the book, Weale, Hunt 1873: "A Selection from Lockwood & Co.'s Publications in Industrial and Chemical Science" n.d., 6; and "New List of Weale's Rudimentary, Scientific, Educational, and Classical Series" 1873, 7.

20 "Virtue & Yorston's List. New Publications" 1868, 74.

infrastructure such as schools, clubs, and libraries.[21] One notable establishment was the Shanghai Library, founded in 1849. By 1854, it housed 1,276 distinct works and subscribed to 30 periodicals and newspapers (Pott 1928, 86). By 1870, it had grown to approximately 8,000 volumes (Lang 1875, 43; Shu 2018, 89-91). From 1852 onwards, the library obtained books abroad via the above-mentioned firm, Smith, Elder & Co. (Wong 2011, 34-35), which were often announced in Shanghai's English-language newspapers, initially in *The North-China Herald* (1850-67) and later in *The North-China Daily News*.

Preliminary analysis of these acquisitions before 1870 reveals that most were related to language, religious literature, and popular entertainment. However, in September 1852, thirteen treatises from Weale's rudimentary series were added to the library, including the aforementioned dictionary of terms. Twelve of these treatises focused on subjects such as architecture, bricks and tiles, ventilation, drainage, land surveying, road construction, and contract law.[22] It is very likely that foreign engineers and technical staff – numbering around 250 by that time – working on city planning and infrastructure projects in Shanghai (Bickers 1999, 125) referred to these works. Later, these treatises would become important sources of knowledge for John Fryer as he sought Western scientific and technical resources in the 1860s.[23]

As revealed in his correspondence with merchant brokers, Fryer demonstrated a particular enthusiasm for acquiring books from Weale's series. The practical knowledge contained in these works had already been widely taught at educational institutions in Great Britain, aimed at training artisans and workers, in an earlier generation than Fryer's. For example, Alexander Wylie, a Scottish missionary-sinologist, was likely familiar with articles from *Penny Magazine* or *Penny Cyclopædia* that were published by the Society for the

21 For a concise overview of the early development of the foreign settlement in Shanghai, cf. Bickers 1999, 123-7; Pott 1928. As noted during a public meeting of foreigners in 1852, the establishment of a central venue in Shanghai for libraries, chess-clubs, billiard-clubs, and other public recreational activities and events was still highly desirable. *The North-China Herald* 1852, 3(113), 30; 1852, 3(114), 34.

22 *The North-China Herald* 1852, 3(114), 35. The newspaper *The North-China Herald* listed only abbreviated titles of the books received, along with their corresponding serial numbers in the local library, for example, "827 On bricks and tiles", referring to Dobson 1850.

23 In Changxue Shu's study of early Western technical works on construction preserved in today's Shanghai Library, six volumes from John Weale's series published before 1856 are identified (Shu 2018, 90-1). However, her discussion does not clarify whether these works were part of the library's collection prior to 1870 – before John Fryer began acquiring books in 1868 – or whether they were later obtained through the Jiangnan Arsenal's book procurement efforts. This ambiguity highlights the challenges in fully reconstructing the origins and pathways of Western technical knowledge in late nineteenth-century China.

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Diffusion of Useful Knowledge and popularly circulated among working classes (Gow 2023, 33-4). Given that Fryer received his education in Bristol and graduated in 1860 (Bennett 1967, 4-5), it is very likely that Weale's textbook series were already known by Fryer while he was in school. Moreover, the early missionary schools in China's treaty ports, including those in Shanghai, and particularly the Jesuit-run Bibliotheca Zi-ka-wei, also known as the Xujiahui Library, or in Chinese: Xujiahui Cangshulou 徐家匯藏書樓 (King 1997), may have introduced Weale's series of educational and classical works (if not the rudimentary works),[24] although this requires further investigation.

Although it is unclear which publisher's circulars or catalogues were available to Fryer in early 1868, it is worth noting that the aforementioned library had purchased (or possibly subscribed to) several popular British magazines, as mentioned in the same news item from 1852. These included *Blackwood's Magazine*, *Sharpe's London Magazine*, *Chambers' Edinburgh Journal*, *The Quarterly Review*, and *The Westminster Review*,[25] all of which provided up-to-date publishing news and announcements across various fields. Additionally, both private and public subscriptions of 'home' (mostly, British) magazines for foreigners in Shanghai likely increased between 1851 and 1871. By 1870, the budget for purchasing books from England had remained steady at £200-250 annually for several years (Lang 1875, 43), while the British resident population had grown from 256 in 1851 to 894 in 1871 (Bickers 1999, 125).

For example, in March 1867, John Fryer wrote to his brother George in England asking him to send him the magazine, *The Family Herald*, regularly. In the same letter, Fryer also asked his brother to send magnesium wire "for the sake of showing experiments to the Chinese" and catalogues of scientific instruments with prices. Although no further details about these catalogues have been found, my evidence suggests that Fryer had at least seen the catalogue of

24 The shortage of textbooks was a persistent challenge for Christian colleges in nineteenth-century China. In addition to teaching classical Chinese, English textbooks on English (instead of the classic Latin and Greek in the Chinese context), mathematics, religion, and later on literature and sciences were often used by the teachers. Translating textbooks into Chinese was greatly developed after 1877, and particularly, after 1895. Cf. Lutz 1971, 66-8. It is noteworthy that the Bibliotheca Zi-ka-wei, established by the Jesuit mission in 1847, was likely another significant resource for John Fryer to consult catalogues of Western publications. Nonetheless, the available evidence does not indicate that Fryer referenced the Bibliotheca Zi-ka-wei in connection with his book-ordering activities between 1867 and 1870. Given the nature of this Jesuit-run library, which served missionaries studying Chinese language and culture and provided instruction in Western languages, religion, and basic sciences to Chinese students, it is plausible that Weale's series of educational and classical works were available there. This possibility, however, requires further verification. I wish to express my gratitude to Prof. Iwo Amelung for drawing my attention to the Bibliotheca Zi-ka-wei.

25 *The North-China Herald* 1852, 3(114), 35.

Weale's rudimentary series, advertised as "Mr. Weale's Publications for 1861", which was often included with John Weale's own publications around 1860.[26]

Why is the 1861 catalogue important for our understanding of mining? Weale's rudimentary series had been expanding throughout the three decades from 1840 to 1870. The advertised 35-page catalogue, "Mr. Weale's Publications for 1861", listed 7 volumes of the Rudimentary Series – on mines, smelting works, and the manufacture of metals, as shown in figure 1. So far, this is the only catalogue version I have found that specifies the titles of these seven volumes.[27] These included treatises on the metallurgy of copper, silver, lead, and iron; treatises on the mining of coal, gold, zinc, tin, nickel, cobalt, etc.; and a treatise on electro-metallurgy.

Notably, the 1861 catalogue provides the prices for only two of these volumes: volume 1 (on metallurgy of copper), priced at 2 shillings, and volume 7 (on electro-metallurgy), at 1 shilling and 6 pence.[28] Fryer ordered exactly seven volumes in his first order of 1868, listing their titles in the same sequence as advertised in the 1861 catalogue. He even estimated the price of 2 shillings for the unpublished volumes (Dagenais et al. 2010, 1: 350) **[fig. 1]**.

Table 1 John Fryer's ordering list of Weale's series on mines and metallurgy

Name of Work	Publisher	Price		
		£	s	c
Metallurgy of Copper	Weales	-	2	0
Do Silver and Lead	Do	-	2	0
Do Iron	Do	-	2	0
Gold Mining & Assaying	Do	-	2	0
Zinc, Tin, Nickel & c	Do	-	2	0
Coal Mining	Do	-	2	0
Electro Metallurgy	Do	-	1	6
*Coal & Coal Mining (The Newest & Most Complete Work)	…	2	0	0

Source: Dagenais et al. 2010, 1: 350.

26 The advertisement "Mr. Weale's Publications for 1861" was appended to Weale 1860. Nevertheless, Fryer placed an order to purchase the dictionary later in 1870 (Dagenais et al. 2010, 1: 459). Therefore, the 1861 catalogue might have been found by him along with other works.

27 The analysis in this article of John Fryer's purchase of John Weale's series, particularly the seven volumes on mining and metallurgy, substantially expands on the evidence presented in one of my earlier publications, cf. Chen 2022, 47-8.

28 The advertisement "Mr. Weale's Publications for 1861" n.d., 9.

Furthermore, one oversight by Fryer provides additional evidence that he had seen "Mr. Weale's Publications for 1861". After the 35-page catalogue (although advertised as "40 pages"), an additional page was appended, containing an advertisement for John Grantham's treatise on iron ship building, which included a description of the accompanying plates. This page likely caught Fryer's attention for two reasons. First, the price for both the plates and the text was listed as 25 shillings, and Fryer indeed recorded £1 5*s* in his order list.[29] Second, Fryer mistakenly attributed the publisher of Grantham's treatise to Lockwood, as indicated in his 1868 book order (Dagenais et al. 2010, 1: 349), when it should have been John Weale (Grantham 1858).[30]

This error was likely caused by a note at the bottom of the advertisement stating, "[t]his work may be had of Messrs. Lockwood & Co., No. 7, Stationers' Hall Court, and also of Mr. Weale". At that time, Fryer was unaware of the relationship between John Weale and his sales agent, Lockwood & Co. An 1859 advertisement, for example, announced that John Weale's rudimentary, educational, and classical series "will henceforth be supplied by Lockwood & Co.", who had been appointed as the sole agent for distributing Weale's publications.[31] Although Grantham's work was eventually delivered to Shanghai, only the plates were included, as Fryer's 1869 letter reveals. Consequently, he had to request that the bookseller send the accompanying text separately (Dagenais et al. 2010, 1: 398).

In addition to the works on mining and metallurgy, Fryer also selected works on naval engineering and steam engines from the Weale's series. These choices reflect Fryer's confidence in the quality and reliability of Weale's publications. Translating the entire set of Weale's Rudimentary Series on mining and metallurgy would have provided Chinese readers with a systematic collection of elementary textbooks for beginners. As Gow (2023, 108-10) observed regarding missionaries' translation of the seemingly outdated and incomplete Euclid's Elements in the 1850s, historical choices and motivations were often influenced by multiple factors beyond immediate practical concerns. In the case of mining-related literature, only three of the seven volumes on mining and metallurgy were published by John Weale's press after Weale's death in 1862: metallurgy of copper (vol.

29 Grantham's treatise without plates, priced at 2*s* 6*d*, had already been listed in "Mr. Weale's Publications for 1861". The accompanying atlas, containing the plates, was advertised separately on the additional page for £1 2*s* 6*d*. Combined, the total price for both the text and atlas was £1 5*s*, which matches the amount Fryer recorded in his 1868 order.

30 However, a later edition, Grantham 1868, was indeed published by John Weale's successor, Virtue & Co.

31 *The Publishers Circular and General Record of British and Foreign Literature* 1859, 22(528), 465.

1); metallurgy of silver and lead (vol. 2); and electro-metallurgy (vol. 7).[32] The treatise on coal mining (vol. 6), written by the aforementioned Smyth, was published in 1867. Among these, only Smyth's coal mining and electro-metallurgy (vol. 7) found their way into China and were later translated into Chinese as *Kaimei yaofa* 開煤要法 (Essentials to Opening Coal Mines) (1871) and *Dianqi dujin lüefa* 電氣鍍金畧法 (Outline of Methods of Electro-Gilding) (1880), respectively.[33]

Even after realising that some of the series on mining were being continued by the publisher Virtue Brothers & Co., Fryer remained eager to purchase works from Weale's series. My investigation and comparison of Fryer's order list with one of Weale's catalogues suggest that after acquiring Alexander Watt's *Electro-Metallurgy Practically Treated* (published by John Weale in 1860) between 1868 and 1869, Fryer encountered another version of "Mr. Weale's Series of Rudimentary Works", in "A Catalogue of Works" published by Lockwood & Co. in 1859, which was appended to Watt's book.[34] Subsequently, in December 1870, Fryer ordered over ten additional works on shipbuilding, machinery, and construction engineering from Weale's series. In a letter to the Shanghai agency, Machenzie & Co., Fryer noted that these works could be obtained from Virtue & Co. and added, "[i]f any should be out of print, please procure if possible copies of former editions" (Dagenais et al. 2010, 1: 458-9).

The influence of John Weale's rudimentary scientific series on John Fryer's book-purchasing choices is evident, and arguably, provided him with a blueprint for producing Chinese textbooks. This approach was institutionalised with the establishment of The School and Textbook Series Committee (Yizhi shuhui 益智書會, lit. 'Useful Knowledge Book Society') in Shanghai in 1877 (Bennett 1967, 60-2). The Committee aimed to promote elementary science education in China.

In line with this mission, Fryer compiled several elementary science textbooks, including works on mineralogy. These included

32 The originally planned vol. 3, *A Treatise on the Metallurgy of Iron*, was written by H. Bauerman and published by Virtue & Co in 1868.

33 For a brief discussion of Smyth's original work on coal mining and Fryer's Chinese translation, see Wu 2015, 88-9.

34 Fryer's ordering list closely follows the numbering and titles given in the catalogue of Weale's series. For example, he simply quoted the catalogue numbers followed by abbreviated titles, such as "no. 23, 24. Brick making" (Dagenais et al. 2010, 1: 458-9). Notably, the number 53 appears twice in Fryer's list – "53 Laying off ships" and "53 Atlas of large plates" – exactly as it appears in the 1859 edition of "A Catalogue of Works", published by Lockwood & Co. and appended to Watt 1860 ("A Catalogue of Works" 1859, 16-18). This duplication of serial number 53 with identical titles does not appear in any other versions of Weale's catalogues that I have examined. Additionally, Fryer listed "Weale's engineers pocket book, newest version" at the price of 6 shillings. It is likely that this entry was prompted by its advertisement on an extra page of Lockwood & Co.'s catalogue ("A Catalogue of Works" 1859, 14).

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Kuangshi tushuo 礦石圖說 (An Illustrated Account of Mineralogy, 1884) as part of the *Gezhi tushuo* 格致圖說 series (Science Handbook Series), and *Kuangxue xuzhi* 礦學須知 (Mineralogy, 1893) as part of the *Gezhi xuzhi* 格致須知 series (Science Outline Series). These works were carefully adapted to suit the tastes and learning practices of Chinese readers (Chen 2022, 53-4). The broader influence of Weale's concept of diffusing useful knowledge on the general production of Chinese textbooks remains a subject that requires further investigation, though it lies beyond the scope of the present study.

After 1870, Fryer also began purchasing books for translation from US publishers. By this time, advertising practical and scientific books and distributing the latest catalogues – free of postage – had reached its peak in the long-distance, cross-continental book trade.[35] The free mailing service was facilitated in particular by the expansion of steamship lines after 1869, following the opening of the Suez Canal and the completion of the US transcontinental railroad. This rapid shift significantly broadened Fryer's access to publishers. Fryer subsequently received numerous catalogues from both US and British publishers, as reflected in his ordering lists. His exposure to these catalogues further diversified his selection of books for translation. For instance, Fryer ordered books from the publisher Trübner & Co., and instructed his agent to send the "immediately wanted" books on brass and iron founding to Shanghai, whether from London or the US (Dagenais et al. 2010, 1: 399). Many of the translations on metallurgy (particularly on iron, steel) and mining tools were published by the Jiangnan Arsenal after 1880 (Chen 2022, 49-51). In total, mining-related translations published by the Jiangnan Arsenal accounted for about 6-8% of the entire Jiangnan Arsenal series, depending on how the publications were categorised (Shanghai tushuguan 2011, 79-82). Despite this seemingly substantial output, the fragmented and sporadic nature of these translations created an impression of inconsistency. Even when broadly defined to include mining engineering, mineralogy, geology, and metallurgy, the translations on mining lacked a coherent system or arrangement.

There are additional examples illustrating that the easier movement of books from the West to the East – compared to the pre-1850 era – cannot be taken for granted, despite the flourishing steam-powered publishing industries and advances in transport technology in the West. For instance, Fryer had attempted to purchase John Percy's work, *Metallurgy: The Art of Extracting Metals from Their Ores* (which was published by John Murray in 1861), as noted twice in his ordering lists in March, and July, 1868, respectively (Dagenais et al. 2010,

35 See, for example, the advertisement by the industrial publisher Henry Carey Baird, based in Philadelphia, US, in "New and Important Books for Practical Men" 1868, 25.

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1: 350, 377). It remains unclear whether Percy's work ever arrived in China as expected. However, Percy's works appeared frequently in "books wanted to purchase" notices in British and American publishers' circulars, both before 1868 and well into the 1880s and 1890s.[36]

In another case in 1870, Fryer ordered books on mechanical engineering and emphasised in his letter, "[i]f new copies cannot be obtained, please send second-hand". He also instructed that if second-hand books could not be found immediately but were located later, they should not be purchased, as the books were required urgently (Dagenais et al. 2010, 1: 425). This urgency suggests that Fryer had repeatedly ordered similar books on the same subject. After 1869, Fryer received a wide variety of catalogues, though it remains unknown how many books he ultimately failed to procure.

This tortuous pathway to acquiring 'classical' works illuminates another dimension of the challenges to long-distance, trans-cultural scientific communication in the nineteenth century. These challenges were not related to the accuracy of translations or outdated knowledge but rather to the availability and accessibility of foreign books. The physical movement of books ultimately determined what could be translated and introduced into Chinese society.

4 A Path Not Taken: Mining Education at Guangfangyanguan Around 1870

Mining is a comprehensive engineering science that goes beyond theoretical knowledge or concepts derived from textbooks; no single book can ensure the successful and profitable operation of a mine. Between 1875 and 1876, local Chinese officials in Hubei province gained valuable insights by reading and critically analysing Fryer's translation of Western coal mining treatises (i.e. *Kaimei yaofa* 開煤要法), alongside various newspapers and magazines, as part of their efforts to locate coal deposits. However, by around 1880, Fryer himself complained that these translated works were often useless in actual teaching practice, as no foreign engineering teachers could read Chinese (Fryer 1880, 81; cf. Wright 2000, 310-11). Before 1870, no formal technical schools existed in China for training mining experts. Fryer's early involvement in an unrealised plan for mining education at Guangfangyanguan 廣方言館 (Foreign Language School) around

36 See a few examples I selected from publishers' circulars, where certain volumes of Percy's metallurgy were advertised as "books wanted to purchase": *The Publishers' Circular and General Record of British and Foreign Literature* 1864, 649, 557; *The Publishers' Circular and General Record of British and Foreign Literature* 1867, 712, 306; *The Publishers' Weekly* 1882, 568, 842; *The Publishers' Circular and Booksellers' Record of British and Foreign Literature* 1894, 1446, 300.

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1870 and its subsequent influence on mining education scheme at Shanghai Polytechnic merits our closer attention.[37]

When John Fryer arrived in China in 1861, debates among Qing policymakers about learning Western science and technology had just begun within the framework of the Self-Strengthening Movement. By 1867, a bureau for arts (*yiju* 藝局) was established at the Fuzhou shipyard to train students and artisans. Around the same time, Prince Gong Yixin proposed incorporating mathematics and astronomy into the curriculum at the Tongwenguan in Beijing (Biggerstaff 1961, 19-21; Chen 2023a, 227-34). As the editor of the Chinese-language newspaper *Shanghai xinbao* 上海新報 (English title: *Chinese Shipping List and Advertiser*; published by the *North China Herald* office),[38] Fryer seized the opportunity to criticise Prince Gong's printed official memorial in the newspaper. In Fryer's view, China needed a systematic approach to training students in Western science and the arts, much like Japan had done (Dagenais et al. 2010, 1: 252, 254-5). Unsurprisingly, Fryer's critique caught the attention of Qing reformers. His background made him a credible voice: he had worked at the Tongwenguan in the early 1860s and maintained close connections with missionary educators in Beijing. He was later invited by officials of the Arsenal to teach "ten of the best scholars" selected from the Guangfangyanguan "the principles of the steam engine at the Arsenal". However, Fryer rejected the teaching plan, which he described as "absurd" (337). Nonetheless, this suggests that he did engage in discussions with Arsenal officials regarding the practicality of their proposed teaching plans.

It is worth noting that around this time, the famous China Education Mission was proposed by Rong Hong (also known as Yung Wing 容閎, 1828-1912). In 1867, Rong successfully persuaded Zeng Guofan 曾國藩 (1811-1872) "to have a mechanical school annexed to the arsenal, in which Chinese youths might be taught the theory as well as the practice of mechanical engineering" (Yung 1909, 168). Rong's official 1868 proposal acknowledged the need for opening mines, but did not directly link the education of mining engineers to the broader educational plan. It was not until 1877, when Rong was serving as the commissioner of the China Education Mission in the US, that Li Hongzhang 李鴻章 (1823-1901) requested him to encourage Chinese students studying in the US to pursue mining engineering. By then, the demand for mining engineers in Chinese industry had become urgent (Chen 2024, 561).

There is no clear direct evidence suggesting Fryer's influence on the development of teaching plans at the Arsenal (although he

37 Guangfangyanguan 廣方言館 was established in 1863, originally named Shanghai Tongwenguan 上海同文館, similar to the other two language schools under the Tongwenguan name in Beijing and Guangzhou.

38 On a brief history of the newspaper, cf. Zhou 2006, 39-42; Mittler 2007, 13-45.

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taught at the French Department). However, as indicated in one of his book-ordering letters, Fryer urged the book trade agent to purchase and send books and apparatus as soon as possible, since a new "Chinese college" at the Arsenal was expected to open in early 1870 (Dagenais et al. 2010, 1: 424). The Chinese college was recorded as a new 'Learning Institution at the Bureau for Manufacturing Machinery' (*zhizao ju xueguan* 製造局學館) in the Qing official documents. It was approved for construction at the Jiangnan Arsenal in 1868, with the building completed by the end of 1869 (Gao, Huang 2007, 188; Wei 1969, 147, 173-4). Additionally, in an 1869 petition, the school (*xuetang* 學堂) was approved to merge with Guangfangyanguan, which was relocated to the Arsenal in the same year (Gao, Huang 2007, 187-8). A closer examination of the 'learning institution' plan reveals that mining-related subjects, essential for supplying industrial raw materials, were a fundamental part of the plan.

In a detailed programme proposal submitted on April 3, 1870 to Zeng Guofan, local officials Feng Junguang 馮焌光 (1830-1877) and Zheng Zaoru 鄭藻如 (1824-1894) presented two sets of regulations for curriculum and activities. The regulations integrated the learning of Western sciences and manufacturing arts with translation, publishing presses, surveying, and above all, education. The general training was proposed to begin with a one-year lower division training programme (*xiaban* 下班), designed to teach students foundational subjects, including international law, mathematical sciences (such as algebra, logarithms, and geometry), physics, foreign languages, geography, astronomy, and drawing. After this, students could choose from one of seven specialised upper division programs (*shangban* 上班), which included:

1. prospecting for mineral ores and metallurgical processes of extracting metals (to supply raw materials to manufacturing industries);
2. methods of metal casting and forging for making machinery;
3. manufacturing wooden and iron objects;
4. design and operation of machines;
5. principles and laws of navigation;
6. naval and land warfare; and
7. foreign languages, customs, and institutions.[39]

The whole set of training programme resembled, and more significantly, broadened, the scope of existing educational models of the above-mentioned *yiju* (bureau for arts), or, school of shipping administration (*chuanzheng xuetang* 船政學堂) at Fuzhou (Giquel 1874, 17-35), which was proposed by Zuo Zongtang 左宗棠 (1812-1885) in

39 Biggerstaff 1961, 167-72; Gao, Huang 2007, 188-202; Wright 2000, 308-9.

1866. The concept of *yiju* was an innovative opening move to establish a model for institutions in technical education. It combined scholarly learning and hands-on training practices (Chen 2023a, 234-9). At Fuzhou, however, no department related to mining or metallurgy was established, apart from a metal-working forge or factory. Clearly, shipbuilding and weapon-making were the primary goals of both arsenals at the time. Mining and metallurgy were crucial for securing industrial raw materials and achieving technological independence.

However, the above-outlined specialised educational programs at the Arsenal in Shanghai, including the mining-related category, were not fully implemented in practice. According to Guo Songtao's 郭嵩燾 (1818-1891) diary, Fryer mentioned to Guo during their return journey from an industrial investigation in Europe in 1879 that, in addition to the English and French schools at Guangfangyanguan, the Arsenal housed three external schools or departments (*ju* 局): mining (*kuangxue* 礦學), machinery engineering (*jiqi* 機器), and navigation (*jiashi* 駕駛).[40]

Guo's own observations during his visit to the Arsenal in the same year, however, provide a somewhat different account. He recorded that besides the Chinese, English, and French language schools at Guangfangyanguan, there were three external 'Western learning schools' (*xixue santang* 西學三堂): drawing and design of steamships and machinery (*huatu jian lunchuan jiqi* 畫圖兼輪船機器), mathematics and cannon drill (*shuxue jian yanpao* 數學兼演炮), and shipbuilding (*zhizao chuanwu* 製造船務).[41] Mining was notably absent from Guo's account, and the discrepancy between his and Fryer's descriptions of the school categories appears to have escaped notice.

But according to the official Chinese regulations, by 1881 only three schools – English, French, and mathematics – were in operation at the Jiangnan Arsenal,[42] along with a military school (*wuxueguan* 武學館) and an iron ship building school (*tiechuanguan* 鐵船館).[43] No mining school or department was mentioned in the official records of the Jiangnan Arsenal. A dedicated technical school or polytechnic

40 Guo 1984, 922-3; cf. Wright 2000, 310. Wright mentioned the date as 1880, but it should be 1879.

41 Guo 1984, 927; cf. a slightly different translation in Wright 2000, 309.

42 Biggerstaff 1961, 176-7; Gao, Huang 2007, 204-6. A fourth department, astronomy, was already in existence by 1894, although the exact date of its establishment remains unknown. See Gao, Huang 2007, 206-7.

43 In his book, Biggerstaff notes that "[t]he remaining three, military science, naval architecture, and marine engineering, constituted what must have been a kind of technical school" (Biggerstaff 1961, 176). This statement is based on John Fryer's description of the "subjects" taught at the Arsenal schools (Fryer 1880, 81). The actual names of the technical schools, *wuxue* 武學 (Military Science School) and *tiechuan* 鐵船 (Ironclad Ship School), appear in Qing official reports on the schools. See Gao, Huang 2007, 206, 215.

(*gongyi xuetang* 工藝學堂) was not formally established at the Arsenal until 1898 (Wei 1969, 173-4). This suggests that Fryer or Guo may have confused the military school (*wuxue*) with a mining school (*kuangxue*) during their conversation in 1879. As will be discussed below, Fryer may also have conflated the teaching plan at Shanghai Polytechnic with that of Guangfangyanguan, as the former had indeed advertised courses in the 'study of mining' (*kuangxue*) in the winter of 1879 (e.g. "Gezhishuyuan zhao zhi sheng" 1879, 3). Moreover, Fryer and Guo's differing and somewhat casual descriptions of the schools, particularly their use of varying Chinese terms such as *ju* (bureau) and *tang* (hall) to refer to these institutions, reflect the ambiguous concept of a technical school at that time. This ambiguity suggests that neither contemporary Chinese officials nor Western scholars clearly distinguished a technical school from other forms of learning institutions (*xueguan*).

5 Persistent Efforts in Advancing Mining Education at Shanghai Polytechnic

The seemingly unrealised 1870 mining education plan at Guangfangyanguan was pursued over the next two decades, notably through John Fryer's involvement in establishing China's first Polytechnic in Shanghai,[44] and circulating China's first scientific magazine *Gezhi huibian* 格致彙編 (lit. 'Compiled Works on *gezhi*'), founded by Fryer in 1876. By 1875, mining had emerged as a top priority, alongside machinery manufacturing, in efforts to generate wealth and stabilise livelihoods ("Lun Gezhishuyuan luocheng shi" 1875, 1). *Gezhi huibian* played a crucial role in the burgeoning publishing industry in China, particularly in Shanghai. Through question-and-answer exchanges with readers in the magazine around 1876, Fryer captured the attention of Chinese scholars by introducing Western mining technologies, such as ore composition analysis and machinery for pumping water (Chen 2022, 55; 2024, 557).

From the late 1870s to the 1880s, Shanghai Polytechnic sought, over a period of at least a decade, to integrate mining-related disciplines into its educational framework. A significant example of this initiative was the incorporation of mineral ore specimens ordered by John Fryer from England during 1868-69 (Dagenais et al. 2010, 1: 352, 385). A report on Zeng Guofan's visit to the Jiangnan Arsenal in November 1871 records that Zeng visited Fryer's residence in Shanghai, where he "made several enquires and remarks respecting the different specimens of mineral ores and rocks contained in a cabinet in the

44 Biggerstaff 1956, 127-49; Wright 1996, 1-16; Xiong 1994; Elman 2005.

room where he sat" ("Tseng-kwo-fan's Visit" 1871, 9231; "Summary of News" 1871, 892). These mineral specimens, alongside other types of machinery, tools, and apparatus, were expanded through donations from foreign firms and governments, particularly from British and Belgian sources. They were subsequently displayed at Shanghai Polytechnic and were also intended to populate a museum (*bowuyuan* 博物院) proposed in 1877, which was to be housed in iron-framed buildings. However, due to financial constraints, this museum project was never realised (Biggerstaff 1956, 135-6; Wang 1998, 11-12, 218).

In the teaching plan of Shanghai Polytechnic, the 1879 advertisement explicitly listed mining as one of the subjects offered at the institute ("Gezhishuyuan zhao zhi sheng" 1879, 3). In the summer of 1890, the chemist Cosmos I. Burton, accompanied by his wife, arrived in Shanghai and was hired to teach six foundational science subjects, including chemistry and mining. Unfortunately, Burton passed away at the age of 28 before his courses could begin. Despite his untimely death, Burton had made systematic preparations for his teaching, including outlining engineering curricula (with mining as a key component), laboratory setups, and other necessary arrangements. It is likely that Fryer assumed responsibility for Burton's planned curriculum and continued to offer courses, including those related to mining, on Saturday evenings, though this began only after 1894.[45]

Thus far, the history of mining education at Shanghai Polytechnic has been simplified by these initial yet largely unrealised plans. The subsequent unsuccessful attempts highlight a critical gap in China's transition to mining education, a transition that was marked by the convergence of both mining practices and educational frameworks. This period reinforces how mining education briefly gained prominence in the late 1880s, just before Professor Burton's employment at Shanghai.

6 Interrupted Convergence of Mining and Educational Practices, 1888-95

John Fryer was never directly involved in the Chinese mining industry, but he maintained close ties with it through his Chinese collaborators in the Jiangnan Arsenal's translation project and through his educational work at Shanghai Polytechnic. Among these scholars, Xu Shou 徐壽 (1818-1884) and his son Xu Jianyin 徐建寅 (1845-1901) were Fryer's early co-translators of mining-related works. Zhong Tianwei 鍾天緯 (1840-1900), a graduate of Guangfangyanguan (studying period:

45 "Gezhishuyuan yanqing huaxueshi" 1890, 3; Biggerstaff 1956, 139-40; Wright 2000, 138-9. On obituary notice, cf. Adams 1890, 654; Wang 1998, 101.

1872-75) in Shanghai, stood out as a notable example of a native Chinese scholar who rose from a declining literati family to become one of the prominent reform-oriented advisors within the officialdom.

After graduating from Guangfangyanguan, Zhong was invited by Xu Jianyin to collaborate at the newly established arsenal in Shandong Province in 1875. In 1880, they both, along with several other diplomats and scholars who investigated Western manufacturing and mining industries in the late 1870s, travelled to Germany.[46] Zhong's two-year experience observing Western industrial nations deepened his perspective on late Qing industrialisation and reforms. Both Zhong and Xu Jianyin played key roles in the development of the coal, iron, and steel industries in the 1890s. However, Zhong's distinctive career also linked Fryer with Sheng Xuanhuai in the initiation of mining education.

From 1882 onwards, Zhong was employed by the Translation Bureau of the Jiangnan Arsenal, where he collaborated with Fryer in translating books and editing magazines that covered a wide range of topics, including Western politics, economics, military affairs, as well as sciences and arts. His contributions quickly gained recognition, and he rose to prominence through his participation in the Prize Essay Contest organised by Fryer and Wang Tao 王韜 (1828-1897) at Shanghai Polytechnic, starting in 1886 (Xue, Liu 2018, 1-2, 205-20; cf. Elman 2005, 346-7). From 1888 onwards, Zhong began serving as an advisor to Sheng Xuanhuai, who was then the Intendant of the Deng-Lai-Qing Military Defence Circuit and the Superintendent of East Customs at Yantai/Chefoo in Shandong (*Deng Lai Qing bingbeidao jian Donghaiguan jiandu* 登萊青兵備道兼煙台東海關監督, from 1886 to 1892).

At that time, Sheng had already witnessed the 'failure' of the Hubei coal mining industry in the late 1870s. However, the unsuccessful coal prospecting efforts led by the foreign mining engineer Samuel J. Morris during this period undermined Chinese officials' trust in Western expertise. Nevertheless, mining expertise in China was shaped by a variety of social and cultural factors, with fengshui disputes playing a particularly crucial, and at times decisive, role in the establishment of mines (e.g. Brown 2023, 158-92). As a result, narratives of 'incompetent' Western engineers became a widely recognised justification for initiating discussions on the need to train China's own mining experts.[47]

The 1887-88 coinage reform, aimed at solving the monetary crisis, acted as a principal stimulus for revitalising non-ferrous mining

46 For an overview of Qing diplomats' visits to the West, see Day 2018.

47 For a detailed investigation of Sheng Xuanhuai's experience with foreign mining engineers in Hubei Province, which ultimately ended in failure and sparked discussions and efforts to establish a mining school in China, see Chen 2024.

industries in Shandong. The sufficient supply of mint metals – copper, lead, and zinc – became an urgent task for local officials like Sheng Xuanhuai, alongside coal and iron. By this time, Qing China had been importing Japanese copper for centuries, and the achievements of Japan's 'modernised' mining and minting industries, particularly in educating and hiring engineers and adopting machinery, began to attract the attention of Qing reformers. As a result, Sheng Xuanhuai proposed the establishment of a mining school in Yantai during 1888-89 (Chen 2024, 562).

In seeking teaching staff, Zhong Tianwei played a key role in negotiating with Max Goebel (in Chinese: Gu Beier 古貝爾), the Consul-General for Belgium in Shanghai, and John Fryer (Chen 2024, 565). Sheng and Zhong were looking for a qualified teacher (*jiaoxi* 教習) for the proposed mining school in Shandong, someone who would ideally be able to conduct field surveys as a mining engineer (*kuangshi* 礦師). This rudimentary idea for establishing a mining school reflects how late Qing reformers envisioned such institutions. By that time, the first generation of five students who had studied mining engineering in Europe had returned to China, and several returned students from the US had also been hired by Qing reformers for various industrialisation and modernisation projects (561).

Another key source of potential candidates for the mining school's teaching staff was the technical schools, including Shanghai Polytechnic. Zhong Tianwei recommended several talented graduates from Guangfangyanguan to Sheng Xuanhuai as candidates for positions in Chinese, English, and mathematics at the proposed mining school. Among them, Xu Huafeng 徐華封 (1858-1928), another son of Xu Shou, distinguished himself and received high praise from Zhong. According to Zhong, Xu Huafeng was Fryer's favourite student and possessed extensive expertise in manufacturing industries, especially mining. Zhong also noted that Xu was well-equipped to manage mining operations and could even replace a foreign engineer, taking on the role of supervisor (*tidiao* 提調) at the planned school (Xue, Liu 2018, 386).

After extensive discussion, Sheng and Zhong concluded that it would be nearly impossible to hire one individual capable of both conducting field mining surveys and teaching at the school. As a result, they decided to hire two separate mining engineers. Since Fryer was travelling in the US at the time (1888), he agreed to assist Zhong and Sheng in recruiting a mining engineer from a US university, such as the University of California, San Francisco (cf. Chen 2024, 565). Fryer particularly emphasised the advantages of mining education in the US, given the country's rapid advancements in mining technology compared to Britain. This judgment was likely based on Fryer's personal communication with a mining engineer on their shared trip to Japan in 1888, whose father was also a mining engineer hired in

Japan. However, Zhong and Sheng were skeptical of Fryer's connection and urged him to write to the *Jiujinshan dashuyuan kuangwu xuetang* 舊金山大書院礦務學堂 (likely the College of Mining, University of California, San Francisco) to enquire about potential candidates, offering a monthly salary of 200 taels (Xue, Liu 2018, 402). It took a considerable amount of time for Fryer to receive a response.

Since Sheng and Zhong were also seeking mining engineers from Belgium, Fryer planned that, if they found suitable candidates elsewhere, the mining engineer from the US he was in search of would be hired by Shanghai Polytechnic. With Goebel's help, Zhong Tianwei eventually found a Belgian mining engineer, Emile Braive (in Chinese: Bai Naifu 白乃富), at a monthly salary of approximately 500 taels (Chen 2024, 565). Despite these efforts, the proposed mining school in Yantai was not approved by Li Hongzhang due to its inconvenient location. Instead, Zhang Zhidong adopted the plan in Hubei, which later became the foundation of the renowned Hanyeping Company (568-9).

Regarding Shanghai's mining education, by the end of 1888, Fryer had secured funding through a donation of 1,000 taels per annum from Liu Mingchuan 劉銘傳 (1836-1896), then the provincial governor of Taiwan, who was also promoting various industrialisation projects, including a telegraph school. This funding was intended to support five students to study mining engineering at Shanghai Polytechnic. Additionally, a limited number of student candidates would be allowed to enter the mining engineering programme at Shanghai through government stipends (Xue, Liu 2018, 411).

However, this plan did not materialise, as the recommended mining engineer from the US requested an annual salary of 10,000 *yuan* (far above the 2,400 *yuan*, or 200 taels per month, offered by Fryer). Moreover, this 23-year-old engineer had a young family to support and had to consider his future career options after leaving the US university system (Xue, Liu 2018, 429-30). After this unsuccessful attempt to hire a mining engineering teacher from the US in 1889, it is highly likely that Fryer eventually recruited Burton from Great Britain by 1890. Despite Burton's untimely death, which hindered further educational efforts, the mining educational scheme in Shanghai continued, at least in their teaching plans.

In 1895, John Fryer published a set of engineering curricula focused on Western learning, or concrete learning (*shixue* 實學), at Shanghai Polytechnic. Mining (*kuangwu* 礦務) was listed as the first subject in the curriculum, followed by five other subjects: electrical engineering (*dianwu* 電務), surveying (*cehui* 測繪), civil engineering (*gongcheng* 工程), steam engines or machinery (*qiji* 汽機), and mechanical engineering or shipbuilding (*zhizao* 製造) (Fu 1901, 1) **[fig. 2]**.

As shown in figure 2, Fryer's mining curriculum at Shanghai Polytechnic consisted of one general course and three specialised

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courses, covering various aspects of mining. These included: (1) mining affairs (17 lessons); (2) opening coal mines (22 lessons); (3) opening metal-related mines (21 lessons); and (4) mining machinery (16 lessons) (Fu 1901, 3). How these courses were implemented, particularly after Fryer's departure in 1896, remains unclear. Not coincidentally, Sheng Xuanhuai established China's first engineering university around the same time, in October 1895, featuring departments similar to those listed by Fryer.[48] Mining, at last, found its place in China's educational system.

7 Conclusion

This article uncovers previously overlooked connections between translation projects and emerging challenges in mining in China, including textbook acquisition and pedagogical strategies. It seems obvious to ask how the Western books found their way into hands of Fryer and missionaries in China, given that books and periodicals on 'advanced' science and technology (e.g. military and navigating techniques, coal-fuelled steam-engines, railways and telegraph) were readily available in the industrialised centres of Europe (as well as US). This seemingly straightforward question, however, prompts a deeper examination of how China was dis- or re-connected with the West through cultural practices in its pursuit of industrial power and wealth. The failed attempts to acquire books and hire qualified teachers underscore two significant obstacles in the cross-cultural transmission of knowledge from the West to China.

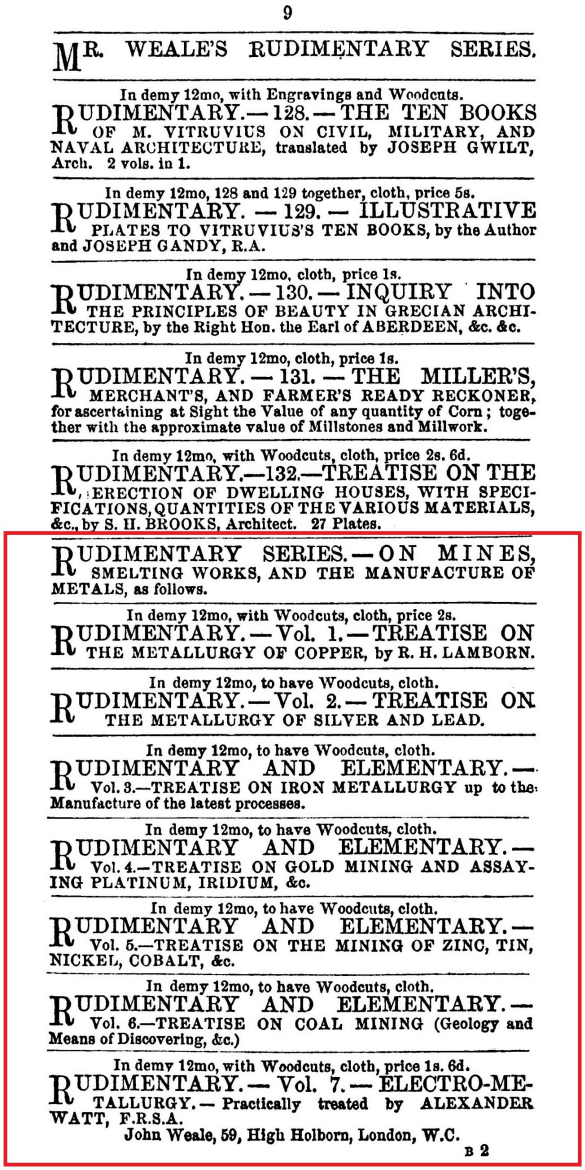
Book catalogues, largely neglected in translation and transfer studies, provided late Qing China, with mediation by John Fryer and other foreigners, a crucial link to the print industry culture of Europe and the US. This article sheds light on these overlooked catalogues, particularly John Weale's rudimentary scientific series, which were less frequently discussed as communication media in Sino-Western exchanges. These rudimentary series of 'classical' Western scientific and industrial works, including mining, played a significant role in inspiring China's textbook production after 1870. However, access to books was far from guaranteed. Fryer's seemingly arbitrary choices of works for translation reflect his limited access to book traders and other overseas trade agencies in the late 1860s. Even for trade agents, overseas book purchasing posed reliability challenges in both commissioning and shipping, challenges that likely shaped the evolution of their businesses, whether as news agents or booksellers, and merit further study.

48 On the history of China's first engineering university in Tianjin, especially on the setting up of mining engineering department, see Chen 2023b.

In parallel with translation efforts, this article also presents a new roadmap, illustrating how Fryer, alongside several reform-oriented scholar-officials and their advisors (notably Zhong Tianwei), planned and advocated for mining education in Shanghai. Although the need to train China's own mining experts emerged in the late 1870s, it took more than two decades for Qing reformers to prioritise mining education. Fryer's 'invisible' involvement in two unrealised mining education plans, from the 1870s Jiangnan Arsenal project to efforts to hire mining engineers from the US for Shanghai Polytechnic in 1888-89, underscores the gradually evolving intellectual and political climate for mining educational reform among Chinese scholars and officials.

The challenges in transmitting Western scientific and technical knowledge through Shanghai Polytechnic's educational programs were clearly articulated by Fryer in 1895, who identified three key obstacles: (1) the intellectual climate for promoting Western science was not conducive for decades (*fengqi weikai* 風氣未開); (2) insufficient funding impeded the establishment of sustainable training programs (*jingfei buzu* 經費不足); and (3) the scarcity of proper teachers (*wu heyi zhi shi* 無合宜之師).

The notion of a 'proper' teacher in the context of mining engineering reflected the complexities of late Qing China's path to establishing mining education. This term encompassed not only the well-known issues of language barriers and reliance on translated textbooks, but also practical challenges in recruiting foreign instructors. These teachers needed to be not only qualified engineers, but also affordable, physically able to work in China, and willing to relocate. Much like the unexpected difficulties in obtaining key Western mining texts, the obstacles to hiring competent foreign mining experts, which represents a critical in-person aspect of knowledge transfer or science communication beyond book knowledge, further impeded the development of mining education in late Qing China.



9

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B 2

Figure 1
The planned seven volumes in Weale's Rudimentary Series on mines, smelting works, and the manufacture of metals. Source: "Mr. Weale's Publications for 1861", n.d., 9. Advertisement. Appended to Weale, John (1860). *Rudimentary Dictionary of Terms*. 2nd ed. London: John Weale (Digitised by Google Books)

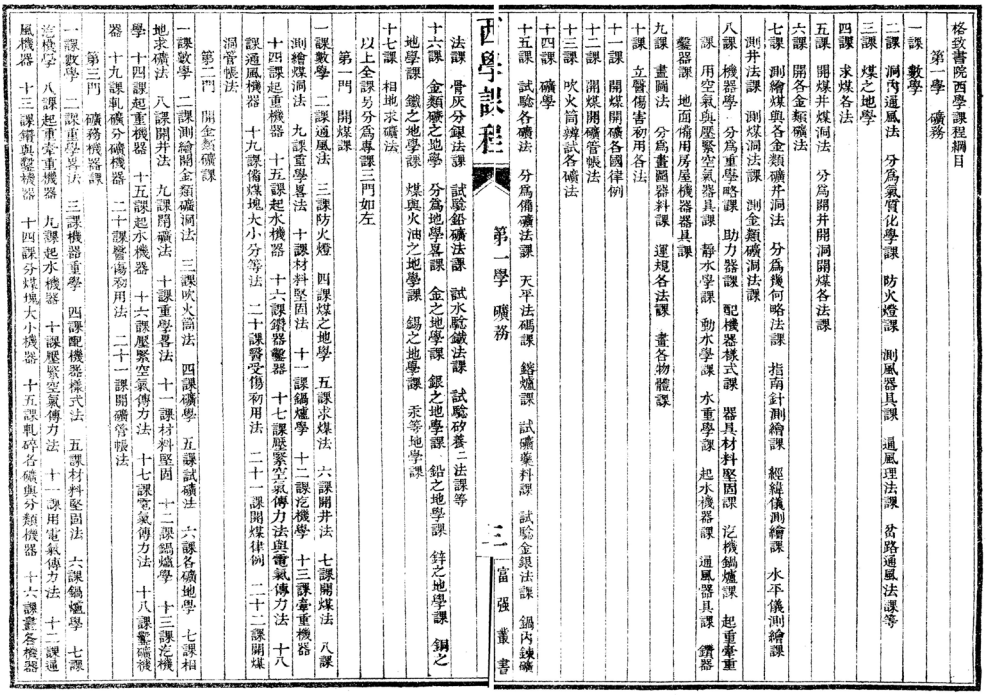


Figure 2 John Fryer's 1895 Mining Curriculum for Shanghai Polytechnic. Source: Fu Lanya 傅蘭雅 1901, 3. *(Gezhi shuyuan) Xixue kecheng* (格致書院)西學課程 (Curriculum on Western Learning at Shanghai Polytechnic). Yuan Junde 袁俊德 (ed.), *Fuqiang zhai congshu xu quanji* 富強齋叢書續全集 (Sequel to the Collected Works from the Studio of Wealth and Power). Shanghai: Xiaocangshanfang

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Envisioning Readers and Shaping Knowledge: Two Instances of Textual Intersections Between China and Italy in the Early Twentieth Century

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Abstract Within the construction framework of China Knowledge, a crucial role has been played by *translations* as creations of texts whose purposes clearly went beyond the transfer of meanings among different languages and cultures, thus becoming agencies in the shaping of a translingual space where Target Language and Source Language constantly interact. The process of transmission and acquisition of literary texts will be analysed here from two different kinds of approach and perspectives, represented by Mario Novaro (1868-1944), a non-sinologist who carved out the earliest Italian translation of the *Zhuangzi* (1922), and Agostino Biagi (1882-1957), a former Franciscan missionary in China whose legacy of manuscripts has recently been discovered and acclaimed, especially for his outstanding Chinese translation of Dante's *Divina Commedia*.

Keywords Agostino Biagi. Mario Novaro. Zhuangzi. Daoism. Italy-China cultural exchange.

Summary 1 Circulating Seeds of Knowledge. – 2 *Zhuangzi* and the Spirit of Poetry. – 3 'We Are', and Let that Be Enough for Us. – 4 Envisioning Readers and Translations' Production. – 5 Λάθε βιώσας.

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1 Circulating Seeds of Knowledge

In recent years, there has been a growing interest in the concept of 'spaces of circulation' as theorised by Kapil Raj (2017) and its application to the history of science field. This concept is particularly relevant to understanding the role of translation in the cultural exchange between China and Europe. Translations played a crucial role, and the theories of Kapil Raj, Schaffer, and in particular of Robert Liss (2009), provide valuable insights into how translation facilitated the movement of ideas, texts, and cultural practices between the two regions at the beginning of the twentieth century.

Translators are often seen as mediators between cultures, as they facilitate the movement of ideas and texts across linguistic boundaries. As often pointed out, translation is not a neutral process but is shaped by power relations and cultural differences and sometimes can be exploited to ascertain power imbalances between languages and cultures (Niranjana 1992, 33). Translators thus must navigate these differences and negotiate the meaning of the text in the target culture, often making significant changes to the text in the process.

In the case of China and Europe, there have been various stages of cultural exchange that can be analysed through these theoretical lenses, and it is even more evident if we look at the period within the end of the nineteenth century and the beginning of the twentieth century. Such a dynamic process of circulation involved a great deal of actors moving across intersecting spaces spanning from scientific to humanistic discourses.

Narrowing the sphere to the cultural contacts between China and Italy in the early twentieth century, we have indeed many examples which can be examined through the perspectives of translations and go-betweens. One of the most notable cases is the eminent scholar Giuseppe Tucci, who made significant contributions to the study of Tibetan Buddhism and culture, introducing these subjects to a wider audience in Italy and Europe. Starting from 1925, Tucci visited Asia several times, then, in 1933, he founded the IsMEO (Istituto Italiano per il Medio ed Estremo Oriente) in Rome with Giovanni Gentile, becoming the forefather of Orientalism in Italy (Crisanti 2020, 178-210).

Examining the intellectual and social landscape of China during the turn of the twentieth century, we can observe a gradual evolution in the Chinese scholars' approach to Western culture. This transformation largely benefited of their extensive reading and study of Japanese translations of Western works on history, philosophy, and literature, which began during the Meiji era in 1868. Henceforth, certain open-minded scholars who aspired for a brighter future for their country on the eve of the collapse of the imperial system, sought inspiration from Western culture and its history. The most noteworthy figures who looked at Italy as source of inspiration were Liang Qichao

梁啟超 (1873-1929) and his master Kang Youwei 康有為 (1858-1927) who travelled to Italy in 1904. Liang, after fleeing to Japan following the failure of the 1898 Wuxi Reforms, was deeply influenced by the Italian Risorgimento movement, exalting the patriotism of figures such as Mazzini, Garibaldi and Cavour, believing that China could look at them as models in the long course of transforming the country into a modern nation.[1] Both Kang Youwei and Liang Qichao played a crucial role spreading the knowledge of Italy in China.

Starting from the nineteenth century, we see an increasing number of individuals who acted as agencies in the development of sinology in Europe, particularly in Great Britain, France, and Germany. Italy saw its Golden Age thanks to the essential role and commitment of the missionaries whose works spread the knowledge of China across Europe between the end of the sixteenth and the beginning of the eighteenth century. However, we have to wait for the second half of the nineteenth century to see a resurgence of interest toward Chinese studies, albeit at a comparatively slower pace than what was happening in the same period in the countries mentioned above (cf. Paternicò 2023). In this initial stage, the earliest scholars of Italian sinology (Carlo Puini, Lodovico Nocentini, Amedeo Vitale, Giovanni Vacca) displayed their interest and gave their contribution through studies and translations related to different fields, such as religion, philosophy, folklore, science, and, to a relatively lesser degree, literature. Apart from the world of those who were directly involved in the production and dissemination of knowledge in their related fields of research, we can see a gradual surge of people acting as low-profile 'go-betweens' sometimes working outside of their main domains, challenging the boundaries of specialisation and giving early examples of an interdisciplinary approach applied to such a peculiar space as the circulation of knowledge between China and Italy at the beginning of the twentieth century.

The interdisciplinary nature of these early efforts reflects a broader tendency in the initial phases of Western engagement with Chinese thought, in a context where boundaries between disciplines remained permeable and subject to ongoing negotiation, and scholars often approached their subjects with wide-ranging intellectual curiosity. This dynamic allowed for the gradual emergence of focused studies within Chinese philosophy and religious traditions, laying the foundation for deeper investigations into specific schools of thought.

1 Liang published in 1901 the work *Yidali Jianguo sanjie zhuan* 意大利建國三傑傳 (Biographies of the Three Founding Fathers of Italy) with the biographies of Mazzini, Garibaldi and Cavour, and, in 1902, he wrote the opera *Xin Luoma* 新羅馬 (New Rome) based on the historical events of the above characters. About Liang Qichao and Italy, cf. Masini, Bertuccioli 1996, 308-14; Masini 2012, 53-67. Cf. also Tang 1996, 88-102. On Kang Youwei and Italy, cf. Turriziani 2017, 217-32.

Within this evolving framework, the study of Daoism in the West began to take shape as a distinct field of inquiry. Unlike Confucianism, which had long been examined through its moral and political dimensions, Daoist thought – sometimes perceived as more elusive or esoteric – presented particular challenges to early European scholars. Their endeavours to interpret Daoist texts were shaped by prevailing intellectual paradigms, including Orientalist discourses, comparative philosophical methodologies, and theological debates.

2 *Zhuangzi* and the Spirit of Poetry

Scholarly interest toward Daoism started quite early during the initial stage of the development of sinology in Europe. However, it has been observed that this fascination was principally directed towards the *Daodejing* 道德經 (The Classic of the Way and Virtue) (which became the most extensively translated Chinese text in the following years) and the *Zhuangzi* 莊子, thereby leaving little room for the vast array of other works belonging to the Daoist canon (cf. Komjathy 2004). This was part of the phenomenon Girardot called the "Victorian invention of Taoism" where the eminent missionary James Legge acted as primary agent staging a "Taoist tradition" in the West, a "reified entity located 'classically', 'essentially', 'purely' and 'philosophically' within certain ancient texts or 'sacred books' – or, more accurately, within a single enigmatic 'classical' text or Taoist 'bible' known as the Tao Te Ching" (Girardot 1999, 108-9). Following James Legge's translations of both the *Daodejing* and the *Zhuangzi* under the rather self-explanatory titling *The Sacred Books of China* as part of Max Mueller's series *Sacred Books of the East*, other translators followed suit, prioritising the former and, to a lesser extent, the latter.

In the context of Italian sinology, interest in Daoism came quite late, mainly from the pen of Carlo Puini who, during the latter part of his career, displayed some curiosity toward Daoist thought, alongside with Buddhism which has been his principal focus in his earlier years. The first Italian translation of the *Daodejing* appeared in 1905 by Guglielmo Evans with the title *Laotse. Il libro della via e della virtù*, published by Fratelli Bocca. Evans was not a sinologist, and his work was likely a translation based on Stanislas Julien's French translation. The very first translation from Chinese was released by the sinologist Alberto Castellani (1884-1932) in 1927, titled *La regola celeste di Lao-Tse (Tao Tê Ching)*.

On the other side, the *Zhuangzi* has been almost completely overlooked: an earlier appearance of a few excerpts of the *Zhuangzi* appeared in 1907 on the literary magazine *Leonardo* through Giovanni Vacca's translations. Then, the *Zhuangzi* is quoted in some passages within the historical outline of Daoism made by Puini (1919) in his

Taoismo (filosofia e religione). The first attempt to a more comprehensive translation of the work will come to light in 1922 under the title *Acque d'Autunno* by Mario Novaro. Followed by other three amended and expanded editions, Novaro's translation remained for decades the only Italian reference for *Zhuangzi*'s writings, until Fausto Tomassini made his own translation, included in the volume *Testi Taoisti*, published in 1977 by UTET, then a few others followed thereafter.

Mario Novaro was not a sinologist; it could be said that he was completely detached from the (at that time comparatively small) sphere of Italian sinology. Today, Novaro is remembered as a philosopher, a poet and indeed as a successful entrepreneur in the olive oil business from the Ligurian town of Oneglia.

Novaro's educational background can be tracked to his formative years at the University of Berlin, where he underwent philosophical studies and wrote his thesis *Die Philosophie des Nicolaus Malebranche* (1893) followed by the publication of a short essay, *Il concetto di infinito e il problema cosmologico* (1895). During the late nineteenth century and the early twentieth century, he returned to his homeland and gradually took control of the family business Olio Sasso. In 1899, he began supervising the contents of a promotional leaflet, known as *La Riviera Ligure di Ponente*, which was regularly delivered together with the olive oil cans. Initially directed by his brother Angiolo Silvio, he transformed the leaflet into one of the most significant literary magazines of that time, making Novaro one of the most influential figures in the literary world of the early twentieth century, encouraging the publication of works by famous and soon-to-be famous authors such as Giovanni Pascoli, Giuseppe Ungaretti, Giovanni Papini, Umberto Saba, Eugenio Montale, Camillo Sbarbaro and many others.

The monotony of his early years as businessman was clearly tempered by the management of the leaflet, then renamed *La Riviera Ligure*, which will become, as he often said, a purpose for his sensitivity and his fulfilment. This constant overexposure to literature, and in particular to the many poetry works published in his turned-out-to-be literary magazine, had a strong influence on him, and in 1902 he himself started writing poetry texts, later returning to philosophical studies, his former field of interest. However, poetry writing was just an early attempt followed by a few years of silence. It was a fortuitous event which brought him back to the publication of a philosophical nature: in November 1909, his friend Giovanni Papini wrote to him that he found a copy of his thesis on Malebranche on a bookstall in Florence. Naturally, Papini was unaware of Novaro's recent 'awakening' and probably of the philosophical interests of the director of the *Riviera Ligure*, too, therefore immediately asked him to compile a little book on Malebranche or a "choice of thoughts and fragments", for the philosophical series *Cultura dell'anima* which he created that

year with the publisher Rocco Carabba in Lanciano (Novaro 2022, XIV-XV).[2] After some hesitations, Novaro accepted the task and, in the very same period, gradually returned to writing, combining philosophical stance within lyrical poems, published on his literary magazine first, then collected in the volume *Murmuri ed echi*, whose first edition is dated 1911.

It is not clear precisely when and how Novaro came up to Zhuangzi; however, there are some hints that could help to identify the epoch and the increasing pervasiveness of Zhuangzi's readings in Novaro's life and production.

Recently, Ricca (2012) suggested that a possible early contact with the Chinese thought might be related to a short pamphlet Nicolaus Malebranche published in 1708, titled *Entretien d'un philosophe chrétien et d'un philosophe chinois sur l'existence et la nature de Dieu*.[3] By his own admission, Malebranche had always held this text in low regard (in fact, he initially attempted to prevent its publication). It was created on the explicit request of Bishop Artus de Lionne (1655-1713), apostolic vicar in China from 1689 to 1703. Malebranche's familiarity with Chinese thought was limited to what was conveyed to him by de Lionne, and as such, the Chinese philosopher depicted in his writing is a fleeting and indeterminate figure, providing only meagre insights and lacking any notable cultural or historical context. From this perspective, it would be hard to relate this Chinese philosopher to Zhuangzi, as he could have been assigned any other geocultural attribution; Malebranche's essential point was to create a figure that represented 'the voice of impiety', which in his own text is synonymous with 'Spinozism', that is, the obliteration of the existence of God whenever it is identified with a principle immanent to nature. This led Pierre Bayle to establish a correspondence between Spinozism and the supposed atheism of the Chinese (Malebranche 2000, 27-8). Therefore, beside the inevitable and inherent inconsistencies in Malebranche's text, the Chinese philosopher seems to have very little (if any) in common with Zhuangzi, whose language relativism would have constituted a far more difficult antagonist for the Christian philosopher. In addition, it should be pointed out that Novaro never quoted this work in his early thesis on Malebranche. Consequently, if he really could have known or read this text, it should

2 Unless explicitly indicated, all the translations of Italian excerpts into English are made by the Author of this article.

3 The *Entretien* represents Malebranche's stance in the well-known controversy on the Chinese rites that inflamed Europe in the second half of the seventeenth century. The evangelical work of the Jesuits in China was accused of excessive concessions towards Confucian rites, and following the denunciations of other religious orders, it led to the condemnation of such ceremonies and the Jesuits themselves by Pope Clement XI in 1704.

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have been dated to a later time, most likely to the years when Papini asked him to write the Malebranche book, published in 1911.

From the collected letters between Novaro and Papini, it is known that, in 1917 and 1921, the latter was informed by the former regarding the comfort derived from reading the *Zhuangzi* over an extended period, specifying that it has been "my family companion for about fifteen years" and that "it was an article by [Herbert] Giles in an English magazine which first introduced me to C. [Zhuangzi]" (Novaro, Papini 2002, 195 [14 February 1921]). It is not clear which magazine Novaro refers to and whether it is temporally related to the previous statement. It is possible that the discovery of Zhuangzi's work was not solely a result of the article by Herbert Giles, but may also have been indirectly influenced by Giles' *A History of Chinese Literature*, published in 1901; this volume, available in Novaro's private library with his own annotations,[4] contains a chapter on Daoism which provides an introduction to the main figures, with Zhuangzi being the primary focus of the section. Novaro already manifested his interest in Chinese thought and literature as early as 1911, explicitly citing the Dao in his poem *Murmuri ed echi*, then in some later-added verses to the poem *Filza* in which he quotes the poet Li Bai [as Litaipò]. The influence of the Daoist thought can be intercepted also in other poems in which the voice of the poet seems to establish a sort of intertextual dialogue with Zhuangzi's lyrical prose.

The fondness for the *Zhuangzi* was not merely a result of scholarly interest, as evidenced by the widespread acceptance of Daoist thought even at the domestic level. This is further demonstrated in a letter from his son, which indicates that an initiation into the Dao was even integral to children's education (cf. Boero 1988, 120). While the approach to Chinese thought can be traced to around 1905 or shortly thereafter, it was in the mid-1910s that Zhuangzi's philosophy began to pervade Novaro's life and poetics.

It is worth noting that the acquaintance of Novaro with the work of Zhuangzi was not an isolated event, as his friend Papini was already familiar with the text by 1907. In fact, Papini had requested the Genoese sinologist and mathematician Giovanni Vacca to translate certain excerpts from the *Zhuangzi* (namely chapters VIII "Double

4 Novaro's private library, as well as many other materials related to him, is today preserved at the Fondazione Mario Novaro in Genoa. In regard to the reference to Giles' article on the *Zhuangzi*, it should be noted that one of his most extensive texts on this topic was published on *The China Review* as "Mr. Balfour's Chuang Tsze" (1882), a very critical revision of Balfour's translation where Giles mostly displays Balfour's errors and misinterpretation of the original text, offering his own correct rendering as parallel text. Even if *The China Review* was not part of Novaro's former private library, the possibility that Novaro could have read Giles' article during his earlier philosophical studies cannot be ruled out.

Thumb", IX "The Horse's Hooves" and X "Ransacked chests") which were published in the February 1907 issue of the already quoted magazine *Leonardo*, along with a brief introduction.[5] It is interesting to observe that while Novaro never mentions Vacca in his letters to Papini, it was Papini who informed him of the Daoist presence in *Leonardo*. Papini himself dedicated a short essay to Zhuangzi in his volume *Testimonianze*, first published in 1918.[6]

At the beginning of 1921, it was Novaro who suggested that Papini publish a selection of texts from the *Zhuangzi* within the series *Cultura dell'anima*, edited by Papini at the publisher Rocco Carabba between 1908 and 1921. As early as spring of 1921, Novaro sent Papini his own selection from the *Zhuangzi* which would be published by Carabba in October 1922 under the title *Acque d'autunno* (Autumn Waters). Since then, three more editions would follow with a selection of texts, a preface and an explanatory note gradually expanded: April 1939 (Carabba), July 1943 (Istituto Grafico Tiberino), 1949 (Laterza; posthumous edition). The explanatory note is particularly significant as it provides us with numerous details about the *intentio operis*, the methodology adopted as well as a critical analysis of the sources used. Being "ignaro del cinese" (ignorant of the Chinese language), Novaro claims to have made his selection of passages by "raffrontandole minutamente" (minutely comparing) the translations of three eminent sinologists: James Legge, Herbert Giles and Richard Wilhelm.[7] The latest, most extensive, edition of *Acque d'autunno* includes a selection of 157 sections taken from the whole *Zhuangzi*, omitting (without giving any reason) chapters 9, 15, 16, 30 and 33. The selection follows the progression of the Chinese text; however, the specific chapters are not indicated, except in the second and third editions. Furthermore, the author adds a title to each section (similarly to the approach taken by Martin Buber and Richard Wilhelm). This may have been done to address potential issues with the original subdivision or to narrow the focus of each section to the content suggested by the titles. Despite lacking the necessary expertise to directly assess the original text, Novaro's comparative examination

5 An early reference to the *Zhuangzi* can be seen in a letter Vacca sent to Papini (8 December 1906) clearly hinting to the imminent publication of some selected excerpts in *Leonardo*. It looks like Vacca formerly (shortly before leaving Italy for his one-and-a-half-year travel in China) planned a more comprehensive selection from the *Zhuangzi* (as seen from further references in other letters from Papini on 29 May 1909 and 24 January 1915) but eventually did not succeed, likely diverted by other sources of interest and research. I am grateful to prof. Andrea Bréard for providing Vacca's references.

6 Cf. "Ciuang-tse" in Papini 1924, 219-38.

7 Actually since Giles' translation was then out of print, Novaro used the volume *Reden und Gleichnisse des Tschuang-Tse*, a selection of passages from the *Zhuangzi* made by the Austrian philosopher Martin Buber who (according to a claim by Wilhelm mentioned by Novaro himself) translated Giles' English version into German.

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of various translations has facilitated a comprehension of both the deep meaning of the Daoist message conveyed by the *Zhuangzi* and the underlying lyrical inclination, coupled with a linguistic fluency that blends literal and metaphorical meanings in a manner that encompasses at times acerbic sarcasm and paradoxical situations. He expresses this concept rather clearly:

> Gruber [*sic*!] already said, regarding the existing versions of the *Daodejing*: "The most reliable knowledge of the language is not enough, but a congenial thought is necessary, which enables the translator to instinctively feel the author's thought and follow it by anticipating it". And, I will add, since we are dealing with pure works of poetry, such as the *Daodejing*, and especially our *Nahua zhenjing*, or rather these *Autumn Waters*, a spirit of poetry is also needed. (But is this spirit of poetry in the translator? The reader will evaluate.)[8]

In Novaro's version, there are no explanatory notes in the text, but only a reference to related conceptual references, found in the Gospels, Dante, Goethe, and other authors. In fact, the tendency to indicate philosophical intersections and intertextuality with the Western cultural tradition is a recurring element of the approach that Novaro already presents in the introduction of his work, with recurring (however rarely explicitly referred to) paraphrases or quotations from the *Daodejing*. Here, the constant meticulousness in indicating affinities related to the history of Western thought and literature is animated by the desire not only to make the profound meaning of a text made notoriously complex by its anti-rationalism more accessible to the neophyte, but also to 'brighten' (*lumeggiare*) the spiritual universe from which it took shape.

3 'We Are', and Let that Be Enough for Us

As already mentioned above, the *Zhuangzi* did not have the same fate as the *Daodejing*, which was translated into many languages with

8 "Diceva già il Gruber, a proposito delle esistenti versioni del Taotechìng: 'la più sicura conoscenza della lingua non basta, ma occorre un pensiero congeniale, che metta in grado il traduttore di risentire istintivamente il pensiero dell'autore, e quasi presentendo seguirlo'. E, io aggiungerò, trattandosi di opere pure di poesia, quali il Taotechìng, e specialmente il nostro Nanhoa Cenching, ossia queste *Acque d'autunno*, occorre anche uno spirito di poesia. (Ma è questo spirito di poesia nel traduttore? Giudicherà il lettore.)" (Novaro 1949, 28 fn. 1). The titles in the original are modified in the translation according to today's standard *pinyin* transcription. Quite oddly, in the whole explanatory note and introduction, the German sinologist Wilhelm Grube is always misprinted as Gruber.

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countless editions. Within the Italian context, Novaro's *Acque d'autunno* remained the unique reference until Fausto Tomassini made his own translation from the Chinese text in 1977. However, after Tomassini's effort releasing the earliest translation from the original language, very few attempts followed: in 1982, a new *Zhuang-zi* [Chuang-tzu] by Carlo Laurenti and Christine Leverd appeared for the publishing house Adelphi Edizioni. They actually translated the French edition previously published by Liou Kia-Hway. Then, in 2008, Leonardo Vittorio Arena edited his translation for RCS Libri (later reprinted by BUR Rizzoli), and in 2012, Augusto Shantena Sabbadini made his own translation for Apogeo, part of the Feltrinelli publishing group, then reprinted it for the *Universale Economica* series (2017) by the same publisher. The translators of the latter two versions explicitly claim to have translated directly from the Chinese text. Furthermore, in 1994, Luni Editrice published the whole translation of Léon Wieger's *Les Pères du Système Taoïste* including the *Zhuangzi* (as *Nan-hoà-cienn Ching* [*Nanhua zhenjing*]) in the third volume, reissued as a single book (*L'opera di Chuang Tzu*) in 2011.

Beside all the above, an unknown translation of the whole *Zhuangzi* appeared among the manuscripts left by Agostino Biagi (1882-1957) to his descendant and discovered after more than half a century by his great-granddaughter Mara Carocci in 2021. Soon after the discovery, Biagi's manuscript legacy made quite a sensation as it included, among others, the full Chinese translation of Dante's *Divina Commedia* in four versions, using different poetic meters. Before this event, the figure of Agostino Biagi was totally unknown in the world of Italian sinology.

Biagi was born in Fossato, a small village on a mountain ridge north of Pistoia, in the very heart of the Tuscan-Emilian Apennines. He spent most of his earlier years in a modest environment, soon facing the difficulties of helping the family to earn its living, as childhood did not last long in those times and places (Carocci 2022, 13). He always displayed an excellent aptitude for studying, then, at twelve, he was admitted in the convent of the Collegio Serafico in Galceti, near Prato. In 1898, at sixteen, he started exercising his duties as a cleric in the convent of Giaccherino, then beginning the novitiate in Cortona. This is a crucial year because, according to his own statement, Biagi had his first acquaintance with two Chinese fellows who were studying with him in the convent and from whom he started his initial learning of the Chinese language that lasted around three years.[9] In 1902, he left

9 Starting from 1887, the convent admitted the first two novices from the Hubei province: Francesco Fung (Feng Luhan 馮陸漢, 1862-1924) and Bonaventura Zeng Guoxian 曾國賢 (1864-1931). Both were ordered priests in 1891 and returned to China two years later, serving the diocese of Laohekou 老河口, Hubei 湖北. Zeng was beheaded by the communists in 1931 during some riots in the area. In 1894, two other novices arrived

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Italy for the Franciscan mission in China, following father Cipriano Silvestri to the Hubei province, settling in Laohekou for acquiring the essential education about both local language and customs, then he devoted himself to missionary work in mountain areas north of the Yunxi township, in north-west Hubei. However, after a few years he returned to Italy: it is not exactly clear when this happened, quite likely in the second half of 1907.[10] Even the reason of his sudden leave is shrouded in mystery: the official record mentions health issues, but there are indications suggesting a possible disagreement with the mission's administration, which appeared to be too compliant with those in power in the local area and not sufficiently protective of the interests of the poor. After returning to Italy, he spent several years in the convents of Galceti, San Bonaventura and Piombino. While in Piombino, in early 1919, he had a serious confrontation with monsignor Eugenio Pacelli (later known as Pope Pius XII) who sworn not to give him any chance to return to China. This confrontation had a crucial impact on him, to the point that soon thereafter he chose apostasy, leaving the Franciscan Church and becoming a Baptist pastor for the American Baptist mission in Italy. This life-changing resolution would lead him and his future wife Sofia around the country for pastoral activities: first in Sicily, then in Avellino during the 1920s and lastly in Genoa. During these decades, Biagi had increased contacts with communist and antifascist associates, thus becoming a marked target filed by the police, and kept under surveillance by the prefectures. He settled in Genoa in the 1930s, however living those years almost constantly in conditions of poverty and destitution, also due to the serious economic difficulties of the mission. In 1942, his name was cleared from the subversive allegations of the past years, following an apparent "repentance" (Carocci 2022, 95); however, he still secretly kept contacts with some local partisans. Nevertheless, with his name finally cleared, he could pursue a job opportunity as lecturer of Chinese language for the Genoa and Turin branches of the IsMEO, thanks to the endorsement of Giuseppe Tucci himself, who also commended his *Grammatica della Lingua Cinese Ufficiale* (Official Grammar of the Chinese Language), an unpublished

from Hubei: Odorico Cheng Hede 成和德 (1873-1928) and Antonio Huang Fangji 黃方濟 (1872-1898). Odorico Cheng, after being ordered as priest in 1900, returned and served in his hometown Laohekou, from 1903. Later, in 1922, he became bishop of the diocese of the Puqi 蒲圻 township, today known as Chibi 赤壁, Hubei 湖北. Antonio Huang died of typhus fever in Italy, soon after becoming priest. Cf. Bensi 2001, 100. Cf. also Zavarella 2000, 125; Van Damme 1978, 77-8, 95, 171, 193. I am grateful to Dr. Raissa Degruttola for her help finding this information.

10 There are incongruences regarding Biagi's stay in China: in his private letters he once wrote eight years, but another one says ten. According to the archive of the O.F.M., he stayed for five years; this information matches with a statement by Fr. Sebastiano Ceccherelli who said he replaced Biagi after his "sudden and unexpected leave" during the autumn of 1907. Cf. Ceccherelli 1964, 57.

typewritten work Biagi previously compiled and used in his courses, now preserved together with his extant manuscripts at the Accademia della Crusca in Florence. The appointment as IsMEO's lecturer probably represents the greatest achievement and the late acknowledgment of the expertise he acquired in decades of studies, despite all the hardship he had to endure during his life. Unfortunately, it did not last long: since the end of 1942, the continuous bombings on the cities of northern Italy caused large destruction. Just a few months after, his lessons in Turin were interrupted due to damages to the university building where the course was held. In Genoa, he continued to teach until 1944, but after the arrival of the Allies, the IsMEO suspended all activities. Throughout this period, Biagi faced even greater difficulties, and the harsh economic conditions of the mission compounded the challenges. After the end of World War II, the situation did not improve; his financial difficulties and the progressive onset of Parkinson's disease would once again put him to the test in a situation of physical debilitation that required long hospitalisation and costly medical expenses. It was in this difficult condition that he considered the possibility of publishing his translation of the *Divina Commedia* to see the effort of a lifetime rewarded and to obtain some economic support. He also tried to sell it to the American Baptist Mission, but all ended without success. In the following years, due to the worsening and chronic nature of his illness, there were no more significant events. The family's burdens now fell entirely on his wife Sofia, who made great efforts to meet all his needs until his death in 1957.

Apart from the family correspondence, there is very scarce information about Biagi's personal life and network of acquaintances. He did not leave any diary or memoir, apart from a handwritten short biographical sketch in Chinese, most likely written in his last years (Carocci 2022, 211-14). Therefore, at present, it is quite hard to draw the path of his significant output and to delineate the genesis of such varied production. According to his wife Sofia, the translation of the *Divina Commedia* was his lifelong commitment, started as early as during his stay in China. In the general lack of temporal indications, Biagi's interest toward the classics of the Chinese thought and literature can be traced back to the same epoch, while his Italian translations probably were completed in the following decades, starting from the 1920s.[11]

The cover page of his *Zhuangzi* translation states: 莊子周 // *TÇuanze Çou // Traduzione testuale di A. Biagi, 1921*. The indication of the year is quite misleading: in the preface, Biagi refers to the sinologist Alberto Castellani as the "lamented professor" (who actually

11 His translations of some of Pu Songling's short stories appeared on the magazine *L'Irpinia* in 1929(?) and were later collected by Bertuccioli. Cf. https://www.orticalab.it/Irpinia-Rassegna-di-cultura-l-avamposto.

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passed away in 1932); consequently, the preface, if not the completion of the entire work, should be postdated. Biagi's *Zhuangzi* is indeed the translation of the whole text with all its 33 chapters; therefore, it should be considered the earliest complete translation in Italian. The translation is introduced by a short preface, the bibliography, and an added explanatory page on phonetic transcriptions with a couple of suggested readings. The bibliographical references, shown below as in the manuscript, are not in alphabetical order, so it is possible to hypothesise that the author may have listed them according to a supposed order of importance:

- Alberto Castellani, *La regola celeste*, Sansoni. Firenze. [1927][12]
- Alberto Castellani, *La dottrina del Tao*. Zanichelli. Bologna. [1927]
- Carlo Puini, *Il Tao. [Taoismo. Filosofia e religione]*. Lanciano. Carabba. [1917]
- Léon Wieger, *Les pères du Taoisme. Rudiments. [Les pères du système taoïste]*. Ho-kien. [1913]
- Herbert Giles, *Tchuang-ze* [*Chuang-Tzu: Taoist Philosopher and Chinese Mystic*]. London. [Bernard Quaritch. 1889]
- Wilhelm Grube, *Geschichte der Chinesischen Literatur*. Leipzig. [C.F. Amelang. 1909]
- Tc'eng Pi-Kin [?], Ricerche sulla filosofia laoziana. [?]
- Wang sien-cien [Wang xianqian 王先謙 1842-1917], *Commentario al Tchuang-ze*. [*Zhuangzi jijie* 莊子集解. 1909]
- Zhai Yuen-phei [Cai Yuanpei 蔡元培 1868-1940], *Storia della letteratura cinese.* [*Zhongguo xin wenxue daxi daolun ji* 中國新文學大系導論集. 1940]
- Hu Sce-cy [Hu Shi 胡適 1891-1962], *Storia della letteratura cinese*. [*Zhongguo wenxue shixuan li* 中國文學史選例. 1931]
- San Phu-teng [?], Storia della cultura cinese. Sciang-hai [?]
- James Legge, [*The Sacred Books of the East*.] *The Texts of Taoism*. Oxford. 1891.

Quite interestingly, in the bibliography, Biagi only refers to the translations by Legge, Giles and Wieger; there's no indication of the other available translations, like the ones by C. de Harlez's (1891) and Richard Wilhelm (1920). Biagi's preface is by far the shortest if compared with those included in the published works above. Biagi's prose is very terse, going straight to some focal concepts of Zhuangzi, whom he calls in the preface's title "the agrestic philosopher" (*il filosofo agreste*). The argumentative discourse of the preface proceeds with some linguistic roughness, which suggests a certain lack of agility in presenting the

12 I completed these references with additional or amended information within square brackets. When unavailable, question marks were added.

main concepts found in the volume, which he summarised as: "world view" (*visuale del mondo*); "men's perspective" (*visuale dell'uomo*); "society's perspective" (*visuale della società*). Differently from the other authors mentioned above and even from Novaro, in his concise presentation, Biagi does not show the same enthusiasm for comparison, limiting himself to a couple of examples that actually reflect his specific religious education. For this reason, the perhaps excessively concise nature of the preface can be explained by the fact that Biagi himself did not have a proper philosophical education, but rather one mainly based on the school studies he had in the convents of Galceti and Giaccherino. For instance, while explaining the Daoist world view, he states:

> Zhuangzi replaces the 'reality' of every being with the Only Real Entity creating the 'material' phenomenon, while the Tao is the 'nothing of the nothing of the nothing' of every reality, both material and spiritual; it is the Truth. It even surpasses the Rosminian aphorism 'The Entity creates the existing' and, approaching the idea of God of St. Augustine, it embraces the concept of the divinity of biblical philosophy: 'God is 'He who is'', He is the truth in itself and in all things.[13]

The comparison with the philosophy of Antonio Rosmini and St. Augustine is rather daring, but it clearly reveals the conceptual references in the interpretation put forward by Biagi.[14] Moreover, in the

13 "Zhuangzi, all'Unico ente reale creante il fenomeno 'materia', sostituisce la 'realtà' di ogni essere, mentre il Tao è il 'nulla del nulla del nulla' di ogni realtà, materiale e spirituale; è la Verità. Sorpassa anche l'aforisma Rosminiano 'L'Ente crea l'esistente' e accostandosi all'idea di Dio di S. Agostino, fa suo il concetto della divinità della filosofia biblica: 'Dio è 'colui che è'', è la verità in sé e in tutte le cose". Cf. Firenze, Accademia della Crusca, Fondo Biagi, 莊子周 // *TÇuan-ze Çou // Traduzione testuale di A. Biagi, 1921*, 1.

14 It should be noted that a reference to St Augustine appears in an early intersectionality between the theoretical framework of Daoism and Western philosophy proposed by Julius Evola in his controversial rendering of the *Daodejing* (1923) while in the introduction he says: "appartenente al Tao l'immobile, l'innominabile, come appartenente anche al divenire e l'immobile mutevole, ossia il decorso ciclico. Così è esplicitato come l'innominabile sia contenuto nel nominabile attraverso la legge ciclica che vien chiamata nel testo (XXI) la forma fenomenica, il modo della Via: il Tao del Tao (XL). Questa stessa teoria, sviluppata sì ma in nulla alterata nella sua essenza, noi la ritroveremo nei neoplatonici (in Proclo specialmente), Scoto Eriugena, in Eckhart, nella dottrina cristiana dell'origine eterna del tempo di cui è traccia già in Agostino e via via sino a Schilling e Hegel" (belonging to the Tao is the immobile, the unnameable, but also the becoming and the mutable immobility – that is, the cyclical flow. It is thus made explicit how the unnameable is contained within the nameable through the cyclical law, which in the text (XXI) is referred to as the phenomenal form, the mode of the Way: the Tao of the Tao (XL). This same theory – developed but in no way altered in its essence – we will find again among the Neoplatonists (especially in Proclus), in Scotus Eriugena, in Eckhart, in the Christian doctrine of the eternal origin of time, of which traces are already found in Augustine, and subsequently in Schelling and Hegel). Cf. Evola 2008, 31.

section on 'men's perspective', it is remarkable to underline the perception of Zhuangzi's skepticism, already pointed out by earlier Western scholars. Biagi here explains:

> Zhuangzi's skepticism is focused on the correspondence of our concepts and mental categories to the reality of things and the truth of the Dao. […] We do not know whether we are ourselves or others, as our consciousness of our personality is nothing more than relative and contingent. 'We are', and let that be enough for us.[15]

Novaro, while musing on the same topic, observes:

> Mixed with Zhuangzi's mysticism is a dose of skepticism. However, it is an apparent and secondary skepticism, and impersonal. As if it were about the human heart and not his own, since he has conquered or conquers it, and only expresses it because there is no one who does not experience it. In truth, the foundation of his thought is absolute certainty and faith: with what is not doubtful, he dissolves doubt until liberation from all doubt. In the Tao, he finds an unshakable pivot of unity, faith, and hope.[16]

In these two passages, there is a clear similarity between the two authors, but Biagi seems to benefit from his own concision. While approaching the thought of Zhuangzi, both develop different paths: while Biagi seems to progressively withdraw, Novaro is driven by an impatience to explain the contents that sometimes border on considerable verbosity. Perhaps Biagi, recognising Zhuangzi's expressive concision, has adapted his preface to this need, letting his translation speak more than any conceptual paraphrase.

4 Envisioning Readers and Translations' Production

Mario Novaro and Agostino Biagi operated in a more understated yet significant capacity as intermediaries in the dissemination of

15 "Lo scetticismo di Zhuangzi versa piuttosto sulla rispondenza delle nostre concezioni e categorie mentali alla realtà delle cose e alla verità del Tao. […] Non sappiamo se noi siamo noi o se siamo altri, essendo la coscienza nostra della nostra personalità nulla altro che relativa e contingente. 'Siamo', e tanto ci basti". Cf. Firenze, Accademia della Crusca, Fondo Biagi, 莊子周 // *TÇuan-ze Çou // Traduzione testuale di A. Biagi, 1921*, 2.

16 "[M]escolato al misticismo di Zhuangzi è una dose di scetticismo: è però uno scetticismo apparente e secondario, e impersonale: come a dire del cuore umano e non suo proprio: poi che egli l'ha vinto o vince, e solo lo espone perché non v'è chi non lo esperimenti. In verità il fondo del suo pensiero è assoluta certezza e fede: con ciò che non è dubbio scioglie il dubbio fino alla liberazione da ogni dubbio: nel Tao trova un perno incrollabile di unità fede speranza" (Novaro 1949, 22).

knowledge, subtly contributing to the broader landscape of cultural production in the early twentieth century; their effort in making the *Zhuangzi* available to Italian readers shows the potential of a translation as 'go-between' in the complexity of cultural exchanges through the explication and the revelation of a founding work of the Daoist tradition. However, the course and the outcome of their efforts had been very different. Novaro was an outsider who felt the fascination of Zhuangzi's thought and tried to make up for the shortcomings of "lazy and distracted sinologists", who, as his friend Papini defined them (1924, 223), "do not like to translate".

Novaro was a philosopher or, as the Nobel prize poet laureate Eugenio Montale called him, a 'poet-philosopher', not a sinologist, and (differently than Papini) he did not have any contact with the major figures of the Italian sinology of the time. While not in the network of the sinology world, Novaro indeed made extensive use of the corpus of translations available, displaying an overtly critical approach that can be seen in his methodical reading of those earlier 'go-betweens', never short of detailed comments on them. Novaro's effort should not be overlooked as the 'translator of Zhuangzi's translators':[17] as the scholar Viviana Masia recently pointed out, the translator

> should make the effort to evaluate the extent to which the receiver shares the common ground underlying the text to be translated. (2021, 130)

Novaro was keenly aware of the importance of this concept while capturing the essence of Zhuangzi's message, and his criticism of earlier translators centred on their inability to convey this message effectively to readers. Novaro believed that these earlier translations had different deficiencies in capturing the true meaning of the text, often failing to transfer the nuances and subtleties of Zhuangzi's notions. About Legge's work, he states his mind

> was too narrowly Anglican, but his scrupulous fidelity means that he puts in parentheses the additions he adds to the text to make it, in his judgment, clearer, so that it sometimes becomes easier, with their suppression, to guess the true meaning of the original.[18]

17 I paraphrased the famous statement 'translator of Homer's translators' (*traduttor dei traduttor d'Omero*) by Ugo Foscolo, referring to his claim that Vincenzo Monti translated Homer's Iliad without having any knowledge of Greek.

18 "La mente del Legge era troppo ristrettamente anglicana. Ma la sua fedeltà scrupolosa fa sì che egli metta tra parentesi le aggiunte che egli appone al testo per renderlo a suo giudizio più perspicuo; cosicché riesce qualche volta più agevole, con la soppressione di esse, indovinare il vero senso dell'originale" (Novaro 1949, 28).

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De Harlez's was "loveless, tasteless, missing the comprehension" (Novaro 1949, 30). While praising Wilhelm's, Novaro yet adds that

> he modernizes the original a bit too much with technical-philosophical phrasing and omits some specifically Chinese details to better adapt the text to the European usage, while taking away its genuine flavour and replacing the specific with the generic. (29)[19]

He believed that translating *Zhuangzi* required an affinity with the philosopher's world view (in some letters he even calls himself Mario Zhuangzi) and a sensitivity to the needs and perspectives of the Western reader. Accordingly, Novaro worked tirelessly to create a version that would be primarily faithful to the spirit of the original, not just necessarily to the text, thus being accessible and engaging to a modern audience. From this perspective, Novaro had a rather clear idea of his potential reader, consequently his choice of passages from the whole text is aimed to express the image of Zhuangzi's Daoism as an effective and valid system of thought, and not merely the description of an outdated or abstruse ideology of a distant past.[20] In *Acque d'autunno*, there are very few footnotes, mainly with no explanatory function; Novaro only points out conceptual affinities with the Gospel, Dante, Goethe, and other authors. In fact, the tendency to highlight intersections and intertextual philosophical influences with the Western cultural tradition is a recurring element of Novaro's approach, as already evidenced in the introduction of the work which showcases his extensive comparative expertise. He quotes plenty of names: Heraclitus, Parmenides, Plato, Protagoras, Giordano Bruno, Shakespeare, Goethe (mentioned almost on every page), Tolstoy, to name just a few, and there are even parallels with the Indian thought of the Upanishads.[21]

19 "Il Wilhelm modernizza un po' troppo l'originale con fraseologia tecnico-filosofica, e sopprime anche qualche particolare prettamente cinese per adattare meglio il testo all'uso europeo, mentre gli toglie il suo schietto sapore, sostituendo al particolare il generico".

20 This is partly the accusation Novaro has made in his letter to Papini against Puini's book on Daoism. Puini's approach toward the history of Chinese religions and thoughts can be also perceived in his collected essays published under the self-explanatory title *La vecchia Cina* (Old China).

21 These animated comparative insights, which were quite common at the beginning of the twentieth century, were partly the result of a vision of Chinese thought (or more generally of Asian cultures) that was one of the consequences of the Jesuits' 'invention' of China, in which points of contact and similarities with aspects of Western tradition were considered elements that contributed to the legitimacy of the other culture and betrayed the implicit and supposed superiority of those who contributed to spreading knowledge about it. However, there is no reason to doubt the genuineness of Novaro's intentions (which are widely expressed), whose diverse outcomes in the extensive introduction are the result of both speculations dictated by his personal

Apparently, the reception of *Acque d'autunno* was excellent, as indicated in reviews of the time,[22] and more than fifteen years after the first edition, all copies were sold out. Following a series of conflicts with Papini, Novaro was able to release an amended and expanded second edition in 1939, and after breaking with Carabba, an additional third revised edition followed for the Istituto Grafico Tiberino in 1943.

Agostino Biagi's translations, on the other hand, had a completely different fate. His manuscripts, together with all his other works, remained sealed in a box for over half a century after his death, and it was only in 2021 that they were discovered by his great-granddaughter and eventually brought to light.[23]

Biagi had an extremely eventful life, where his devotion to the missionary work, first as a Franciscan and then as a Baptist pastor, was accompanied by a deep fervour against the injustices suffered by the underprivileged, which he had always held dear. Therefore, his approach to anti-fascist groups and his strong stance on the events that marked his time is not surprising. In this context, he never gave up his dream of returning to China, towards which he had always felt an affection that never faded over the years; on the contrary, it may have become even stronger to the point of cultivating his passion and study of the Chinese language and culture for the rest of his life. The most evident proof is the rich production of translations he compiled over several decades, which have now emerged from oblivion.

formation and considerations drawn from the sources consulted. Therefore, it is from this perspective that one must understand, for example, the numerous references to the *Daodejing* (which he wished to re-translate, not showing particular preference for the existing Italian translation by Guglielmo Evans), to which Novaro refers in the introduction, as well as the references to Confucius, albeit filtered through the often-irreverent lens of the Daoist school.

22 The orientalist Paolo Emilio Pavolini praised *Acque d'autunno* in his review on the literary magazine *L'Italia che scrive* (1923, 107), saying: "Anche a giudizio di sinologi da me consultati, la sua versione può usarsi con piena fiducia – il che non può dirsi purtroppo di altre condotte sull'originale da chi sapeva di cinese 'quanto la punta di un pelo sul mantello di un cavallo'" (According to the sinologists I consulted, his version can be used with complete confidence - which unfortunately cannot be said of others who worked on the original and knew about Chinese 'only as much as a hair on a horse's coat'). The review does not mention the sinologists consulted by Pavolini.

23 Until the summer of 2021, Biagi's great-granddaughter Mara Carocci was in possession of only a few of the notebooks that her father had passed down to her, which contained Biagi's preparatory work for the translation of the *Divina Commedia*. It was only after her mother's death and during the process of clearing out the house in October that a box was found containing all the other manuscripts with all the translations of the *Divina Commedia*, several Italian translations of Chinese texts (*Zhuangzi* was among them) and other previously unknown materials. All materials have undergone an initial general assessment and have subsequently been examined by the author of this essay during the preparation of the present work. In relation to Biagi's translations of the *Divina Commedia*, a preliminary study has been recently published by the author in collaboration with Mara Carocci and Emanuele Banfi, released by the Accademia della Crusca (2024).

Biagi had a remarkable determination to have his knowledge and talent recognised. Already in the 1920s, while he was living near Avellino, he sought the possibility of teaching at the Regio Istituto Orientale in Naples (Carocci 2022, 92), but without success. It is difficult to know whether this negative outcome was also determined by the consequences of his anti-fascist activities, which had long been under the scrutiny of the fascist police. His personal experiences and serious economic difficulties would continue to mark him, and certainly never facilitate the possibility of asserting his skills in the appropriate context. As previously mentioned, this would only happen for a brief period in the early 1940s.

As of today, many questions about Biagi's personal life remain unanswered, as do many questions about his written works. For example, it is unclear whether he showed or shared his works with specialists in sinology, especially his translations of the *Divina Commedia*. It is also uncertain whether he had any native speakers' support in realising this enormous project and whether he showed his translations to any Chinese readers. Furthermore, it is unknown whether his translations of Chinese texts were solely intended for educational purposes or if he envisioned a wider readership, perhaps through publication. By examining Biagi's translation of the *Zhuangzi*, it may be possible to provide some answers or understand what underlies this and the other translation works he left us.

In the title, the word *testuale* (textual) is indicated in bold, which I believe should be understood as a specific connotation of the conception of his work. 'Textual' here, I believe, should be understood as an ideal adherence to the original text. Biagi certainly had the skills for this type of work and there are several elements that allow us to interpret it in this sense: he is one of the few to explicitly indicate Chinese sources in the bibliography, which allowed him to submit his work to a deeper interpretation, even comparing well-known Chinese commentaries such as Wang Qianxian's. Observing, for example, the rendering of the second chapter, *Unità delle cose* (*Qiwulun* 齊物論 'Equalising Assessment of Things'), a particular attention to the writing of the original text and to the alternation between prose and verse sections can be noted. Biagi, probably induced to this particular attention by the valuable sources consulted, is one of the few to dwell on this specific linguistic aspect that will be highlighted much later by Angus Graham. Consequently, the idea of 'textual' denotes a specific angle, perhaps more strongly linguistic than content-oriented.

The impression is that Biagi is deeply convinced that the essence of thought can be inferred and can emerge from the text itself. Although this may seem rather utopian to the Western reader approaching a work such as the *Zhuangzi*, a motivation can be detected in the same dialogic structure of most of the narrated episodes (which is

also very common in the tradition of ancient Chinese thought). It is likely that in Biagi's idea there was the confidence that an accurate textual rendering could allow the reader to independently determine the truth of the message, as Socrates did with his disciples. Therefore, it should be like a sort of μαιευτική in which truth would spontaneously sprout in the reader's consciousness. Generally speaking, Biagi's prose is rather less polished than Novaro's, but the former's version of all the poetical sections is much worth of mention for a distinct lyrical elan.

As mentioned above, Biagi's introduction to the *Zhuangzi* is brief and to the point. While it is possible that it was not solely intended as an educational text, but rather as a summary of the main themes, it cannot be ruled out that there may be other reasons behind its brevity. Perhaps it cannot even be excluded that Biagi did not fully feel a total communion with the principles as they were exposed in earlier Western texts. A case that can lead to this consideration can be found in his brief explanation of the concept of *wuwei* 無為 (non-action). In fact, he quotes Castellani, stating that this concept can be better understood as 'not overdoing' (*non strafare*). And then he adds:

> In its Daoistic extension, I believe that the expression 'not-action' should be understood in the individualistic causal sense, in antithesis to the Dao, which is in Man and driven by external reasons. You 'do not' for individual purposes or schemes.[24]

Biagi then points out the opposition to the opportunistic political involvement (rather than engagement, as he labels it with the rather slanderous "*politicantismo*") of the Confucian disciples. Biagi's interpretation of *wuwei* is rather noteworthy here; his conception seems to deviate considerably from the theoretical idea of the 'non-action' as a "conscious and relaxed tendency that gives space to the natural development of situations" (Andreini, Scarpari 2007, 26), proposing instead a vision in which the practice of virtue appears admissible as an active form only when it is not driven by individualistic impulses. This would appear to be further supported by his premise in which he refers to Castellani's interpretation as 'not-overdoing', something that the latter does only in an extremely limited number of occurrences.[25]

24 "Nella sua estensione taoistica, io ritengo che essa espressione : "non agire" debba intendersi nel senso causale individualistico in antitesi del Tao che è nell'uomo, e spinti da motivi esteriori a quello. "Non agire" tu secondo fini o schemi personali, individuali". Cf. Firenze, Accademia della Crusca, Fondo Biagi, 莊子周 // *TÇuan-ze Çou // Traduzione testuale di A. Biagi, 1921*, 2-3.

25 The use of the word *strafare* (overdoing) in Castellani's works on Daoism appears only within his *La Regola Celeste di Lao-Tse (Tao Te Ching)* as referred to the wrong

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At this point, one cannot help but wonder what motivations could be behind such a bold and divergent interpretation by Biagi, and whether it could be related to a specific envision of his ideal reader. Biagi's life experience shows that the Word of the Gospel has always been a focal point of his world view, and being on the side of the marginalised also meant taking a strong stand in defence of their rights. This became evident since his mission in China and probably was the real reason that led to his return to Italy. This stance was further confirmed by his subsequent anti-fascist activities, which resulted in him being monitored by the police and, in 1926, being denounced and then prosecuted (although he was acquitted). Even after his surely staged 'repentance' in 1942, he apparently continued to maintain contacts with anti-fascist and partisan circles, to the point that, among his manuscripts, in addition to the Chinese translation of *The Internationale*, there was also a translation of the partisan song of the Garibaldi Brigade Cichero, which operated on the Genoese hills between 1943 and 1945.[26]

Therefore, political engagement and activism were clearly part of Biagi's life. Considering the implications of Biagi's world view, it becomes clear how he arrived at his particular conception of the *wuwei*. His inclination towards proselytism, in which the principles of the Gospel merged with a clear ideological orientation, did not merely contemplate the natural course of events in the world, but also envisaged the possibility of an active response to specific stimuli, a response ideally driven by collective intent. Thus, it can be inferred that Biagi's approach to the *wuwei* went beyond the acceptance of things as they were, thus actively pursuing for a better world. This was fuelled by his Christian faith and his commitment to social justice,

behaviour of the sovereign towards his subjects when he misses the 'non-action'. As explicit reference in the explanation of the concept of *wuwei*, it appears only in the comment of the sixty-fourth stanza, when he says (1954, 109): "Il Non-fare non deve essere il frutto dell'inerzia ma della nostra più perforante penetrazione […] da contrapporsi alla fretta infeconda di chi pretende strafare la quale si fonda sempre sopra una inguaribile angustia di coscienza" (Non-action must not stem from inertia but from our most penetrating insight […] as opposed to the barren haste of those who strive to overdo, which always arises from an incurable narrowness of consciousness). However, he never uses this expression while expounding the *wuwei* in the chapter "Il suo compito terreno" in his *La dottrina del Taoismo. Ricostruita sui testi cinesi ed esposta integralmente* (1927).

26 The song *E giustizia sarà – Il canto della Cichero* was officially published in September 1944 on the clandestine journal *Il Partigiano* that was edited by Giovanni Serbandini (1912-1999), also known as 'Bini'. In the manuscript, the Chinese translation is followed by Biagi's dedication in verses to Bini, who was among the founders of the Cichero brigade in 1943. The dedication also mentions the newspaper *L'Unità*, of which Serbandini would become the founder of the Genoese section and which he would lead from 1945 to 1958, when he will be elected as a deputy of the Italian Communist Party. Therefore, it can be deduced that the manuscript is at least from the post-1945 period. In the manuscript, Biagi refers to himself as 'old and paralysed,' which is quite evident in his unsteady handwriting. Cf. https://www.anpi.it/biografia/giovanni-serbandini-bini

which led him to be a vocal advocate for the rights of the marginalised and oppressed. His vision of *wuwei* and the transmission of this concept within the *Zhuangzi* was then not a withdrawal from the world, but rather an engaged and transformative way of being in it.

5 Λάθε βιώσας

The author of a modern Italian edition of *Zhuangzi* declares in the last paragraph of its preface:

> To avoid sterile controversies, I allow myself one last consideration. Usually, the translator of certain works is a philologist, endowed with an excellent knowledge of the language but, unfortunately, with insufficient and sometimes non-existent philosophical background. Since certain texts cannot be without it, it seemed necessary to me to approach *Zhuangzi* from a different perspective. (Arena 2018, 47)[27]

Apart from the trivial generalisation regarding the category of philologists, the acrimony of this statement allows us to clearly discern a divergence in the approach to a text like the *Zhuangzi* (and even more manifest with the countless versions available of the *Daodejing*), which has been evident since the early twentieth century and implicitly reveals a methodology in which any textual nonconformity is blatantly justified in terms of clarity for the reader, an *excusatio non petita* that may betray, for those more shrewd and informed, a lesser familiarity with the complexity of the core significances within the original text. And exactly here lies the clear difference between a translation aimed at the creation of a product (regardless of how successful or not) meeting the expectations of the mass' reader and one based on a deep scientific analysis.

27 "Per evitare sterili polemiche mi permetto un'ultima considerazione. Di solito, il traduttore di certe opere è un filologo, dotato di un'ottima conoscenza della lingua, ma, spiace constatarlo, di una insufficiente e talvolta inesistente preparazione filosofica. Poiché certi testi non possono prescinderne, mi è sembrato necessario affrontare il Zhuangzi in un'altra ottica". It should be reminded that so far none of the published Italian translations of the *Zhuangzi* was written by a 'fully fledged' sinological philologist.

If we look at the two cases presented here, it is true that Biagi's work does not mention some earlier versions of the *Zhuangzi*, and it is also true that neither Novaro's is mentioned. The latter is even ignored, perhaps carelessly or intentionally, in a short text published on the same subject and by the same publisher shortly thereafter (Carbone 1938), and it is substantially absent from the bibliographies of more recent editions, including that of the author of the above quotation.[28]

Both Biagi and Novaro had to undergo marginalisation, though for very different reasons. Biagi's marginalisation was fundamentally linked to contingent factors that prevented him from giving voice to his impressive work or finding fertile ground to sow the fruits of his long labour, which remained unknown for about a century but fortunately preserved and now brought to light and made available to the scientific community. His valuable contribution already denotes a modern approach to translation in which numerous elements of intertextuality emerge in his Italian renderings, and this is even more evident in his versions of the *Divina Commedia*.

On the other hand, Novaro's marginalisation is of a different kind: his publication had some success, as evidenced by subsequent reissues. However, it was a work not conducted by a specialist of the Chinese language or philosophy, but by a philosopher who, in perceiving an affinity of thought, wanted to disseminate knowledge through his own realisation. He was consciously an outsider, and so was considered his work even after his death. As a result, the contribution of Novaro must be understood and valued within the epoch in which it was produced, and above all for the reasons that led to its creation.

However, there is a common point that seems to connect such different lives as those of Biagi and Novaro. Their Italian renderings of the *Zhuangzi* were, in fact, products of particular moments in their lives, moments that could well align with the Epicurean phrase Λάθε βιώσας, or 'live in hidden'.[29] Epicurean solitude, advocating the avoidance of public attention, fame, or political involvement, considers the essence of meditative practice as an attempt to reconnect the soul and inner self with nature.

In the case of Novaro, the first edition of the *Zhuangzi* appeared in 1922, notably at the encouragement of his friend Papini. This,

28 It only appears in Sabbadini's bibliography, where Novaro is mentioned within brackets as the prefacer of *Acque d'autunno*. However, it is worth noting that the summary of *Acque d'autunno* on the back cover of the facsimile reprint of the fourth edition published by Laterza is signed by Lionello Lanciotti (1925-2015), one of the leading Italian sinologists of the twentieth century.

29 While this exact phrase cannot be found in Epicurean sources, it has been referred to many times in later philosophers as in Philostratus' *Vita Apollonii* [8.28.12] or in Plutarch's treatise Εἰ καλῶς εἴρηται τὸ λάθε βιώσας -*De latenter vivendo* within his Ἠθικά - *Moralia* (cf. Roskam 2007).

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however, was a crucial moment in Novaro's life: in 1917, during the First World War, he lost his son Cellino, with whom he had often shared reflections on Zhuangzi's thought; in 1919, after two decades, he permanently suspended the publication of his review *La Riviera Ligure*, which had so significantly contributed to the dissemination of new literature in the early twentieth century; later, in the 1920s, his poetic inspiration waned, following the publication of his finalised anthology *Murmuri ed echi* in 1919. Novaro, now in his fifties, appears to have entered a new and last phase of his life, marked by a retreat into hidden living – a twenty-year period in which he greatly reduced his social contacts, seeking refuge in the constant rereading and reediting of his *Acque d'autunno*, which he dedicated to the memory of his son.

In Biagi's life, the *Zhuangzi* took its shape in 1921 (according to the date on the title page) at an equally pivotal moment in his existence. Biagi had departed from the Franciscan order only two years earlier, joined the American evangelical church in 1920, married Sofia, and moved to Sicily, where he began his pastoral ministry and soon encountered direct confrontations with local fascist groups. In 1921, he was transferred to Avellino, where he was already noted by the Prefectures for his anti-fascist activities, to the point of being nicknamed 'a communist evangelical pastor'. His life during this period was marked by severe hardships and poverty due to the mission's meagre financial support and restrictions on the public exercise of his ministry because of the accusations against him. At this stage in his life, 'living in hidden' was for Biagi both a necessity forced by circumstances and a way to embrace a life sublimated through the practice of extreme frugality; a way of life that resonated not only with his evangelical proselytisation but perhaps even more with the words of the *Zhuangzi*, in his return to the essence of the inner voice, essential for strengthening the spirit and restoring harmony with the external world.

Consequently, based on the points outlined above, it is evident that the marginalisation experienced by both Novaro and Biagi can be attributed to life circumstances, and thus partially viewed as a conscious choice from their side. For Novaro, the publication of *Acque d'autunno* marked the culmination of a spiritual transformation that had been underway for at least a decade. Free from material and prestige-driven aims, Novaro's dedication to Zhuangzi's thought thus appears to arise from the spontaneity (*ziran* 自然) that repeatedly surfaces as an existential axis in the life of the Daoist sage.

In contrast, Biagi's marginalisation results from external forces that compelled him to pursue his work and research with caution and discretion over more than two decades. In this respect, Biagi had to accept it as a constraint that decisively shaped his future decisions. Nevertheless, he did not adopt an eremitic existence;

rather, he sought, within the limitations of his circumstances, opportunities to have his expertise acknowledged within the sinological field. This effort indeed began with an (unsuccessful) attempt to apply as a lecturer at the Oriental Institute of Naples in 1926. Although he remained outside the formal academic sphere, his close scrutiny by authorities likely constituted an additional barrier to any such efforts at professional engagement. Therefore, his 'repentance' in 1942 – a gesture certainly simulated, as several indications suggest that he maintained connections with partisan groups well beyond that date – should be understood from this vantage point. Yet, this act eventually allowed him to establish contact with Giuseppe Tucci and commence his, regrettably brief, career as a Chinese instructor for the ISMEO.

By taking into account all these elements, which played a decisive role in shaping the very different lives of Novaro and Biagi, we can better understand and appreciate the fruit of their work by properly contextualising it within the diverse milieus in which it developed.

A century later, we stand in an environment where those responsible for disseminating knowledge must fulfil all necessary standards to produce works that adhere to scientific rigour, accessibility, and clarity. The practice of offering provocative justifications to implicitly excuse any perceived shortcomings no longer aligns with the expectations of our era.

In their own unique ways, Novaro and Biagi were pioneering figures whose paths illuminate the significant responsibilities of facilitating communication across cultures. Their work exemplifies the essential task of harmonising cultural sensitivity with intellectual integrity, offering a model for fostering meaningful and respectful knowledge exchange. Their contributions, beside any inherent shortcoming, underscore the importance of a thoughtful approach, respecting cultural nuances while upholding intelligibility and ethical awareness. By examining the tracks they established, we gain valuable understandings into the complex challenges and opportunities within the evolving landscape of intercultural dialogue, informing future approaches that prioritise authentic insight unmarred by pretentiousness or mannerism.

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The Frame of Western Learning and the Systematicity of Chinese Translated Technical Terminology

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Abstract Modern scientific terminology relies on univocity (clear meaning) and systematicity (organised structure). Strict definitions are key to distinguishing technical terms from everyday language. Yan Fu noted China's tradition of mutual glossing but lack of definitions. Systematicity, as seen in Linnaeus's eighteenth-century classification, organises growing knowledge. China and Japan adopted Western science differently: Chinese actors used new characters, while Japan focused on synthesis. The method employed in Japan proved more effective. This paper explores their linguistic approaches to developing scientific terminology, ensuring univocity and systematicity.

Keywords Neologisms. Newly coined words. Systematicity. Affixation. Translation.

Summary 1 Introduction. – 2 Understanding the Characteristics of Terminology: Mill and Yan Fu. – 3 From Character Components to Radicals. The Classification Tradition of the Culture of Chinese Characters. – 4 The Temptations of *Cang Jie* 倉頡: Creating New Characters. – 5 Do Translators Need to be Proficient in 'Philology'? The Impact of Zhang Taiyan and His Successors. – 6 Conclusion: Insights from *Rangaku* and the Birth of New Affixes.

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1 Introduction

What is commonly known in China as the 'Eastward Spread of Western Learning' (*xixue dongjia*n 西學東漸) essentially refers to the historical process of a Western knowledge system being introduced and integrated into the East through the medium of Chinese characters.

Throughout history, Chinese characters always responded to the addition of concepts through a special method of growth. And in the great historical process of the reception of Western learning, Chinese characters also played a decisive role in their distinctive manner. Western learning as a novel scientific system is characterised by the unambiguous nature and systematicity of its terminology. The strictness of definition is an essential means for guaranteeing univocity and distinguishing between common words and technical terms. As Yan Fu 嚴復 (1853-1921) pointed out, the Chinese language only has a tradition of glossing and lacks the practice of defining or delineating objects. From another point of view, systematicity is a necessity for organising the ever-expanding accumulation of knowledge. The biological classification system invented by Carl Linnaeus (1707-1778) in the eighteenth century is the most scientific attempt. In the East, the radicals of the Chinese characters serve as the model for reflecting the classes of the external world in language. But radicals are merely visual symbols that need to acquire sound. Vis-à-vis the scientific conceptual system of the West, John Fryer (1839-1928) and Western missionaries decided to coin new characters as a means to translate terms. Scholars such as Zhang Taiyan 章太炎 (1869-1936) and others advocated to employ traditional philological knowledge of coining new characters to address the increasing number of new concepts. Japan, however, which faced the same terminological problems, used a synthetic method, employing compound words and affixation. In the end, practice corroborated that Japan's synthetic methods were the only feasible way to adopt foreign conceptual systems on a large scale. This article will explore the similarities and differences, as well as the achievements and shortcomings in the history of translatory innovation from the perspective of a scientific narrative characterised by linguistic consistency.

2 Understanding the Characteristics of Terminology: Mill and Yan Fu

The translation of Western scientific books at the outset requires addressing the issue of terminology. Terminology forms the foundation upon which scientific narratives are constructed. Yan Fu, when translating *Evolution and Ethics*, recognised the importance of adhering to scientific standards in dealing with scientific terms by means of

'definitions' and 'explanations'.[1] The second introduction to *Evolution and Ethics* is the section of the original book in which in a broad sense a definition of 'evolution' is provided. However, both in terms of conceptual expression and linguistic form, Yan Fu's translation fails to exhibit the characteristics expected of a scientific definition. On 19 September 1898 (the fourth day of the eighth month by the lunar calendar), Yan Fu in a lecture presented "Five Rules of Definition".[2] At this time, *Tianyanlun* 天演論 (the translation of *Evolution and Ethics*) had just been published, and Yan Fu was in the process of translating Adam Smith's *The Wealth of Nations*.[3] In general, *Evolution and Ethics* is a popular science lecture intended for a general audience, and the issue of terminology is not particularly prominent. However, as the original works which Yan Fu translated became more specialised, the problems related to terminology and its definitions became increasingly prominent. "Five Rules of Definition" reflects Yan Fu's contemplation on definition issues during this period. When Yan was translating Mill's *Logic*, he had to confront the following questions:

1. What meaning do words have, especially which characteristics do science terms have regarding their meaning?
2. What is a definition, and how should it be carried out?
3. What kind of influence did the language behaviour of the Chinese people and the contemporary Chinese language have on definitions?

In the introductory part of his book, John Stuart Mill (1806-1873) provides a detailed and precise definition of logic, in the second part of the first volume he further writes on the problem of using existing words as technical terms:

1 As for example in the introduction of his translation of *Evolution and Ethics* he writes: "[Spencer] defines 'evolution' as 'Evolution is an integration of matter and concomitant dissipation of motion during which the matter passes from an indefinite incoherent homogeneity to a definite coherent heterogenity'" (1981b, ix). Yan Fu's commentary runs: "The principle of evolution is the integration of matter and concomitant dissipation of force. In the process of its practical application things change from simplicity to complexity, from fluidity to coagulation, from chaos to order. The mingling of substance and force, in mutual interaction, gives rise to transformations" (6).

2 The content of "Five Rules of Definition" is as follows: "First, a definition must embody the virtues of the object, any deviation from this results in confusion. Second, a definition must not use the words that are defined, and violation of this leads to circularity. Third, a definition must include all the named things, any failure to do so results in omission. Fourth, a definition must not use semantic glosses or explanations, violating this leads to obscurity. Fifth, a definition must not use words like 'non', 'without', 'not', etc., violating this results in negation" (Yan 1986, 1: 95-6).

3 According to Pi Houfeng (2006, 414-20), *Tianyan lun* was published in June 1898. At this time, already 146 pages of Smith had been translated.

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> Even scientific writers have aided in this perversion of general language from its purpose; sometimes because, like the vulgar, they knew no better; and sometimes in deference to that aversion to admit new words, which induces mankind, on all subjects not considered technical, to attempt to make the original stock of names serve with but little augmentation to express a constantly increasing number of objects and distinctions, and, consequently, to express them in a manner progressively more and more imperfect. (Mill 1882, 40)

Yan Fu, in a note to his translation, writes that over time, the gap between the "name" and the "reality" of things widens to the point where the "name" can no longer represent the "reality" and cannot be used in science. Not only do ordinary people employ nouns thoughtlessly, at times even those "scientific writers" who should be much more cautious in the same way as ordinary people "destroy language". He points out:

> When language is in such a state of confusion, the task of using it for profound and difficult matters of knowledge and principles becomes extremely difficult. (1981a, 35)

General words thus cannot be used as precise scientific terminology. Yan Fu closely related Mill's discussion on the general tendency of semantic change to the narrative of science. In his translated text, Yan Fu rather accurately conveyed Mill's intentions, but at the same time even more stressed the peculiarities of scientific terminologies.

Regarding the influence of language on scientific discourse, Yan Fu employs the words of Alexander Bain in order to point out:

> The definition of meaning is explained by using properties similar to it. However, when things with the same name now have different properties, or when things have similar properties but different names, it becomes impossible to define meaning. (1981a, 35)

Yan Fu stressed that, originally, "the names of things have drifted far from their proper meaning to that extent that there is no clear definition".[4] Science, however, begins with definition and without strict definitions there can be no scientific narrative. Therefore, those engaged in science often abandon common names and create new

4 "Therefore, those who engage in the sciences, quite often refrain from using popular names and create new ones, in order to seek the true essence of language and thought, detached from conventional paths, and indeed in these matters there often is no other choice" (Yan 1981a, 35).

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terminology out of necessity.[5] Considering Yan Fu's extensive use of archaic and less common words in his translation, one can agree with this assertion.

Chapter eight of Mill's original work was titled "Definitions". Here the author of the original work focuses on the issue of defining words. Firstly, regarding what a 'definition' is, Mill states that a definition is a proposition that expresses the meaning of a word. As for how to define, Mill says that listing all the attributes is the most precise and least ambiguous way of defining. However, this method is not very concise, if too many technical terms are involved it is not convenient to use it in everyday contexts. A more common approach is to use one or more other words to explain a word that needs to be defined. However, it is normally assumed that this cannot be considered a definition (this is the technique Yan Fu referred to as 'mutual glossing' *hu xun* 互訓, explained later). Mill states that the definition of a term is the sum of its attributes, which also means that a definition can be broken down into a set of attributes. Mill moreover discusses questions such as the distinction between "complete definition", "incomplete definition" (Mill 1882, 106-7) as well as the difference between complete definition and description.

The term *dingyi* 定義 used today for 'definition' was introduced from Japanese. Yan Fu employed the term *jieshuo* 解說. The earliest appearance of this term in a scientific context is in Matteo Ricci's (1552-1610) and Xu Guangqi's 徐光啟 (1562-1633) translation of Euclid's *Elements* (*Jihe yuanben* 幾何原本, 1607). At the beginning of the first chapter of the book, there is an attached list containing thirty-six definitions, where terms used in the book are defined. Ricci explains:

> Always when you set up a discussion, you first have to separate, distinguish and explain the list of names that is going to be used in the discussion. That is why they are called 'definition'. In all matters pertaining to calendrical methods, geography, music, the crafts and arts, there is Measure and there is Number. This all is subordinated to one of the ten categories, the category of quantity. Generally speaking, Quantity starts with one Point. A Point

5 Yan Fu in his 'translation' writes: "A word with a single meaning should only have one usage, this would achieve the highest reliability. In seeking it through language and written words however, it is not only difficult to attain, but nearly impossible. Even if words only have one meaning, when used by those who do not understand, unfortunately, through widespread usage, diverse meanings proliferate, rendering them insufficient as resources for exhausting knowledge and understanding principles", which actually goes beyond Mill's original text in demanding 'univocal' names in science (Yan 1981a, 42; Mill 1882, 44). Mill also writes: "Scientific definitions, whether they are definitions of scientific terms, or of common terms used in a scientific sense, are almost always of the kind last spoken of: their main purpose is to serve as the landmarks of scientific classification" (1882, 109).

> is then prolonged to a Line, and a Line is developed into a Surface. A Surface is accumulated into a Solid. Those are called the three Magnitudes.[6]

The first term defined is 'point': "A point: it has no parts" (Engelfriet 1998, 155). Further on at the beginning of every chapter there are definitions of the technical terms used. The first six chapters of Euclid define 80 terms.

The concept of *jieshuo* as a linguistic practice does not have any tradition in China. In a commentary, Yan Fu says that in the West, from the time of Aristotle in ancient Greece on, it has been a common teaching to conduct definitions before engaging in any intellectual endeavour. Therefore, as long as a person was reasonably educated, this tradition would not be violated.

However, China did not have the linguistic habit of defining nouns. Yan Fu specifically points out:

> In the past if one had a term and wanted to explain it, there was no other way than employing the technique of 'semantic glossing' (*xun gu*). If two words were similar or near to each other, then they could be used for 'mutual glossing'. (1981a, 103)

Chinese ancient dictionaries such as the *Erya* 爾雅 or the *Shiming* 釋名 all followed this pattern. For example, the statement 'Large: This means great' (*juzhe da ye* 巨者大也) does not involve describing and defining attributes. Therefore, Yan Fu explained that 'glossing' is not providing 'definitions', it only involves mutual explanations of words, explaining the semantic changes of words from ancient times to the present. Yan Fu added:

> From the perspective of a scientist, this merely constitutes a gloss and cannot be taken as a definition. A definition involves using several words which have a meaning and put them together. Their meaning corresponds to that, what one wishes to define. So, one could say: "A human is a thing that has a body, organs, is filled with life and a spirit and has such an outward appearance". There we have a definition. (124)

A definition should be "exhaustive, covering all attributes". Mill, however, also says that, in everyday contexts, 'mutual glossing' style definitions are unavoidable, such as "A human is a member of the human species" (Wang 1986, 5: 1243).

6 Translation in Engelfriet 1998, 138-9.

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> This is because human cognition of things proceeds gradually. For this reason, the most superficial and most easily understood method is 'mutual glossing'. This is if two terms have the same meaning and if the latter is already known, such as 'a pheasant is a wild chicken', or 'an undercurrent is a stream flowing back' and so on. (Yan 1981a, 124)

Yan Fu apparently was unable to escape the influence of nominalism and he adhered to the Confucian principle of 'proper designation and smooth words'. He criticised China for its scientific backwardness, which resulted in not understanding the essence of things, so that even if a name was clearly incorrect, this was not realised. As for example the 'Five Planets' (*wu wei* 五緯) are still called stars, although they were no stars, or the whale (*jing* 鯨), the mythical fish (*kun* 鯤), the sturgeon (*xun* 鱘) and the Huso sturgeon (*huang* 鰉) all employed the radical for fish although they do not constitute fish. 'Stone charcoal' (*shitan* 石碳) should not be used in order to denote 'coal'. Mercury (*gong* 汞) should not be denoted as being 'sandy', etc. Such examples were extremely numerous. Especially after trade was opened with the West, a large number of Western products was imported, but the translated names were incorrect. Examples include 'Fire-wheelship' (*huolunche* 火輪車) for steamship, 'self-chiming clock' (*zimingzhong* 自鳴鐘) for an automatic clock, 'self-flowing water' (*ziliushui* 自流水) for tap water, 'self-coming fire' (*zilaihuo* 自來火) for gas, 'electric *qi*' (*dianqi* 電器) for electricity, 'elephant skin' (*xiangpi* 象皮) for rubber, 'foreign gun' (*yangqiang* 洋槍) for Western firearms etc. (1981a, 35-6). To address this, scientific knowledge was essential. For this reason, Yan Fu pointed out China's second great weakness: because of a lack of scientific knowledge, the people were unaware of the original principles of things and merely from the appearance created names. It was therefore, that erroneous terms such as 'fire-wheel car' and 'self-chiming clock' could appear.[7] Yan Fu pointed out that, apart from issues related to knowledge, there were certain problems inherent in the Chinese language during that time. The disconnection between names and realities was a common issue in the languages of various countries, but it was particularly pronounced in China, as he stated. When discussing abstract and concrete terms, Yan Fu wrote:

7 'On-the-Spot Naming' is a naming method that captures the surface of things and can be explained in a popular etymological way. Until the mid-nineteenth century, the translated terms of missionaries active in Guangzhou exhibited this characteristic, such as 'light air' (*qingqi* 輕氣, hydrogen), 'nourishing air' (*yangqi* 養氣, oxygen), 'worship period one' (*libaiyi* 禮拜一, Monday), 'protecting against danger' (*baoxian* 保險, insurance), 'accompanying a trial' (*peishen* 陪審, jury). The Shanghai-term 'study of change' (*huaxue* 化學, chemistry) also is a result of on-the-spot naming (cf. Shen 2010).

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> This is so in the case of the 'property of white' (*baide* 白德). Its definition would be: objects, which enable me to perceive whiteness (in this context, the word *bai* 白 in the phrase has a different meaning from the original name *bai* 白, thereby avoiding any offense); as for example, in the case of white objects, their definition can be stated as 'things that evoke a sense of whiteness in people'.[8] (27)

Since Chinese does not have morphological changes, single-syllable forms do not have the means to offer such distinctions.

Yan Fu once again provided a concentrated discussion of terminology in *Zhengzhi jiangyi* 政治講義 (Lectures on Politics, 1906) (Wang 1986, 5: 1241-316). This is the transcript of a series of lectures given by Yan Fu in the early summer of 1905, in response to an invitation from Lu Junwei 駱君維, secretary of the Chinese YMCA. According to research by Qi Xueben 戚學本, *Zhengzhi jiangyi* is a translation of *Introduction to Political Science* of the English historian J.R. Seeley published in 1885[9] (2014). However, unlike general translated works, due to being a transcript of lectures, it inevitably incorporates a large number of colloquial elements, leading to issues of consistency in language. Yan Fu at the outset informs his audience that when discussing scientific issues, it is necessary to have (1) clear and precise terminology (*mingyi liaoxi* 名義了晰) and (2) systematic reasoning (*sili cengzhe* 思理層折), which means establishing rigorous terms and cultivating scientific thinking habits. Especially the former is the foundation of scientific discourse; otherwise,

> Sometimes the meaning is already very clear, yet one may still consider it profound and difficult to comprehend. Or, thinking that one has understood, it turns out that the reality is much farther away. (Wang 1986, 5: 1243)

The viewpoint expressed by Yan Fu here does not exist in the original work; it is specifically added by him for the Chinese audience and consistently runs through the entire lecture.

Regarding the question of scientific terminology, Yan Fu in his lecture repeatedly emphasised:

- "All of you [audience] should understand that the first step in engaging with science is to rectify names". (5, 1247)

8 The original text runs: "Whiteness may be defined, the property or power of exciting the sensation of white. A white object may be defined, an object which excites the sensation of white" (Mill 1882, 133).

9 I used the 1896 edition of Seeley as reference. For a translation of Seeley's work into modern Chinese, cf. Shen, Guo 2016-19.

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- "When we discuss politics, we are talking about science. Since it is considered a science, the meanings of the words used in it must be clearly defined without any ambiguity". (1280)
- "A scientific term only has one meaning. If there is a second meaning, we must ask, whether these two meanings are compatible to each other. If they are compatible, it is fine, if they conflict with each other and don't match, then one of them can be employed, the other one needs to be done away with. Only then can the term be used without violating the prohibition of contradicting the principles of language". (1285)
- "This is precisely the crucial task of science; without this, there is no science. Confucius said: 'It most definitely would be to rectify the names'. There has never been a case where names and meanings are vague, and the principles discussed are clear. If you all adhere to this warning, your achievements in science will be considerable". (1285)
- "Scientific terms must have unambiguous meanings and must not allow for ambiguity or contradictions". (1290)

Yan Fu used the example of the term 'freedom' in order to illustrate his points. In general language usage within society, the term 'freedom' roughly encompasses three meanings:

1. "Freedom is the independence and sovereignty of a country, which is not subjected to the restraint and interference of the powerful. This meaning has been transmitted since antiquity, and is most commonly found in historical records and poetry.
2. Freedom is the responsibility of the government towards its citizens. This concept existed in ancient times and remains relevant today. The conflicts between rulers and citizens in Europe often revolve around this idea. Hence, it is said that freedom is like a tree, it must be nurtured with bloodshed before it can grow.
3. Freedom as the limitation of the government's governing power. This can be observed in various aspects of life, such as religious freedom, free trade, freedom of the press, freedom of marriage, freedom of association, which all belong into this category. Often, these types of freedoms coexist with the second category of freedom". (1284)

This is a situation in daily life, but "science cannot not follow it suit because scientific terms cannot tolerate ambiguity, let alone contradiction" (1290).

In his own writing, Yan Fu declared: "To follow the third sort of meaning and simplify government, this then is political freedom" (1290). However, at that time in 1906, the formation of Chinese scientific and technical terminology was still incomplete and

the terminological system in the humanities had just begun to be formed. Yan Fu exclaimed:

> Freedom in the political realm has just this meaning. If we use this term according to the laws of science, then it must not have other uses. Thus, when we use it, then we do it according to the definition. Unfortunately, words in common usage are prone to change. As the examples mentioned before, there may still be ways to grasp other meanings or intentions. Moreover, if there are considerations beyond those mentioned earlier, there may still be ways to understand other intentions or meanings. (Wang Shi 1986, 5: 1284)

Even though the state of the Chinese language at that time did not satisfy Yan Fu, he said: "I can only cope with it". He complained stating:

> The regrettable aspect of the Chinese language lies in the misuse by scholars, resulting in the corruption of language with confusing and elusive words. This is a great obstacle for the development of scholarship. You all will realise this in the long run. Today, I, whom I am not talented, discuss science with you using the language of our country. It is akin to a watchmaker using old Chinese tools like knives, saws, hammers, and chisels, causing only those familiar with them to truly understand the hardships involved. However, we can only deal with what is at hand. Simultaneously, we must strive to refine and improve, while using it with utmost respect. There is no other way. (1247)

3 From Character Components to Radicals. The Classification Tradition of the Culture of Chinese Characters

As described by Yan Fu, scientific terms, or 'terminology', must possess unambiguous meanings; another important characteristic of terminology is its systematicity. Human cognition of the external world, with its myriad phenomena, is chaotic and disorderly but when it becomes the object of human cognition, it is endowed with a certain structure. It is determined by the physiological limitations of the human brain. Due to the scattered nature, handling cognitive objects that lack connections would be more time-consuming and laborious. With the development of human cognitive abilities, there is the need to classify and organise the knowledge that has been accumulated at home and abroad from antiquity to modern times. Linnaeus' system of plant and animal classification was specifically developed to cope with the explosion of knowledge that followed the age of

discovery. The modern Japanese enlightenment thinker Nishi Amane 西周 (1829-1897) has pointed out that human knowledge has evolved from isolated "limited knowledge" to a panoramic "comprehensive knowledge", enabling a broader understanding of the environment. After the nineteenth century, Europe entered a stage characterised by "knowledge with organised structures" (Nishi 1874, n.p.), becoming an academic discipline for both science and governing the state. The medical missionary S.A. Hunter who was working in China said:

> The nomenclature of any science is a true exponent of its condition and progress. Every advance in scientific knowledge has been indicated by a more thorough and accurate terminology, as well as by a higher and more perfect classification. (Hunter 1890, 158)

Classification is the systematisation of knowledge; terminology must reflect this systematic nature to ensure the accuracy and nimbleness of knowledge transmission.

In ancient China whether nouns, verbs, or adjectives, all adopted monosyllabic forms. In the less-developed morphological structure of the Chinese language, mono-syllables serve as a non-analytical phonetic unit, there is no inherent classification. However, in the process of obtaining a written form through the creation of Chinese characters, Chinese words were influenced by considerations of folk classification, as for example character components such as 'wood' (*mu* 木), 'fish' (*yu* 魚), 'worm' (*chong* 虫), 'water' (*shui* 氵), 'word' (*yan* 讠), 'gold/metal' (*jin* 金), 'stone' (*shi* 石), 'foot' (*zu* 足), 'mouth' (*kou* 口) etc., which already fulfil the function of categorisation.

Character components are of course components for constructing characters belonging to visual imagery and unrelated to spoken language. They reflect the folk understanding and classification of the natural world, especially the plant and animal realms. In the later development of Chinese vocabulary (binominalisation), the markers originally enclosed in the Chinese characters were released and obtained phonetic form such as:

A

松樹	柳樹	榆樹	鯽魚	鯉魚	鯨魚	蝗蟲	駿馬
songshu	*liushu*	*yushu*	*jiyu*	*liyu*	*jingyu*	*huangchong*	*junma*
pine-tree	willow-tree	elm-tree	crucian carp	carp	whale	locust	fine horse

B

樹根	樹葉	樹枝	魚鱗	魚鰭	魚鰓	車輪	車軸	車轅	馬駒
shugen	*shuye*	*shuzhi*	*yulin*	*yuqi*	*yusai*	*chelun*	*chezhou*	*cheyuan*	*maju*
tree roots	leaves	branches	fish scales	fish fins	fish gills	wheel	axle	carriage shaft	colt

The A-form is an inclusive structure, where the posterior component (underscored) serves as an affix to indicate the class of the object written before. The B-form is a segmental structure, where the front part of the compound word represents the whole, and the back part represents the part. In group B, the category component is placed at the front of the compound word, serving a limiting function, thereby ensuring the clarity of metaphorical and extended usage of the posterior component. For example, *gen* 根 originally referred to the roots of a tree, but after the permutation of the limiting components, it can also refer to grassroots (*caogen* 草根), to the heel of a foot (*jiaogen* 腳根), to the base of a wall (*qianggen* 牆根), and so on. The underscored components in the aforementioned A/B classes serve as redundant elements in terms of meaning but carry the function of classifying or distinguishing objects at the colloquial level. The phenomenon of classifying two-character words already existed in oracle-bone inscriptions, and the development of affixes in modern Chinese has further evolved in three-character and four-character words. Oracle bone script is pictorial, and composed by pictograms. Although normally designated as 'single-bodied characters' (*wen* 文) it also contains a large number of 'joint-bodied characters' (i.e. characters that can be dissected into individual parts). The components later came to be referred to as *pian* 偏 or *pang* 旁, among which some have become common components, although their number is small, such as *shou* 手 (hand). The *Shuowen jiezi* 說文解字 (Explaining Simple and Analysing Compound Characters), compiled by Xu Shen 許慎 (58-147) during the Eastern Han Dynasty (23-220 AD), consists of a total of 9,353 characters. Additionally, there are 1,163 *chongwen* 重文 (variant characters). They are classified into 540 different *bu* 部 (compartments) which became the means for retrieving other characters. There are still many facts of this process which need clarification, but the establishment of the classification system certainly is of great significance. But this is not all: The process of character components becoming 'radicals' also was a period of the great proliferation of characters. When sound-components and form components are combined in order to form new characters, the form component at the same time also becomes the classification symbol. After the *Shuowen jiezi* there was a substantial increase in the number of characters. Zhang Taiyan said: "Extending Xu, from the *Yupian*

to the *Jiyun* there were no less than 20,000 characters" (2014, 45). At the time the *Kangxi Dictionary* was compiled, the number of characters included into the dictionary already was more than 40,000. The complexity of such a vast system of linguistic symbols undoubtedly increased the difficulty in its usage.

4 The Temptations of *Cang Jie* 倉頡: Creating New Characters

The Japanese Rangaku scholar Ōtsuki Gentaku 大槻玄澤 (1757-1827) in the chapter five *Meigi kai* 名義解 (The Explanation of Names) of his *Chōtei kaitai shinsho* 重訂解體新書 (Revised New Book on Anatomy) writes:

> When providing specialized translations today it is essential to ensure the appropriateness of the nomenclature in accordance with the original. Translation should not be done by creating new words or using newly devised characters arbitrarily. Terms such as *shun* 肫, *chitsu* 膣 (vagina), *setsugo* 攝護 (prostate) or *kaitai* 解體 (dissection), as well as *shinkei* 神經 (nerves) and *rohō* 滤胞 (follicle) are all examples. (1826, j. 5, 1b)

The newly coined characters mentioned by Otsuki actually refer to two different situations: (1) using obscure and abandoned characters to translate new concepts in Western medicine, in which case these characters are given new meanings; (2) creating new characters to represent Western medical concepts that do not exist in Chinese medicine. In respect to the former, *shun* and *chitsu* mentioned by Otsuki are examples, another character used in the book is *jun* 腱.[10] All three characters can be found in Chinese dictionaries. Regarding the latter practice, *sen* 腺 really is a newly created character, which was used for translating 'gland'. However, newly created characters in the 'Dutch-learning' translations are exceedingly rare. Characters used until today, except the original obscure characters *chitsu* 膣, are only *sen* and *su* 膵 (pancreas). The only character which was integrated into Chinese and is still used is *xian* 腺.

The character *sen* was first used in a book published in 1805, the *Waran naike ihan teikou* 和蘭內景醫範提綱 (Outline of the Dutch Internal Medicine Model). A statement in the first chapter of the book

10 The original meaning of 腱 is a piece of meat, specifically referring to the meat around the elbows and knees that is shaped like a block. Daisuke Ozuki chose this character because on the left side, there is the component 肉 (meat), and on the right side, there is an alternate form of the character 菌 (bacteria or fungi). Together, they convey the idea of an organ formed by the convergence of cellular tissues.

says: "*Sen* is a newly coined character and it is pronounced *sen* 泉". The character *sen* is in its nature similar to affixation and this is of greatest importance. Such characters, which were newly coined in Japan, in linguistic research are called *Kokuji* 國字. In China, they are also referred to as *wozi* 倭字 (Japanese characters), *hesuzi* 和俗字 (ordinary Japanese characters) and *hezhi hanzi* 和制漢字 (Japanese coined Chinese characters). They are Chinese characters newly formed by Japanese on the basis of Chinese methods of character formation. In ancient texts such as the *Kojiki* 古事記 (Account of Ancient Matter, ca 712) and the *Manyoshu* 万葉集 (Collection of ten thousand leaves, after 759) some examples of newly coined characters can already be found, but the majority of newly created characters occurred after the twelfth century. The method of creating characters primarily involves combining meanings, such as in the case of *touge* 峠 (mountain pass), *tsuji* 辻 (crossroad), *shitsuke* 躾 (discipline), *iwashi* 鰯 (pilchard) etc. Most of these characters do not have Chinese-style pronunciations. After the beginning of the Meiji era (1868-1912), combined characters such as *kawat* 瓩 (kilogram), *sun* 糎 (centimeter), *ke* 粁 (kilometer) appeared. These characters were created to represent Western units of measurement using a single piece of movable type. They are not read as individual syllables and should rather be treated as symbols. Those who had received an orthodox Chinese studies education, considered these Japan coined Chinese characters as vulgar and looked down upon them. Regarding, for example, the concept of *sen*, Noro Tennen's 野呂天然 *Seishō shikan* 生象止觀 (Introduction to Anatomy) and others all contain newly created strange characters in order to express it, but in the end none succeeded. Ishizaka Sotetsu 石阪宗珪 (1770-1842) criticised the creation of characters as distorting ancient scriptures, which he considered as a deceptive act (Sasahara 2006, 177-84). This forms a sharp contrast with the practices of Western missionaries who came to China in the nineteenth century, which we will discuss below.

In his *Account of the Department for the Translation of Foreign Books at the Kiangnan Arsenal, Shanghai*, John Fryer pointed out that

> the Chinese language presents extraordinary difficulties both in its acquisition by Europeans and in its use for the expression of the more exalted ideas of Western learning. (Fryer 1880, 79)[11]

11 Translator's note: the author here used the Chinese translations of the account, which was first published under the title "Jiangnan zhizaoju fanyi xishu shilüe" (Brief Account on the Translation of Western Books at the Shanghai Arsenal) in serialised form in the *Gezhi huibian* of 1880, numbers three to five. A reprinted version is in Zhang Jinglu 1953, 9-28. The translation employs the original English version as far as possible. Chinese passages, which are not contained in the original English version, were translated and added.

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This is because it is "so ancient, so crude, and so inflexible".

> It is readily granted [...] that such subjects as the doctrines of Christianity, or affairs of a political nature might be expressed easily in the language of a people among whom religion and diplomacy have for ages been carried to a considerable state of advancement. (79)[12]

However, if translating Western science and technology, it could be considered as "almost absurd" (79). Especially with the recent rapid development of science and technology in the West,

> there are numerous fields and a multitude of names, but China lacks both the knowledge and the terminology. How can it be accurately translated? Truly, it is an exceedingly difficult task. (79)

Fryer however, has a solution:

> A little investigation will show that this opinion is without foundation; and that from the time the early Jesuit missionaries commenced their compilations up to the present day no serious difficulties have been experienced by foreign translators. (79)

Fryer also was of the opinion that

> from the almost total absence of native scientific literature and pursuits there is necessarily a paucity of scientific terms, and this appears at first sight to form an almost impassable barrier to the use of Chinese for scientific purposes. (79)

However, Fryer also believed that

> Chinese, like other languages, is capable of growth. The increasing intercourse of China with Western nations is undoubtedly making vast additions to the number of words in current use. (79)
>
> If it were necessary to use only such terms as are to be found in standard Chinese dictionaries, or if it were forbidden to give any

12 The translation department of the Kiangnan-Arsenal did almost no translations of Western humanities. Regarding this kind of translations, Fryer's statement constitutes a misunderstanding. Subsequent translation practices have proven that the differences between China and the West are even greater in the field of humanities. It is also important to note that Fryer is only discussing the translation of Western works by Westerners, as China at this time was still lacking foreign language talents, and translation work could only be carried out in a way dominated by Westerners.

> new shades or meaning to existing characters, the task of translation could never be accomplished. (79)

Therefore, in the creation of translated terms, the translator's task is formidable. Fryer reflects on the coining of new terms by Jesuit missionaries since the late Ming and early Qing dynasties (1600-1720 ca):

> Where it has become necessary to express a new idea, or to give a name to a new object in Chinese, there has always been found a way of managing the matter more or less satisfactorily, and hence some very clumsy specimens of nomenclature are gradually becoming current […]. Of course all such new terms have to stand or fall on their own merits, and if radically wrong or misleading, they are pretty certain, eventually, to be supplanted by better ones. (79)

> It will be remembered that when the English language began to borrow largely from Greek and Latin, many scientific and technical terms were coined which have since fallen into disuse or been supplanted by others. So, it must necessarily be in China in regard to the terms borrowed from the English or other languages. (79)

Regarding the translated names of chemical elements, Fryer proposed two methods:

> 1. Form new terms by using ordinary characters combined with character components, still pronounced with their original sounds. Examples include magnesium 鎂 *mei*, osmium 鉮 *shen*, rhenium 砸 *bu*, and silicon 矽 *xi*; or 2. use less commonly used characters in the dictionary and assign them new meanings to create new names, such as platinum 鉑 *bo*, potassium 鉀 *jia*, cobalt 鈷 *gu*, zinc 鋅 *xin*, and so on. (1880, 79; see fn. 11)

Fryer's examples include platinum, potassium, cobalt, zinc, all of which are found in Chinese dictionaries. The *jia* used in potassium, for example, originally means 'armour', and the *xin* in zinc means 'firm'. The issue discussed here can be considered as pertaining to the levels of character creation and usage. The creation of characters mainly utilises the method of phonosemantics, but the character component employed, to some extent, also made a chemical classification possible: *jin* 金 represents metal, while *shi* 石 represents non-metal.[13]

13 In Fryer's table, the character compound *qi* 氣 for 'gas' does not show up. *Yang* 氧 (oxygen), *qing* 氢 (hydrogen), *dan* 氮 (nydrogen) for the first time appear in the Educational Association of China's *Xieding huaxue mingmu* 協定化學名目 (Agreed on List of Chemical Substances, 1899). Cf. Wang 2000, 15.

The pioneer of the method to represent chemical elements by creating new characters was the German missionary W. Lobscheid (1822-1893). In his *English-Chinese Dictionary* (1866-69), Lobscheid showed a particular interest in the terminology of chemistry – specifically, the names of elements. In the Preface of Part IV of the dictionary, he specifically discusses the naming issues of chemical elements (Shen 2010, ch. 5). Lobscheid believed that in the Chinese language, the character representing the basic elements constituting the world is *xing* 行 and therefore, the names of the majority of elements can be easily obtained by inserting a certain Chinese character into 行. That is, he divided the character 行 into two parts, placing a Chinese character related to chemical elements in the middle and pronounced it according to that character. Lobscheid provided the following examples:

彳+水+于 (Shwui) = hydrogen	彳+光+于 (Kwang) = phosphorus
彳+炭+于 (Tan) = carbon	彳+绿+于 (Luh) = chlor

Lobscheid hoped that through this simple naming method, Western knowledge of chemistry could be popularised in China. In the preface, he wrote that he believed his method, compared to the explanatory methods commonly used in chemistry books at the time, was more straightforward and practical. He thought that through the use and promotion by experts, people in China could understand Western science, particularly chemistry, more quickly and effectively **[fig. 1]**.

The *English-Chinese Dictionary* includes a total of 49 chemical element names, of which 21 are named using the character creation method. Excluding the four mentioned earlier, the remaining 17 are shown in table 1.

Table 1 Lobscheid, *English-Chinese Dictionary*, terms for chemical elements

Bromine	彳+臭+于 Chau (溴)	Strontium	彳+白+于 Peh (鍶)
Fluorine	彳+黃+于 Hwang (氟)	Tellurium	彳+地+于 ti (碲)
Iodine	彳+藍+于 Lan (碘)	Thorium	彳+灰+于 Hwui (釷)
Nitrogen	彳+硝+于 Siau (氮)[i]	Titanium	彳+紅+于 Hung (鈦)
Oxygen	彳+养+于 Yang (氧)	Uranium	彳+天+于 Tien (鈾)
Potassium (Kalium)	彳+榎+于 Kien (鉀)	Vanadium	彳+皓+于 Hau (釩)
Selenium	彳+紅+于 Hung (硒)	Yttrium	彳+白/金+于 Kin (釔)
Silicon	彳+火/石+于 Shih (硅)	Zirconium	彳+黑+于 Heh(鋯)
Sodium (Natrium)	彳+莎/金+于 So (鈉)		

i Lobscheid also proposed the term *danqi* 淡氣.

Lobscheid did not provide explicit principles for selecting the characters inserted in the middle, but based on examples, they can generally

be categorised into two approaches: characters chosen based on the root of the original word, such as 水 in 氵+水+亍 (water) and 天 in 氵+天+亍 (heaven); and characters selected based on the element's form, properties, colour, etc., such as 養 in 氵+養+亍 (nurture) and 綠 in 氵+綠+亍 (green). It should be noted that the former type of characters is extremely rare. Lobscheid's character creation method mostly falls within the category of phonosemantics, with new characters pronounced based on the character inserted in the middle of the character 行.[14]

The drawback of Lobscheid's 'Five-Elements Method' was that it only could be used to indicate new chemical elements. Moreover, it did not provide any classificatory added value. Fryer's method, on the other hand, could represent the form of substances, and was clearly further advanced. From the point of view of the form of characters, it was more easily accepted by Chinese. Fryer's principle of character formation was formulated in 1869 when he was translating *Well's Principles and Applications of Chemistry* (translated as *Huaxue jianyuan* 化學鑒原). Whether it was influenced by Lobscheid remains unknown, but the significant role played by collaborator Xu Shou 徐壽 (1818-1884) is undeniable. The method of naming they applied was the following:

> In the West, the names of substances often have many syllables and are difficult to pronounce. If one translates them into Chinese, it is impossible that they fully correspond [to the original]. Here we use one character for each term designating a chemical element. […] With respect to the names of compounds we combine the terms of the elements. Many of the elements were known in ancient China. Their names we retained, for instance 'gold' (*jin* 金), 'silver' (*yin* 銀), 'copper' (*tong* 銅), 'iron' (*tie* 鐵), 'lead' (*qian* 鉛), 'tin' (*xi* 錫), 'mercury' (*gong* 汞), 'sulphur' (*liu* 硫), 'phosphorus' (*lin* 磷) and 'carbon' (*tan* 碳). […] We also retained names that had already been translated appropriately, such as *yangqi* 養氣 (oxygen), *danqi* 淡氣 (nitrogen) and *qingqi* 輕氣 (hydrogen). In addition, there are several dozen [elements], which were either unknown to the ancients or which they knew of but designated with a name that was deficient in some respect – and which are covered more completely in Western books. Were one to translate their meanings, it would be extraordinarily difficult to be concise. Transliterating the whole name would be excessively complicated. We therefore used the first sound of the Western term and transliterated it

14 Lobscheid provided pronunciations for Cantonese (written in small letters) as well as for the *guanhua* pronunciation (written in large letters). There was no standardised *guanhua* pronunciation for 鈉 and 碲.

> with one Chinese character. If the first sound was unsuitable, we used the second sound. We then added a radical (character compound) to distinguish the classes but retained the original pronunciation. (Wells, Fryer, Xu 1871, j. 1, par. 29, 19b-20a)

The key here is the 'one-character principle based on the name of a single character'. The one-character principle resolves the contradiction between the characteristics of Chinese words and the names of chemical elements. The average length of Chinese words is generally not more than four syllables, while chemical elements need to be used both individually and in compound forms.

If the names of elements are disyllabic, it would be very inconvenient for compound usage. The single-character principle used by Fryer for elements thus is much superior in this aspect to the translated names in *Gewu rumen* 格物入門 (Introduction to Natural Sciences, 1868) by W.A.P. Martin (1827-1916, Ch. Ding Weiliang 丁韙良).[15]

The principles and methods advocated by Fryer for the creation of terminology were embraced by the School and Textbook Series Committee and the China Medical Missionary Association, also known as the *Boyi hui* 博醫會. Particularly noteworthy is the naming system for chemical elements with character creation at its core, which later became a national standard. It needs to be acknowledged that Fryer in respect to his innovation in coining terms for chemical elements was very successful. However, this success also conveyed a misleading message, namely that the creation of new terms was synonymous to the creation of new characters. The character creation method was especially revered by the China Medical Association, which was of the opinion that it was the best method for creating medical terminology embodying their systematicity.

The Medical Missionary Association was established in 1886 with the aim of promoting the introduction and education of Western medical knowledge. The association undertook extensive work in the creation and approval of medical terminology.

P.B. Cousland (1860-1930) documented this period of history in the following manner:

- 1890. The lack of uniformity in the terms used by the various translators was so serious a hindrance to medical education that the Medical Missionary Association of China at its first

15 W.A.P. Martin lists 42 elements in his "Introduction to Chemistry", which was part of his *Introduction to Natural Sciences*. There are Chinese terms for 25 of them. Except for the metallic elements, already known in China's antiquity, such as iron, copper, zinc etc., the names of the other elements are disyllabic. In his scheme, gaseous elements have the character *qi* 氣 (air) at the end (*yangqi* 養氣 'oxygen', *tanqi* 淡氣 'oxygen'), while non-metallic elements mostly have the character *jing* 精 (essence) at the end (*tanjing* 碳精 'carbon', *pengjing* 硼精 'boron'). Cf. Masini 1993, 154-6.

Conference held in Shanghai in 1890 appointed a Terminology Committee to draw up a standard medical nomenclature.

- 1901. The first meeting of this committee was not held till 1901, when the subjects considered were Anatomy, Histology, Physiology, Pharmacology and Pharmacy, and a pamphlet containing the chosen terms was issued (Medical Missionary Association of China 1901).
- 1904. The Terminology Committee met for the second time in 1904 and published the terms in Pathology, Pharmacology and Pharmacy, and a pamphlet containing the chosen terms was issued (Medical Missionary Association of China 1904).
- 1905. The third meeting took place in 1905. A Bacteriology and Materia Medica nomenclature and also revised terms in Anatomy, Histology, Physiology, Pharmacology and Pharmacy were issued.
- 1908. The nomenclature devised by the committee was published by Cousland, *An English-Chinese Lexicon of Medical Terms, Compiled for the Terminology Committee*.[16]
- The Terminology Committee of the Medical Association, in the introduction to the terminology collection *First Report* published in 1901, provided the following explanation on the principles of terminology creation:

> It may be of interest to the members of the Association to give some idea of the principles which guided the Committee in its work, especially in regard to fundamental terms. The first subject which claimed attention was the names of the bones. It was thought most desirable that in the case of such a foundation matter there should be, if possible, only one character for each bone, in order to facilitate the naming of arteries, veins, and nerves as well as muscles. After a long and exhaustive search through Williams, Giles, and Kang Hsi for suitable characters, the following list was finally agreed upon on the principle that every long or otherwise important bone should have the bone radical at the side (except those of the head), the bones of the hand should have the hand radical, and the bones of the foot, the foot radical. The

16 On the process, cf. also Wang 1991; Zhang 1994. "However, we should note that, including the Jiangnan Arsenal Translation Bureau, most of the Western books translated into Chinese in the nineteenth century were done by Westerners dictating and Chinese scholars transcribing. The Westerners had limited knowledge of Chinese, and the Chinese scholars had no understanding of foreign languages. Without understanding foreign languages, it was impossible to create translated terms using the morphemic decomposition method. This stands in stark contrast to the Japanese scholars of *Rangaku* 蘭學 (Dutch Learning). In Japanese, 'oxygen' is translated as *sanso* 酸素 (literally 'acid element'), and 'hydrogen' is translated as *suiso* 水素 (literally 'water element') because the Japanese scholars understood the meanings of 'oxy-' and 'hydro-'".

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> bones of the head; it was not thought necessary to specially indicate by the radical, though as a matter of fact most of the cranial bones have the head radical. (Medical Missionary Association of China 1901, iii)

In concrete, this meant using old discarded Chinese characters, or adding character components to existing Chinese characters and giving them a meaning different from the *Kangxi Dictionary*. Such a naming system would be of great help for students and teachers in memorising the location of bones in the body.

The principle for naming each part of the circulatory system is to add the radical for 'blood' (*xue* 血) alongside, and each part is represented by a single Chinese character, as shown in table 2 **[tab. 2; fig. 2]**.

Table 2 Translations of parts of the circulatory system

Original word	Chinese character	Pronunciation	Reason	Modern term
Auricle	窦	*hsüeh*	blood cave	心房
Ventricle	血+賁	*p'en*	blood spirter	心室
Artery	衄	*mo*		動脈
Vein	盂	*huang*	blood going to the heart	靜脈
Capillary	微/血	*wei*	minute blood vessels	毛細管

In the table above, [血+賁] and [微/血] are newly created characters, while the rest are characters listed in the *Kangxi Dictionary* but given new anatomical meanings. Others include:

> For 'canal' and 'duct', the character *wan* 脘 was used.
>
> For 'cell', the character *chu* 胰 was used.[17]

For the translation of 'gland', the terminology committee considered the term 腺 coming from the Japanese and carrying the combined meaning 'flesh spring' as correct, and it should be pronounced as *Chüuan* (this meant that the pronunciation also followed the Japanese model). But at the same time it suggested to employ the character *hu* 糊 for glands without ducts.

The preface also offered explanations regarding the reasons for proposals for the following terms:

17 The compilators refused to use the term *xibao* 細胞 coined by Li Shanlan 李善蘭 (1811-1882) and also were of the opinion that *zhu* 胰 was semantically better fitting than *zhu* 珠, cf. Shen 2000.

pancreas 胰 *I* (胰[腺])
lymph 淋 *Chin* (淋巴)
globulin 球 *Ching* (球蛋白)
tissue [月+罔] *Wang* (组织)
proteins 朊 *Ch'eng* (蛋白质)
serum 盟 *Ming* (血清)
uterus [子+宫] *Kung* (子宫)

The character creation principles established in the *First Report* served as a guideline for the subsequent terminology approval work of the Medical Missionary Association. In the preface of *An English-Chinese Lexicon of Medical Terms* published in 1908, Cousland expressed his own views on the character creation method in the translation term creation principles of the Terminology Committee:

> To utilize the many obsolete or rarely used characters in *K'ang His's dictionary*. – Many were discovered whose composition or meaning enabled us to employ them usefully or appropriately. It is a great advantage to have technical terms, especially those for vessels, nerves, and bones, represented by single ideographs. (Cousland 1908, i)

> To coin new characters. – This is an enticing method, as many characters could be built up from suitable radicals and phonetics, conveying at a glance their meaning and lending themselves to scientific classification. The committee, however, did not feel itself entitled to use this method except in case of dire extremity. (1908, ii)

The second point is precisely the systematic approach that the missionaries diligently pursued. In 1937, with the publication of the revised eight edition of *Cousland's Medical Lexicon*, terms using newly created characters were largely eliminated, and replaced by Japanese medical terminology. It can be said that the efforts of the Medical Missionary Association's Terminology Committee were essentially unsuccessful. Why did the newly created characters of the Medical Missionary Association yield different results compared to Fryer's chemical element names? Firstly, Fryer's newly created characters were primarily phonosemantic, meaning:

> the initial sound is taken from the Roman [Latin] script, translated into a Chinese character. If the initial sound is not suitable, the secondary sound is used, with the addition of character components to differentiate categories, while the pronunciation remains the original sound. (Wells, Fryer, Xu 1871, j. 1, 20a)

On the other hand, the newly created characters by the Medical Missionary Association incorporated more combined semantic

components, pursuing a stronger rationale for the creation of new characters. Secondly, and most importantly, the 'one-character principle' of the Medical Missionary Association ignored the direction of Chinese language development and was deemed unnecessary. If terms such as *zigong* 子宫 (uterus), *danbai* 蛋白 (protein), and *xueqing* 血清 (serum) are replaced with new characters, they create conflicts regarding the shape with characters such as *gong* 宫 (palace) or *ming* 明 (bright, clear), and moreover there is no way to pronounce them. The Medical Missionary Association took Fryer's approach to creating characters for translation to an extreme, ultimately leading medical, especially anatomical, terminology development to a dead end.

In 1904, the chairman of the Educational Society of China, C.W. Mateer (1836-1908) published a terminological dictionary titled *Technical Terms*. This dictionary can be regarded as a summary of a century of missionary terminology creation efforts. In the preface, Mateer stated:

> Suitable technical terms are essential to scientific thought and investigation. The several branches of physical science have added many thousand new terms or words to the English language. To successfully teach Western science in Chinese, a sufficient number of suitable technical terms is absolutely essential. Some of the pioneer writers on physical science in China have avoided as far as possible all new technical terms. The result has been a vague disquisition *about* the science in question rather than the accurate setting forth of the science itself. The many new terms with which the science has enriched the English language must also be made to enrich in like manner the Chinese language. (Mateer 1904; italics in the original)

Mateer was of the following opinion:

> The question whether in general technical terms should be translated, or transferred has often been raised. It seems clear that in case a brief and expressive term can be found, it is the best, and is generally preferred by Chinese scholars. Rather, however, than use a long, or an awkward term, or one that does not strike the essential idea in the case, it is better to transfer the sound of the term used in the West. This method is popular with commercial men. The list contains a considerable number of terms of this kind, though they are but few in the aggregate […].
>
> It will be observed that the list contains a considerable number of *new* characters not found in Chinese dictionaries. All such characters are composed of a radical and a phonetic, and are to be pronounced in accordance with the phonetic part. All the rarer elementary substances, as well as some of the common ones

> are so named, also a number of technical terms for which a single character has been urgently needed, have been so rendered. This method avoids confusion which it enriches the language, and will, we venture to predict, be more resorted to in the future than it has been in the past. (2, 4-5; italics in the original)

The newly coined characters in *Technical Terms* concentrated on the realms of medicine and chemistry. Looking back, the bold predictions of Mateer did not become a reality. In the preface, Mateer pointed out that his wife had greatly contributed to the compilation of the book. However, a decade later, Mrs. Ada H. Mateer (1850-1936), wrote in the preface to her own book *New Terms for New Ideas*:

> Or they have invented new characters for the new ideas, and one is puzzled to know how to pronounce them. Only one is given in his book – for microbe (秒十生[生 at the bottom of 少]). This is given by way of contrast. But such will scarcely become popular. Their own new terms have a distinctly oriental air about them. (1913, 3)

5 Do Translators Need to be Proficient in 'Philology'? The Impact of Zhang Taiyan and His Successors

John Fryer's method of creating characters for the names of chemical elements even became a model for the idea of 'Chinese learning as essence and Western learning for application' (*zhongti xiyong* 中體西用). Zhang Zhidong expressed approval for the practices of "chemists, manufacturers, and all specialists in learning, when there are new things and new methods, in creating new characters", and suggested extending this practice to "all specialized fields of study" (Zhang, Rong, Zhang 1903).

The earliest clear and unequivocal response to the missionaries' character creation method came from Liang Qichao 梁啟超 (1873-1929). Liang Qichao stated:

> The ancients created characters in order to name things, but when those things no longer exist, the characters become useless. For the things existing today without corresponding characters, it becomes necessary to borrow characters from the past to name them by force. This borrowing is a practice that leads to the multiplication of words […] With the increasing emergence of new things, it is impossible to exclusively borrow ancient characters. Therefore, in today's context, the foremost priority is to create new characters. In translating names, for example, characters like *qi* 汽 are borrowed, and for names like the sixty-four elements zinc, platinum, potassium, etc., new characters are created. In John Fryer's

> translation of chemistry books, he took the original names of the various elements, selected the first sound, translated it into Chinese characters and added character components. He added the character for metal to those belonging into the metal category, and the radical for stone to those belonging to the stone category. This method is most effective. In future translations of names, it is advisable to universally follow this example, even adding the character component for fish to those belonging to the fish category, the character component for bird to those belonging to the bird category, the character component for wood to those belonging to the wood category, and the character component for container to those belonging to the container category. For all other things, they should follow the same approach. This not only alleviates the burden of excessive naming but also provides the benefit of observing similarities and distinguishing differences of categories. After the names have been established, still a glossary should be used and the terms in both languages should be printed side by side in order to provide reference. This is the grand track of translators in giving proper names. (Liang 1897, 3-4)

In addition to praising John Fryer, there thus was the desire to expand the method of character creation to the creation of all translated terms. Huang Zunxian 黃遵憲 (1848-1905) holds a similar opinion on this matter. In a letter to Yan Fu in 1902, he discussed the creation of translated names and the reform of writing forms, expressing his agreement by saying: the Chinese characters that originated four thousand years ago

> used to document the knowledge of things and events in China since ancient times, are no longer suitable, let alone for the various sciences of the West. (Wang 1986, 1572)

The meanings of ancient characters and the contemporary significance of things are "no longer comparable", not to mention comparing them with Western languages. Huang Zunxian pointed out:

> Today, we are already in the world of the twentieth century in which Eastern and Western civilisations have converged. The task of translating books, to bridge the understanding between us and them, elucidating the knowledge of both the new and the old, is indeed an essential duty. (1572)

Regarding the creation of translated names, Huang Zunxian specifically proposed the following methods: creating new characters, borrowing, analogies, creating compound words, phonetic translation and hybridity. Huang mentioned the creation of new characters at

the top of his list, apparently because he considered it as the most practical method. Huang said that "Chinese scholars consider this as the authoritative and independent acts, which the ancient sages and worthies carried out" (1572). In fact, the *Cang Jie* only contained a little more than 3000 characters. However, the character count expanded to around forty to fifty-thousand in later works like *Jiyun* 集韻 (Collected Rimes) and *Guangyun* 廣韻 (Broad Rimes). These additional characters were created in response to specific needs and circumstances that arose later on. Characters like *seng* 僧 (monk) and *ta* 塔 (pagoda), often considered as part of the classical language in the Thirteen Classics by traditional prose writers, were actually created for translating Buddhist scriptures. Huang emphasises that such a practice of creating characters for religious texts did not exist before the Jin and Wei dynasties (220-420). Huang went so far to state that, as Xunzi 荀子 (300-236 BC ca) had said, new words need time for being accepted by the society and that for those words which are not understood by the society an explanation of the meaning and a discriminatory analysis of the word is necessary. He was of the opinion that only new words created by the "character creation method" would be quickly accepted by society (Wang 1986, 5: 1571-3).

In the chapter *Ding wen* 訂文 (A Critical Discussion of Literature), Zhang Taiyan (2014) had a detailed discussion regarding the method of creating new characters or utilising abandoned and obscures characters for translated terms.

Zhang Taiyan quotes the words of Xunzi, stating that in the reign of later kings, "they will certainly adhere to old names and create new names" (2014, 208). The term "new names" in the context of Zhang refers to the creation of new characters. Zhang Taiyan was of the opinion that for a number of concepts originally no names existed. For example, there was a name for 'older brother' (*xiong* 兄) but there was no word for 'younger brother'. The same was true for opposite concepts. Quite often there only was a word for one side of the concept, as in the case of the term for 'younger brother', the word for the opposite concept was coined later. For this reason, Zhang hold that for newly discovered concepts new words – and this, in his case, means characters[18] – should be created, just as the ancients did.

Moreover, in China, now

18 Translator's explanation: Zhang Taiyan distinguished between *wen* 文and *zi* 字. For him, *wen* were indicative or self-explanatory characters (*zhishi* 指事, 'pointing at situations') and pictographic characters (*xiangxing* 象形, 'depicting the shape'), while *zi* were semantic-phonetic compounds (*xingsheng* 形聲, 'shape and sound') and suggestive compounds (*huiyi* 會意, 'combining meanings', ideographs) developed only later. The compound characters (*zi* 字) increased following the propagation (*ziru* 孳乳, 'extension') of expressions (*yan* 言). Cf. Kaske 2008, 145.

> there is mutual trade with foreign lands, constant advancements in technology and machinery, and a daily increase in the pursuit of new aspirations and ideas. (210)

Zhang specifically pointed out that:

> [there] are colloquial expressions and there are scientific expressions, this is the reason that academic and colloquial language needs to be distinguished. (217)

For this reason, there is the need for many more terms. How to deal with that?

> When the common affairs flourish, then the proper words and the compound characters need to multiply every day. However, if there are no newly created characters, the names of newly introduced tools will inevitably borrow from one another. (209)

This inevitably will result in confusion. But Zhang did not propose to create new words for all new concepts. "Pick out the important ones and this will be practicable" (209). However, both Zhang Taiyan and Huang Zunxian never explicitly explained how to create characters.

Zhang Taiyan also mentioned another method, which is to revive obsolete characters. Zhang stated:

> There are ancient meanings that are profound and vivid, yet are no longer in use today. To lift them up and apply them is akin to restoring disused official positions. (218)

This clearly indicates an awareness of Fryer's attempt to name chemical elements using archaic and uncommon characters. However, Zhang expressed a strong dissatisfaction with Fryer's approach, saying:

> There are certain old characters, which now are forcefully used to denote other things. They need to be pruned in order to serve as re-definition. As for example it is the case of *dang* 鎕 and *ti* 銻, which originally referred to a kind of fiery bead, and today *ti* is used to denote a chemical element in the class of metals. Steam originates from the evaporation of water, and it is written as 氿 in ancient scripts. Nowadays, 汽 is used to represent steam. The discrepancy between the name and reality is like throwing dice in a bowl, making it easy to cause confusion and bewilderment. (218)

In ancient times, there may have been similar instances,

> however, when closely examined, there is no fitting comparison. Therefore, writings on antimony, steam, and the like must be more precisely defined. (218)

Regarding the utilisation of obsolete characters, Zhang Taiyan did not object. He stated:

> In recent years, there may be a need for newly created characters. Upon examining the *Cangjie pian* and the *Erya* dictionaries, many discarded words can be employed as new language, such as *ruan* 耎, *bi* 匕, *chuo* 輟, *ji* 暨, and others. (230)

The prerequisite however was to have a complete understanding of philological issues and only then it would be possible to transform the decayed into something miraculous. The Japanese scholar Matajiro Takeshima 武島又次郎 (1872-1976) authored a book titled *Shūjigaku* 修辭學 (Rhetorics) (1898), in which he advocated for the exclusion of obsolete language in writing. About this Zhang said:

> People from the East are not well versed in philology, they do not know that a word can be replaced by another. This almost is as closing the eyes once and never re-opening them. (230)

Zhang Taiyan's principle was:

> Using obsolete language is not different from foreign words or newly created characters: it is necessary to carefully consider and guard against excess. (232)

On 29-30 July 1905, the *Shenbao* 申報 newspaper serialised an article titled "Translators Should Take Philologyinto Account" (*Lun yixue dang zhuzhong xiaoxue* 1905). The author asserted that knowledge of philology (linguistics) is indispensable for translation; the translator's crucial task is to verify translated names based on the original work's meaning, and this presupposes to understand the true meaning of words. Therefore, an era which emphasises translation also is an era that values philology. This argument aligns with the advocacy of Zhang Taiyan.[19]

Yan Fu, however, was reserved in his approach towards the methods of missionaries. Although he extensively used archaic characters in his early translations, during the period of 1909-10, when he was in charge of reviewing and approving scientific and technical

19 The author of this article is unclear. Rao Jiarong thinks that the author might have been Liu Shipei 劉師培 (1884-1919).

vocabulary at the Nomenclature Bureau of the Ministry of Education, there were certain limitations imposed on the use of archaic characters. For instance, in the approved terms, only a few examples, such as the translation of 'lymph' with the archaic character 盡 derived from the *Kangxi Dictionary*, were permitted (Shen 2010; 2018, ch. 2). As for the creation of new characters, Yan Fu and other native translators seemed unwilling to risk attempting it, possibly fearing the "crime of creating characters without the sanction of the sage" (in the words of Huang Zunxian) (Wang 1986, 1572).

Regarding the creation of new characters and the use of obsolete characters, Hu Yilu 胡以魯(1895-1968) and his teacher Zhang Taiyan had differing views. Firstly, in chapter 9 of *Guoyuxue caochuang* 國語學草創 (Drafts on National Language Studies), when discussing how to transform the Chinese language into a 'substantial language' (*zhiwen* 質文) (a form of written language closely resembling spoken language, as discussed in chapter 3, "Yingyong zhi wen" 應用之文 'Applied Language'), Hu Yilu pointed out:

> For the names of new things and the expression of novel ideas, it is recommended to employ compound words rather than creating new characters. Foreign words should also be translated in meaning (however, for names lacking inherent meanings, such as personal names, place names, or newly invented items designated with proper nouns, one may adopt the phonetic sound directly). When terms translated into Chinese characters by the Japanese are interchangeable, they should be used. Otherwise, they need to be changed. (2014, 124)

In respect to obsolete terms, Hu Yilu did not endorse John Fryer's practice of using them for chemical elements. His reasons were:

> If an ancient name exists, and it is mistakenly used by the Chinese people or translators, it is advisable to remove it for greater accuracy. Even if the mistakenly used character is an obsolete character, after clarification of the written materials, the term reappears and is used again, it will lead to further confusion. In such cases, a correction needs to be done. For example, 鎕 originally referred to the brilliance of a burning bead of fire, and 銻 meant a bead of fire reaching its peak. Now, borrowing 銻 to translate the name of metallic elements in the gold group is inappropriate. Similarly, 汽 originally denoted the drying up of water. Using 汽 to translate the name of water vapour is not suitable. In essence, it is stating that these characters, while now considered obsolete, originally had specific meanings related to fire or water, and using them to translate the names of metallic elements or water vapour is inappropriate. (1914, 9-10)

This is because, even though these characters are currently obsolete, they might be misunderstood when revived after clarification of written materials.[20]

The impact of the issue of newly creating terms was long-lasting, especially in the fields of medicine and chemistry.

In 1916, the second volume, issues 1 and 3, of *Zhonghua yixue zazhi* 中華醫學雜誌 (Chinese Medical Journal) published Yu Fengbin's 俞鳳賓 (Yui Voonping 1885-1930) "Yixue mingci yijian shu" 醫學名詞意見書 (Opinions on Medical Terminology). In part 1, Yu Fengbin emphasised:

> Composing single-bodied characters is not difficult, but creating joint-bodied characters is challenging, and for foreigners to create Chinese characters is particularly difficult. It is no wonder there are inappropriate terms. It's like trying to fit a square peg into a round hole. In our national language, occasional use of new terms is acceptable, but the creation of new characters is a challenging task. If scholars attempt to do so in isolation, not only will they be ridiculed, but ordinary society will also criticize it. Therefore, it is not something knowledgeable people should pursue. (1916, 1: 14)

He thus expressed a negative attitude towards the creation of new characters, especially if it was done by foreigners. In part 2 of "Yixue mingci yijian shu", Yu Fengbin continues to express his views on character creation, stating:

> In the past, Wu Zetian attempted to create new characters, but they were constructed with forced and fragmented strokes, deviating from ancient meanings, making them difficult to use appropriately. They were soon abandoned. This shows that creating new characters is not an easy task. It requires to make reference to the 'Six Categories' (*liushu*) and to recognise the standards, this is indicatives, pictographs, phonosemantic compounds, associative compounds, derivative cognates and loangraphs as well as numerals. Examining what principles to follow and which methods to adhere to, having a well-defined plan, is essential. After creating characters that are clear and concise, collaboration with experts in philology is necessary for their evaluation and approval. Only then they should spread widely. In the past, when translating chemical terms at the Jiangnan Arsenal, the creation of new characters that are still in use today has been successful, as they align with the essence of the *Shuowen Jiezi*. This is the best proof. (Yu Fenbing 1916, 3: 16-17)

20 On Hu Yilu, cf. also Shen 2005.

Yu believes that although the *Shuowen Jiezi* contains over nine thousand characters, less than one-third of them are commonly used. In the case of Western medical terminology, which exceeds fifty thousand terms, a one-to-one correspondence is not feasible. However, he points out that Chinese is not structured in such a way that each character necessarily represents a word. There are many compound words consisting of two characters. There is absolutely no need to forcefully create a single character to replace terms like *tianwen* 天文 (astronomy) or *dili* 地理 (geography), or established translations for terms like *xijun* 細菌 (bacteria) or *yuanchong* 原虫 (protozoa). Why introduce new characters when these translated terms have been in use for a long time? When there is no existing translated term, it is advisable to combine characters to create new words.

> The top priority is to avoid creating new characters whenever possible. However, in cases where it is necessary to do so, it should be a limited and well-considered approach. For nouns that cannot be translated, it is recommended to compile a list, clarify their meanings, and then discuss whether new characters should be created. If there is a desire to create new characters, one should strive to align with the intention of the six principles, thus avoiding the drawbacks of confusion and stagnation. (Yu 1916, 2(3), 17)

> When there is a thing or concept for which there is no existing noun, it is appropriate to create new terms to express them. Moreover, if there are things or concepts that China does not have, and new terms are insufficient to convey them adequately, then it is even more appropriate to create new characters to address this inevitable need, this is a necessary tendency. (16)

Yu Fengbin believed that the creation of new characters was inevitable, but their quantity should be controlled, and the methods of philology should be followed. This perspective is shaped by Yu's observation of the drawbacks in the medical terminology used by the Medical Missionary Association as "frequently using Japanese translations and excessively creating new characters" (1916, 2(1), 14) **[fig. 3]** [旅華醫士 refers to the Medical Missionary Association].

In August 1918, during the fourth meeting of the Medical Terminology Committee, it was renamed the Scientific Terminology Review Committee. The committee aimed to integrate medical terminology into the broader context of scientific and technological terminology.

In 1921, the seventh volume, issue 3 of the *Zhonghua yixue zazhi* published the "Opinions on the Criteria for Verifying Scientific Terms" by the Physics Terminology Review Group. This document outlined seven principles, including:

1. It is advisable to use terms consisting of two or more characters, and avoid using single characters.
2. However, when creating new terms, refrain from inventing new characters.

Subsequently, not only in physics but also in medical terminology, the creation of characters was restrained. This can be understood as the terminologists giving up efforts to demonstrate systematic structures through radicals and character components.

In 1919, Zhu Ziqing 朱自清 (i.e. Zhu Peixian 朱佩弦 1898-1948) published *Yi ming* 譯名 (On the Translation of Names) and discussed the creation of new characters from the point of view of a nonnatural science scholar. Zhu Ziqing believed that the creation of new characters as a method for translating terms could be divided into the following two types:

1. Take a Chinese character containing a part of the original meaning and add a character component, or replace the original character component. The added or replaced character component should be related in nature to the original term. For example, Zhang Zhenming 張振名 uses 亻+財 (Ewnomy) [*sic*].
2. Take a Chinese character with the same pronunciation as the original term, add or replace a character component related in nature to the original term, while still maintaining the original pronunciation. For example, as presented by Geng Yijun 耿毅君, 忄+羅忄+輯 (pronounced as 'logic') (Zhu 1919, 99).

The method mentioned by Zhu Ziqing was only intended to evoke a certain association and unrelated to systematic classification. John Fryer once quipped:

> Why should 'coffee' be written 加非? […] Why should not such old long forgotten characters with the appropriate tree radical, as 檳榔, have been selected? The only danger if it may be called danger, is that some future Chinese philologist will look up their original meaning in some antiquated volume and declare they are correctly used; or else that some conservative patriot of the future will write an elaborate essay to prove that coffee was known to the ancient Chinese and introduced from China to Western countries in the same way that steam engines and telegraphs were! (1890, 542)

In 1920, Liang Guochang 梁國常(1891-1956) stressed the importance of focusing on the scientific meaning in the creation of new characters while also considering explanations from the *Shuowen Jiezi*: "Clarity and simplicity should be emphasised, as it is the virtuous way". His rationale was that:

> the creation of a character is a means to publish a type of knowledge; when such knowledge is instilled and widely disseminated, the character will naturally become accepted. (1920, 999)

He believed that addressing the confusion in the nomenclature of organic chemistry is "even more challenging without creating new characters, and success is hard to achieve" (999).

In 1925, the journal *Kexue* published three issues featuring "Youji huaxue mingmingfa pingyi" 有機化學命名法評議 (A Review of Nomenclature in Organic Chemistry) by the chemist Wu Chengluo 吳承洛 (1892-1955). In the article, Wu advocated for a chemical nomenclature that

> takes existing commonly used terms as the foundation and facilitates ease of use; prioritises the avoidance of creating new characters, with the creation of new characters being supplementary, and does not solely focus on systematic terminology. (Wu 1925, 346)

In 2017, the media announced the Chinese names for the four newly discovered elements in the seventh row of the periodic table. The radicals 钅 and 石 were used to represent the properties of the substances, while the phonetic part indicated the country where they were first discovered, following the internationally accepted naming principles. With this, the gaps in the periodic table were filled, and it seems that there is no longer a need for creating new characters **[fig. 4]**.

6 Conclusion: Insights from *Rangaku* and the Birth of New Affixes

As mentioned above, the history of Chinese characters is a history of proliferation and evolution. Apparently the 'Six Principles' in the first place were attractive to Westerners. However, as Huang Zunxian pointed out, for Chinese scholars, creating characters is an endeavour reserved for ancient sages and wise men, not something that ordinary individuals can casually engage in. This sense of reverence for Chinese characters was shared by Japanese *Rangaku* scholars. Additionally, the characteristics of the translated language greatly inhibit the impulse to create characters. The books of the *Rangaku* scholars were mainly written in Dutch, medical terminology extensively employs Latin and Greek, both of which have excellent decomposability. The morphemes of Latin interact with Chinese characters, generating affixes in the process. As we can see below, the *Rangaku* dictionary *Yakken* 譯鍵 (A Key to Translation) by Fujibayashi Fusen (1810) already confirms the corresponding relationships of the following affixes:

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臼齿-tand (tooth); 骨膜-vlies (membrane); 血石-steen (stone); 饮器-bak (bin/container); 肺脉-ader (vein); 胃病-ziegte (disease)

In the 1873 publication *Igo-rui-kai* 醫語類聚 (A Medical Vocabulary in English and Japanese) by Okuyama Torasho 奥山虎章, the following morphemes have completed the process of affixation.

Affix	Frequency	Examples					
-炎[1]	163	生殖器炎	網膜炎	扁桃核炎	脈管炎	動脈炎	
		genitis	retinotis	tonsillitis	vasculitis	arteritis	
-學	37	藥劑學	病因學	解剖學	運動學	修身學	健康學
		pharma-ceutics	Patho-genesis	anatomy	kinematics	ethics?	health studies
-管	38	輸水管	泌尿管	毛細管	導尿管	乳糜管	圓錐管
		pipeline	urinary canal	capillary	catheter	chyle duct	?
-器	31	生殖器	驗液器	聽胸器	分泌器	放血器	哺乳器
		reproductive organ	test tube	stethoscope	secretory organ	bloodletting device	breast pump
-機	19	愈合機	滲入機	成形機	滲出機	生殖機	循環機
		mixing machine	exuding machine	forming machine	exuding machine	reproductive machine	circulatory machine
筋[1]	26	內直筋	異常筋	舉耳筋	二頭筋	角舌筋	毛樣輪筋
		rectus muscle	abnormal muscle	auricus muscle	biceps	angular tongue muscle	trinarius muscle
-骨	15	尾骶骨	上舌骨	上膊骨	無名骨	腕前骨	跗前骨
		coccygeal bone	epihyoid bone	superior hyoid bone	nameless bone	brachial bone	anterior rib
-質	14	白堊質	象牙質	琺瑯質	灰白質	特異質	蜂巢質
		cement	dentin	enamel	gray matter	ectoplasm	honeycomb structure
-術	59	外科術	動脈切開術	造鼻術	割去術	導尿管插入術	
		surgery	arteriotomy	rhinoplasty	excision surgery	urinary catheterisation	
-症	18	膽汁變質症	乏血症	恐血症	腸蟲症	膿毒症	
		cholelithiasis	anemia	hemophobia	tapeworm infection	sepsis	
-腺	37	甲狀腺	松子腺	攝護腺	粘液腺	會厭腺	列印巴腺
		thyrothy gland	matsuko gland	prostate gland	mucous gland	tonsil	Lymph gland
-素	17	膽液素	軟骨素	消化素	血紅素	纖維素	血球素
		lycosinophytes	cartilage	digestive elements	hematocytes	fibrins	hemocytosis
-體	38	四疊體	硝子體	乳嘴體	細胞體	腦索狀體	圓錐體
		quadrigeminal vein	vitreous body	mammillary body	cyton	cerebellum	cone

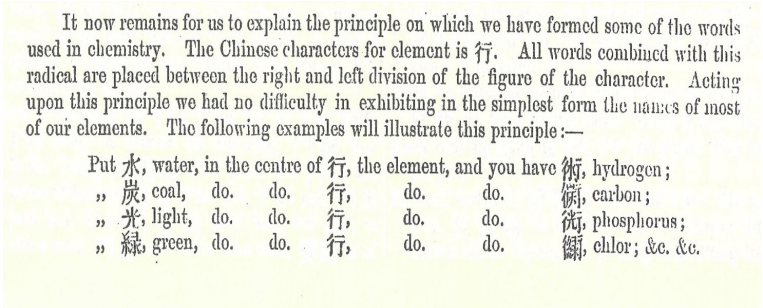
Affix	Frequency	Examples					
-痛	41	咽喉痛	神經痛	鼠蹊痛	胃脘痛	心臟痛	膀胱痛
		sore throat	neuropathic pain	inguinal pain	epigastric pain	angina cordis	cystalgia
-熱	24	粘液熱	膽液熱	稽留熱	泥沼熱	發汗熱	
			bilious fever	retained fever		sweat-induced fever	
-病	107	副腎病	乏血病	脈管病	關節病	異膽液病	結膜病
		adrenal gland disease	oligocymia	vascular disease	knots	heterogeneous fluid disease	conjunctival disease
-法	63	撥下法	斷食法	止血法	砂浴法	聽胸法	湯治法
			fasting	hemostatis			balneotherapy
-膜	44	基底膜	脫落膜	處女膜	細胞膜	脈絡膜	胃粘膜
		basement membrane		hymen	Cell membrane	choroid	gastric mucosa
-藥	143	清滌藥	解毒藥	變質藥	祛痰藥	鎮痛藥	防腐藥
		purifier	antidote		expectorant	analgesic	anti-corrosive agent
-論	65	生殖器論	空氣論	脈管論	人身論	關節論	動脈論
		genital theory	aerology	vascular theory	anthropology	joint theory	arteriology

1 The character *yan* 炎 (inflammation) in its function as suffix has been created by B. Hobson, but in his *Medical Vocabulary in English and Chinese* (1858) are 45 examples, 13 of the 1 + 1 style, 9 of the 2+1 three-character style. The rest is of the form phrase+*yan*.

2 The Japanese *sin* 筋 is equivalent to the Chinese *ji* 肌.

This affix-like component is referred to as 'new affix' (*xin cilei* 新詞綴) because, compared to affixes in European languages such as English, it is only 'similar' to affixes, hence also known as 'pseudo-affix' (*lei cilei* 類詞綴). I am of the opinion, however, that the primary function of these affix components is classification, organising the increasing number of concepts into distinct categories. They can be referred to as *leibie cilei* 類別詞綴 (category affix). The division between word-forming elements and category affixes lies in the distinction between two-character words and three-character words.

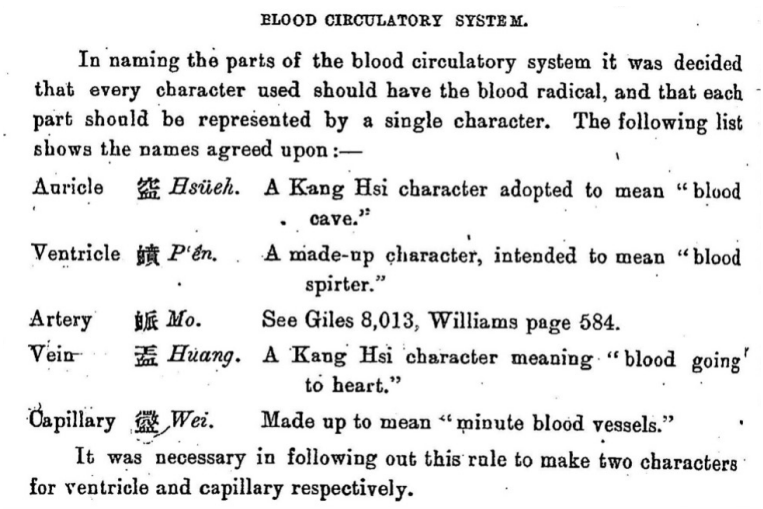
Wang Lida 王立達 has suggested that the new affixes in the Chinese language have been formed under Japanese influence. Japan systematically translated scientific books earlier than China, and Wang Lida's judgment aligns with historical facts (Wang 1958). At the same time, it is important to recognise that Chinese characters possess a powerful classification function. As Benjamin Hobson's *A Medical Vocabulary in English and Chinese. Yixue Ying Hua zishi* 醫學英華字釋 has demonstrated, in the process of the translation of Western scientific knowledge, the classification function of Chinese characters has gained new vitality (1858). The widespread use of category affixes indicates that modern Chinese was undergoing a transition from two-character to three-character words.



It now remains for us to explain the principle on which we have formed some of the words used in chemistry. The Chinese characters for element is 行. All words combined with this radical are placed between the right and left division of the figure of the character. Acting upon this principle we had no difficulty in exhibiting in the simplest form the names of most of our elements. The following examples will illustrate this principle:—

Put 水, water, in the centre of 行, the element, and you have 𣾀, hydrogen;
„ 炭, coal, do. do. 行, do. do. 𥕢, carbon;
„ 光, light, do. do. 行, do. do. 𤧛, phosphorus;
„ 綠, green, do. do. 行, do. do. 𣰰, chlor; &c. &c.

Figure 1 Lobscheid, *English-Chinese Dictionary*, Part IV, Preface



BLOOD CIRCULATORY SYSTEM.

In naming the parts of the blood circulatory system it was decided that every character used should have the blood radical, and that each part should be represented by a single character. The following list shows the names agreed upon:—

Auricle	𥘅 *Hsüeh.*	A Kang Hsi character adopted to mean "blood cave."
Ventricle	𥘆 *P'ên.*	A made-up character, intended to mean "blood spirter."
Artery	𥘇 *Mo.*	See Giles 8,013, Williams page 584.
Vein	𥘈 *Huang.*	A Kang Hsi character meaning "blood going to heart."
Capillary	𥘉 *Wei.*	Made up to mean "minute blood vessels."

It was necessary in following out this rule to make two characters for ventricle and capillary respectively.

Figure 2 Terms of the different parts of the circulatory system.
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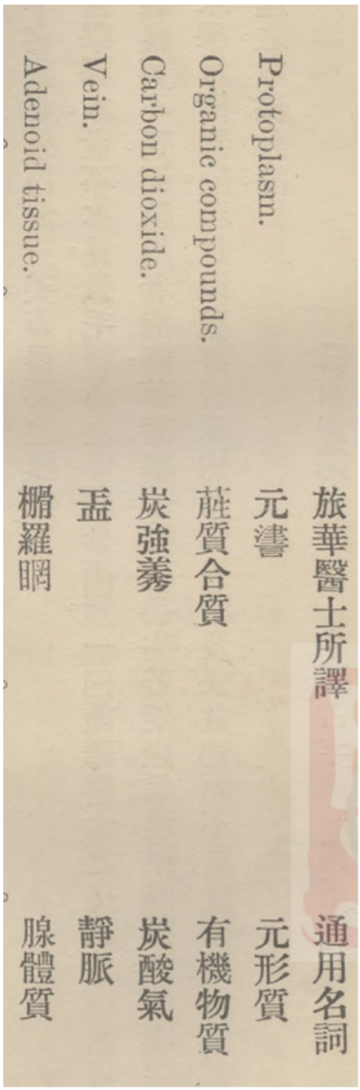


Figure 3
Terminology used by the Medical Missionary Association. © Yu 1916, 14



原子序数	英文名	符号	中文名	汉语拼音
113	nihonium	Nh	鉨	nǐ
115	moscovium	Mc	镆	mò
117	tennessine	Ts	砬	tián
118	oganesson	Og	氪	ào

Figure 4
Characters for new elements proclaimed in 2017. © Xinhua news agency, May 9, 2017

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Richard Wilhelm's Engagement in German-Chinese Terminology Work and Related Interactions in Qingdao Before 1914

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Abstract The missionary, translator, and sinologist Richard Wilhelm (1873-1930) is widely recognised as a cultural intermediary between China and Germany. However, attention has mostly focused on his translations of Chinese philosophical classics for a German-speaking audience and his efforts to create a positive image of China in Europe. In this article, the focus is shifted to Wilhelm's less-explored contributions in the opposite direction. We will highlight his efforts in conveying 'Western' knowledge to China. Emphasis will be placed on his projects involving the creation of bilingual or multilingual dictionaries, glossaries and textbooks for natural sciences within the context of his teaching activities, as well as collaborations with the Chinese teaching staff at the school for Chinese boys in his mission station in Qingdao. This article will demonstrate how Wilhelm's school, the German-Chinese Seminar, serves as an intriguing case study of a "space of circulation" for interactions between German and Chinese actors in the translation and transfer of 'Western' knowledge and terminology to and in China, and explores personal interactions, exchanges, and the collaborative production of texts and knowledge.

Keywords Terminology transfer. Missionary school education. German colony of Tsingtau. Richard Wilhelm. German-Chinese interactions. Space of knowledge circulation.

Summary 1 Introduction. – 2 Preparation and Publication of the German-English-Chinese Dictionary of Technical Terms (1909-12). – 3 Wilhelm's Chinese Collaborators in Dictionary and Textbook Production at the German-Chinese Seminar – with Special Focus on the Role of the Tan Brothers. – 4 Education in Natural Sciences and the Role of Scientifically Trained Chinese Teachers at the German-Chinese Seminar. – 5 Wilhelm's Pedagogical Principles and the Concept, Aims and Target Groups of the *German-English-Chinese Dictionary of Technical Terms*. – 6 Wilhelm's *Abriß der Zoologie* (Outline of Zoology), 1913. – 7 Conclusion.

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1 Introduction

Considerable research and literature have delved into the role of Christian missionaries in conveying modern knowledge to China, particularly in the context of Western, including German, cultural imperialism. Richard Wilhelm worked as a missionary of the General Evangelical Protestant Missionary Society (AEPMV)[1] in the German (from November 1914 Japanese) colony of Tsingtau (Schutzgebiet Kiautschou, see below) from 1899 to 1920. However, shortly after his arrival, he began to express critical views about imperialism and colonialism, as well as their intertwining with Christian missions (cf. Wippermann 2020, 96-126). Today, he is also widely regarded in China as a personality who actively worked to foster cultural exchange on equal terms, showing genuine interest and respect for Chinese culture, and making significant contributions to its dissemination in Germany.

Like all missionaries, Wilhelm, upon his arrival in China, began to learn the Chinese language and engaged in extensive studies of Chinese culture and intellectual realms. The study of native languages and cultures was a fundamental part of a missionary's responsibilities, and particularly in the AEPMV, great importance was placed on missionaries achieving a high level of familiarity with the Chinese language and cultural understanding, not least in order to be able to reach the Chinese upper class for the mission's goals. From the outset, acquiring sinological expertise was a top priority for Wilhelm. He obtained this expertise in Qingdao 青岛 through interactions with his Chinese language instructors, who were educated and learned individuals with varying degrees of expertise in traditional Chinese and/or 'modern Western' knowledge. Wilhelm also began reading Chinese texts early on and published his first translation of a classical Chinese text in 1902.

In the months following his arrival in May 1899, Wilhelm benefited from the experience and knowledge of his colleague and predecessor, Ernst Faber (who had lived in China since 1864)[2] and his extensive library. After Faber's death by the end of September 1899, his library remained at the mission station. Wilhelm's knowledge about China at the time was drawn from a multitude of sources, including Chinese texts and human informants, as well as Western scholarly literature. The authors of this Western China-literature, in turn, were influenced by experiences on-site, the reception of both Western and Chinese

1 Also Weimar Mission, later German East Asia Mission (DOAM). For more information about this mission society, cf. Gerber 2002.

2 For information about Ernst Faber, cf. Gerber 2002, 167-71; Sun 2002, 166-70 and *passim*.

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sources, and personal exchanges with Chinese actors. Wilhelm thus found himself in a starting position that was based on a pool of experiences between interacting people from China and the West, as well as on texts and bodies of knowledge circulating in between. It was a complex context that spanned both historical and geographical dimensions, and a fabric into which he actively and creatively inserted himself with his own personal interactions and textual productions.

Notably, Wilhelm did not engage in direct missionary conversion work, but primarily focused on educational efforts in his schools for the local Chinese population (cf. Kim 2004, 193-204). In these institutions, religious instruction was, at most, offered as an optional component. One of the key institutions in this regard was the German-Chinese Seminar (Deutsch-chinesisches Seminar), founded by him in 1901. Under his leadership, this middle and high school earned an excellent reputation in Qingdao and Shandong 山东 Province. Wilhelm was thus a missionary, translator, and sinologist widely recognised as a cultural intermediary between China and Germany during his lifetime, and he continues to enjoy great esteem in China to this day. Much of the attention has been directed toward his German translations of Chinese classics and his efforts to mitigate negative stereotypes about China among the German-speaking audience.

This article aims to shift the focus to a less-explored aspect of Wilhelm's contributions, which namely is his role in the transmission of culture and knowledge from 'the West' to China. Here, the emphasis is placed on Wilhelm's involvement in Qingdao during the period leading up to 1914, before the outbreak of World War I. In the following, we will examine Wilhelm's projects in the field of German-Chinese technical and scientific terminology, particularly in the context of his teaching and the development of teaching materials for the natural sciences at the German-Chinese Seminar. We will explore the role played by the Chinese teaching staff in this terminology and translation work as well as textbook production, and examine how Wilhelm's relationships with the Sino-German University in Qingdao accompanied these endeavours. To exemplify these cooperations, special attention will be given to Wilhelm's *German-English-Chinese Dictionary of Technical Terms* (1911b), his textbook *Outline of Zoology* (1913) and to his long-term cooperation with the Tan brothers – both students and later teachers at his German-Chinese Seminar.

The German-Chinese interactions under consideration took place within Germany's 'Colony of Tsingtau', officially known as the Kiautschou [Jiaozhou 胶州] Protectorate (*Schutzgebiet Kiautschou*, 1897/98-1914). The heart of this area was Tsingtau [Qingdao], at that time only a small town, and its surrounding rural areas. Naturally, there were also connections to other locations in the Shandong province, as many Chinese people from regions outside the protectorate settled in Qingdao. This includes numerous Chinese students and

teachers at Wilhelm's German-Chinese Seminar. Wilhelm operated within a social and physical space that can be described as follows:

> Wilhelm's writings provide detailed accounts of his everyday interactions with Chinese individuals from various backgrounds. As a missionary, he was not subject to strict segregation between Germans and Chinese in Qingdao. His work in schools and hospitals necessitated close contact with Chinese people. As he described it, he lived in "two separate worlds" of the European and the Chinese (*VM*, early December 1908.5, 79). These worlds also intertwined within the mission station: the station, which expanded with new buildings on the extensive "Mission Hill," was located on the outskirts of the European district. It formed its own German-Chinese microcosm under Wilhelm's leadership, with a mixture of German and Chinese staff, their families, Chinese service personnel, Chinese students in the boarding schools, and Chinese patients and medical staff in the Faber Hospital. (Wippermann 2020, 38-9)

The German-Chinese Seminar, at its inauguration in 1901, was initially housed in a building located in the Tapautau (Dabaodao 大鲍岛) district for Chinese residents. However, the following year, a new building complex, featuring Chinese architectural elements, was occupied on the Mission Hill:

> The pupils [...] were accommodated in the school buildings under the supervision of Chinese teachers and were provided for within the mission station's facilities. The proximity of the German-Chinese Seminar to Wilhelm's residence facilitated his supervision of the students. [...] He encountered them daily during lessons and morning devotions, and he also attended to their personal needs. (41)[3]

As this paper will demonstrate, the German-Chinese microcosm of Wilhelm's mission station with the German-Chinese Seminar as central institution, physically located on the Mission Hill of Qingdao, constituted a clearly confined geographical "space of knowledge circulation". This space and the actors and texts involved were not strictly separated from the outside world, but were embedded in numerous larger spaces of circulation, especially the colony of Qingdao and surrounding regions of Shandong Province, and existed with close connections and exchange not only with individuals and institutions in its near physical surroundings – like the Sino-German University

3 For more information about this school, cf. Gerber 2002, 215-21; 2013; Kim 2004, 194-9; Zhai 2015, 54-124, 336-403 and *passim*; Wippermann 2020, 127-32, 261-2.

in Qingdao, but also with the "world of knowledge" in all its historical and geographical dimensions. It thus will turn out to be a rather small-sized, but quite typical example for the model of a "social and physical" "space of circulation", that allows "tapping into an already existing continuum, or cloud, of relations" as described by Raj (2017, 52-4) **[figs 1-3]**.

2 Preparation and Publication of the German-English-Chinese Dictionary of Technical Terms (1909-12)

The *Deutsch-Englisch-Chinesisches Fachwörterbuch* (hereafter *Dictionary of Technical Terms*) edited by the Sino-German University in Qingdao was published in 1911 (and 1912, see below), with Richard Wilhelm credited as author. Wilhelm likely began or intensified his work on this dictionary in late 1909,[4] continuing his efforts over the next more than two years. This can be deduced from numerous calendar entries in the period from January 5, 1910[5] to November 7, 1911, when Wilhelm noted: "dictionary Z finished" (KN 1910-11).

Despite the publication year being stated as 1911 on the front page of the volume, it seems that the work actually was completed in 1912 only. On January 19, 1912, Wilhelm wrote "work on the lexicon resumed", and on January 22, he noted: "lexicon finished" (KN 1912). However, the publication process likely commenced already in 1911. In a letter dated June 4, 1911, Wilhelm mentioned: "As to the dictionary, the first volume [A]-L should be published first" (B-SW).[6]

4 There is no evidence in the sources reviewed so far to support Salome Wilhelm's statement (1956, 136) regarding "the continuation of work on a German-English-Chinese dictionary in 1906".

5 About his publications in 1910, Wilhelm summarised: "The work of the year was divided between the preparations for the Dictionary of Technical Terms and the translation of the Tao Te Ching [Daodejing]" (KN 1907-14, text following the entry of January 31, 1910. Cf. also KN 1910).

6 From Wilhelm's calendar entries, it can be inferred that the section up to "L" had long been completed by that time (cf. KN April 11, 1911), allowing it to be published in the same year. The few complete editions cataloged in German libraries (cf. KVK) are single-volume (576 pages), except for one part of the volume "A-L" cataloged at the library of Trier University and the Central Archive of the Evangelical Church of the Palatinate (Speyer) (307 pages). In Wilhelm's literary estate in Munich, apart from the single-volume work, there is also one copy of volume M-Z, which is listed in their catalog ("Anonym, Deutsch-Chinesisches Wörterbuch, M-Z, ohne Ort und Jahr", ABAdW I/92) without the author's name or correct title. However, upon closer examination, it is indeed volume II of the *Dictionary of Technical Terms*. Wilhelm's statements from the period before 1911 about the printing progress (B-AEPMV, December 2, 1909, 3) and about "the Chinese printing press [in Shanghai. DW: probably Commercial Press] where my German-English-Chinese dictionary is currently being printed" (*VM*, July 2, 1910, 28) seem confusing. It is possible that Wilhelm wanted to present the progress of the work to the mission society or mission circles in Germany more favourably regarding

Wilhelm's publication of the *Dictionary of Technical Terms* and the Sino-German University's editorship aligns with his close connection to this university, which opened in October 1909.[7] He had expressed interest in this institution early on. Already at the end of 1908, Wilhelm emphasised

> how important it is that Germans and Chinese stay in touch with each other and work together for mutual prosperity. In this regard, the university venture of the German and Chinese governments can, under the right circumstances, be of significant benefit. It can evolve into a cultural enterprise that serves mutual understanding and mutual support. (*VM*, early December 1908.5, 88)

The idea for the *Dictionary of Technical Terms* appears, however, to have originated independently of the then-planned university. Following the statement quoted here, Wilhelm mentioned in the next paragraph: "There is now a need for a German-Chinese dictionary of the most important scientific terms to be published" (88). And even earlier in a letter dated June 24, 1907 (B-AEPMV, 1) he had already mentioned that he was working on a German-Chinese scientific dictionary. By the end of 1909, Wilhelm conveyed the impression to the AEPMV that the project was well-advanced:

> I am currently engaged in the production of a German-English-Chinese dictionary of scientific terms, the printing of which has just begun. I kindly request to be allowed to advance the printing costs, which will amount to approximately 2-3000 dollars, initially from the funds of the mission society [AEPMV]. I commit to reimbursing the society, along with interest, after the sale of the corresponding number of copies. Such a dictionary is indeed a genuine necessity at this moment, and I have been led to undertake this endeavour based on practical requirements. I hope to complete it within a year. (B-AEPMV, December 2, 1909, 3)

Wilhelm mentions some other ongoing projects for the publication of school teaching materials (see sections 3 and 4), but "I consider the dictionary to be the most important project in the first place" (p. 3) **[figs 4-5]**.

How the Sino-German University came to be the editor of the dictionary is still unclear. Although Wilhelm initially intended it for the

the potential for financial support of his projects. Interestingly, there is no mention of a specific printing or publishing company in the dictionary.

7 For further information about the Sino-German University, cf. Mühlhahn 2000, 242-51 and Iwo Amelung's article in this volume.

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students of his school, it is reasonable to assume that it was also of interest to the students of the preparatory college and the specialised programmes of the Sino-German University. In a letter to Wilhelm dated March 3, 1912, Georg Keiper, the director of the Sino-German University, wrote:

> I have discussed the issue of early access to the profits from the specialized technical dictionary in more detail and found that in this budget year, ending at the end of March of this year, a payout is no longer possible. However, I will gladly pursue the matter further as soon as confirmation of the usage plan for our industrial fund from Berlin arrives. I hope this will happen immediately after the start of the semester. I will not fail to revisit the matter at that time. (1912)

At the end of 1912, referring to the dictionary, Wilhelm mentioned Hans Wirtz, who was responsible for the Translation Office at the university, which handled the translation of textbooks into Chinese: "Meeting with Wirtz regarding the lexicon" (KN November 19, 1912).

Shortly after the university's opening, Wilhelm had reported that "the head of the university has so far avoided any contact with us" (B-AEPMV, December 2, 1909, 1). At that time, the German side endeavoured to officially maintain the appearance of distance from Christian missions, at least in public. Therefore, Wilhelm's early attempts to join the university and establish a formal connection between his school and the university had been unsuccessful (Gerber 2013, 133-4). However, from the beginning, Wilhelm was "personally in stimulating contact with many of the university lecturers" (B-AEPMV, December 2, 1909, 1), not only with Wirtz but also with individuals such as the legal scholar Harald Gutherz and the sinologist Ferdinand Lessing, among others.[8]

8 Several notes in Wilhelm's calendars indicate that during the year 1910, he and Gutherz prepared even a collaboration on the Chinese translation of the "German Encyclopaedia of Law", but this plan did not realise. Cf. for example, Wilhelm's note about "translation plans with Gutherz", referring to the year 1910 (text following the entry for January 31, 1910 in KN 1907-14).

3 Wilhelm's Chinese Collaborators in Dictionary and Textbook Production at the German-Chinese Seminar – with Special Focus on the Role of the Tan Brothers

While Wilhelm is listed as the sole author of the *Dictionary of Technical Terms*, it is difficult to imagine that he created it without the involvement of others, particularly without the assistance of Chinese native speakers with proficiency in German and/or English as well as scientific and technical knowledge. In late 1908, when he mentioned the idea for the dictionary, Wilhelm expressed hope for support from graduates of his German-Chinese Seminar. He referred to the "first five [Chinese] school students who have completed the full seven-year course," saying:

> They all give reason for good hopes. Although it is easy to find good positions for them, they have nevertheless agreed to return next year to assist with the work on the planned technical dictionary. (*VM*, early December 1908.5, 88)

It remains unclear if these five students really were involved after the work on the dictionary had begun. There is, however, compelling evidence that one former student of the German-Chinese Seminar, Tan Yuefeng, was his collaborator in this project. In a letter from Wilhelm to his wife, the following passage can be found:

> The lexicon is progressing step by step, now already at 'K.' I still have to copy it, however. Because if I don't copy it, Tan will have nothing to do and will take leave to Tapautau. But you can imagine how much I look forward to you helping me in all these matters. (B-SW, August 4, 1910)

From this, along with information from other sources, it is clear that by "copy," Wilhelm meant a typewritten copy, which was usually done by his wife Salome Wilhelm. It appears that Tan regularly received the typewritten versions for further processing. This is corroborated by another statement:

> My daily routine is also quite settled. In the morning, lexicon and the like. From 10 o'clock onwards, together with Tan. (B-SW, February 23, 1911)

Although there is no specific information about Tan's exact role in creating the dictionary, it seems to be evident (see below in this section and section 4) that he possessed knowledge in both the German language and specialised terminology required for the dictionary work.

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As little has still been reported – especially in Western literature – about Tan and his brother and their quite significant roles in Wilhelm's school and his work on the dictionary and teaching materials, we here will briefly delve into the life, education and professional careers of the Tan brothers. We will focus on their time as students and teachers or translators at Wilhelm's school and as students and translators at the Sino-German University.

Tan Yuefeng 谭岳峰, in Wilhelm's spelling 'Tan Yüo Feng' (1882-1935), and his elder brother Tan Yufeng 谭玉峰, in other spellings 'Tan Yü Feng', 'Tan Jü Feng' or 'Tan Ue Feng' (born around 1879), from Weixian 潍县 (Shandong Province), were among the first Chinese students whom Wilhelm began teaching German from October 1900. In the following year, he opened the German-Chinese Seminar with them and other students. In 1934, Tan Yufeng recalled:

> In the year 1900, persecuted by the anti-Christian Boxers, I left Tengchoufu [Dengzhou 登州], where I had studied in an American mission school and adopted the Christian faith, and went to Tsingtau with the desire to be able to satisfy my longing for learning the German language here. My path led me to Dr. Wilhelm in the East Asian Mission, where I initially enjoyed private lessons with a few other students. (1934, 35)

The two youngest of six brothers (alongside five sisters), Tan Yuefeng and Tan Yufeng, were raised in extremely impoverished conditions in a family of carpenters until their older brothers, who had found opportunities working on construction projects in the new German colony, were able to support their attendance at Wilhelm's school (Liu 2016, 82-3). By the end of 1906, they were among the "first 3 high school graduates from the school" (Wilhelm et al. 1906, 32).[9] In the years leading up to their graduation, both of them had been employed as particularly talented and successful students, assisting with the teaching of "German for beginners". The mission station's annual report 1902/03 stated that

> Tan Ue Feng from Weihien [Weixian], a student in our Tsingtau school, assists with German elementary education and is currently serving as the acting interpreter for the Chinese district office in Kaumi [Gaomi 高密]. (AEPMV 1903, 38-9)

9 Tan Yuefeng's descendants have preserved a copy of *Brockhaus' Kleines Konversationslexikon*, on the inside title page of which there is a handwritten dedication from "R. Wilhelm" to "Tan Yüo Feng as a friendly reminder of the day of his departure from the German-Chinese Seminar on January 18, 1907" (photo in Liu 2016, 82).

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Here, due to the similarity of the pronunciation of their names and the ambiguous transcription of "Ue", at first sight it seems unclear which of the two brothers is being referred to. However, it must have been Tan Yufeng, as confirmed by a preserved letter from "Tan Ju Fung" to Wilhelm, dated May 7, 1903, which makes reference to his stay in Gaomi.[10] In the next annual report, only Tan Yufeng is listed as teaching one hour of German daily (Wilhelm 1904, 50). However, in the following annual report, both brothers are recorded as "assistant teachers in German" (AEPMV 1905, 48), and Tan Yufeng is mentioned as having "successfully passed the master's examination at Tsinanfu [Jinan 济南] University" in the fall of 1904.[11]

Another report notes that Tan Yufeng "holds the literary degree of a Yu Gung [yougong 憂貢],[12] teaches physics and natural sciences," whereas Tan Yuefeng is still identified as an "assistant teacher in German" (Wilhelm et al. 1906, 30). The annual report 1907 lists only Tan Yufeng among "Our Chinese employees," now as a "graduate of our school, teaching physics and German". However, Wilhelm expressed praise for both brothers:

10 The letter reads as follows: "Dear Teacher! After I left you, I constantly think of the grace and love I received before, without interruption, and God has protected me, so everything has been going well. When I arrived in Kaumi, the county official ordered me to take the side hall of the Jamen as the most comfortable place. The room I live in is always quiet, and no one disturbs my tasks. The city council and I paid each other a visit, and the German mandarins did too. Later, you can give me a response so that I can follow your orders, if I may ask. With warm regards! Respectfully, your devoted student Tan Ju Fung" (AEPMV 1902-25).

11 "We can already report a great success in the past year in the significant interest shown to us by both the former Governor of Shandong, Chou Fu [Zhou Fu], and his successor, Yang Schi Siang [Yang Shixiang], during their visits to Tsingtau. This interest was not only expressed through generous financial donations but, as an even more valuable result, it led to our school's integration into the Chinese government school system. At Chou Fu's suggestion, the Taotai Hsiau [daotai Xiao] examined all mission schools, for those who desired it. For us, this resulted in several students receiving awards, and I was also invited to send students to Tsinanfu for the university examinations, with the explicit concession that, after passing the exams, our students would be allowed to complete their studies at our school. I took advantage of this offer and initially sent one student [Tan Yufeng] to Tsinanfu for the examinations. He passed them with distinction. Additionally, several of our students transitioned to the university in Tsinanfu, all having passed the necessary entrance exams. [...] Regarding internal developments, we may mention that various students have already proven themselves as useful individuals. The three most advanced students [including the Tan brothers] were able to become assistant teachers this year, which proved to be a great relief due to the high influx of new students. One of them, together with Pastor [Wilhelm] Schüler [Richard Wilhelm's missionary colleague, for whom this student served as an interpreter], teaches German in the 2nd grade, and the other two teach independently under Mrs. Wilhelm's supervision. [...] In this way, we can observe that our work is gradually bearing fruit as we are able to gradually develop a group of useful assistants" (AEPMV 1905, 50).

12 Tan Yufeng wrote about this in retrospect: "In 1904, I was selected as the first student to take the civil service examination in the provincial capital. I passed the examination with good results, and I was awarded the honorary second-grade title by the Emperor of the Tsing [Qing] Dynasty, skipping the first grade" (1934, 36).

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> Of the three students who graduated last fall, one, Tan Jü Feng [Tan Yufeng], is employed as a teacher at our school and is of great value to us in this role. We were also delighted that he declined other, highly advantageous offers such as a position at Tsinanfu University to remain loyal to our cause. His brother, Tan Yüo Feng [Tan Yuefeng], holds a well-paid teaching position at a Chinese modern school [according to Liu 2016, 84, Zhongguo Gongxue 中国公学] in Shanghai 上海, where he also teaches at the German medical school there. (Wilhelm 1907, 34)

When the Sino-German University was established in Qingdao in the autumn of 1909, Tan Yufeng began pursuing a degree in mechanical engineering and simultaneously secured a part-time position as a technical translator in the university's translation office. At this office, Germans (including its head and Wilhelm's friend Hans Wirtz) and Chinese individuals collaborated to translate teaching materials into Chinese. After completing his studies in 1913, Tan Yufeng started teaching at the Sino-German University. His whereabouts during the Japanese occupation of Qingdao from 1914 to 1922 remain unclear. However, in 1922, he returned to his role as a teacher at the school founded by Wilhelm in Qingdao:

> It was only after the return of Qingdao to China that a reorganization [of the school] occurred, which I helped establish in collaboration with Dr. Seufert and director Liu.[13] I returned to my old school, now guided by the motto 'docendo discimus' (we learn by teaching). On the occasion of the fiftieth anniversary of the East Asia Mission [formerly AEPMV], to which I owe my intellectual and moral education, I wish to express my gratitude through these words. I hope that it continues to grow and flourish in its mission of bridging China and the West in the spirit of Jesus Christ. Tan Jü Feng, Deputy Director of the Mission School. (1934, 36)

According to a list of teachers at the school in 1937, Tan Yufeng, now 58 years old, was still working there at that time as "educational director and teacher for mathematical subjects" (Zhai 2015, 375). He

13 Zhai (2015, 368-79) reports that Liu Shuanfa 刘栓法 (1889-1957) came to Qingdao in 1904 at the age of 15 from a village in Shandong and became a student at Richard Wilhelm's German-Chinese Seminar. Later, with Wilhelm's recommendation, he was admitted to the Sino-German University. After the outbreak of the war in 1914, he transferred to the German Tongji University in Shanghai, where he completed his studies in 1921. In 1922/23, he became the director of Wilhelm's former mission school (under the supervision of AEPMV missionary Wilhelm Seufert). He is praised to have continued and developed the school in the spirit of Richard Wilhelm for 30 years, creating an "educational legend of the Richard Wilhelm School in Qingdao" (369).

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maintained contact with Wilhelm after Wilhelm had left Qingdao, during Wilhelm's time as a Scientific Advisor at the German legation and as a professor at Peking University in Beijing, and continued his correspondence with Wilhelm, after the latter had left China to take up his career as professor at the University of Frankfurt.[14] These letters provide evidence that in addition to his teaching at the mission school, Tan Yufeng had also secured a part-time position as a "technical censor within the government". In early 1925, he was involved in preparations for the celebrations of the school's twenty-fifth anniversary (December 27, 1924 and February 27, 1925). He also proudly reported that his "eldest son, named Dasi, who has been studying political science, along with German and French languages in America for five years," was going to take his doctoral exam at the end of the year (December 1, 1927).

The younger brother, Tan Yuefeng, had not stayed in Shanghai for long in 1908 and returned to Qingdao in the same year's winter. According to Liu (2016, 85), he worked then in Qingdao as a translator or interpreter. Based on Wilhelm's reports, he re-entered the German-Chinese Seminar as a teacher and also took on translation tasks:

> We had to employ a few new teachers, among them a former student of our school who gave up a well-paid position in Shanghai to assist us in our cause for half of the salary he earned there.[15] He is of great value to us due to his knowledge of the German language and his teaching capabilities. (*VM*, February 1909.1, 9-10)

The annual report 1909 once again listed Tan Yuefeng: "Trained at the Seminar, teacher for the German language and chemistry, also assists with translation work" (Wilhelm 1909, 53). Additionally, Wilhelm noted: "Ma De I.[16] Trained at the Seminar, assistant teacher in German. Translation work". In this report, Wilhelm wrote about the school's own "translation office" for the first time with a list of the personnel employed there:

14 Cf. Tan Yufengs letters to Wilhlem during the years from 1922 to 1927 (AEPMV 1902-25).

15 Liu (2016, 84) indicates that the unstable situation and poor financial condition of many Chinese educational institutions, including those in Shanghai, which often had difficulties paying salaries regularly, may have influenced Tan Yuefeng's decision to return to Qingdao.

16 Ma Deyi 马德溢 continued to teach at the German-Chinese Seminar for a long time, at least until 1937 (Zhai 2015, 85, 375).

> Director: R. Wilhelm
> Chinese director: Dsang We Tang[17]
> Chinese assistants proficient in German:
> Tan Yüo Feng [...]
> Ma De I [...]
> Dsiao Gi Dseng, trained at the Seminar; transferred to the translation office of the University by the end of the year.
> Chinese scribe: Ma Schen An [...] [also listed as one of the "teachers of Chinese at the Elementary School"]. (1909, 54)

Tan Yuefeng continued working at the German-Chinese Seminar, as per Wilhelm's reports, until the fall of 1911. In his annual report 1911, Wilhelm writes about him:

> The shortage of teachers became particularly acute when one of the most talented former students of our school, Pan Yür Föng[18] [Tan Yuefeng], left for the [Sino-German] University at the beginning of the second semester to work as an interpreter. As a result, I had to add physics to my other teaching subjects. However, the Chinese teachers, among whom several were former students of our school, faithfully provided assistance, ensuring that the year's workload was completed. (1911a, 64)

In private letters, Wilhelm expressed significant concerns about the increasing competition from the Sino-German University and its preparatory college for his school:

> I am not entirely sure how our work will continue. In the upper grade of the seminar, we had five students last semester. Now I hear that three of them intend to go to the university. If only two students remain, who also belong to two different classes, it's quite questionable whether it's worth continuing the upper grade. Recently, on the way to the university – where I went with the [Chinese] teachers of the Protectorate for an inspection – I spoke with Tan Yüo Feng [Tan Yuefeng] about the matter and asked him to talk to Du Diän Ying (one of those who want to leave) so that he might reconsider. He promised to do his best, and I was pleased to have at least one loyal helper in him. Later at the university, Dr. Wirtz told me that the same Tan Yüo Feng had applied for the

17 Cang Yuchen/Weitang 藏毓臣, 字炜堂 from Zhucheng 诸城 in Shandong province was a graduate with the traditional degree of *juren* 举人 (provincial examination level) (Zhai 2015, 85).

18 From the entire context, it is clear that only Tan Yuefeng must be meant here. "Pan Yür Föng" is likely a typographical error that occurred during the printing of Wilhelm's manuscript by the AEPMV.

> interpreter position in the medical department for next year. The Tan brothers, who were present, noticeably blushed, while I continued to smile without batting an eye. Well, I won't hold onto anything. Who wants to leave, should leave. (B-SW, August 8, 1911)

Soon after that, Wilhelm wrote that he was "teaching physics at the seminar" because "Tan left for the university hastily" (B-SW, September 29, 1911). According to Liu (2016, 85) Tan Yuefeng began working as a medical interpreter at the Sino-German University in June 1911, with a workload of 25 hours per week, and he was also enrolled as a student in the medical department in the same year. While Wilhelm continued to have contact with Hans Wirtz and other lecturers from the university, it is likely that his connection with the Tan brothers also persisted, although so far, no specific indications of the collaboration continuing were found. Tan Yuefeng is reported to have worked as interpreter for Sun Zhongshan (Sun Yat-sen) during his visit to the Sino-German University in Qingdao on September 30, 1912, and that a joint photo of Sun and Tan was taken on this occasion (Liu 2016, 85-6, 99). In 1913, Tan Yuefeng published a Chinese-German Glossary of the "Most important [German] nouns, sorted by subject" in Qingdao.[19]

After the outbreak of World War I in 1914, Tan Yuefeng, like many other students and faculty members of the Sino-German University, moved to Shanghai and completed his studies at the German Medical School (later Tongji University) in 1916. He was then offered a teaching position for chemistry and German at the predecessor institution of Henan 河南 University in Kaifeng 开封. But after one year, he established himself as a Western medicine physician and pharmacist, achieving great renown and wealth in Kaifeng. In the early 1930s, he opened a pharmacy and optician's shop in Qingdao. On January 27, 1935, he passed away (due to meningitis) and was buried in the European cemetery in Qingdao.[20]

19 Tan Yüo Fung (1913). *Hua-De yaoyu leibian* 华德要语类编 *Die wichtigsten Hauptwörter nach Arten geordnet. Herausgegeben von Tien Hsing Buchhandlung* (Published by Tian Hsing Bookshop). Tsingtau (now kept in the Museum of Tongji University, cf. the photograph of the title page in Tongji Daxue 2023).

20 Cf. Liu 2016. In the chapter "Xunzhao Tan Yuefeng" 寻找谭岳峰 (In Search of Tan Yuefeng) (80-91), the Qingdao journalist and local history researcher presents his research on the Tan brothers, especially Tan Yuefeng. Liu does not provide precise references, but he mentions a number of sources used, including those he personally viewed in Kaifeng archives, as well as secondary literature. He also used documents and photographs kept in the Tan family, provided by Tan Yuefengs grandson Tan Guozhang 谭国璋. For the Tan brothers, cf. also Tan 1934; Gerber 2002, 218-19; Zhai 2015, 61, 368, 375-6.

Tan Yuefengs optician's store in Qingdao was equipped with modern technical equipment from Germany, carried out eye tests for spectacle fitting and is said to have been the first in Qingdao to be able to grind its own lenses. In 2013, Tan Guozhang donated one of his father's optical devices, an ophalmoscope, to the Museum of Tongji University

4 Education in Natural Sciences and the Role of Scientifically Trained Chinese Teachers at the German-Chinese Seminar

To return to the above-mentioned "translation office" established at Wilhelm's German-Chinese Seminar – his report (1909) makes it clear that this likely new "office", under Wilhelm's leadership, with entirely Chinese staff (including Tan Yuefeng) and dedicated office space,[21] was responsible not only for work on the *Dictionary for Technical Terms* but also, and primarily, for extensive projects related to the creation of Chinese teaching materials for school instruction, particularly in modern natural science subjects:

> In addition to our school teaching work and, to a large extent, with the assistance of individuals trained in our seminar, we have undertaken to participate in the highly important task of creating suitable teaching materials for Chinese schools. In the reporting

in Shanghai, and in 2023 donated again some documents from Tan Yuefeng's time as a student (Liu 2016, 89-90, Tongji Daxue 2023). Among the many further details about the Tan family's history in Liu's text, it is noteworthy that Tan Yuefeng is said to have learned to play the violin from Richard Wilhelm and practiced a lot at home, so that his son, Tan Shuzhen 谭抒真 (1907-2002), became familiar with the sound of the violin in his mother's womb and developed a love for this instrument as a child (Liu 2016, 62, 83). It is also reported that Tan Shuzhen's interest in the violin was fostered in Qingdao because his father, Tan Yuefeng, would sometimes take him to music "parties" (yinyue "paidui" 音乐"派对"). Additionally, their experiences with European music in the Christian Tan family's church services played a role (Qingdao chengshi dang'an luntan 2022). Richard Wilhelm was an enthusiastic amateur musician who often attended classical European music concerts held in Qingdao and also regularly organised chamber music evenings with German friends at his home (noting this in his calendar entries). This apparently allowed Chinese individuals such as Tan Yuefeng and his son to come into contact with European music.

Tan Shuzhen became a famous violinist and professor of the violin, as well as a violin maker, known as the "Father of Violin Making in China," who in 1935 produced the first violin made in China in Qingdao and in the 1950s established violin making as a music academy subject in Shanghai. In 2020, the violin he had made in 1935, was donated to the Oriental Museum for Musical Instruments in Shanghai by the last owner, a teacher from Nanning 南宁, Guangxi 广西 Province (Qingdao chengshi dang'an luntan 2022, Dongfang Yueqi Bowuguan 2020). A female student of Tan Shuzhen, Xiuwei Zhou-Geiger, continued her training in violin making in Mittenwald (1980-1983), became a prominent violin maker in Germany, and for more than 30 years runs her own violin making shop in Bonn (Zhou-Geiger, s.d.). Tan Shuzhen's son, Tan Guozhang also became a master violinist and violin professor (cf. `https://music.shu.edu.cn/info/1016/4063.htm` and his CV on LinkedIn). Tan Guozhangs daughter Tan Wei 谭玮 emerged as a violin talent in her childhood; since 1994, she pursued her educational and professional music career in the USA, where she is engaged in the cause of music up to today ("Yishujia jianjie, Tan Wei" 2010, NYIAA 2024).

21 A letter from Wilhelm reveals that he had his own so-called "inner study" within the German-Chinese Seminar, and the "outer room" in front of it served as a "translation office" to which Chinese collaborators had access also in his absence (B-SW, October 1910).

> year, the following were completed and printed:
> For Chinese elementary schools:
> Chinese Bible, Part 1, second edition.
> The most important Chinese characters arranged by radicals, with pronunciation indications and translations.
> Arithmetic textbooks, Part 1 and 2.
> Currently under press:
> Chinese Primer, Part 2.
> Chinese Readers, Part 1 and 2.
> For secondary schools:
> Manuscripts are complete for:
> Overview of Chemistry.
> Textbook of elementary physics.
> Overview of Astronomy.
> Geography for Chinese elementary schools.
> Presently still in progress:
> German-English-Chinese Dictionary of scientific and technical terms.
> Geometry textbook. (1909, 53)

In a letter to AEPMV at the end of 1909, Wilhelm writes something similar:

> As for other works, a catechism of astronomy, an overview of chemistry (inorganic), and a geography textbook for elementary schools are ready for printing. As soon as the financial resources are available, they can be printed. [...] In terms of literary works, I am currently working on a geometry and a physics textbook, and a textbook of Chinese for elementary schools, which are intended for use in the protectorate's schools. I am sending you a copy of a recently completed list of the most important Chinese characters. (B-AEPMV, December 2, 1909, 3)

In earlier annual reports, Wilhelm had already occasionally mentioned that teachers from the German-Chinese Seminar were involved in creating teaching material, translation work, and/or assisting him with Chinese-language correspondence. Wilhelm himself had started working on teaching materials early on,[22] and from the beginning taught natural science subjects. For example, he reported about his work in 1901 that besides teaching German and Bible studies, he taught "Anthropology and Astronomy" and was also occupied with the "creation of teaching materials for our school":

22 Teaching materials for German and Chinese (including Chinese characters) written or edited by Wilhelm (published during the period from 1901 until 1913, cf. Walravens 2008) will not be considered here, as the focus of this paper is primarily on the education in scientific subjects.

> I am currently engaged in composing a Chinese botany textbook. An existing manuscript by Dr. Faber, although written in the southern Chinese dialect and covering only introductory questions in plant physiology, is to be used in this work. (Wilhelm 1902a, 60-1)

In the annual report 1905, "Dschou Ming Giu,[23] the first Chinese teacher of Western sciences [engaged at the school]", is mentioned to teach "geography, arithmetic, algebra, geometry and stereometry" and to have assisted in creating a Chinese textbook for introductory classes. Additionally,

> Dsang Yü Tschen [Cang Yuchen, see fn. 17], the former Chinese district school inspector, holding the 2nd Literary Degree (Gü Jen), teaches Chinese essay writing and literature for advanced students and takes care of the Chinese correspondence under the supervision of Pastor Wilhelm. (AEPMV 1905, 47-8)

Furthermore, in the annual report 1906, among "Chinese assistants", "Dschu Bao Tschen"[24] is listed as a staff member of the mission station:

> At the founding of our seminar, he was the first teacher, later worked for a considerable time in Shanghai in the translation committee of Schansi [Shanxi 山西] University, Chinese lettré assisting Pastor Wilhelm in the creation of Chinese teaching materials for Chinese schools. His salary is covered in part by the school communities of the protectorate. (Wilhelm et al. 1906, 30)

The same report stated:

> An increase and expansion of teaching resources had to be undertaken. This was done by establishing an educational teacher's library, which is also open to advanced students of the school. The mineralogical collection was supplemented by the most important stones and minerals of Shandong. The entomological-zoological collection was particularly developed thanks to the zeal of Mr. [Benjamin] Blumhardt [a theologian and missionary colleague of Wilhelm, and the cousin of his wife Salome]. Meanwhile, Dr. Faber's botanical collection is currently in knowledgeable hands, overseeing its reorganization. The physical teaching materials collection is also undergoing a thorough review and restructuring

23 For some information about Zhou Shuxun/Mingjiu 周书训, 字铭九, cf. Zhai 2015, 84-5. According to Zhai, Zhou was still working as teacher at Wilhelm's school in 1919.

24 For information about Zhu Baochen 朱宝琛, cf. Zhai 2015, 84, 86-7.

> with the kind assistance of Mr. Esterer, the head of the local Siemens-Schuckert Works. We hope that our seminar can compare favorably with other schools in this regard. (32)

Wilhelm always placed great emphasis on hiring well-qualified teachers for his school, and undoubtedly, his Chinese teaching staff consisted of remarkable individuals and experts who played an important role in Wilhelm's daily work in Qingdao for many years. Whereas for the 'Chinese subjects' he engaged highly qualified graduates from the traditional Chinese examination system, for the 'Western subjects' he selected Chinese with modern educational background and training in natural sciences. For instance, during the early days of the German-Chinese Seminar, Wilhelm had already reported about "Dschou Ming Giu" (Zhou Mingjiu, mentioned above as a contributor to the creation of teaching materials), and other teachers:

> After some initial difficulties, I succeeded in finding a Chinese scholar for Chinese classics and a Chinese teacher for Western sciences, who is one of the best mathematicians in China. (Wilhelm 1902a, 60)

> I have also managed to recruit three very capable teachers, two Chinese graduates for the Chinese subjects, and teacher Dschou, one of the best teachers overall. (Wilhelm 1902b, 122)

> Geography and mathematics continued to be taught by the Chinese teacher Dschou, as before. He had received a job offer from Shansi [Shanxi] Provincial University with very favorable conditions, but I succeeded in keeping him here. The Chinese classics were taught by two very capable Chinese graduates. (Wilhelm 1902c, 185)

Zhou Mingjiu, Tan Yufeng and most of the other teachers who taught "Western sciences" at the German-Chinese Seminar, were former students/graduates from the Presbyterian Tengchow College, founded in Dengzhou (Shandong province) by the American missionary Calvin Wilson Mateer in 1882 (cf. Hyatt 1971). It is claimed to be the first modern (Western style) institution of higher education in China and a predecessor institution of today's Shandong University in Jinan.[25] Mateer highly esteemed and fostered education in "mathemat-

25 For Wilhelm's principles of composing his staff of Chinese teachers, cf. Zhai 2015, 84-8. Zhai identifies seven Chinese teachers of Wilhelm's school in the early period as graduates from Tengchow College (also cf. Chang 1998, 216-17). It should be noted that one of Wilhelm's own first teachers of Chinese and long-term employee as physician in the hospitals of his mission station, Li Benqing 李本庆, was also a graduate from the medical department of Tengchow College (cf. Gerber 2014). From the sources used

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ics and science, which were administered in massive doses. All graduates from the mid-1880s had at least a year in algebra, geometry, trigonometry, calculus, surveying and navigation, chemistry, physiology, astronomy, and geology, plus three years of physics" (Hyatt 1971, 318). Like Wilhelm, Mateer was aware of the importance of education in the native language, and he produced large quantities of Chinese textbooks for 'Western sciences' to be used at his college. It is reportedthat Tan Yufeng in 1905 personally visited his former college (since 1904 situated in Weixian) and recruited four new teachers for Wilhelm's mission schools **[fig. 6]**.[26]

In the years 1909 to 1911, the scope of tasks related to the creation of teaching materials at Wilhelm's school significantly increased. Wilhelm even sought the assistance of advanced school students for this purpose. As early as the end of 1908, Wilhelm outlined his intentions:

> Furthermore, we intend to systematically continue working on teaching materials. Each of the five students [who had completed the entire seven-year course by 1908 and received a graduation certificate] has chosen a specific subject that they want to work on under my guidance. Additionally, I hope to be able to train a few capable Chinese literati so that the Chinese style of these books is appealing and user-friendly, which is of great importance in China. (*VM*, early December 1908.5, 89)

Wilhelm reported on the involvement of school students in creating teaching materials again in February 1911:

> According to the individual aptitude and inclination of each student, tasks were assigned. One student was tasked with translating materials on philosophical topics, while others assisted with the copying and hectographing of textbooks in physics, chemistry, history, etc. (*VM*, February 1911.1, 2-3)

It can be assumed that for these Chinese teaching materials, existing German- or English-language textbooks and other materials had to be

here, it is not clear if Tan Yufeng had only studied at a secondary level in the Presbyterian educational institutions in Dengzhou, or if he had already entered the college level, before he moved to Qingdao. The former secondary school (Wenhuiguan 文会馆) had already very early taught courses near the college level and in 1882 had been recognised and renamed as Tengchow College of Liberal Arts.

26 Two of these teachers simultaneously also taught at the Me I (Meiyi) girl's elementary school, founded by Wilhelm in his mission station in 1905. The other two were a former headmaster of a woman's secondary school attached to Tengchow College and a graduate from the renowned Presbyterian Wen Mei secondary girl's school in Weixian; both of them took up teaching and supervising tasks at the Me I School (Zhai 2015, 134).

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evaluated and translated, however it would not be surprising, if the Chinese teachers for "Western sciences" at Wilhelm's school made also use of their former teaching materials from Tengchow College in their own teaching, and also in their participation in the production of textbooks at the German-Chinese Seminar. And the work on the selection of scientific terms for the *Dictionary of Technical Terms* appears to have been intertwined with the work on the teaching materials. These textbooks were intended not only for the German-Chinese Seminar and the elementary schools of the mission station but also for the Chinese schools within the Kiautschou Protectorate that were not operated by missions, but by the colonial government. Beginning as early as 1905, the German government in Qingdao increased its involvement in school education for the Chinese population of the protectorate. And despite its official distance from the Christian missions, Wilhelm was engaged by the protectorate's government in the conception and organisation of this school system. He contributed to the design of curricula and, as mentioned in the previous quotes, was also commissioned, with partial or full funding, to create teaching materials, that should meet the standards of modern pedagogy. However, the fate of these teaching materials is not well-documented, and most of them remain unrecorded in bibliographic databases, except for a few exceptions such as some textbooks for Chinese native language instruction (cf. Walravens 2008).[27]

5 Wilhelm's Pedagogical Principles and the Concept, Aims and Target Groups of the *German-English-Chinese Dictionary of Technical Terms*

The simultaneous creation of Chinese teaching materials for scientific subjects at Wilhelm's school and of the *Dictionary of Technical Terms* were contributions to the German-Chinese terminology work in technical and scientific fields in which the Sino-German University was also actively engaged. But when Wilhelm mentioned his dictionary project early in 1907 (B-AEPMV, June 24, 1), he only expressed as a general purpose that such a German-Chinese "scientific dictionary" did not yet exist, but was "urgently needed for Chinese translation work," and he added that "comparable English-Chinese compilations were not satisfying".[28] In the following year he stated a

27 Also cf. Kim 2004, 158, 197-8. For a description of the general situation of teaching material for German educational institutions in China, cf. Reinbothe 1992, 240-59.

28 For an overview of the relevant dictionaries available at the time, reference can be made to the preface of Hermeling's *English-Chinese Dictionary and Handbook for Translators, Including Scientific, Technical, Modern and Documentary Terms* (1916, iii). There, he provides a list of consulted dictionaries, most of which were English-Chinese

specific goal for a specific target group, but the Sino-German University was not included:

> so that Chinese school students learning German can be enabled to further educate themselves independently by using German-language works, because this is the only way they can truly participate in the advances of scientific research. (*VM*, early December 1908.5, 88-9)

Wilhelm expressed the pedagogical goal of training independent scientific work in his school multiple times. In October 1908, he reported that "we […]could make various arrangements"

> to advance the school students scientifically, and they have been of great interest to them. Specifically, the establishment of regular scientific lectures from all possible areas […]. I hope that in this way, the school students will gradually learn to independently process both German and Chinese literature, thus going beyond mere memorization formalism. (*VM*, October 1908.4, 55-6)

In his 1911 report on the involvement of school students in the creation of teaching materials, especially for scientific education (see section 4), Wilhelm also provided pedagogical reasons:

> During the past half-year, school operations at the seminar have evolved in the direction of open communication with the older students, as I attempted to introduce them more and more to their own work and research […]. In this way, the books that they had a kind of share in creating become something much more intimate for the students than if they were handed to them as finished products for rote memorization […]. This year, I have tried to have the departing school students complete independent work in their scientific subjects instead of a final exam, with topics covering the entire curriculum. The experiences have turned out to be quite satisfying. (*VM*, February 1911.1, 2-3)

Wilhelm did not write a preface for the *Dictionary of Technical Terms*, and we do not have any explicit explanations regarding the criteria and principles for selecting terms and their translation into Chinese. Conclusions about these criteria can only be drawn indirectly by analysing the entries. Since the lemmata were arranged alphabetically by the German terms, the dictionary is not searchable for

works published since the end of the nineteenth century and partly containing specialised terminologies.

English. The English terms provided behind the German ones may have served the purpose of assisting Chinese learners of German who also had knowledge of English, making it easier for them to associate the terms with their more well-known English equivalents in China. Although German cultural policy at the time aimed to promote the German language in China and Wilhelm's own school only taught German as a foreign language, not English, this inclusion of English indicates that Wilhelm took into account the dominance of English as a foreign language in China, and also may suggest that he had a larger target audience in mind for the dictionary.

Given Wilhelm's general workload, it is unlikely that he personally conducted extensive research into German, English, and Chinese technical and scientific texts, and that he selected and translated the German terms solely based on his own text analysis. He probably used existing dictionaries or other materials in the field of German/English-Chinese terminology as a basis and source of inspiration. He must, for example, have taken note of Mateer's dictionary *Technical Terms, English and Chinese* (1904), but a comparison based on a small ad hoc sample from Wilhelm's and Mateer's dictionaries reveals clear differences in the selection of both Western technical terms and their Chinese equivalents.

The systematic progression of Wilhelm's work on the dictionary following the alphabetical order of the selected terms manifests a somewhat mechanical approach, which seems to have frustrated him, as evidenced by a comment in summer 1910:

> In truth, I am nothing more than a dictionary-making machine here. But I swear that I will never write another German-English-Chinese technical dictionary! (B-SW, July 31, 1910)

The described parallels and connections between the work on the *German-English-Chinese Dictionary of Technical Terms*, Wilhelm's own teaching responsibilities, his interactions with Chinese teachers trained in scientific disciplines, and the involvement of advanced Chinese students of his school suggest that there existed or circulated a common body of German-Chinese scientific and technical terminology in the Sino-German microcosm of the mission station and his school. This terminology likely extended to both oral communication (in classrooms or discussions among teachers) and written communication (teaching materials, exams). The sources presented in this paper reveal that the negotiation and selection of Chinese equivalents for German terms in Wilhelm's teaching materials (textbooks and the dictionary) were presumably done within this network or space of Wilhelm's German-Chinese Seminar on the Mission Hill in Qingdao. Although we might expect collaboration with the personnel from the Sino-German University in Wilhelm's terminology work

on the *Dictionary of Technical Terms* and textbooks, no relevant hints or evidence for this could be found so far.

It also has to be stated that in their terminological work, Wilhelm and his Chinese staff were not necessarily always faced with the question of how to coin new Chinese terms up to then totally unknown notions in Chinese culture. Even if the creation and standardisation of Chinese scientific terminology was still an ongoing process at that time, they could already use an existing and gradually growing corpus of modern scientific Chinese terms as a base for their own terminological choices. But Wilhelm's earlier ambition, "to contact the Chinese government after finalizing his dictionary in order to establish a unified fixation of Chinese termini technici, which were still in a state of disarray" (B-AEPMV June 24, 1907, 1), apparently was never fulfilled.

That a common stock of German-Chinese scientific and technical vocabulary existed and circulated within the school's teaching staff, appears even more likely when examining Wilhelm's remarks on the languages of instruction in his school. While it may be expected that a school operated by a German mission society would teach the German language, Wilhelm repeatedly emphasised the importance of providing Chinese students with an excellent education in their native language. To Wilhelm, this was crucial not only for their career opportunities but also for their social status within Chinese society and, indirectly, for the long-term sustainability of his educational work in China. Therefore, Chinese had a dominant position as the language of instruction in the German-Chinese Seminar:

> The curriculum includes the hours devoted to the study of Chinese literature and language, following the patterns established in the home country's [Germany's] gymnasium curricula for classical and German languages. The language of instruction is primarily Chinese. This means that instruction in East Asian geography, mathematics (up to the basics of integral calculus), natural science, Chinese history, physics, and chemistry is in Chinese. European history, geography, and the more advanced natural science subjects, along with psychology and pedagogy, are taught based on German books, but detailed explanations are also provided in the Chinese language. The goal is to prepare the school students to be capable of independently pursuing German literature in their field of study and, by doing so, keeping up with the progress of science to some extent. (*VM*, May 1909.2-3, 18-19; *VM*, April 1910.1, 6-7)

Wilhelm reiterated the importance of providing education in students' native language in 1913 (1913a, 6-7), at the same time setting high goals of teaching the German language and educational content, particularly of secular education:

> For us, it is especially important to consider that a mental engagement with Europe has become a historical necessity for China. The better part of China has recognized this and is consciously striving for it. It is not about acquiring our machine culture but about acquiring knowledge about our way of thinking and inner life, scientific and religious. Anyone who becomes our student should, so to speak, get to know our intellectual life from their own observation. It is not our task to merely instil facts and finished results or present our own worldview as a proven truth of European science. It does not harm them to become acquainted with the contradictions and shortcomings of European thought systems. They should see where we, and all human thinking and striving, have found their limits, and they should think, seek, and experience for themselves. We do not want to turn them into people who meekly follow us, but rather into individuals who stand on their own feet and find the right path themselves. We want to educate not just the led but, if possible, the leaders, or, at least, mature, independent individuals. China needs such personalities, and, above all, Chinese Christianity needs them. (Wilhelm 1913a, 10-11)

Little is known about the actual use and dissemination of the *Dictionary of Technical Terms* or the number of its editions. The outbreak of World War I and the subsequent Japanese occupation of Qingdao in 1914 had a significant impact on the German educational activities and institutions, including the closure of the Sino-German University. With the disruption of German educational efforts, the need for the dictionary and other German language educational materials must indeed have been significantly reduced. Anyway, it is difficult to assess the impact of the dictionary in terms of its distribution and the standardisation of Chinese technical terminology. Nevertheless, it was listed among the consulted works for the compilation of Hermeling's dictionary (1916, iii), and there appears to have been some interest in Wilhelm's dictionary on the Chinese side, at least until the 1920s. In late 1923, a "spoiled" copy was reportedly available in a bookstore in Qingdao, and some volumes had been sold there earlier, from the proceeds of which Wilhelm was due a small payment.[29] And the Shanghai Commercial Press responded to Wilhelm's inquiry from June 11, 1925, stating that the *Dictionary of Technical Terms* was being sold for $2 at that time. They offered to send Wilhelm five copies upon receipt of this payment (July 9, 1925). This indicates that the dictionary had been previously supplied to the publisher for distribution. Furthermore, correspondence from 1930-31 between the

29 Letter to Wilhelm from his successor at the German-Chinese Seminar, Wilhelm Seufert, dated December 21, 1923 (AEPMV 1902-25).

Shanghai Commercial Press and Wilhelm's widow, Salome, revealed that by the end of 1930, the publisher still had 371 copies left, down from a previous stock of 542. The publisher had also collected funds from the sales, which were available for payment to Salome Wilhelm. Due to the reduced demand, the publisher expressed the intention to sell the remaining stock to Salome Wilhelm. However, she responded that she could not afford to pay for them. Instead, she proposed that if the publisher could send the volumes to Frankfurt free of charge, she would try to distribute them in Germany. There is no further correspondence available regarding the outcome of this matter (cf. Commercial Press, RW, SW 1922-31).

6 Wilhelm's *Abriß der Zoologie* (Outline of Zoology), 1913

An interesting work authored by Wilhelm in the context of his German-Chinese Seminar and his teaching there is the *Abriß der Zoologie* (Outline of Zoology) from 1913, a work that has received little recognition until now (1913b). Apart from the copy found in Wilhelm's literary estate, only one catalogue entry was discovered in the German National Library in Leipzig. The *Abriß der Zoologie* consists of three thread-bound volumes: volume I, Mammals; volume II, Birds, Reptiles, Amphibians, Fishes; volume III, Invertebrates. These thin booklets were printed as handwritten manuscripts and contain a total of 186 pages of rather closely written text.[30] The text is written in German, but it is highly relevant to the topic of German-Chinese terminology since it provides Chinese equivalents written in characters in footnotes for all German animal names on each page.

Given the level of detail and comprehensiveness in terms of presenting zoological taxonomy and the large number of animal names, it is hardly imaginable that the work was suitable for upper-level school students learning German as a second language. Even though it is written in simple, easily readable German style, the work has a distinctly encyclopedic character, suggesting that it may have been created for students at the Sino-German University. The content and the German and Chinese zoological vocabulary go beyond the

30 In addition to the copy in three booklets, which has thread-bound folded double pages with writing on both sides, there are also one volume each of Booklet I and Booklet II in Wilhelm's estate, where the text only appears on one of the outer folded pages, resulting in twice as many folded pages. These are likely hectographs. In the early 1920s, there must have still been copies of the work in Wilhelm's former mission school: In December 1923, Wilhelm Seufert wrote in a letter to Wilhelm, who was then living in Beijing: "You will have received the books on Chinese zoology in the meantime. There are still about 5 copies of each booklet here" (Letter from Wilhelm Seufert to Richard Wilhelm, December 21, 1923, 2. AEPMV 1902-25).

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foundational and general knowledge in zoology one would expect at the school, as well as the corresponding vocabulary in both the mother tongue and foreign language. Would Chinese school students really have to learn the numerous German terms, many of which even Germans without specialised knowledge may not have known, and whose Chinese equivalents were likely largely unfamiliar to even educated Chinese as well? **[figs 7-8]**.

However, based on Wilhelm's limited indications regarding the production and the target audience of the work, he did indeed intend it for the Chinese students at his German-Chinese Seminar. In May 1913, he reported that at that time, he was extremely burdened with teaching obligations at the German-Chinese Seminar: "Apart from religious instruction and history, I have to teach zoology to two classes and German for beginners" (B-AEPMV, May 13, 1913, 1). In October the same year, Wilhelm noted that he had started the "manuscript for zoology instruction to be printed. The sheets will be produced as far as needed", and on November 4, 1913, he wrote "working on zoology, insects" (KN 1907-14).

Even though the *Abriß der Zoologie* does not contain a list of reference materials, Wilhelm could not have created the work without drawing from relevant Western and Chinese scientific literature. He must have used existing German or other Western templates.

A particularly interesting find in Wilhelm's literary estate is a notebook titled *Vorarbeiten zur Zoologie* (Preliminary work on Zoology). In this notebook, extensive and detailed handwritten notes and Chinese-German-Latin glossaries can be found, containing numerous Chinese terms written in characters. These notes and glossaries were apparently written by Wilhelm himself, not by a Chinese collaborator. It appears that Wilhelm searched for Chinese animal names in classical works like *Shijing*, *Chunqiu*, *Zhuangzi*, *Liezi*, *Sunzi*, *Zhouli*, *Liji*, *Erya*, *Shuowen*, *Shanhaijing*, *Hanshu*, *Gujin tushu jicheng*, and more. He delved into classical Chinese literature spanning over more than 2,000 years to identify existing Chinese expressions for German and Latin animal names **[figs 9-10]**.

Whether he actually used terms compiled in these "Preliminary work" glossaries in the *Abriß der Zoologie* remains subject to a more specific investigation. Nonetheless, it is noteworthy that Wilhelm apparently invested considerable effort in creating such glossaries for a subject that he only taught temporarily. We may ask, whether he hoped that the zoology textbook also would be useful at the Sino-German University, especially as zoology was one of the examination subjects in its preparatory college (Mühlhahn 2000, 254). However, Wilhelm's own school, the German-Chinese Seminar, also had a teacher training programme and was known for maintaining a high standard, which Wilhelm undoubtedly intended to uphold, especially after the founding of the Sino-German University in Qingdao. On one hand, the

establishment of the University's preparatory college created competition for Wilhelm's German-Chinese Seminar. On the other hand, Wilhelm aimed to prepare graduates to pass the entrance examination for the Sino-German University, the German Medical school in Shanghai (later Tongji University), or other universities, which was indeed achieved repeatedly.

Wilhelm had already utilised classical Chinese texts as sources in an early article about Chinese zoology (1904/1906) and in his book *China. Das Land und die Natur* (China. The country and its nature, 1911c). For example, in the chapter on Chinese fauna, he explains:

> Among the works that encompass various aspects of the animal kingdom, we should mention the Örl Ya [*Erya*], possibly the earliest conversational lexicon originating from the Confucian school. Another work, the Ben Tsau Gang Mu [*Bencao Gangmu*], deals with various medicinal substances and also includes a section on animals, highlighting how each animal can be utilized for medical purposes. All these Chinese works on the animal world comprise a colourful blend of precise observations […] and daring tales. Some illustrated works are particularly instructive in this regard. (1911c, 69)

Wilhelm's effort in creating the *Abriß der Zoologie* in 1913 might have reflected his personal interest in the plant and animal world, which he often observed and lovingly described in many of his writings, where he provided detailed observations, often with consideration for cultural and historical aspects. His book *China. Das Land und die Natur* from 1911, delves into not only the animal and plant world but also the cosmos,[31] natural forces, geography, soil conditions, rock formations, mountains, rivers, mineral resources, and more. The section on the animal world is the most extensive one, spanning from pages 67 to 124.

It would be interesting to conduct a comparative analysis regarding terminology, systematics, and categorisations between this work and the *Abriß der Zoologie*. Since the notebook "Preliminary work on Zoology" is undated, it might have been created already as preparation for the 1911 book. However, it is worth noting that most of the Chinese terms and characters found in the "Preliminary work" are not used in the German-language book from 1911, whereas in the *Abriß der Zoologie*, as previously mentioned, Chinese equivalents of German terms are consistently provided.

31 It should be noted that Wilhelm already much earlier published articles on "Ausgewählte Kapitel aus der chinesischen Zoologie (Selected Chapters from Chinese Astronomy) (1904, 1906) and "Chinesische Astronomie. Aufgrund chinesischer Quellen zusammengestellt (Chinese Astronomy. Compiled on the Basis of Chinese Sources) (1906).

Wilhelm's pursuits in natural studies certainly place him within the tradition of the numerous Europeans interested in zoology and botany during a time when there was still much to discover in these fields. Western missionaries often engaged in botanical research and collections alongside their missionary activities (Fan Fa-Ti 2004). An outstanding example of this was Wilhelm's colleague and predecessor, Ernst Faber, who was renowned as a competent botanist. Faber introduced Wilhelm to the local plant life around Qingdao upon Wilhelm's arrival (SW 1956, 87). The library left behind by Faber contained an extensive collection of both Western and Chinese literature, including a significant amount related to botany and other sciences, likely providing Wilhelm with valuable resources for his *Abriß der Zoologie* and the book *China. Das Land und die Natur*. Already in the year 1900, Wilhelm had reported:

> I have now provisionally arranged Dr. Faber's books. In addition to many Chinese works and those about China, there are notably botanical and other scientific, theological (mostly from earlier times), as well as some philosophical, socio-political, and generally literary ones. As soon as I have some time, I intend to systematically organize and catalogue them. (B-AEPMV, March 3, 1900, 1)

It is hardly imaginable that Wilhelm could have arranged the terms in the *Abriß der Zoologie* without referring to existing monolingual and multilingual lexicographical works. The exact meanings of ancient Chinese animal names are not easy to deduce. That is, which genera and species, as defined by precise scientific taxonomy, were meant and suitable as equivalents for the respective German terms can only be determined by experts. Additionally, sometimes it was necessary to make choices among synonyms, and certain Chinese terms could have different meanings in various contexts and time periods, making a clear definition challenging. Wilhelm did not mention Western or Chinese collaborators in the creation of the *Abriß der Zoologie* . In any case, when producing the manuscript that was later printed and hectographed, he would have needed a Chinese scribe for the characters in the footnotes. This is because the fluently written characters, unlike those in the notebook *Vorarbeiten zur Zoologie*, clearly do not originate from Wilhelm himself.

7 Conclusion

This article has introduced aspects of Richard Wilhelm's work that expand upon the dominant image of him as a translator and mediator of Chinese philosophy for a German-speaking audience. While the German-Chinese Seminar in Qingdao is often emphasised as central

to his work in the mission station, the complexity and extent of his activities at the school have not been thoroughly detailed in the existing research. In this article as well, only small glimpses of his contributions and responsibilities in the education of Chinese school students, particularly in the field of natural sciences, could be highlighted.

In assembling the teaching staff, creating and using teaching material and special collections as visual aids, Wilhelm emerged as a school leader who held the natural sciences in high regard and, of course, met the needs of the time in China and Germany's Kiautschou Protectorate.

Wilhelm had no formal education in the natural sciences. However, his widely recognised broad general and diverse interests undoubtedly extended, perhaps more so than one would expect by today's standards, to some foundational knowledge about natural sciences. The demands of teaching provided additional opportunity for him to delve into scientific subjects, at least at the level of school education or even beyond.

Wilhelm had reached an excellent level of proficiency in the Chinese language, but we would not expect a theologian and China missionary with a specialisation in Chinese philosophy to possess a significant Chinese vocabulary in the fields of technology and natural sciences. While the gathered information does not allow for an exact assessment of the extent of his Chinese language skills in this domain, it has been shown that he cooperated with technically and linguistically trained Chinese during the creation of the *Dictionary of Technical Terms* and various natural science teaching materials and undoubtedly relied on their support. That he must have familiarised himself to a certain degree with technical and natural scientific terminology in both the German and Chinese languages is especially confirmed by his notebook *Vorarbeiten zur Zoologie*, which contains numerous entries of Chinese terms. Additionally, since Chinese was the primary language of instruction at the school and also played a significant role in the natural science subjects, which Wilhelm himself often taught alongside to subjects, such as German, history, or Bible studies, it is evident that he would have needed competence in basic related terminology in both languages.

Wilhelm's German-Chinese terminology work in the field of technology and sciences (the *Dictionary of Technical Terms* also contains vocabulary related to society and politics) took place, as presented, within the context of intensive German-Chinese interactions, primarily within his mission station, especially at the German-Chinese Seminar, where other German teachers also regularly taught. However, Wilhelm seems to have been the only German collaborating with the Chinese teaching staff in the course of the dictionary and textbook creation work. This teaching staff did not include as prominent scholars as Lao Naixuan, Ku Hung-ming, Kang Youwei, Liang Qichao, Hu Shi or Carsun Chang (Zhang Junmai), who are frequently mentioned when discussing

the topic of Wilhelm's Chinese networks (Leutner 2004, 2010). But from the findings described above, we can deduce that undoubtedly, the Chinese teaching staff at his school consisted of remarkable individuals and experts who played an important role in Wilhelm's daily work in Qingdao for many years. His contact and communication with them might have even be more intense and familiar than with most of his more prominent Chinese friends and collaborators.

When we speak about Wilhelm's engagement in Western-Chinese knowledge transfer and about his German-Chinese terminology work, we must be aware that at that time, the so-called 'Western-Chinese knowledge transfer' was not at all one-directional and only actively realised by Western actors like Wilhelm. It is true that in the beginning of the twentieth century, modern scientific knowledge had not yet spread all over China, and the German-Chinese Seminar under Wilhelm's leadership made great efforts in changing this situation – responding to needs and expectations on the side of the Chinese themselves. Although this article focuses on Wilhelm's efforts in the teaching of natural sciences, this does not mean that he neglected to impart traditional Chinese educational content to his students. On the contrary, it is well known that he attached great importance to it. The division of teachers and teaching content as being either 'Western' or 'Chinese'", was undoubtedly necessary at the time for pragmatic reasons, but this did not imply that Wilhelm wanted to cement two completely separate spheres. After all, to build bridges between the cultures for his students was of great importance for him.[32]

The findings presented here confirm that Wilhelm could only realise his educational principles and goals by heavily relying on the collaboration and support of his staff of Chinese teachers. Even if his own basic knowledge in the sciences and Chinese scientific terminology – in regard of his amateurship – cannot be esteemed too low, the level of technical and scientific knowledge of several teachers of his Chinese staff surely was higher than his own. These teachers represented a new generation of educated Chinese who had already received training in 'western or modern scientific knowledge' and were capable to transfer it to their compatriot students.

When we consider German-Chinese interactions and knowledge transfer during the colonial period, we must always take into account hierarchical power relationships. But even though Wilhelm was a representative of the German colonial power and was the head of the mission station and the German-Chinese Seminar, it should have become clear that he was aware of the value of the work of his Chinese collaborators and expressed high appreciation for their contributions

32 This was for instance acknowledged by Zhai (2015, 86), expressing that Wilhelm aimed at combining and reconciling western sciences with Confucianism.

and expertise. Nor can one speak of clear one-sided dependencies on the Chinese side – corresponding to the attributes of spaces of circulations under colonial conditions as described by Raj (2017, 58-60): while Wilhelm had the authority to make decisions on the recruitment of the Chinese teachers, he was himself extremely dependent on their commitment, cooperation and expertise for the implementation, success and reputation of his school work. After all, well-qualified Chinese teachers could choose from many offers at the time, both in institutions of the Christian missions and colonial powers as well as in the increasing number of new educational institutions on the Chinese side. In order to acquire and retain a well-trained teaching staff, he had to offer them acceptable employment conditions and good salaries, not least a motivating working atmosphere (cf. Gerber 2013, 132). And indeed, many of the teachers remained at his school for years or (after his departure) even decades.

We also have to take into account that Wilhelm did not only work for the mission society and the schools run by the protectorate, but had simultaneously also been engaged by the Chinese authorities of Gaomi (outside the protectorate) to assist them in building up a new-style district high school and devise a curriculum that met the requirements of Chinese educational reforms. And he also adapted the curriculum of his own school to the standards of this evolving modern Chinese educational system, thus creating better chances for his graduates to shift to Chinese educational institutions. And from the fact that in 1906, he was rewarded with a Chinese imperial rank for his achievements in the education of the Chinese youth in Qingdao and Gaomi, the high appreciation of his work on the Chinese side becomes evident. Such constellations[33] correspond to another observation made by Raj:

> This 'promiscuity' between the actors of the different cultures translated into a permeability of practices, ideas, and discourses which significantly influenced ways of doing on both sides of the cultural divide while not resulting in a flattening of differences between them. (2017, 60)

From today's perspective, it would undoubtedly have been desirable for him to have documented the specific contributions of the Chinese teachers in his dictionary and textbook projects more clearly and in greater detail and to have disclosed Tan Yuefeng's collaboration and specific contributions to the *Dictionary of Technical Terms*

33 For Wilhelm's missionary school projects, his activities relating to educational institutions of the colonial government and of the Chinese areas outside the colony, cf. Gerber 2013, 32-134; Zhai 2015, 75-174 and *passim*; Wippermann 2020, 127-40.

in the printed version.[34] As far as the textbooks for natural sciences are concerned, the information available on Wilhelm's *Abriß der Zoologie* may indicate that he was indeed the main author here, while the absence of detailed information on the many textbooks mentioned in the reports to the AEPMV and the lack of corresponding specimen copies in his literary estate could be an indication that he may have primarily initiated and organised their creation by Chinese teachers, without having been significantly involved as an author or translator himself. In view of the almost unmanageable amount of sources in Wilhelm's estate and possibly in other German and Chinese archives, it cannot be excluded that further material might be found that shed more light on Wilhelm's cooperation with the Chinese teachers and their individual contributions.

This article has described the social and professional relations between Wilhelm and the Chinese graduates and teachers of the German-Chinese Seminar as an institutional and physical space of circulation, where "cross-cultural encounter, negotiation, and interaction result in the co-construction and co-reconfiguration of knowledge" (Raj 2017, 58) – in this case scientific and terminological knowledge, also in the written form of the *Dictionary of Technical Terms* and textbooks for the teaching of natural sciences. This space sometimes expanded or overlapped through interactions with other Chinese and German actors or institutions in Qingdao, especially with the lecturers of the Sino-German University (Wirtz, Gutherz, etc.). Although Wilhelm had no formal connection to the Sino-German University, it was an important point of reference for him since its establishment in 1909. While Wilhelm presented his terminology work and dictionary project in his reports to the AEPMV as being related to school work, it cannot be ruled out that this was a more tactical approach, and that he had also considered the target groups of Chinese students at the Sino-German University. Similar considerations might apply to his *Abriß der Zoologie* as well.

The sources examined here provide enough evidence of interactions between graduates of Wilhelm's school with the Sino-German University and some of the German lecturers. Wilhelm's contacts with Hans Wirtz and Harald Gutherz, as well as other German members of the university, are quite extensively documented in his records. The progress of the Tan brothers, who developed from students to teachers and translators at Wilhelm's school and transitioned from this school as students, translators and teachers to the Sino-German

34 In the earlier reports about Wilhelm's work for the AEPMV, Chinese teachers and collaborators were listed under headings such as *Unsere chinesischen Hilfskräfte* (Our Chinese Helpers), which was common at the time. But in later reports the headings changed, using the word *Angestellte* (employees).

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University and had close contact with Wilhelm's friend Hans Wirtz there, is an example of German-Chinese cross and triangular connections between the German-Chinese Seminar and the Sino-German University, the latter being described as a space of circulation on its own behalf by Iwo Amelung in this volume. The relations and overlappings between these two spaces support the finding that "the frontiers" of "spaces of circulation" "are not clearly delineated" and "can be fuzzy and porous" (Raj 2017, 52). As mentioned above, Tan Yufeng and most of the other Chinese teachers for 'Western subjects' at the German-Chinese Seminar had beforehand been trained in scientific disciplines in the American missionary Mateer's Tengchow College, that can also be considered to be a "social and physical space of circulation" in Shandong province, thus giving another example for the fluidity of circulation of knowledge and related actors. These transfers have not been forgotten in China, after Wilhelm left Qingdao in 1920, his school continued to operate as a mission school of the AEPMV/DOAM). In 1934, Tan Yufeng stated:

> From this mother school, numerous capable men emerged over time, some of whom went on to universities for further studies, while others found good job placements. Beyond this, the school served as a valuable exchange centre for German and Chinese knowledge. From a social perspective, it provided affordable education. (1934,35-6)

The German-Chinese Seminar as a space of circulation of actors and knowledge continued to have an impact even after decades, both spatially and temporally. Tan Yufeng's report, in which he mentions that his son studied political science, French, and German in the United States during the 1920s and even earned a doctorate (as mentioned above), also illustrates how, in this case, social advancement and educational careers of the following generation were indirectly related to Wilhelm's engagement. Only after the founding of the People's Republic in 1949, the school was turned into a governmental institution and renamed as Highschool No. 9 (Qingdao di-jiu zhongxue 青岛第九中学). But up to today it ranks as one of the best secondary schools in the Shandong province and proudly traces its origins to the Lixian Shuyuan 礼贤书院 (Richard Wilhelm School). This heritage is prominently commemorated on the school's homepage, and is, for example, featured on the school emblem of the students' uniforms today. It is noteworthy that the school does not trace its history to the year of its official foundation in 1901, but to the year 1900, when the Tan brothers began to be taught German by Wilhelm at his home **[fig. 11]**.

As is evident from the accounts in this article, the collaboration with Chinese actors in the social microcosm in which Wilhelm

operated his school in Qingdao was not purely a matter of vocational concern. Instead, it was accompanied by the development of close personal relationships that deepened over many years. As demonstrated by the case of the Tan brothers, especially the music career apparently initiated by Wilhelm for several generations of Tan Yuefeng's descendants, these interactions and relationships resulted in indirect, likely not specifically intended German-Chinese knowledge and cultural transfers. This family history appears to be an example of how personal Sino-German interactions in colonial Qingdao could have lasting and ongoing effects, and how contributions to knowledge and cultural transfer could be made in seemingly inconspicuous and little-noticed informal interactions.[35]

It thus can be shown that the

> geography and topography of spaces of circulation are […] liable to change over time. This can happen as a function of […] wider social, political, and cultural influences and dispersion of the interacting milieus in question. (Raj 2017, 53-4),

and

> although spaces, and communities, are connected, they do not merge into a single network with a putative European centre: on the contrary, they maintain their identities in historically evolving morphologies, albeit globally connected. (60)

An indication of the "temporal dimension in the making of encounters and sustained interactions […] between different members of the spaces of circulation" (59) found in the changing, but lasting impact of Wilhelm's spatially and temporarily confined, sphere of German-Chinese interactions and knowledge transfer in Qingdao's past is the current interest of actors in Qingdao (and throughout China) in Richard Wilhelm, his school, its former students, and their career paths. This includes individuals like the journalist Liu Zongwei and the professor of education Zhai Guangshun in Qingdao, whose works were used as sources in this article. Such contemporary works review stories of past German-Chinese interactions and transfers, preserving and transmitting them. This relevant reception, remembrance, and research has experienced a significant surge in China over the past

35 The Tan family history has only been touched on here. It might be the subject of a separate case study – if possible with precise documentation of the use of more original sources. However, the media reports from the internet referred to in note 20 are interesting indications of the great interest in Wilhelm's work and, more general, the (colonial) past of Qingdao and its after-effects in China today – and of what kind of stories are being spread about it to a broader contemporary audience.

decade (cf. Wippermann 2020, 258-62), and it could only be briefly touched upon here. It has grown quantitatively to the point of being challenging to oversee and appears to access local Chinese sources that can complement our knowledge of the conditions in colonial Qingdao and promise interesting discoveries. When works from contemporary China, in turn, pique the interest of researchers here in the 'West' with a focus on the history of German-Chinese relations – as in this article, the spatial and temporal sphere and impact of Wilhelm's former Chinese-German microcosm in Qingdao expand into additional dimensions.[36]



Figure 1 The German-Chinese Seminar and Wilhelm's residence (background, right) in 1902.
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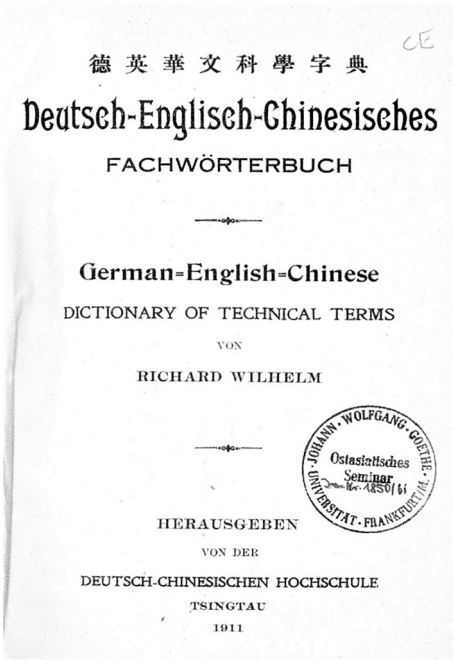
36 All quotes from works written in German or Chinese in this article were translated by the author.



Figure 2 Students in front of the entrance of the German-Chinese Seminar in 1902.
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Figure 3 Wilhelm with graduates of the German-Chinese Seminar in 1911.
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德英華文科學字典

Deutsch-Englisch-Chinesisches

FACHWÖRTERBUCH

German-English-Chinese

DICTIONARY OF TECHNICAL TERMS

VON

RICHARD WILHELM

JOHANN·WOLFGANG·GOETHE·UNIVERSITÄT·FRANKFURT/M
Ostasiatisches Seminar

HERAUSGEBEN

VON DER

DEUTSCH-CHINESISCHEN HOCHSCHULE

TSINGTAU

1911



ABE 2 ABI

— sphärische spherical 凸差.
Abfahrtsgeleis n. starting track 出軌.
Abfahrtssignal n. signal of departure 行車號誌.
Abfall m., Abhang m. inclination 側.
— Überbleibsel n. waste 廢物.
— Aufstand m. revolt 背叛.
Abfeilen to file off 銼下.
Abfindung f. arrangement; indemnification 和解, 調停, 償還.
Abfluss m. issue 流出, 流出之物.
— outlet, discharge 出水口.
Abflusshahn m. discharge-cock 出水塞門.
Abflussleitung f. waste-pipe 放水筒, 放水管.
Abflussöffnung f. overflow-shoot 流口.
Abflussventil n. head valve 出汽門.
Abführmittel n. purgative 輕瀉藥.
Abgaben pl. tax, duty 錢糧, 稅銀, 稅.
Abgangsprüfung f. final examination 畢業考試.
Abgeben to transmit 發, 傳, 交.
Abgeordnete m. delegate, deputy 代表人, 議員.
Abgeordnetenhaus n. Chamber of Deputies 議院, 議事院.

Abgeplattet oblate 扁圓.
Abgeplattetes Sphäroid n. oblate spheroid 扁球.
Abgesandte m. envoy 委員.
Abgestumpftheit n. bluntness 鈍, 截體.
— obtuseness 倦乏, 蠢笨.
Abgottschlange f. boa-constrictor 蛇王, 巨蛇.
Abgrund m. abyss 深淵, 無底深淵.
Abguss m. — chm. decantation 傾清, 倒清.
— techn. casting 鎔鑄, 鑄像.
Abhandlung f. treatise, discourse 論說, 策論.
Abhang m. slope 坡, 斜坡.
Abhängigkeit f. 倚靠, 倚賴.
— Unselbständigkeit f. dependence 從屬.
— Unterordnung f. subordination 受制, 順服.
Abhärtung f. hardening 强健其身, 自强.
tempering 鍛鍊, 碎硬.
Abhorreszieren, verabscheuen to abhor, to detest 憎惡, 厭煩.
Abies f., Tanne f. fir(-tree) 樅.
Abiogenesis f. abiogenesis 自然發生論.
Abiturient m. candidate for leaving-examination 畢業生, 卒業生.

ABI 3 ABO

Abiturientenzeugnis n. leaving certificate 畢業文憑.
Abklatsch m. impression, copy 搨.
Abkloofen (Kesselstein) to knock out 擊去.
Abkommen n., Vereinbarung f. agreement 合同, 約據, 條約.
Abkühlen to cool; to refrigerate 使涼, 致涼, 去熱.
Abkürzung f. abbreviation 筒.
Ablagern to deposit 堆集, 沉, 擱, 卸.
Ablagerungsboden m. sedimentary soil 定積土壤.
Ablass m. indulgence 赦罪, 大赦.
Ablassventil n. delivery-valve 出水門.
Ablaufkanal m. drain 流水溝.
Ablaufrohr n. waste-pipe 放水管.
Ablaut m. change of the radical vowel 變音.
Abläutern to clarify 吊清.
Ableger m., Absenker m. layer 栽子, 壓條.
Ablehnung f. rejection, refusal 拒絕, 迴避.
Ableiten to derive 推原.
Ableiter m. positive electrode 正極端, 陽極端.
Ableitung f. derivation 引出, 推原.
— des Dampfes eduction of steam 引出熱汽.

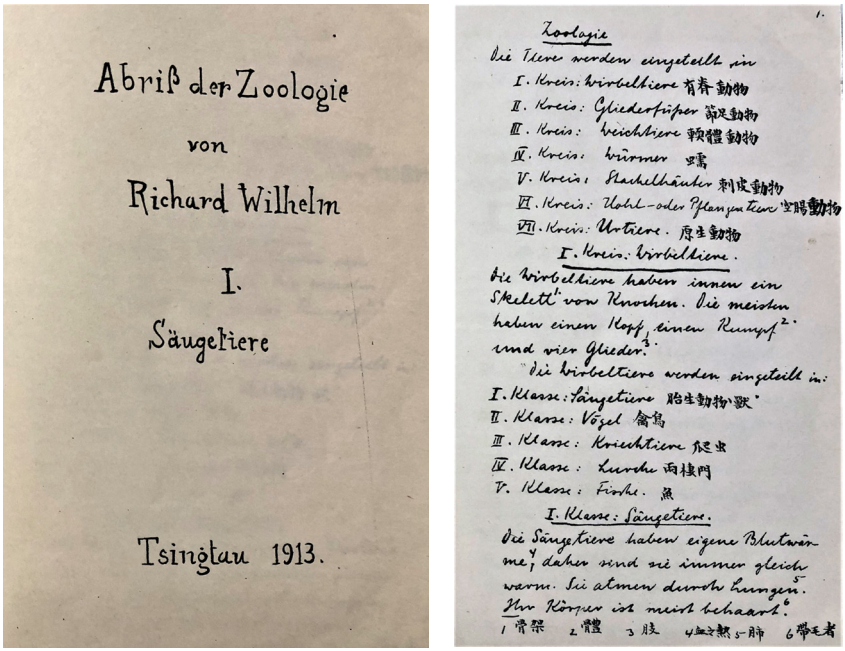
Ablenken to deviate 轉偏, 偏倚.
Ablenkung f., einer Nadel deflection of a needle 磁針之偏倚, 屈折.
Ablenkungswinkel m. angle of deviation 偏倚角.
Ablesen to read 視, 讀.
Ablersemikroscop n. reading microscope 視度數之顯微鏡.
Ablösung f. relief; relay 調班, 接班, 換助.
Abmachung f. arrangement, stipulation 議定, 議准, 商議.
Abmagerung f. emaciation 消瘦.
Abmessung f., Grösse f. dimension 大小.
— Messung f. measuring 量.
Abnehmen (weniger werden) to decrease 減少, 漸少.
— (Mond) to wane 虧.
Abneigung f. aversion 厭嫌.
Abnehmer m. consumer 用物之人, 貨客.
Abnorm, regelwidrig abnormal 非常, 異式, 怪異.
Abnützen to wear out 用損, 損廢, 漸盡.
Abolition f., Abschaffung f. abrogation 廢弛, 弛禁.
Abonnement n. subscription 定購.
Abordnung f. deputation 代表之委人.

Figures 4-5
Inner title page and pages 2-3
of the *Dictionary of Technical Terms*.
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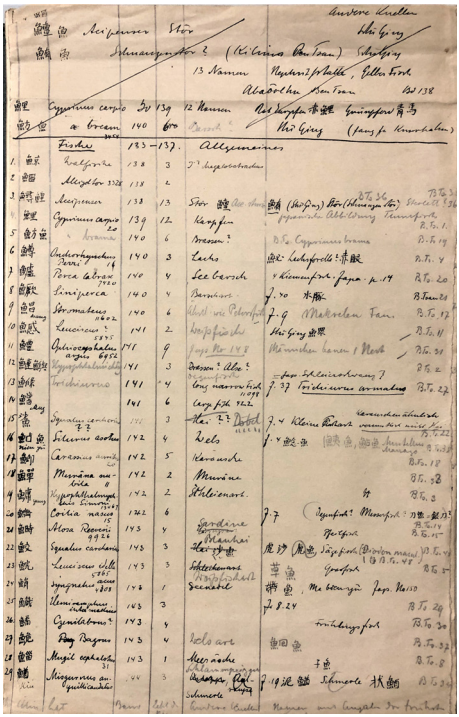
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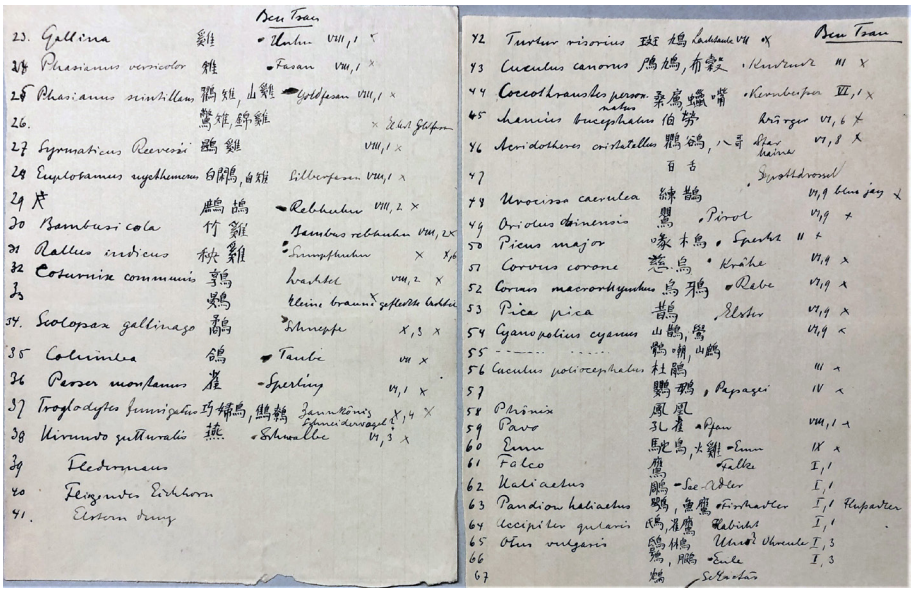


Figure 6 Wilhelm and the teachers of his German-Chinese Seminar in 1910.
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Figures 7-8 Inner title page and page 1 of Wilhelm's *Abriß der Zoologie* (Outline of Zoology, vol. I).
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Figures 9-10
Pages from Wilhelm's notebook *Vorarbeiten zur Zoologie* (Preliminary work on Zoology). © ABAdW; Photographs by Dorothea Wippermann



Figure 11
Emblem of the school founded by Richard Wilhelm on today's students' uniforms (2018).
© Photographs by Dorothea Wippermann

Abbreviations

ABAdW	Archiv der Bayerischen Akademie der Wissenschaften, München. Nachlass Richard Wilhelm (Archives of the Bavarian Academy of Sciences, Munich, Literary Estate of RW)
AEPMV	Allgemeiner Evangelisch-Protestantischer Missionsverein (General Evangelical Protestant Missionary Society)
B-AEPMV	RWs Briefe an den AEPMV (RW's Letters to the AEPMV, ABAdW))
B-SW	RWs Briefe an SW (RW's Letters to SW, ABAdW)
DOAM	Deutsche Ostasienmission (German East Asia Mission)
KN	Kalendernotizen/Tagebucheintragungen (Calendar/Diary Notes, ABAdW)
KVK	Karlsruhe Virtueller Katalog (Karlsruhe Virtual Catalogue)
MR	*Zeitschrift für Missionskunde und Religionswissenschaft* (Journal for Mission and Religion Studies)
RW	Richard Wilhelm
SW	Salome Wilhelm
VM	*Vertrauliche Mitteilungen an die Freunde unserer Arbeit in China* (Confidential Reports for the Friends of Our Work in China, journal published by RW (also author of the reports, see bibliography below)

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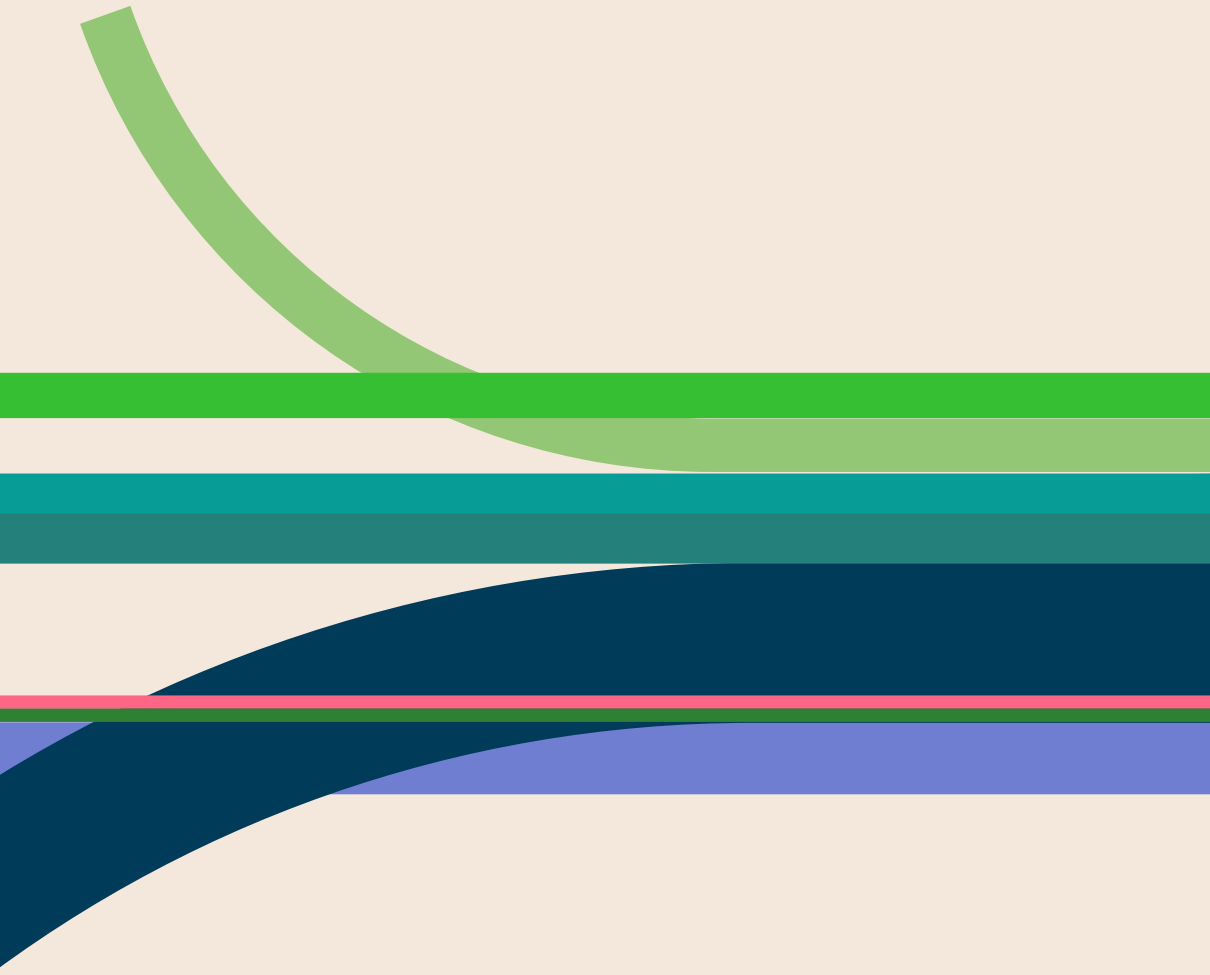
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