

The Transcultural Travel of Smallpox Immunisation Practices: From Variolation to Vaccination¹

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ABSTRACT: Before smallpox was eradicated in 1979, two different immunisation practices were used to fight the disease: variolation and vaccination. Variolation originated in China and reached Europe before the 19th century. It set the narrative for vaccination, establishing a vocabulary with which to refer to smallpox and smallpox immunisation and providing an explanation for successful immunity from the disease. Vaccination replaced the oriental practice in the 19th century, and its reception in China, facilitated by cognitive and social factors, led to changes in the Chinese discourse surrounding the disease and immunisation.

KEYWORDS: discourse, immunisation, smallpox, travel, vaccination, variolation.

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1. Introduction

Vaccination against smallpox, the first medical technique to be introduced to China when Western medicine (henceforth, WM) began its eastward dissemination to the country, is a key concept in the field of immunology. In 1805, seven years after the technique was invented in Britain, the first smallpox vaccination was administered in China by Dr Alexander Pearson, Senior Surgeon of the East India Company (Fu, 2013).

As a medical technique introduced to the Chinese people in the early 19th century, when WM knowledge and theories had not yet been systematically disseminated via medical publications in translation and newspaper articles by foreign and domestic medical practitioners, smallpox vaccination travelled to China in a process where language played a noteworthy but not vital role.

Although social factors, such as the vaccine being free of charge and required by law, may have had a stronger influence on the promotion and reception of the technique, language undeniably played a role and the practice would not have travelled successfully without it. This article will explore the transcultural

travel of historical immunisation practices, the changes in the Chinese language brought about by the introduction of Jennerian vaccination, and the factors contributing to its reception, with the aim of demonstrating the influence of medical translation on the Chinese language and the effect of localisation on medical concepts.

The following questions will be addressed:

- (1) How did immunisation practices of different origins travel in different cultures?
- (2) How were smallpox and smallpox immunisation lexicalised in English and Chinese, and how did the travel of Jennerian vaccination change the Chinese discourse about them?
- (3) What factors influenced the reception of Jennerian vaccination in China?

2. Current Approaches to Issues Relating to Medicine and Translation

In recent decades, medical translation, as a subfield of technical translation, has been gaining scholarly attention, while interpreting in healthcare settings and translation of medical texts have become growing research areas (Susam-Saraeva & Spišiaková, 2021). In *Translation and Medicine*, edited by Fischbach (1998), the medical translator in training and at work is studied from different perspectives, and the historical and cultural aspects of medical translation are discussed. Two decades later, studies exploring the “specificities of medical texts, terminology and translation” may be considered to be “flourishing” (Susam-Saraeva & Spišiaková, 2021: 1). Several different approaches have been used in this area of research. Historical approaches track the transtemporal travel of medical concepts and texts (for example, van Dalen, 2021; Kang, 2021). Technical approaches explore the methods used to translate medical terminology (for example, Lynch, 1998; Buyschaert, 2021). Empirical approaches are adopted to observe and analyse the mediation and reception of medical knowledge (for example, Montalt-Resurrecció & Shuttleworth, 2012; Jiménez-Crespo, 2017). In these studies, the history of medical transla-

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tion, translation of medical terminology, and transfer and reception of medical knowledge through translation emerge as major themes in research on the general topic of medicine and translation.

In the Chinese context, scholarly discussions on medicine and translation focus on the translation of medical terminology. In the early 21st century, systematic discussion of the translation of scientific and technological terms from English to Chinese (for example, Zhang, 2008) prepares Chinese scholars for further study on E-C translation of medical terms, with a focus on the nomenclature of medical concepts, translation of medical terms, and common difficulties in translating medical terminology (for example, Sun & Li, 2012). Another major topic concerning medical translation in China is the translation and standardisation of terms relating to Traditional Chinese Medicine (TCM) (for example, Li, 2008), which has also received attention from Western academics (for example, Wiseman, 2000). The aforementioned discussions of E-C and C-E translation of medical terminology provide significant clues for further observation of intercultural communication between the West and China in the field of medicine, yet the transcultural transfer and reception of medical concepts throughout history has been insufficiently studied. As a result, literature on the travel histories of medical concepts, theories, and practices between the Western world and China is increasingly necessary.

To address this gap, this paper takes smallpox immunisation practices as an example and reproduces the historical travel of immunisation practices, demonstrating the discursive reconstruction of Jennerian vaccination in China and analysing the reception of WM practice among Chinese people. Dictionaries in English (for example, *Oxford English Dictionary*, LEXICO, and *Merriam-Webster Online Dictionary*) and Chinese (for example, *Kangxi Zidian* 康熙字典, *Ciyuan* 辞源, and *Hanyu Da Zidian* 汉语大字典) will be examined to identify the meanings of key terms relating to smallpox and smallpox immunisation. Other scholarly discussions, archival materials, and newspaper articles on the discourse surrounding smallpox (accessed primarily via CNBKSY, a database created by Shanghai Library, where scanned copies of a large number of newspaper and journal articles published in China from 1833 to 1949 are stored) will also be studied and cited to substantiate our findings on the changes to Chinese discourse on smallpox following the arrival of vaccination in China and the reception of the technique among Chinese people. Detailed linguistic analysis of smallpox terminology in English and Chinese may point to avenues for further research on the translanguaging practice of medical concepts travelling between cultures, while discussion of the technique's reception in China may provide additional context for intercultural communication between the West and China in medicine.

Preceding an in-depth analysis of the lexicalisation of smallpox and smallpox immunisation in English and Chinese, and of the way in which Jenner's invention influenced Chinese discourse about the disease, the next section will describe the travel of immunisation practices between cultures in order to provide readers with important background information.

3. The Trajectories of Smallpox Immunisation Practices

Smallpox was a fatal, contagious disease that caused multiple epidemics on a global scale (Dinc & Ulman, 2007). The extent of the devastation that it wrought was recorded in Lord Macaulay's history of England, which described the disease as "the most terrible of all the ministers of death, [...] always present, filling the churchyards with corpses [...] and making the eyes and cheeks of the betrothed maiden objects of horror to the lover" (as cited in Henderson, 1997: 236). In the 18th century, smallpox was also referred to as the "speckled monster" (Taylor, 2017). Humanity's struggle against the disease continued until it was eventually eradicated on 9 December 1979, as decreed by the World Health Organisation's Global Commission (Gross & Sepkowitz, 1998).

The history of China's struggle against smallpox did not begin with external methods; rather, the Chinese were the first to describe the symptoms of smallpox and suggest the first treatment plans and preventive methods, generating a set of conditions that paved the way for Jennerian vaccination to travel to the country. This preparatory discourse was bolstered by the notion of 'variola' or 'inoculation', a traditional local practice to prevent smallpox that preceded the Western method and was exported to the Western world centuries before Jenner's birth. However, its journey from East to West was unsuccessful in comparison with the adoption of Jenner's invention from West to East.

3.1. The Westward Travel of Variolation

The Chinese were believed to have given one of the earliest reports on smallpox: in the 4th century BCE (around 318), Ko Hung² published *The Handbook of Prescriptions for Emergencies*³, where he offered a detailed description of the symptoms of smallpox and a treatment plan for the disease (Dinc & Ulman, 2007; Ma, 1995). It was not until the early 10th century that widespread confusion emerged about spotted diseases, and Persian physician Phazes was the first to distinguish between measles and smallpox (Taylor, 2017). The earliest successful attempt to distinguish between chickenpox and smallpox was made by a Chinese doctor, Chen Wenzhong (as cited in Liao, 1988).

The Chinese were also believed to have been the first population who "endeavoured to transfer the infection to susceptible individuals with the goal of rendering them immune" (Dinc & Ulman, 1998: 4262). Their invention, variolation, was believed to have been in practical use since the 11th century (Needham, 1970)⁴. After being widely practised in China, India, Africa, and Turkey, this "oldest immunization method" (Dinc & Ulman, 2007: 4261) eventually entered the European continent, where it was successively introduced to Denmark, Britain, and the rest

of Europe (Gross & Sepkowitz, 1998), and was regarded as a method derived from “an illiterate Sort of People ... and suited to the meanest Capacity, without the labour'd Embellishments of Learning or Eloquence” (as cited in Barnes, 2012: 348).

Lady Mary Morthley Montagu was the first person to actively promote the oriental immunisation method in Britain (Underwood, 1949). In a letter she wrote during her stay in Turkey, *The Turkish Embassy Letters*, she reported on her observations of variolation against smallpox (Grundy, 2000), which she referred to as “engrafting”. She deemed the invention to render the fatal, general disease “entirely harmless” and described herself as “patriot enough to take pains to bring [...] into fashion in England” (Montagu, 1966: 339). She also used the term ‘inoculating’ to denote this Eastern practice, as she wrote in an anonymously published article “A Plain Account of the Inoculating of the Small Pox by a Turkey Merchant”, “[...] I am determin'd to give a true Account of the Manner of Inoculating the Small Pox, as it is practis'd at Constantinople with constant success, and without any ill consequence whatever” (2013: 256).

The lack of any records of Montagu's efforts from 1719 to 1721 suggest that her endeavour to promote the practice was perhaps unsuccessful from the outset (Xie & Zhang, 2000). Nevertheless, the smallpox epidemic in Britain in 1721 offered her a second opportunity. In an anonymous manner, she published another pamphlet, *A New Essay on the Small-Pox with a View to Preserve This Nation from the Infection of That Distemper*, where she claimed, “I shall not enter into the Dispute about Inoculation, which is now on the Carpet” (Montagu, 2013: 257). Heated discussions and public debate continued to surround this exotic method. Despite the successful public experiment with variolation overseen by Hans Sloane in 1721 (Gross & Sepkowitz, 1998; Grundy, 2000), the anti-inoculators tirelessly attacked the method on various grounds. Their protests primarily reflected their value systems, rather than any factual evidence challenging the effectiveness or reliability of the practice.

Dr William Wagstaffe, a key opponent of variolation, described the method as “a fashion” and a practice that “does not seem as yet sufficiently supported either by Reason, or by Fact” (Barnes, 2012). Edmund Massey, a priest and apothecary who referred to people's fear of smallpox as “a happy restraint [...] to keep themselves in temperance and sobriety”, claimed variolation to be an evil, dangerous practice (as cited in Gross & Sepkowitz, 1998: 57). Voices of opposition were also heard in other European countries. For instance, in France, variolation was viewed as futile, uncertain, and dangerous (Franklin, 1759), while Voltaire outspokenly supported Montagu, calling her a “Princess [...] born to encourage the whole Circle of Arts, and to do good to Mankind” (Montagu, 2013: 259).

Despite the difficulties involved in promoting the technique, variolation was officially recognised by some countries in the West during the second half of the 18th century. In 1746, when another smallpox epidemic struck Britain, a “smallpox and inoculation hospital” was set up in London, where 1,252 people were variolated for free (Xie & Zhang, 2000). In 1775, in America, George Washington ordered all troops to be variolated (Gross & Sepkowitz, 1998). The effectiveness of the technique

was by no means unproven. One of the tests carried out in Europe showed that the smallpox death rate fell from 14% to 2% thanks to the method (1998).

The practice of variolation was not immediately abandoned when vaccination, a method “hailed as one of the most important advances” in medical history (Henderson, 1997: 236), was invented by Edward Jenner, a British country physician. Several documents reported that variolation and vaccination had similar mortality rates (Baxby, 1981; Razzell, 1977). A survey carried out in China in 1985 provided further evidence that the oriental practice was as successful as Jenner's invention: the success rates of the two methods were 97.4% and 96.9% ($p > 0.05$)⁵ (for details, see Ma, 1991).

Nonetheless, humanity's struggle against smallpox was ultimately brought to an end thanks to Jenner's invention rather than its oriental counterpart, whose adoption as a valid preventive method in the Western world was marred by adversity, a limited number of beneficiaries (in comparison with those vaccinated worldwide), and replacement by vaccination. By contrast, vaccination was well-received when it arrived in China, and the introduction of the technique changed the Chinese discourse about smallpox.

3.2. The Travel of Vaccination to China

In 1768, Jenner, an apprentice at Sodbury, was the first person to associate cowpox, “a self-limited, pastoral disease contracted via direct contact with lesions on the cow” (Gross & Sepkowitz, 1998: 57), with smallpox prevention, when he heard a dairy maid say “I cannot take that disease⁶, for I have had cow-pox” (Underwood, 1949: 823). Thirty years later, he published *An inquiry into the causes and effects of the variolae vaccinae, a disease discovered in some of the Western countries of England, particularly Gloucestershire and known by the name of the cow-pox*, which aroused responses “ranging from disinterest, ridicule, and opposition to gathering enthusiasm” (Dunn, 1996: 78).

Seven years after its invention, vaccination was introduced to China. In 1805, Dr Alexander Pearson used vaccine viruses from Mexico to perform the first vaccination in the country (Fu, 2013). The method used by the surgeon was different from that adopted by the Jesuits who had come to China two centuries earlier (Tian, 2011); according to his own accounts, the first people vaccinated were from the poorest class, dwelling “crowded together in boats” (as cited in Fu, 2013: 113). Once its benefits had been proven, the new method soon garnered attention among Chinese people (Fu, 2013).

To promote Jennerian vaccination, Pearson wrote a pamphlet titled *The New Method for Inoculation from Great Britain*, which is divided into two parts: several pictures showing the location and identification of smallpox and the tools used for vaccination, and a text (“Detailed Description of the New Vaccination Method”) explaining the harmfulness of smallpox, the invention and spread of Jennerian vaccination, its effectiveness, etc. (Tian, 2011). The pamphlet was translated into

Chinese by George Thomas Staunton not long after in 1817 (Li & Cheng, 1987). The following decades saw the publication of two additional books on vaccination: *On the Western Cowpox Vaccination (Xiyang Zhongdou Lun, 西洋种痘论)* by Huang Anhuai and *Introduction to the Extraction of the Cowpox Vaccine (Yindou Lun, 引痘论)* by Qiu Xi. The latter was the most popular text introducing the practice to Chinese people in the 19th century (Chang, 2007).

The reaction to the new method among the local Chinese population differed greatly from that of people in the West when variolation was introduced. Jenner's invention was quickly accepted and embraced, exceeding the inventor's own expectations, as he remarked that the Chinese seemed more willing to adopt his invention than the English closer to home (Wong & Wu, 1932/2009). Indeed, Jennerian vaccination also faced opposition⁷, while in 1950, nearly a century after the method was introduced to China, the Chinese Ministry of Health issued regulations on vaccination (Liao, 1988) and the method became an officially recognised method for preventing smallpox.

During the process of adopting vaccination in China, there were no fierce clashes between local traditions and new ideas, and the reception of the technique did not lead to difficulties in the population's cognition of alien terms, as the existing local discourse on variolation facilitated understanding of the new immunisation method. The key terms used by local medical practitioners to refer to Jennerian vaccination, *dou* (痘), *zhongdou* (种痘), and *niudou* (牛痘), all have strong traditional roots.

The reception of vaccination and of the vocabulary associated with it were inseparable processes. Thanks to the pre-existing discourse surrounding the traditional method of variolation, the terms for vaccination were already established, although semantic changes to certain words were still observed. The reception of vaccination was not only about local people's acceptance of a medical technique; it was also a discursive event that brought two discourses into contact with one another: one concerning newly introduced concepts and the other concerning traditional concepts, which were bridged by a shared vocabulary.

4. English and Chinese Discourses of Smallpox and Smallpox Immunisation

4.1. Smallpox and Vaccination in English

Smallpox and Variola

'Smallpox' is an ancient term that appeared in the 16th century as 'the small pokes'⁸. 'Pox', originally the plural form of 'pock', "a pustule or spot of eruption in any eruptive disease" (*OED* definition), denotes the features of smallpox and has become the general term for a category of disease, differentiating smallpox from other, non-pox diseases. 'Small' differentiates

it from other diseases causing pustules, such as syphilis, the 'great pox'.

Another commonly used term for smallpox is variola, which is the root of the term 'variola'. *LEXICO* defines variola as "a technical term for smallpox", narrowing down its register; *Merriam-Webster Online Dictionary* adds that the term refers to the "causative poxvirus" of smallpox, that is, "species Variola virus of the genus Orthopoxvirus". The following examples from the two dictionaries give the sense that the term is more commonly used to refer to the virus than the disease:

The Smallpox virus, or *variola*, has been wreaking havoc across the globe for thousands of years.

Additional testing of the *variola* samples is under way to determine if the material in the vials is viable (i.e., can grow in tissue culture).

Inoculation and Vaccination

The definitions of 'inoculation' and 'vaccination' from *LEXICO* below give the initial impression that the two can be used interchangeably as there is no difference between them:

Inoculation: the action of inoculation or of being inoculated; *vaccination*.

Vaccination: treatment with a vaccine to produce immunity against a disease; *inoculation*.

However, they have very different etymologies. The origin of 'inoculation' is Latin *inoculat-*, meaning 'engrafted', and *in-oculare*, where *in-* means 'into' and *oculus* means 'eye' or 'bud', whereas 'vaccination' originated from the Latin *vacca*, meaning 'cow'.

The *OED* definitions provide further information on the differences between the two. The term 'inoculation' has the following three levels of meaning:

- (1) The insertion of an eye or bud of one plant under the bark of another for the purpose of raising flowers or fruit different from those of the stock; a junction in which the two parts become continuous.
- (2) The introduction into the body, by puncture of the skin, or through a wound, of the virus or germs of an infectious disease.
 - a. Originally applied [...] to the intentional introduction of the virus of small-pox [...]; also [...] to vaccine inoculation, and to the similar treatment of other infectious or contagious diseases.
 - b. Now also applied to the introduction (accidentally or otherwise) of the virus or germs of any bacterial disease into the body through a wound.
 - c. The imbuing of a person with feelings, opinions, etc.
- (3) The addition of an inoculant to molten metal, esp. iron.

The first definition, which relates to the field of horticulture, echoes the origin of the word, while the third definition, which

relates to metallurgy, appears to have been lost in contemporary dictionaries, reducing the range of meanings of ‘inoculation.’

Before Jenner’s short book about his invention was published in 1798, ‘inoculation’ was used to denote the oriental practice of immunisation (“the obsolete process of inoculating a susceptible person with material from a vesicle of a patient with smallpox”, as defined by *Stedman’s Medical Dictionary* 28th Ed.). After 1798, ‘inoculation’ was used with the noun modifier ‘vaccine’ to refer to the novel method, as indicated by an example from 1800: “On the Introduction of the Vaccine Inoculation in Paris”.

Reference to ‘vaccination’ as ‘inoculation’ expanded the meaning of the latter, and this example shows how the scope of its meaning was enlarged to encompass immunisation against diseases other than smallpox: “*Inoculation* against flu is readily available” (LEXICO).

‘Vaccination’ is less complicated than ‘inoculation’ when it comes to changes in meaning. ‘Vaccination’ was derived from ‘vaccine’, a term first used as a modifier before ‘disease’ or ‘pock’. Both ‘vaccine disease’ and ‘vaccine pock’ referred to cowpox.

Before 1881, ‘vaccination’ was used to refer exclusively to immunisation against smallpox. Louis Pasteur began to use the term to denote immunisation against diseases other than smallpox (rabies and anthrax) to honour Jenner (Taylor, 2017), thus broadening the scope of its meaning. Since then, phrases such as ‘typhoid vaccination’, ‘cholera vaccination’, and ‘COVID-19 vaccination’ have come into existence.

4.2. Smallpox and Variolation in Chinese

Smallpox was well-documented in TCM and had a series of names, including *dou* (痘), *zhen* (疹), *douzhen* (痘疹), *douchuang* (痘疮), and *tianhua* (天花) (for details, see Huang, 2016).

The character *dou*, meaning ‘bean’, was considered a general term for smallpox (Zhou, 1918). The connection between the character and the disease owes to the visual resemblance between the shape of beans and smallpox pustules. *Kangxi Zidian* (康熙字典) (1716) defines *dou* as *douchuang*, while *Ciyuan* (辞源) (1915) defines the character as “name of disease commonly called *tianhua*”, which suggests that the character referred solely to smallpox until the early 20th century. The examples provided by the latter date to centuries before vaccination arrived in China, suggesting that the naming of the disease as *dou* was purely local and traditional.

The character *zhen* was also used to denote smallpox, as is apparent in the definitions in *Ciyuan*:

(when pronounced ‘zhen’)

1. Red pimples on the skin; *also referring to smallpox.*
2. Generally referring to diseases.
3. A sore on the lip.

Zhen was a general term denoting a category of disease, with smallpox as a subcategory. Unlike *dou*, *zhen* subsequently be-



Soft Text # 2 (180 cm x 45 cm), algodón y fibras sintéticas

came a general term to refer to a specific type of symptom on the skin.

The phrase *douchuang* consists of two characters, *dou* and *chuang*. The character *chuang*, as explained by *Hanyu Da Zidian* (汉语大字典), has three meanings: would, ulcer, and pain (figuratively). The phrase means ‘the wound of the smallpox’. Structurally, it is similar to *douzhen*, with the first character denoting the specific type and the second the general category.

The phrase *tianhua*, as *Ciyuan* explains, was first used to denote smallpox in *Tianhua Jingyan* (天花精言), a 1753 publication by Yuanju (袁句) on treating *douzhen*. This indicates that *tianhua* was also a local, traditional term for smallpox that was not affected by the introduction of Jennerian vaccination. The term was also used in some proper names, such as the name of the goddess in charge of smallpox, *tianhua shengmu* (天花圣姥), which appears in the following example: “it is believed that after seeing such prayer, *tianhua shengmu* will naturally grant a pardon (for these people by freeing them from the infection of the smallpox)”⁹.

Before vaccination was introduced, immunisation against smallpox was primarily denoted by a term referring to the material used in the process of inoculation, *miao* (苗), and the traditional local practice of immunisation was called *chuimiao* (吹苗) or *zhimiao* (室苗), as demonstrated by the following excerpt:

What is most important is that *chuimiao* (what folk call *zhimiao*), the method that fills the child's nostrils with *doumiao*, [...] is now strictly banned by the government. If you are concerned about the effectiveness of *niudou*, you can have your children vaccinated several times, which is completely safe.

Both Chinese verbs, *chui* and *zhi*, refer to the act of variolation. The material used in variolation was also called *bimiao* (鼻苗), *jiangmiao* (浆苗), *yimiao* (衣苗), *hanmiao* (旱苗), and *shuimiao* (水苗), denoting specific inoculation procedures.

TCM practitioners believed smallpox to be caused by foetal toxins, pointing to an invisible, untouchable understanding of disease that led to variolation being used as an experiential immunisation method. Meanwhile, WM practitioners believed that the disease was caused by a virus and immunisation was the product of scientific experiments. The visible effectiveness and perceived safety of the latter soon brought it into favour with the population after its arrival in China.

Nevertheless, promotion of the newly introduced concepts was facilitated by the discourse surrounding the longstanding local practice, which provided a vocabulary to describe the disease and immunisation, as well as a system to explain the aetiology of the disease and the mechanism and effectiveness of immunisation. Despite bringing about changes in their meanings, the localisation of the new concepts rendered them more accessible to the local population.

5. The Reception of Vaccination

Following on from the previous section on English and Chinese discourses of smallpox and smallpox immunisation, this section observes the changes that occurred in the Chinese discourse of the disease and the reception of smallpox vaccination in the Chinese discursive domain. It describes the reception of *niudou*, the vaccine, and *zhongniudou*, the act of vaccination, in China and how their respective meanings evolved as a result.

5.1. The Changing Meaning of *Dou*

Observations of the terminology used for smallpox before and after the introduction of Jennerian vaccination lead us to the preliminary conclusion that domestic ways of denoting the disease were preserved. The newly introduced technique, although substantially different from local practices to tackle smallpox, did not change the nomenclature of smallpox-related notions in Chinese.

Although the naming of the disease did not change, the meaning of the character *dou* did as it was adopted as the name for the new method. The character's definition expanded as it became part of the terms *zhongdou*, meaning the act of vac-

ination, *yangdou* (洋痘), meaning the foreign vaccine, and *doumiao*, meaning the vaccine.

During the early stages of its promotion in China, the concept of vaccination was lexicalised into the verb phrase *zhongdou*, which is apparent in the title of the earliest publication about the method: *Yingjiligu Xinchu Zhongdou Qishu* (also *Zhongdou Qifang Xiangxi*) and *Xiyang Zhongdou Lun*. Since the Jennerian vaccine and the material used in the traditional practice of variolation were referred to using the same term, it became necessary to differentiate between the newly introduced and local concepts; consequently, terms like *yangdou* were coined by local medical practitioners to designate Jenner's invention, while the material used in the local practice was referred to using terms like *bimiao*.

The character *dou* traditionally referred to the disease and the introduction of Jennerian vaccination to China added a new dimension to its meaning: the vaccine against the disease. In modern Chinese, the character still refers to both the disease and its immunisation, as evidenced by the definition of *dou* in the *Modern Chinese Dictionary* (2016): "smallpox, vaccination, and pox that appear on the skin in the process of a smallpox attack, or after vaccination".

The specific term for *dou* is *niudou*, an ambiguous expression with strong local connotations. On the one hand, the term refers to cowpox, the spotted disease that can be caught from bovines; on the other, it denotes the material used in vaccination against smallpox, as a Chinese equivalent to 'vaccine'. As such, it is similar to the character *dou* in the sense that both are used to denote a disease and a material used to generate immunity.

5.2. Cognitive and Institutional Factors Influencing the Reception of Vaccination

The cognitive and institutional factors influencing the reception of Jennerian vaccination were mainly at the conceptual level, governing the reception of the technique and associated concepts by the Chinese people as a legitimised immunisation method against smallpox. The promotion, circulation, and reception of the vaccination within the Chinese discursive domain was intrinsically a process whereby a discourse of a novel medical technique came into contact with that of a pre-existing local practice. Vaccination and variolation shared the same objective and the encounter between the two formed a new discursive order concerning smallpox immunisation.

On the cognitive side, the pre-existing discourse of variolation provided a comprehensive, well-received vocabulary for vaccination, including terms for the disease (*dou*, *douzhen*, *douchuang*, and *tianhua*) and for concepts relating to immunisation, such as *miao*. A well-organised explanatory system explaining the aetiology of smallpox and the mechanism for effective inoculation was also in place.

Both the vocabulary and explanatory system were anachronistic in the sense that they belonged to an earlier age. This anachronistic discourse of smallpox immunisation helped the

population to overcome any reluctance they felt in accepting deliberate infection with the pox, as it reminded them of their own traditional practice and assuaged their fear of the ‘foreignness’ of the new method.

Meanwhile, any hesitation at receiving a vaccine that crossed the border between different species was overcome by constructing the technique as one that reflected the local folk belief that humans and cows are both elements of the earth (*tu*, 土), as the following explanatory lines demonstrate: “that is because the cow is an animal belonging to the earth, and the spleen of the human belongs also to the earth, [...], and so we can achieve such an effect”¹⁰.

On the institutional side, the establishment of a smallpox hospital (*douju*, 痘局, or ‘vaccination depôt’ in Dr Sircar’s words, in 1908: 319), where local people could be vaccinated for free, and the inclusion of vaccination among government hygiene policies in the 1930s accelerated the reception of the new technique. Until the early 1900s, the two immunisation practices co-existed in China but the vaccinated population remained “much smaller” than the variolated population, which indicated that “the majority of the people still have faith in the old practice” (Sircar, 1908: 318).

The situation changed with the regulation on vaccination issued by the government of the Republic of China in 1928, which stated that “those who are not vaccinated should be vaccinated before a specified time, and the same goes for those who are not successfully vaccinated”. Article 9 of the regulation further clarified the punishment for those who did not comply: “in addition to the requirement that they should be vaccinated before a specified time in Article 4, their parents or guardians, or any other people with custody of them, should be fined up to ten yuan”.

6. Conclusion

In the history of medicine, immunisation practices serving the same purpose travelled transculturally and translingually between nations. Variolation against smallpox reached European countries in the 18th century, but it was not recognised as a valid method to protect people from the disease. Approximately one hundred years later, vaccination was invented by Jenner and replaced variolation as a common method of smallpox immunisation. Within a decade, Jenner’s invention had been introduced to the Chinese public. The travel of the Western practice to China led to changes in the Chinese discourse surrounding smallpox and smallpox immunisation, and the reception of vaccination was facilitated by cognitive and institutional factors.

This paper sought to record the history of the transcultural travel of variolation and vaccination, and to analyse Jennerian vaccination’s travel to China as a discursive event. Historically, the trajectories of both practices were tracked, and a detailed description of key dates, locations, and figures was presented. Linguistically, discourses of smallpox immunisation in English

and Chinese were studied, with a particular focus on specific terminology for the disease and immunisation against it. The changes to the Chinese discourse surrounding smallpox that were triggered by the introduction of Jennerian vaccination were also identified. Socially, cognitive and institutional factors influencing the reception of vaccination by the Chinese people were discussed.

Analysis of the transcultural travel of immunisation techniques of different origins may offer additional insight for scholars of translanguaging practices in the medical field. The eastward transfer of WM knowledge, theories, and techniques in modern times could be further studied, tracking their trajectories, analysing their associated discourses, and explaining their reception. The study of a historical discursive event presented in this article may provide analysts of medical discourses and medical translation with ideas for further analyses of transcultural issues relating to medical development and draw more scholarly attention to issues of this kind at the crossroads of history, language, and society.

NOTES

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2. Also Ge Hong, 葛洪.
3. Chinese title: Zhouhou Jiuzu Fang 肘后救卒方.
4. Dudgeon believed that the practice of using smallpox scabs to immunise against the disease was first discovered between 1127-1279, roughly a century later. See 1873: 221.
5. The survey was conducted by a research group led by Ma Boying (马伯英), Academician of the Royal College of Physicians. ‘Successful’ refers here to becoming immunised against smallpox after variolation or vaccination without any side effects.
6. Here it refers to smallpox.
7. For instance, some Chinese girls refused to be vaccinated as a few smallpox marks demonstrating that they had overcome this terrible disease were regarded as one of the most important characteristics of a marriageable maiden by the native swains, but vaccination scars were not accepted as a promise of future immunity (*‘Vaccination in China’*, 1879).
8. The disease was also denoted by terms such as small pox, small-pox, small poxe, small-pocks, small pockes, small-pockes, and small pocks.
9. The example is taken from *‘Quanzhong Niudou’* (An Appeal to Getting Vaccination, 劝种牛痘), a newspaper article published in Jiangxi Tongsu Jiaoyu Zazhi (Jiangxi Education, 江西通俗教育杂志) in the 1910s.
10. My translation.

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