

Unveiling Nature: Liu Zhi's Translation of Arabo-Persian Physiology in Early Modern China

by *Dror Weil**

ABSTRACT

This article examines the multifaceted approach to the translation of medicine as it appears in the works of Liu Zhi, a seventeenth-century Chinese-Muslim translator from Arabic and Persian into Chinese. Through empire-wide journeys to recover manuscripts, the building of an archive of Arabo-Persian knowledge on the natural world, and the application of various methods to produce coherence, authority, and compatibility with local epistemes, Liu assembled translations that presented early modern Chinese readers with new insights into the structure and operation of the human body. Liu Zhi's translations provide a rare glimpse into a cross-Asian circulation of knowledge on the human body and add a philological dimension to the premodern knowing of the body.

In 1704, Liu Zhi 劉智 (1660–1730), a Chinese-Muslim scholar, published a book with the title *Human Nature and Cosmic Principles in Islam* (*Tianfang xingli* 天方性理).¹ In this book, and in his subsequent two books, Liu endeavored to translate what he considered fundamental Islamic theories on the structure and operation of the natural world, including those related to the human body, for the benefit of his fellow Chinese readers. To that end, Liu undertook empire-wide journeys to recover Arabic and Persian texts forgotten in private libraries or newly introduced by foreign visitors. He scrupulously copied, collated, and compared manuscripts, and later painstakingly studied their contents, marking portions that were relevant to his study. His philological scrutiny, however meticulous, was subsumed under his more general interest in knowledge making, and by his genuine attempt to reconcile Arabo-Persian² and Chinese theories and concepts. Liu's utmost ambition, as well as his greatest predicament,

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¹ Liu Zhi 劉智, *Tianfang xingli* 天方性理 [Human nature and cosmic principles in Islam], in *Qingzhen Dadian* 清真大典 [The complete corpus of Chinese Islamic literature], ed. Huang Xiefan 周燮藩 et al. (Hefei shi: Huangshan shushe, 2005), 17:1–136. Unless otherwise noted, translations in this article are mine. Throughout, I have used quotation marks to indicate literal translations. I have capitalized the Chinese terms for bodily systems to distinguish them from Western and biomedical anatomical terminology.

² Labels and cultural categories pose a challenge for historians writing on cross-cultural subject matters. Throughout this article I will use “Arabo-Persian” to label the corpus of texts in Arabic or Persian

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was how to achieve what many of his predecessors had failed to do: carry the nuanced philosophical insights on the natural world he found in these Arabic and Persian texts into Chinese.

Liu Zhi was not a practicing physician, nor did he seem to aspire to compile books exclusively on medical issues.³ He was a Chinese literatus, mainly interested in philosophical questions and matters related to the theology and practice of Islam. Yet, his works abound with insights on the structure of the human body, its generation and physiological operation, the human psyche, and some pathological conditions that risk human well-being, which he drew from reading Arabic, Persian, and Chinese texts.

Liu Zhi's works spotlight the richness of information, theories, and concepts on the human body in texts outside the purview of practicing physicians.⁴ His investigation of the human body sheds light on a philological dimension in the premodern knowing of the body. Descriptive medical knowledge, as seen in his works, emerged from textual analysis and intertextual coherence, rather than from bedside observation or medical treatment. A series of cognitive practices and textual manipulations substituted for clinical experience and professional training as the main routes to understanding the body and its operation.

The circulation of Liu Zhi's works among Chinese literati, some of whom cited them for presenting unique theories on the human body,⁵ brings to light the blurriness between the professional and philosophical makers of medical knowledge. This blurriness is likewise echoed in the respectful place that Liu Zhi's theoretical explanations and vocabulary still receive today in curricula of *Huiyi* 回醫 (lit. "Arabo-Persian medicine" or, alternatively, "Islamic medicine")—a newly established ethno-medical expertise offered in some universities and medical institutions in contemporary China.⁶ One of the objectives of this essay is to flag the potential in expanding the study of medicine and healthcare beyond the archives of medical professionals and to highlight the role of philosophers in producing, digesting, and spreading medical knowledge even during the early modern period.⁷

circulated in premodern China in order to mirror the integrated Chinese view of scholarship in both languages and the corpus's inclusivity of scientific and religious texts.

³ By literature for medical practitioners, I especially refer to the genre of *yishu* 醫書 (medical treatises) and *fangshu* 方書 (formularies). The former are compilations that narrate physicians' theories and experiences in treatment, and the latter include medicinal recipes.

⁴ On the intertwining between medical practice and Confucian philosophy, see Peter K. Bol, *Neo-Confucianism in History* (Cambridge, MA: Harvard Univ. Asia Center, 2008), 174–5; Paul U. Unschuld, *Medicine in China: A History of Ideas* (Berkeley: Univ. of California Press, 2010), 154–88; Charlotte Furth, "The Physician as Philosopher of the Way: Zhu Zhenheng (1282–1358)," *Harvard J. Asia. Stud.* 66 (2006): 423–59; and Hong Yu and Deyuan Huang, "'All Things Are Already Complete in My Body': An Explanation of the Views of the Taizhou School on the Human Body," *Frontiers of Philosophy in China* 5 (2010): 396–413.

⁵ Readership of Liu Zhi's works went beyond Chinese Muslim communities and also included some "mainstream" literati. For example, the early nineteenth-century philologist Yu Zhengxie 俞正燮 (1775–1840) cites Liu Zhi's works in discussing embryogenesis; Yu Zhengxie, *Guisi cunqiao* 癸巳存稿 (Shanghai: Shang wu yin shu guan, 1957), 4:6.

⁶ See Shan Yude 單于德, *Huiyi yaoxue mianmian guan* 回醫藥學面面觀 (Yinchuan: Ningxia renmin chubanshe, 2016); He Xiaohui 賀曉慧, Jia Xusheng 賈戌生, and Jia Menghui 賈孟輝, "Huiyi zhuan yue jichu lilun jiaoxue zongjie yu sikao" 回醫專業基礎理論教學總結與思考, *Zhongguo minzu yiyao zazhi* 中國民族醫藥雜誌 25 (2019): 70–2.

⁷ Buddhist texts served as vehicles for transmitting medical concepts and theories into China during the first millennium CE and as such constituted an earlier parallel of the Islamic case; C. Pierce

Liu Zhi's works display a complex relationship between the explanatory and the explained—a relationship that is inherent to acts of translation. The translational acts display a Hegelian oscillation between a broadening of the episteme to accommodate new imported insights on one end, and the use of the existing local episteme as an explanatory frame on the other. Accordingly, a translation act could be viewed at once as a reconfiguration of form and content orchestrated by individual idiosyncrasy, or a product of epistemic and linguistic regimes set by the particular intellectual landscape in which the translation takes place.⁸ This relationship suggests a multifaceted approach to translation that accounts for conventions and originality that reconfigure the translated message at the semantic/lexical and epistemic levels.

The structure of this article seeks to reflect the multifaceted approach to translation as it is manifested in the case of Liu Zhi's translation of Arabo-Persian physiology in early modern China. It begins by situating Liu Zhi within the intellectual landscape of Islamic scholarship in early modern China, introducing the presence of Arabic and Persian texts in China and some of the reading practices that Liu Zhi's predecessors employed in their reading of these foreign texts, and describing aspects in Liu Zhi's translation as a historical continuity. It then proceeds to investigate three unique features of Liu Zhi's translation. First, the article will explore the ways in which Liu built an epistemic foundation through searching for, collecting, and selecting Arabic and Persian manuscripts, and using hermeneutical and interpretive methods to domesticate foreign ideas and produce coherence and discursive familiarity for the benefit of the Chinese reader. Second, it will examine Liu Zhi's tactics of lexical and semantic rendition and the ways he articulated western medical theory-based concepts in Chinese. Finally, the article will shed light on some of Liu's insights on the structure and the operation of the human body, and the contributions to the contemporary Chinese medical discourse that Liu Zhi's translations were able to make by juxtaposing Arabo-Persian and Chinese medical theories and negotiating ways to bring meaning across cultures.

Salguero, *Translating Buddhist Medicine in Medieval China* (Philadelphia: Univ. of Pennsylvania Press, 2014). On the role of religion as a vehicle for introducing Galenic medicine to various parts of Asia, see Fabrizio Speziale, "The Relation between Galenic Medicine and Sufism in India during the Delhi and Deccan Sultanates," *East and West* 53 (2003): 149–78; Jennifer W. Nourse, "The Meaning of Dukun and Allure of Sufi Healers: How Persian Cosmopolitans Transformed Malay-Indonesian History," *J. Southeast Asian Stud.* 44 (2013): 400–22; and Ronit Yoeli-Tlalim, "Galen in Asia," in *Brill's Companion to the Reception of Galen*, ed. Petros Bouras-Vallianatos and Barbara Zipser (Leiden: Brill, 2019), 594–608. The role of Jesuits and other European missionaries in introducing medical theories and concepts has received somewhat more scholarly attention; Henri Bernard, "Notes on the Introduction of the Natural Sciences into the Chinese Empire: Cultural Contacts between China and the West," *Yenching Journal of Social Studies* 3 (1941): 944–65; Daniel Asen, "'Manchu Anatomy': Anatomical Knowledge and the Jesuits in Seventeenth- and Eighteenth-Century China," *Soc. Hist. Med.* 22 (2009): 23–44; Chu Ping-yi 祝平一, "Tianxue yu lishi yishi de qianbian—Wang Honghan de 'Gujin yishi'" 天學與歷史意識的變遷-王宏翰的'古今醫史,' *Lishi yuyan yanjiuso jikan* (*Bulletin of the Institute of History and Philology Academia Sinica*) 77 (2006): 591–626; Noël Golvers, "The Jesuits in China and the Circulation of Western Books in the Sciences (17th–18th Centuries): The Medical and Pharmaceutical Sections in the SJ Libraries of Peking," *EASTM* 34 (2012): 15–85; Nicholas Standaert, "Medicine," in *Handbook of Christianity in China, Volume One: 635–1800*, ed. Standaert (Leiden: Brill, 2001), 786–802.

⁸ On idiosyncrasies and norms in translation, see Gideon Touri, *Descriptive Translation Studies and Beyond* (Amsterdam: Benjamins, 1995); and Lawrence Venuti, *The Translator's Invisibility: A History of Translation* (Hoboken, NJ: Taylor and Francis, 2012).

ARABIC AND PERSIAN TEXTS IN EARLY MODERN CHINA

Liu Zhi's discourse on the natural world can best be described as a nexus between the scholarship produced by early modern Chinese Muslims, which promoted immersion in the study of Arabic and Persian languages and texts—a theme that has only recently begun to receive scholarly attention⁹—and the vibrant intellectual landscape of the Jiangnan region in South China, which witnessed the refashioning of Confucian, Buddhist, and Daoist philosophies and the introduction of European thought.¹⁰ The Arabic and Persian texts Liu Zhi read and some of the methods he applied to analyze their content were predicated on a philological-pedagogical enterprise that emerged in China during the last decades of the sixteenth century among Chinese Muslims, and sought to promote the study of Arabic and Persian texts.¹¹ At the same time, Liu read these texts through the analytical lens and learned practices of his contemporary Confucian classical learning and saw his fellow literati as the target audience of his publications.

Growing up amid the turbulent times of the mid- and late seventeenth century, Liu Zhi witnessed the thriving cultural scene that characterized his city of Nanjing, a long-standing cultural and intellectual metropolis. The city changed its face as the Ming empire fell to the hands of the Manchu conquerors, yet resiliently kept its cultural and intellectual vibrancy. The booming book culture brought to his attention a plethora of literatures and writings.¹² These include the Jesuits' translations of Western works as well as philosophical treatises by Confucian, Daoist, and Buddhist authors.¹³ He learned as well of the attempts by Chinese Muslims of his father's generation to produce Islamic literature in Chinese with the aim of introducing Islamic ideas and theories

⁹ On that theme, see Zvi Ben-Dor Benite, *The Dao of Muhammad* (Cambridge, MA: Harvard Univ. Press, 2005); Dror Weil, "Islamicated China—China's Participation in the Islamicate Book Culture during the Seventeenth and Eighteenth Centuries," *Intel. Hist. Islam. World* 4 (2016): 36–60; and Kristian Petersen, *Interpreting Islam in China: Pilgrimage, Scripture, and Language in the Han Kitab* (Oxford: Oxford Univ. Press, 2018).

¹⁰ On the intellectual landscape in late imperial China, see Benjamin A. Elman, *From Philosophy to Philology: Intellectual and Social Aspects of Change in Late Imperial China* (Cambridge, MA: Council on East Asian Studies, Harvard Univ., 1984); Yü Chün-fang, "Ming Buddhism," in *The Cambridge History of China, Volume 8: The Ming Dynasty, 1368–1644, Part 2*, ed. Denis C. Twitchett and John K. Fairbank (Cambridge, UK: Cambridge Univ. Press, 1998), 893–952; Dewei Zhang, *Thriving in Crisis: Buddhism and Political Disruption in China, 1522–1620* (New York: Columbia Univ. Press, 2020); Golvers, "Jesuits in China" (cit. n. 7); and various chapters in *The Cambridge History of China, Volume 9, Part 2: The Ch'ing Dynasty to 1800*, ed. Willard J. Peterson (Cambridge, UK: Cambridge Univ. Press, 2016).

¹¹ On the ways Arabic and Persian texts were read in late imperial China, see Weil, "Islamicated China" (cit. n. 9), 36–60; and Weil, "Literacy, in Arabic and Persian, in Late Imperial China," in *Encyclopaedia of Islam: Three*, ed. Kate Fleet et al. (Leiden: Brill, 2020), 92–5.

¹² On the surge of printed books in the late Ming and early Qing, see Cynthia J. Brokaw and Kai-wing Chow, eds., *Printing and Book Culture in Late Imperial China* (Berkeley, CA: Univ. of California Press, 2005); Brokaw, "Commercial Publishing in Late Imperial China: The Zou and Ma Family Businesses of Sibao, Fujian," *Late Imperial China* 17 (1996): 49–92; Kai-wing Chow, "Writing for Success: Printing, Examinations, and Intellectual Change in Late Ming China," *Late Imperial China* 17 (1996): 120–57; Tobie Meyer-Fong, "The Printed World: Books, Publishing Culture, and Society in Late Imperial China," *The Journal of Asian Studies* 66 (2007): 787–817; Wu Kuang-Ch'ing, "Ming Printing and Printers," *Harvard J. Asia. Stud.* 7 (1943): 203–60; and Ōki Yasushi 大木康, "Minmatsu kōnan ni okeru shuppan bunka no kenkyū" 明末江南における出版文化の研究, *Hiroshima daigaku bungakubu kiyō* 50 (1991): 1–176.

¹³ On the interaction between Jesuits and Chinese Muslims, see Zvi Ben-Dor Benite, "Western Gods Meet in the East: Shapes and Contexts of the Muslim-Jesuit Dialogue in Early Modern China," *Journal of the Economic and Social History of the Orient* 55 (2012): 517–46.

to Chinese readers. Liu Zhi's father, a Chinese-Muslim educator, shared the perplexity of many other Chinese Muslims of the period, torn between a commitment to perpetuating traditional Muslim education and the wish to engage with the non-Muslim intelligentsia, or, alternatively framed, between a scholarship of transregional, cross-Asian dimensions and the local Chinese intellectual discourses.

Liu Zhi's father was a member of a long-lasting empire-wide network of Chinese Muslims invested in the linguistic study of Arabic and Persian texts. This network emerged in the northwestern province of Shaanxi in the mid-sixteenth century and soon spread to other parts of China. It brought together people who practiced Islam, descendants of Muslim migrants, and people interested in learning Islamic texts.¹⁴ Hu Dengzhou 胡登州 (1522–97), a Shaanxi Chinese Muslim, is widely accredited as the founder of this network. Hu Dengzhou's fascination with the nuanced philosophy of nature he found in Islamic texts led him to develop a pedagogical program for reading Arabic and Persian texts and subsequently inspired him to establish a school dedicated to that cause.¹⁵ His disciples, and following generations of disciples, created a network of schools and scholars equally devoted to training in Arabic and Persian yet differing from one another in their selection of texts and thematic foci. Members of Hu Dengzhou's network selectively collected and copied Arabic and Persian manuscripts on themes such as theology, Islamic law, grammar, and logic for their teaching curricula, and produced by the late sixteenth century an impressive cross-country archive of manuscripts that provided unprecedented access to texts produced across the Islamicate world.

While oral interpretation of Arabic and Persian texts must have taken place, members of Hu Dengzhou's network placed most of their scholarly emphasis on the analysis of grammatical structures and literal glossing of the Arabic and Persian texts, followed by an investigation of their rhetorical and logical patterns and a thorough scrutiny of their contents. The scholars copied and collated Arabic and Persian manuscripts, compared versions, marked textual divergences, parsed sentences, identified their various syntactical components, and supplemented them with interlinear glossing and marginal commentaries. Difficult Arabic and Persian words were explained by other, apparently easier, Arabic or Persian words, or vernacular Chinese.¹⁶ Textual variance and intertextuality were crammed into dense marginalia around the main text.¹⁷

By the early seventeenth century, the economic prosperity and attendant sociocultural consequences that swept China's metropolises produced a vibrant book culture and invigorated intellectual activity in the wealthy Jiangnan area. This was also the period when Jesuit missionaries moved to the region and ushered in the proliferation

¹⁴ On that movement, its geographical spread in China, and its pedagogies, see Ben-Dor Benite, *Dao of Muhammad* (cit. n. 9); and Weil, "Islamicated China" (cit. n. 9).

¹⁵ The earliest historical record on Hu Dengzhou and his network is Zhao Can's 趙燦 *Jingxue xichuanpu* 經學系傳譜 [The genealogy of classical learning], which was composed in the 1660s, almost half a century after Hu Dengzhou's death; Zhao Can, "Jingxue xichuanpu," in Huang Xiefan et al., *Qingzhen Dadian* (cit. n. 1), 20:23–166.

¹⁶ *Vernacular* here refers to the spoken register of Chinese, which differed between locales. This register was rarely put into writing. Writing was mainly the domain of Classical Chinese, which differs in grammar and vocabulary from the local spoken idioms. One example of written vernacular Chinese in Arabic script that annotated manuscripts from Northern Chinese is called *xiao'er jing* 小兒經; Weil, "Islamicated China" (cit. n. 9), 55–6.

¹⁷ For more on the ways Arabo-Persian texts were read in late imperial China, see *ibid.*, 49–57.

of Christian-Western ideas and texts through lectures and translations. Chinese-Muslim scholars, inspired by the intellectual possibilities that the local print culture offered, and aspiring to popularize the insights they encountered in their study of Arabic and Persian texts, began to publish translations and summaries of Arabo-Persian texts in Chinese. Many of these scholars found this new form of scholarship a useful platform from which to socialize and engage intellectually with the non-Muslim local intelligentsia. By the 1640s and 1650s, they had produced a plethora of printed Chinese treatises on various themes, including Islamic philosophy of nature, Islamic law and religious practice, and translations of Arabic and Persian literature and history. Their shared aspiration to align their scholarship with the contemporary Chinese discourse and style resulted in a variety of methods for iterating Arabo-Persian ideas in Chinese. Some published literal translations of complete Arabo-Persian texts, others merged translated excerpts and paraphrases into monographs; some put together lecture notes in a vernacular register, others published eloquent Chinese iterations of Arabic and Persian ideas.¹⁸

Descriptions of the natural world and explanations of natural phenomena, including phenomena related to the operation of the human body, were integral aspects in the study of Islamic theologies and cosmologies, in the expounding of Islamic law, and even in the narration of prophetic histories. Consequently, they constituted central themes in the published works of Chinese Muslims from the mid-seventeenth century onward. The writers of these texts faced, however, a critical methodological challenge in reconciling the epistemic, conceptual, and terminological disparities between their sources and their contemporary Chinese discourses. The grammatical focus that had been a central method in approaching and deciphering Arabic and Persian texts among members of Hu Dengzhou's network was no longer useful when writing in Chinese, and it was replaced with a "philosophical" investigation of Arabo-Persian texts that could spotlight distinct ideas and compared them to other philosophical traditions.¹⁹ This shift had broader implications in terms of the analytical lenses through which Arabo-Persian ideas were read and the ways coherence and authority were conveyed to Chinese readers. This shift in focus also prompted Chinese-Muslim scholars to experiment with various strategies to reconfigure epistemic boundaries, their styles of presentation, and methods of conveying their ideas to their target audiences.²⁰ Furthermore, moving away from scrutiny of linguistic patterns to exposition

¹⁸ An example of such a case is Wu Zunqi's 伍遵契 (1598–1698) translation of Najm al-dīn Rāzī's (d. 1256) mystical treatise, *Mirṣād al-'ibād* [The path of God's bondsmen] into Chinese, completed in 1678 and titled *Guizhen yaodao* 歸真要道 [The essential way to submit to the Truth].

¹⁹ Elman points to an opposite trend among mainstream Chinese scholars during the seventeenth and eighteenth centuries, in which philosophical discussions on the principles of nature were replaced by new forms of "evidential investigations" (*kaozheng* 考證, sometimes referred to as "philology"); Benjamin A. Elman, "Philosophy (I-Li) versus Philology (Kao-Cheng): The Jen-Hsin Tao-Hsin Debate," *T'oung Pao* 69 (1983): 175–222; Elman, *From Philosophy to Philology: Intellectual and Social Aspects of Change in Late Imperial China* (Cambridge, MA: Council on East Asian Studies, Harvard Univ., 1984).

²⁰ For English translations of some of these Chinese-Islamic works, see Sachiko Murata, *Chinese Gleams of Sufi Light: Wang Tai-Yü's "Great Learning of the Pure and Real" and Liu Chih's "Displaying the Concealment of the Real Realm"* (Albany: State Univ. of New York Press, 2000); Murata, William C. Chittick, and Tu Weiming, *The Sage Learning of Liu Zhi: Islamic Thought in Confucian Terms*, Harvard Yenching Institute Monograph Series (Cambridge, MA: Harvard Univ. Press, 2009); Murata, *The First Islamic Classic in Chinese: Wang Daiyu's "Real Commentary on the True Teaching"* (Albany: State Univ. of New York Press, 2017).

of ideas allowed Chinese-Muslim scholars who did not master the Arabic and Persian languages to participate in this scholarship and contribute their share in producing coherence and authority.

A common tactic applied by Chinese-Muslim scholars to lend coherence and authority to their works was to adopt concepts, theories, terms, and even epistemological theories from the contemporary intellectual Chinese discourse. Being part of the literati class in China, these Chinese-Muslim scholars received Chinese classical education and were acquainted with discourses on the natural world. In particular, they had knowledge of the Confucian cosmological framework, expounded in the works of Zhu Xi 朱熹 (1130–1200) and the Cheng 程 brothers, which constituted the orthodox view during the Ming and early Qing periods (known as the Cheng-Zhu 程朱 school). Many of them were also aware of the heated debates among Chinese philosophers on the metaphysical and epistemological grounds of that framework.²¹ The cosmological framework left its mark in the works of Chinese-Muslims in their adoption of vocabulary, such as the foundational concepts of *xing* 性 (“[Human] Nature”), *li* 理 (“Principle” or “Coherence”), *xin* 心 (“Heart” or “Mind”), *qi* 氣 (“Energy Matter” or “Matter Influence”), the analytical frameworks of yin 陰 and yang 陽 and the Five Phases (*wuxing* 五行),²² or the selective adaptation of aspects from Confucian epistemological theories such as *gezhi* 格致 (“The Extension of Knowledge thorough the investigation of things”), *daxue* 大學 (“the Great Learning”) and *liangxin* 良心 (“Innate Intuition”). These terms and frameworks were important tools for iterating, naturalizing, and explaining some of the ideas Chinese-Muslim scholars encountered in their reading of Arabic and Persian texts.

Moreover, the borrowing of terms and frameworks from the Confucian philosophical discourse, as well as alluding to major Confucian works in their titles, lent an intellectual identity and scholarly authority to these Chinese-Islamic works and situated them within the purview of Chinese orthodoxy, in particular that of the Cheng-Zhu school.²³ For example, the seventeenth-century Chinese-Muslim scholar Wang Daiyu 王岱輿 (ca. 1570–ca. 1660) named one of his major works on Islamic theology *The Pure and True Great Learning* (*Qingzhen daxue* 清真大學), explicitly linking the study of Islam (or, as it was commonly known in Chinese, “the pure and true teaching”) and Confucianism by using the term *daxue* 大學 “The Great Learning”—the title of one of the Confucian Four Books that was greatly promoted by Zhu Xi and his school as the epitome of Confucian self-cultivation and its epistemological program.²⁴ Similarly, Liu Zhi clearly sought to situate his scholarship as an extension

²¹ Chinese-Islamic works show some engagement with the debate between the Cheng-Zhu orthodoxy and the school of Wang Yangming 王陽明.

²² The complex and changing contents of these concepts made their definition and translations matters of great debate among historical actors and contemporary scholars alike. While I propose some common translations here, they should be taken with a grain of salt. For representative discussions on the definitions of these core principles in Chinese natural philosophy and medicine, see Nathan Sivin, *Health Care in Eleventh-Century China* (Cham: Springer, 2016); Bol, *Neo-Confucianism in History* (cit. n. 4); and Unschuld, *Medicine in China* (cit. n. 4).

²³ See, for example, Qin Huibin, “On Cosmology and Tawhid in the Works of Wang Daiyu,” in *Islam*, ed. Jin Yijiu and Ho Wai Yip (Leiden: Brill, 2017), 245–72; and Murata, *First Islamic Classic in Chinese* (cit. n. 20).

²⁴ On the Four Books and Zhu Xi’s rearrangement of *The Great Learning*, see Daniel K. Gardner, *Chu Hsi and the Ta-hsueh: Neo-Confucian Reflection on the Confucian Canon* (Cambridge, MA: Harvard Univ. Press, 1986); and Bol, *Neo-Confucianism in History* (cit. n. 4). By the seventeenth century,

of the Confucian orthodoxy by naming his treatise, *Human Nature and Cosmic Principles in Islam*, after the fifteenth-century imperially-endorsed compendium of Confucian cosmology, *The Great Compendium on Human Nature and Cosmic Principles* (*Xingli daquanshu* 性理大全書). By using such titles for their works and structuring their texts after renowned orthodox Confucian classics, Chinese-Islamic authors sought to naturalize their scholarship and present their works as legitimate components of the contemporary Chinese discourse on the natural world and human society.

At the turn of the eighteenth century, about half a century after the first work on Islam appeared in Chinese, Liu Zhi published *Human Nature and Cosmic Principles in Islam*. Building on past scholarship and his own new translations, the book sought to introduce the foundation of Islamic cosmology to a Chinese reader. Together with his subsequent two publications, *Annotated Selection on Islamic Norms and Rites* (*Tianfang dianli zeyao jie* 天方典禮擇要解), a work dedicated to the study of Islamic practice, and *Veritable Records of Islam's Most Venerable* (*Tianfang zhisheng shilu* 天方至聖實錄),²⁵ a chronological account of Prophet Muhammad's life, these works constituted a trilogy dedicated to what Liu perceived to be the three axes of the natural world: the Cosmos, Human Society, and History.

References to physiological and pathological processes and descriptions of human and animal anatomy are scattered throughout Liu Zhi's works, drawing on and referring to Arabic, Persian, and Chinese sources. The references in *Human Nature and Cosmic Principles in Islam* and *Annotated Selection on Islamic Norms and Rites* are very different in character, both in terms of the sources they draw on and their roles in Liu's larger intellectual projects. Whereas Liu Zhi widely quotes passages from identified Arabic and Persian texts to construct his expositions, in the latter work, quotes from identified Chinese sources are provided as cross-references to and support for his exposition on Islamic practices. In *Human Nature and Cosmic Principles in Islam*—a work that focuses on the various correspondences between the universe as a macrocosm and the human body as a microcosm—a full chapter is dedicated to discussing embryogenesis, whereby synopses, expositions, and illustrations of the various phases of embryonic development and the functions of bodily organs, based on references from Arabic and Persian sources, are provided. Conversely, in *Annotated Selection on Islamic Norms and Rites*, physiological and anatomical explanations in the form of excerpts from Chinese medical and pharmaceutical literature are provided as justification and underlying rationales for Islamic ritual behavior, dietary restrictions, hygienic requirements, and methods of slaughter.

Similar to his Chinese-Muslim predecessors, Liu Zhi sought to present a discourse on the natural world that could at once convey coherence, authority, and compatibility with Confucian philosophy. Challenged by the nature of his core sources, Liu Zhi sought to develop a translational program that would bring across the meanings of

Zhu Xi's reorganization and interpretation of the text of *The Great Learning* was heavily contested by rival Confucian schools; Wang Huaiyu, "On Ge Wu: Recovering the Way of the 'Great Learning,'" *Philosophy East and West* 57 (2007): 204–26; Bruce Rusk, "Not Written in Stone: Ming Readers of the 'Great Learning' and the Impact of Forgery," *Harvard J. Asia. Stud.* 66 (2006): 189–231.

²⁵ Liu Zhi 劉智, *Tianfang dianli zeyao jie* 天方典禮擇要解 [Annotated selection on Islamic norms and rites], in *Qingzhen Dadian* [The complete corpus of Chinese Islamic literature], ed. Huang Xiefan 周燮藩 et al. (Hefei shi: Huangshan shushe, 2005), 15:46–190; Liu Zhi 劉智, *Tianfang zhisheng shilu* 天方至聖實錄 [Veritable records of Islam's most venerable], also in *Qingzhen Dadian*, 14:1–365.

his foreign sources without communicating a sense of foreignness, idiosyncrasy, or iconoclasm. For that purpose, Liu adopted a guiding strategy that worked on two levels: the epistemic and semantic/lexical. The former included the establishment of an archive of Arabic, Persian, and Chinese texts and the application of a series of commentarial tools to explain the contents of the Arabic and Persian texts and to lend authority to their readings. The latter included various translational tactics to bridge the linguistic gap, to produce a sense of compatibility with other Chinese discourses, and to bring across meanings. These two strategies will be further examined in the following pages of this article.

BUILDING A TEXTUAL ARCHIVE

Translation of discourses on the natural world, such as the one carried out in Liu Zhi's works, entailed negotiation between two sets of textual corpuses representing two distant epistemic systems: the one that is mirrored in the sources and the one held by the translator and readers. To produce a sense of commensurability and affinity between these two systems, Liu Zhi created an archive of Arabic, Persian, and Chinese texts on the natural world and employed a series of translation methods and reading practices to construct a coherent discourse in Chinese on what he saw as the Islamic view of the natural world. The archive, which consisted of two distinguished, yet intertwined, sections—Arabic-Persian and Chinese texts—allowed Liu Zhi to push the boundaries of the Chinese canon, yet at the same time to display the coherence and authority of his new synthetic discourse. The Arabic and Persian texts served as repositories for new insights that could be assimilated into, and verified against, the Chinese understanding of the natural world. The Chinese texts constituted a verification mechanism that attested to the authenticity of the assimilated knowledge.

For the purpose of establishing his archive, Liu Zhi set out on cross-country journeys in search of relevant texts. He described in his works the laborious task of obtaining such Arabic and Persian texts in China during the late seventeenth and early eighteenth centuries. He also recounted his visits to multiple private libraries throughout China, where he happened on Arabic or Persian manuscripts of interest; copied them himself or asked a local literatus with the required linguistic skills to assist; and thereafter carried out a critical investigation of their contents, comparing different editions and marking central points or odd parts. Using methods of excerption, paraphrasing, and summarization, he then incorporated parts of the texts he encountered into his works on the natural world.

Vestiges of Liu Zhi's archive, which might have been once a physical library at his residence in Nanjing, are manifested in the form of identified and unidentified references scattered in his works. Two bibliographical lists—paratextual elements that are rarely seen in contemporary Chinese works—comprising forty and forty-six titles were included in *Human Nature and Cosmic Principles in Islam* and *Annotated Selection on Islamic Norms and Rites* correspondingly. Each entry in these lists begins with a transliteration of the original Arabic or Persian title in Chinese characters, followed by a short explanatory comment in Chinese. These bibliographies list only Arabic and Persian texts, and entirely omit any indication to the Chinese texts that Liu Zhi used, references to which appear only in the body of the works. In some sections of the works, such as in the first part of *Human Nature and Cosmic Principles in Islam*, known as “The Root Classic” (*benjing* 本經), references to the sources are given

at the end of each passage in a manner similar to modern footnotes. Likewise, references to the Chinese sources appear at the beginning or end of the quotes that Liu Zhi incorporated in his works.

Liu Zhi's archive includes multiple Arabic and Persian texts on theology, natural philosophy, Islamic jurisprudence (*fiqh*), astral and earth sciences, and language. While there is no indication to any work that is exclusively medical in Arabic or Persian, or to works that focus on the study of the human body, Liu quotes from Chinese medical and pharmaceutical works and includes passages from Neo-Confucian philosophies and popular encyclopedias. Liu Zhi employs cross-textual readings in which he extracts information on physiology, anatomy, and pathology from Arabic and Persian sources and reads them against discussions of medicinal properties of substances and physiological processes in Chinese materia medica literature; foundational theories of the structures and operations of the natural world and the human body expounded in Neo-Confucian philosophical works; and related references in popular encyclopedias. Such cross-textual reading performed two functions for Liu Zhi's translation: it provided an explanatory framework and a method for authenticating and authorizing the ideas presented in Arabic and Persian texts. Liu Zhi employed Chinese framing of subject matter, theories, and terms to make sense of, explain, and render in Chinese what he encountered in Arabic and Persian texts. At the same time, he used cross-textual reading to provide evidence for the veracity of the accounts by pointing to existing parallels in the related Chinese literature.

Among the Arabic and Persian²⁶ works on theology that Liu Zhi obtained for his archive are 'Abd al-Raḥmān Jāmī's (d. 1492) *Ashi'āt al-lama'āt* (Rays of the flashes) and *Lawā'ih* (Gleams), Najm al-Dīn Rāzī's (d. 1256) *Mirṣad al-'ibād* (The path of God's bondsmen), 'Azīz al-Dīn Nasafī's (fl. 13th c.) *Maqṣad-i aqṣá* (Furthest goal), and an unidentified work titled *Mawāqif* (Stations) and a commentary on it.²⁷ These texts presented adaptations of Aristotelian and Neo-Platonic cosmological theories, including views on the relationship between human soul and human body and descriptions of human cognition. They were also instrumental in providing glimpses into Hippocratic and Galenic views on the structure and operation of the human body, such as the four humors, the phases of embryonic generation, and the functions of bodily parts, as well as the dichotomy of human soul and body that were deeply embedded in Islamic theological works. Legal manuals, such as Burhān al-Dīn Marghīnānī's *Al-Hidāya fī sharḥ al-bidāya* (Guidance in the commentary of al-Bidāya, comp. 1178 in Samarqand), Tāj al-Sharī'a al-Maḥbūbī's (d. 1344) *Sharḥ wiqāyat al-riwāya fī masā'il al-hidāya* (Commentary on The Protection of the narration in matters of the *Guidance*, comp. 1342, a commentary on Marghīnānī's work) and *Kāfī dar fiqh* (The sufficient work on jurisprudence, comp. fourteenth c., originally in Persian), were important

²⁶ Liu Zhi does not differentiate Arabic from Persian texts. In some cases, it is unclear if he used an Arabic work or its Persian translation. In order to maintain actors' categories, my discussion will treat Arabic and Persian texts as a single literary and linguistic category; Weil, "Literacy, in Arabic and Persian" (cit. n. 11), 92–5.

²⁷ A work by the title of *Mawāqif* and its commentary are listed in the bibliographies and are referenced in *Human Nature* (cit. n. 1). A possible identification might be al-Ījī's (d. 1355) important work on logic, titled *Mawāqif*, and al-Jurjānī's (d. 1423) commentary on it. I was, however, unable to locate the quoted passages in these works. As Murata suggests, it is likely that the titles refer to other works; Murata, Chittick, and Tu, *Sage Learning of Liu Zhi* (cit. n. 20), 14.

sources on the practicality and applicability of Islamic views on bodily purity and impurity, including the states of menstruation, sperm and blood discharges, hygienic practices, nourishment and diets, animal anatomy, and the physiological aspects of animal slaughter.

Using a series of translation methods that worked on both the epistemic and semantic/lexical levels, Liu Zhi sought to explore the ideas he found in his collected texts and present them as compatible with, and supplementary to, the contemporary Chinese discourses on the natural world and the human body. These methods will be the foci of the following sections.

EPISTEMIC CONFIGURATIONS

In their introduction to *Canonical Texts and Scholarly Practices: A Global Comparative Approach*, Anthony Grafton and Glenn W. Most tell us that producing a canonical text in the premodern period was often a project that involved choice and authorization, followed by domestication techniques with the aim of making the texts seem familiar, relevant, and up to the readers' standards and tastes.²⁸ Similarly, Alisha Rankin and Elaine Leong elsewhere in this volume show how translation tactics and learned practices were specifically chosen by the translator to suit the target audience.²⁹ These perceptions could equally apply to Liu Zhi's translation. As suggested in the prefaces to his translated works, the methods to domesticate Arabo-Persian ideas and produce coherence, authority, and discursive familiarity for the benefit of his Chinese readers were central concerns for Liu Zhi. Accordingly, he employed strategies in structuring his translations to overcome the epistemic gap between his foreign sources and the intended Chinese audience, to infuse his translations with authority and legitimacy, and to demonstrate the compatibility of Islamic and Chinese theories.

The core objective behind Liu Zhi's translations seems to have been his wish to demonstrate the compatibility of Islamic thought with the Neo-Confucian philosophy of the Cheng-Zhu school. Liu Zhi wrote that soon after he began to study Arabic and Persian works, he realized that they shared many of their essential ideas with "the teachings of Confucius and Mencius" and that anyone who delved into Islamic texts would surely find that "the texts are Islamic, but the [underlying] principles are universal."³⁰ This realization informed Liu Zhi's main strategy in presenting Islamic ideas: emphasizing the compatibility of Islamic theories with the Confucian philosophical framework. On that ground, Liu Zhi defined his investigation of Islamic natural philosophy and Islamic praxis in Confucian terms, labeling the former "the study of [Human] Nature and Cosmic Principles" (*xingli* 性理) and the latter "Norms and Rites" (*dianli* 典禮): both phrases carry loaded Neo-Confucian connotations and would be linked by any Chinese reader to Confucian cosmology and ethics. Moreover, this strategy lent itself to the application of particular translational methods that Liu Zhi described as "excerpting [passages] from multiple [Arabic and Persian] classics where the principles

²⁸ Anthony Grafton and Glenn W. Most, "How to Do Things with Texts: An Introduction," in *Canonical Texts and Scholarly Practices: A Global Comparative Approach*, ed. Grafton and Most (Cambridge, UK: Cambridge Univ. Press, 2016), 1–13.

²⁹ See Alisha Rankin, "New World Drugs and the Archive of Practice"; and Elaine Leong, "Translating, Printing, Reading," both in *Osiris* 37.

³⁰ *Human Nature* (cit. n. 1), 17:13.

are the same [as in Confucian philosophy] and the meanings match, and then compiling them into a single text.”³¹

Producing compatibility between Islamic and Confucian theories could not be achieved without making adjustments to the epistemic grounds and lexicon. To that end, Liu Zhi’s strategy was to use “thick translation,”³² that is, to accompany the literal rendering of excerpts from the source texts with rich explanatory notes and glosses. In his preface to *Human Nature and Cosmic Principles in Islam*, Liu Zhi provided the following reason for this strategy: “The statements and meanings in this book are all extracted from Islamic classics. Among them are texts that are difficult to render literally into Chinese and require interpretations based on other texts. The texts might differ, but their meanings are identical.”³³

Liu Zhi’s model for compiling *Human Nature and Cosmic Principles in Islam* sought to reconfigure the epistemic grounds of his readers by splitting his translation into three distinct, yet intertwined, parts: the first, titled “The Root Classic” (*Benjing* 本經), includes five concise chapters that are composed of translated excerpts from identified Arabic and Persian texts. The second part, a series of illustrations (*tu* 圖), aims at presenting a graphical representation of the main principles; and a third part, the Commentary (*zhuan* 傳), provides a thick and elaborate translation of the five chapters in the Root Classic. These three parts enabled Liu Zhi to expand his discussion beyond the original text and provide graphical representations of theories and concepts. The illustrations lent further clarity and coherence to Liu Zhi’s translations of Arabo-Persian cosmological theories, including the theories on the structure and operation of the human body.

In his *Annotated Selection on Islamic Norms and Rites* Liu Zhi sought to translate and explain the underlying rationale of Islamic religious practices and daily routines through the prism of contemporary Chinese scientific discourse. As a means to control the readers’ economy of attention and aid the reception of ideas,³⁴ Liu Zhi and the subsequent editors of his works interpolated different hermeneutical and commentarial devices to amplify certain ideas, clarify potential difficulties, further domesticate the discourse, and produce coherence and discursive familiarity for the benefit of the Chinese reader.

In his preface to *Annotated Selection on Islamic Norms and Rites*, Liu Zhi provided a rare insight into the range of hermeneutical devices and thick translation that he used in compiling the work. He listed the following devices: “interpretations” (*jie* 解), “major commentary” (*dazhu* 大註), “minor commentary” (*xiaozhu* 小註), “substantive meaning” (*shiyi* 實義), “expanded meaning” (*guangyi* 廣義), “evidential verification” (*kaozheng* 考證), “additional references” (*jilan* 集覽), “frequently asked questions” (*wenda* 問答), and “further discussion” (*fulun* 附論). According to Liu’s explanation, the “expanded meaning” device offers examples when the underlying principle is clear but not concrete, and “substantive meaning” is used to generalize the underlying

³¹ Ibid.

³² I borrow Appiah’s definition of *thick translation* to denote “translation that seeks with its annotations and its accompanying glosses to locate the text in a rich cultural and linguistic context”; Kwame Anthony Appiah, “Thick Translation,” *Callaloo* 16 (1993): 808–19.

³³ *Human Nature* (cit. n. 1), 17:2.

³⁴ I borrow the phrase *economy of attention* from Daston’s discussion of the cognitive practices entailed by note taking; Lorraine Daston, “Taking Note(s),” *Isis* 95 (2004): 443–8.

principle. “Additional references” and “evidential verification” are provided for the sake of readers who doubt the veracity of the presented theses and include supporting citations from Chinese sources (*ruzhe zhi yu* 儒者之語).³⁵ These devices sought to gain the readers’ confidence regarding the epistemic grounds of the theories presented and to assert the accuracy of Liu Zhi’s translation of the sources.

It was in these commentaries that Liu Zhi made references to Chinese texts on medicine and materia medica. These references include quotes from major Chinese materia medica works, such as Shizhen’s 李時珍 (1518–93) *Bencao gangmu* 本草綱目 (Detailed outline of materia medica); Liao Xiyong’s 繆希雍 (1546–1627) *Shennong bencao jingshu* 神農本草經疏 (Commentary on “The divine husbandman’s materia medica classic,” pub. 1625); and Wang Ang’s 汪昂 (1615–94) *Zengding bencao beiyao* 增訂本草備要 (Expanded edition of Materia medica essentials, pub. 1694);³⁶ medical compendia such as *Yijing bielu* 醫經別錄 (Miscellaneous records from medical classics); the works of the famous physician Sun Simiao 孫思邈 (d. 682); and a certain unidentified professional work on women’s menstruation and gestation (*funü jingchan* 婦女經產).

Adding illustrations and various forms of commentary to his translated text and providing cross-textual references were Liu Zhi’s main devices for making sense of and conveying the meaning of the foreign ideas he translated. At the same time, these devices served to demonstrate how compatible these Islamic ideas were with Chinese discourses on the natural world and the human body. Whereas these methods played out at the epistemic level, Liu Zhi employed a series of tactics at the semantic/lexical levels to render specific Arabo-Persian concepts and terms in Chinese to further produce discursive familiarity and coherence. These tactics will be the focus of the following section.

TACTICS OF LEXICAL AND SEMANTIC RENDITION

At the lexical and semantic levels, Liu Zhi applied a series of tactics to render Islamic physiological, anatomical, and pathological concepts and terms in Chinese, including loan translation (or calque), equating Arabo-Persian with existing Chinese terms, and coining new Chinese terms to translate Arabo-Persian concepts.³⁷ These tactics further helped to domesticate Islamic theories and construct compatibility with Chinese philosophical and medical discourses.

The tactic of loan translation renders the literal meaning of an Arabo-Persian term in Chinese while ignoring the semantic and theoretical differences between the two discursive systems in the use of the term. Liu Zhi used loan translation to render, for example, the Aristotelian Four Elements. He translated the Arabo-Persian terms of the substances Soil, Water, Air, and Fire with the Chinese terms *tu* 土, *shui* 水, *feng* 風

³⁵ *Annotated Selection* (cit. n. 25), 15:57.

³⁶ On Li Shizhen’s *Bencao gangmu* and the other two materia medica works, see Unschuld, *Medicine in China* (cit. n. 4); Carla Nappi, *The Monkey and the Inkpot: Natural History and Its Transformation in Early Modern China* (Cambridge, MA: Harvard Univ. Press, 2009); and Georges Métaillé, “The Bencao gangmu of Li Shizhen: An Innovation in Natural History?,” in *Innovation in Chinese Medicine*, ed. Elisabeth Hsu (Cambridge: Cambridge Univ. Press, 2001), 221–61.

³⁷ There is a great resemblance between Liu Zhi’s translation tactics and those used to translate Buddhist texts more than a millennium earlier. See Salguero, *Translating Buddhist Medicine* (cit. n. 7), 55–60.

(or *qi* 氣), and *huo* 火.³⁸ Of these four, the translation of *Air* is the most problematic as the two terms *feng* and *qi*, which Liu Zhi alternately used to translate the Arabo-Persian concept of Air, carry very different meanings in Chinese philosophy and medicine.³⁹ It is hard to see how *feng*, which plays an important role in Chinese pathology, and *qi*, which is a core aspect of Chinese physiology, could convey the meaning of Air as a substance.⁴⁰ It is worth mentioning here that Liu Zhi had difficulty in rendering the general concept “Element” for the Aristotelian Four Elements, and that he employed a number of translation tactics for doing so. In some cases, he equated the Aristotelian concept with the existing Chinese term “Phase” (*xing* 行)—a central concept in the Chinese analytical framework that investigates the natural world through a series of five types of transformations. Equating these concepts, Liu passed over the significant difference between the Chinese Phase and the Aristotelian Element—they differ in their conceived materiality and analytical functions. Elsewhere, he used a literal translation of the Arabo-Persian term for Element (*‘unṣur*) and rendered the Four Elements as *siyuan* 四元 (“The Four Original Components”)—a term that might better convey to a Chinese reader the physical dimension of the Aristotelian concept.⁴¹

An interesting case of a loan translation are Liu Zhi’s renderings of the concepts “Natural Disposition” (*ṭabī‘a*) or “Temperament” (*mizāj*). These are two central concepts in the Four Element theory and have important implications in Greco-Arabo-Persian medical and pharmaceutical theory and practice. The underlying theory suggests that every substance consists of a certain balance, called Temperament, of the Four Elements that determine its natural qualities and inclinations. In translating these concepts, Liu Zhi used the Chinese term *xing* 性. This term is originally a central concept in Chinese moral philosophy, and in that context can be translated into English as “Human Nature.” It was later adopted into Chinese cosmology, where it played a major role in defining the correspondence between the Cosmos and Man, and it was even incorporated into medical discourses on human generation, vitality, and self-cultivation.⁴² Establishing the actual relations between this concept and the

³⁸ A similar set of four elements was introduced to China via Buddhist translations during the first millennium CE and then again in the translation of the Jesuits. These terms would have been quite widely known to literati in the seventeenth and eighteenth centuries. Liu Zhi testifies in one of his prefaces that he studied Buddhist and European texts. It is therefore likely that he encountered this terminology. On the Buddhist translation of these terms, see Salguero, *Translating Buddhist Medicine* (cit. n. 7), 58–9. On the Jesuit translation of the four elements, see Hsu Kuang-Tai, “Four Elements as *Ti* and Five Phases as *Yong*: The Historical Development from Shao Yong’s *Huangji jingshi* to Matteo Ricci’s *Qiankun tiyi*,” *EASTM* 27 (2007): 13–62.

³⁹ On the terms *qi* and *feng* and their usages in Chinese philosophy of nature and medicine, see Unschuld, *Medicine in China* (cit. n. 4), 67–73; Shigehisa Kuriyama “The Imagination of Winds and the Development of the Chinese Conception of the Body,” in *Body, Subject, and Power in China*, ed. Angela Zito and Tani E Barlow (Chicago: Univ. of Chicago Press, 1994), 23–41; and Bol, *Neo-Confucianism in History* (cit. n. 4), 64–9 and 170–2.

⁴⁰ Matteo Ricci faced a similar dilemma in using the term *qi* to render the Aristotelian element of Air; Hsu, “Four Elements” (cit. n. 38), 51.

⁴¹ The Jesuits, facing a similar challenge, translated the four elements as *Si yuanxing* 四元行 (Four fundamental elements). It is plausible that Liu Zhi borrowed this term from Jesuit works in Chinese. On the Jesuit translation of the four elements, see *ibid.* The Jesuit translation also bears some resemblance to the Buddhist rendering of the Four Elements; Salguero, *Translating Buddhist Medicine* (cit. n. 7), 72–3.

⁴² See Michael Stanley-Baker, “Health and Philosophy in Pre- and Early Imperial China,” in *Health: A History*, ed. Peter Adamson (Oxford: Oxford Univ. Press, 2019), 36–7.

other core cosmological concepts of *li* 理 “Cosmic Principle”, *xin* 心 “Heart/Mind,” and *qi* 氣 was a matter of harsh debate between different philosophical schools during Liu Zhi’s time.⁴³ By borrowing the term *xing* to translate “Temperament,” Liu Zhi embraced the view of *xing* held by the orthodox Cheng-Zhu school, which defined it as the grasp of the Cosmic Principle within the human Heart/Mind and “the innate and unchanging norms according to which that thing operates,”⁴⁴ instilling moral philosophy and philosophy of the mind into the theory of the Aristotelian Four Elements.

By equating Arabo-Persian concepts with existing Chinese terms, Liu Zhi was able to pass over significant theoretical differences and produce constructed commensurability between the two systems. Liu used this method to translate human physiology and anatomy and ignore the differences between the Islamic and Chinese conceptualizations of the body. Blood and blood vessels, such as arteries and veins, for example, were an integral part of the Islamic constitution of the human body yet lacked exact parallels in Chinese. To translate these two terms, Liu equated the Islamic concepts with the Chinese physiological terms *qixue* 氣血 and *jingluo* 經絡 respectively. The former, which is sometimes translated into English as “*qi* and Blood,” refers to a pair of primary vitalities in Chinese physiology, and the latter designates the conduits and network vessels that transport *qi* and Blood between different bodily systems and loci.⁴⁵ This way of equating the Chinese and Arabo-Persian concepts appears in Liu’s description of the movement of blood in the fetus’s body, where he explains that “*qi* and Blood flow through the various conduits and network vessels and prevent the decaying [of the body].”⁴⁶ Equating the Chinese pair of primary vitalities that circulate in the body and enable the operation of the various physiological systems with the Greco-Arabo-Persian notion of blood as a bodily flood may overlook the theoretical difference in quality and function between the two concepts, but it provides a useful way to explain the operation of the human body for a Chinese reader.

Similarly, Liu employed this method of equating concepts in his translation of the following Persian passage from Nasafī’s *Maqṣad-i aqṣá* (*Furthest goal*): “When the fetus begins to require nutrition, it extracts blood [*khūni*] that was accumulated in the mother’s womb by way of the navel. When it enters the fetus’s stomach, it goes through processes of digestion.”⁴⁷ Liu rendered this description into Chinese, writing, “When the child absorbs *qi* and Blood, which enter the stomach by way of the navel, firmness and consolidation [of the fetus’s body] begin; this is the ‘mineral nature’; it supplies the one Hundred Bodily Members.”⁴⁸

⁴³ See Qian Mu 錢穆, *Xueshu sixiang yigao* 學術思想遺稿 (Taipei: Lantai chubanshe, 2000), 212–3; Willard J. Peterson, “Arguments over Learning Based on Intuitive Knowing in Early Ch’ing,” in *The Cambridge History of China, Volume 9, Part 2: The Ch’ing Dynasty to 1800*, ed. Willard J. Peterson (Cambridge: Cambridge Univ. Press, 2016), 458–512.

⁴⁴ Bol, *Neo-Confucianism in History* (cit. n. 4), 165. On the concept of *xing* in Chinese philosophy, see Bol again (69–71).

⁴⁵ On the concepts of *qi* and Blood, see Charlotte Furth, *A Flourishing Yin: Gender in China’s Medical History* (Berkeley: Univ. of California Press, 1999), 46–8; Unschuld, *Medicine in China* (cit. n. 4), 75–9.

⁴⁶ *Human Nature* (cit. n. 1), 17:75

⁴⁷ ‘Azīz al-Dīn Nasafī, *Maqṣad-i aqṣá* [Furthest goal] (1351; Tehran: Kitābkhānih-yi ‘ilmīyah-yi Hāmidī, 1972), 58.

⁴⁸ I use here Murata’s translation with some modification; Murata, Chittick, and Weiming, *Sage Learning of Liu Zhi* (cit. n. 20), 127.

When Liu Zhi failed to find suitable Chinese terms that could capture the meaning of an Arabo-Persian concept, he coined new terms in Chinese. A Chinese reader might find such terms unfamiliar but would be able to make sense of them. Liu used this method to translate fundamental concepts such as Hippocratic humorism or the Arabo-Persian concept of *rūḥ* (“soul” or “*pneuma*”).

The theory of Hippocratic-Galenic humorism stands at the core of Islamic medicine and constitutes a central analytical framework for the discussion of human physiology and pathology. Liu Zhi rendered the general theory of humorism with a Chinese term he coined—*Siben* 四本 (lit. “Four Sources”). In his terminology for the four individual humors, Liu stressed their fluid nature and their associated colors. He translated black bile, yellow bile, blood, and phlegm as *heiye* 黑液 (“black fluid”), *huangye* 黃液 (“yellow fluid”), *hongye* 紅液 (“red fluid”), and *baiye* 白液 (“white fluid”) respectively.⁴⁹ In contrast to the use of the humors in Greco-Arabo-Persian physiology, Liu seems not to identify “red fluid” with blood, or “white fluid” with phlegm (*tan* 痰). His terms, however, are surprisingly similar to those that the Jesuits used to translate the four humors into Chinese. Giulio Aleni’s (1582–1649) *Xingxue cushu* 性學彙述, a Chinese adaptation of the Coimbra commentary on Aristotle’s *De Anima*, used the exact four terms in its exposition of the four humors.⁵⁰

The translation of the concept of the Soul (*rūḥ* or *Nafs*) is another example of the invention of new Chinese vocabulary to translate Islamic concepts. The concept of the Soul constituted a major divide between the Islamic and Chinese views of the human body and its operation. The Islamic concept of the Soul juxtaposes religious and biological functions, whereby the Soul is seen as an emanation of the Divine and a link between the cosmos and the human body. Its biological function corresponds to the Galenic concept of *pneuma* (lit. “breath”)—that which gives the human body its vitality. Greco-Arabo-Persian medical theories refer to three manifestations of the Soul in human physiology: the “Vegetative Soul” (Greek: *pneuma physicon*, Persian: *rūḥ-i nabātī*)—the source of the vegetative processes, such as growth and digestion, whose seat in the human body is the liver; the “Vital Soul” (Greek: *pneuma zoticon*, Persian: *rūḥ-i ḥaywānī*)—the source of living processes that regulate the innate heat and vital conditions of the body, whose seat is the heart; and the “Psychic Soul” (Greek: *pneuma psychicon*, Persian: *rūḥ-i nafsanī*)—the source of emotions and movement, whose seat is the brain. Translating this concept was a great challenge for Liu Zhi, who eventually decided to use the loaded term *xing* 性 ([Human] Nature)—a term he used also to translate the concept of Temperament. By doing so, he presented the concept of the Soul as a form of endowed character or personal inclination, infusing the religious Islamic definition of the concept with elements from Confucian moral philosophy.

⁴⁹ Interestingly, Hei Mingfeng 黑鳴鳳, who edited and published an edition of Liu Zhi’s *Human Nature and Cosmic Principles in Islam* with short commentaries on the text, commented that this theory of the four liquids resembles the four humors theory (*siye zhi shuo* 四液之說) that he had encountered in a European book; Liu Zhu, *Human Nature* (cit. n. 1), 17:71.

⁵⁰ Thierry Meynard and Dawei Pan, *A Brief Introduction to the Study of Human Nature: Giulio Aleni* (Leiden: Brill, 2020), 163–4. On the Chinese reception of the Jesuit medical translations, see Chu Ping-yi 祝平一, “Shenti, linghun yu tianzhu: Mingmo Qingchu xixue zhongde renti shengli zhishi” 身體靈魂與天主: 明末清初西學中的人體生理知識, *Xin shixue* 7 (1996): 47–98; and Benjamin A. Elman, *On Their Own Terms: Science in China 1550–1900* (Cambridge, MA: Harvard Univ. Press, 2005), 63–221.

For translating the physiological manifestations of the soul, Liu coined new terms that use the Chinese term *xing* with particular qualifications according to what he viewed as the defining physiological features of each manifestation. Accordingly, he coined *muxing* 木性 (lit. “tree nature”) for the “Vegetative Soul,” *shengxing* 生性 (lit. “living nature”) for the “Vital Soul,” and *juexing* 覺性 (lit. “conscious nature”) for the “Psychic Soul.” To these three, he added a fourth type that does not appear in Greco-Arabo-Persian tradition: *jinxing* 金性 (lit. “mineral nature”), which he defined as the source of *qi* and Blood to the various bodily organs.⁵¹ While these translations convey the multiplicity and the particular functions of the faculties of the human soul, a Chinese reader would not necessarily be able to link these terms with their assigned physiological processes.

SYNTHESES OF ISLAMIC AND CHINESE MEDICAL THEORIES IN LIU ZHI’S TRANSLATION

Synthesizing Islamic and Chinese discourses, Liu Zhi’s translation was able to make some important claims about the structure and operation of the human body, supplementing and offering alternative theories to both Islamic and Chinese traditions. His charting of human generation provides an insightful framework for discussing human anatomy and the functions of bodily organs, one that juxtaposes the Hippocratic theory of the four humors with the Chinese theories of yin and yang and the Five Phases. Liu Zhi also links the physiological functioning of the Brain with its relation to the Heart, and even descriptions of the physiological processes of nourishment, digestion and growth. These joinings produced intriguing theories that transcend both Islamic and Chinese discourses.⁵²

Liu Zhi’s account of the nine months of embryonic development in *Human Nature and Cosmic Principles in Islam* includes an interesting description of the four humors and their role in developing human anatomy. The four humors, Liu explains, are the root of the “human Body, Blood, Flesh and Vital *qi*”; are divided into Clear (*qing* 清) and Turbid (*zhuo* 濁); and are distinguished by their colors.⁵³ The particular set of properties of an individual humor, Liu suggests, emerges from the burning effect of the womb’s yin fire (*yinhuo* 陰火⁵⁴) and the humor’s position in the womb. These sets of properties associate each humor with one of the Four Elements (*sixing* 四行): Wind/Air, Fire, Water, and Soil. During the second month of gestation the humors are

⁵¹ This type of nature does not appear in the passage in *Maqṣad-i aqṣá* from which Liu Zhi translated this part; Murata, Chittick, and Weiming, *Sage Learning of Liu Zhi* (cit. n. 20), 373n2.

⁵² For a comparison of Liu Zhi’s embryogenesis scheme with other Chinese theories, see Stephen R. Bokenkamp, “Simple Twists of Fate: The Daoist Body and Its Ming,” in *The Magnitude of Ming: Command, Allotment, and Fate in Chinese Culture*, ed. Christopher Lupke (Honolulu: Univ. of Hawaii Press, 2005), 151–68; Furth, *A Flourishing Yin* (cit. n. 45); and Yi-Li Wu, *Reproducing Women: Medicine, Metaphor, and Childbirth in Late Imperial China* (Berkeley: Univ. of California Press, 2010). On the Islamic theories of gestation, see Nahyan Fancy, “Generation in Medieval Islamic Medicine,” in *Reproduction: Antiquity to the Present Day*, ed. Nick Hopwood, Rebecca Fleming, and Lauren Kassell (Cambridge: Cambridge Univ. Press, 2018), 129–40; and B. F. Musallam, “The Human Embryo in Arabic Scientific and Religious Thought,” in *Islamic Medical and Scientific Tradition*, ed. Peter Pormann (London: Routledge, 2010), 2:317–31.

⁵³ *Human Nature* (cit. n. 1), 17:70.

⁵⁴ Yin fire (*yinhuo* 陰火) is a Chinese concept that draws on a bifurcation of the Five Phases into yin and yang manifestations. In contrast to the common usage in Chinese cosmology, Liu uses the term here in what seems to be a reference to an actual substance.

distinguished according to the tendencies of their associated elements, and form the Outward (*biao* 表) and Inward (*li* 裏) frames of the body.⁵⁵ The humor that is associated with Soil makes up the Flesh; that which is associated with Water, the Vessels (*mailuo zhi lu* 脉絡之路); that which is associated with Air, the Heart; and the humor that is associated with Fire becomes the Apertures of Awareness (*lingming zhi kong* 靈明之孔) that stand on the left and right sides of the Heart.

The anatomical structure of the body, according to Liu Zhi's accounts, involves a division into four *zang* 藏 and six *fu* 府 elements. It is unclear from Liu's description whether these are systems or specific organs.⁵⁶ An abstract anatomical sketch suggests that the four *zang* elements include the Lung, Liver, Spleen, and Kidney, and the six *fu* include the ears, eyes, mouth, nose, four limbs and the "Hundred Members" (*baiti* 百體). The *zang* and *fu* categorization draws on a view commonly used in Chinese medical texts which divides bodily systems into five *zang* (including Liver, Heart, Spleen, Lung, and Kidney) that are in charge of generating and storing vital *qi*, and six *fu* (Stomach, Small Intestine, Large Intestine, Urinary Bladder, Gallbladder, and Triple Burner) that are in charge of transmitting vital *qi* and its digestion.⁵⁷ Liu's use of the terms *zang* and *fu*, however, greatly departs from these meanings, and seems to mark a certain binary of internal and external body parts. The four *zang* systems, Liu explains, are linked to one another in the space between the Heart and outer frame of the body, and they constitute the particular lodges of each of the Four Elements. According to Liu, the functionality of the body as a whole lies in "the linkage and coordination" (*guanhe* 關合) of body members and apertures (*tiquiao* 體竅) carried out by the *zang* and *fu* systems. Each of these systems is in charge of specific body members and apertures, while the Brain (*nao* 腦) is that which oversees the linkage and coordination of the entire body.

A major feature of Liu Zhi's synthesis is its assertion of the centrality of the Brain over the Heart. Liu explains that the Brain links together "the spiritual *qi*" (*lingqi* 靈氣) of the Heart and the "vital *qi*" 精氣 of the body and transforms both of them, suggesting a psychological-physiological interaction that takes part in the brain.⁵⁸ He suggests that the Brain is the main source of the various blood vessels, the enabler of cognition, sensation, and motion. According to Liu's description, the Brain collects and stores what the eye sees, the ear hears, and the heart cognizes. At the same time, the Brain acts as a sensory central command (*zongjue* 總覺), and through sinew networks (*jinluo* 筋絡) that link the Brain to the specific organs, it empowers the eye, ear, mouth, and nose to see, hear, taste, and smell accordingly, and produces sensation. Embedding this theory in Chinese medical theory, Liu further explains that the Liver has its aperture in

⁵⁵ In Chinese medicine, the pair *li* 裏 (internal) and *biao* 表 (external) represent a binary division of bodily organs. There are, however, different definitions of this binary. In some cases, they are used to mark the difference between external and internal organs. The former includes skin, flesh, hair, and blood vessels, and the latter internal organs. Alternatively, they are used to distinguish *fu* 腑 organs (defined as *biao*) and *zang* 臟 organs (defined as *li*); Manfred Porkert, *The Theoretical Foundations of Chinese Medicine: Systems of Correspondence* (Cambridge, MA: MIT Press, 1985), 162.

⁵⁶ In this and the following paragraphs, I follow the convention of capitalizing the names of systems to distinguish them from simple organs.

⁵⁷ Some Chinese texts speak of the six *zang* organs with the addition of the Pericardium; Unschuld, *Medicine in China* (cit. n. 4), 77–83.

⁵⁸ See also Zhu Yongxin, "Historical Contributions of Chinese Scholars to the Study of the Human Brain," *Brain and Cognition* 11 (1989): 133–8.

the eye, yet it is the Brain that empowers the eye to see. Similarly, it is the Brain that empowers the ear, mouth, and nose, the apertures of the Kidney, Spleen, and Lung accordingly, to hear, taste, and smell. This sensory network connecting the Brain with the various organs allows the hand to hold things, the feet to walk, and the “Hundred Members” to feel pain and itch.

The Heart/Mind (*xin* 心) was a subject of major debate among Chinese philosophers and medical theoreticians. In his works, Liu Zhi discussed various features of the Heart/Mind at great length, pointing to the role of Heart/Mind as the seat of emotions and thoughts, a complement of *xing* ([Human] Nature) and the microcosm parallel to macrocosm Heavens—the abode of the cosmic principles. In describing the role of the Heart/Mind in the operation of the human body, Liu Zhi placed it secondary to the Brain. Liu explains in *Human Nature and Cosmic Principles in Islam* that although the Heart is the seat of Awareness (*lingming* 靈明), it relies on the Brain. When the Brain is well nourished, Liu suggests, the Heart/Mind’s Awareness is solid, but when the Brain lacks proper nourishment, the Heart’s vigor wanes. The relationship between the Brain and the Heart/Mind, according to Liu, is one of a planner and executer, where the Brain commands the Hundred Bodily Members and apertures to carry out what the Heart/Mind wishes to do.

Liu Zhi’s translation provides various descriptions of physiological processes such as nourishment, digestion, and growth. These descriptions synthesize Islamic and Chinese theories. Nourishment, for example, is described as taking place in two ways: through the navel and in the Gallbladder. The former represents an Islamic description that is found in the Arabo-Persian sources of Liu Zhi, and the latter is borrowed from Chinese medical theory. According to Liu Zhi, the navel conducts *qi* and Blood from the mother’s womb into the fetus’s stomach where nourished substances are extracted; the gallbladder separates the transported *qi* and Blood into benevolent and malicious substances, further transporting the benevolent and storing the malicious.

These various theories are the outcome of Liu Zhi’s attempts to read Greco-Arabo-Persian physiology through the prism of Chinese medical terminology and theories. Juxtaposing the two medical traditions, Liu Zhi was able to point to differences and similarities between the ways each tradition explains the structure and operations of the human body. By extracting parts of these explanations, matching concepts, and synthesizing theories in his translation, Liu Zhi was able to come up with fresh and innovative views of the human body and its operation.

* * *

Liu Zhi’s translations and their descriptions of the human body and physiological processes were further reconfigured by a list of editors, readers, and publishers that took an active role in shaping the works’ contents and formats long after Liu’s death. At least two editions of *Human Nature and Cosmic Principles in Islam* include editorial interventions and the commentaries of Hei Mingfeng 黑鳴鳳 (b. 1673), a high-ranking official and a military *jinshi*-degree holder. Hei seems not to have had the linguistic skills to read original Arabic and Persian texts but was immersed in Chinese classical learning and familiar with some of the published works of the Jesuits. His commentaries expanded Liu Zhi’s discussions on the human body and added further coherence and authority to the works. Hei’s high-ranking status also lent the works further visibility among Chinese literati. In 1868, Ma Dexin 馬德新 (1794–1874), a

Chinese Muslim scholar who spent a long time in the Middle East and even studied Islamic theology in Al-azhar University in Cairo, published a commentary in Arabic on Liu Zhi's *Human Nature and Cosmic Principles in Islam*, seeking to explain how Liu Zhi's thought conforms to the Islamic theological system, including Liu's interpretations of physiology.⁵⁹ His student Ma Lianyuan 馬聯元 (1841–1903) published a subcommentary on *Human Nature and Cosmic Principles in Islam* under the title *Sharḥ al-laṭā'if* (Explanation of the Subtleties).⁶⁰ These editions and extensions not only attest to the impact of Liu Zhi's works on the accommodation of Islamic philosophies of nature and views of the human body in China but also display the open-endedness of the translation of such branches of knowledge and the continuous interaction between authors, commentators, and readers in their search for coherence and meaning.

As the various essays in this volume show, as early modern texts moved across geographies and languages, they carried with them local experiences and implanted them in new environments. Translation in that regard can be described as the collective textual acts and forms of articulation that are required for such imported experiences to become coherent, authoritative, and relevant for a target audience. Liu Zhi's translation shows such movement of ideas and theories on the human body and its operation from the Islamicate world, broadly defined to incorporate the sum of the various Greco-Arabo-Persian cultures and traditions as viewed from the perspective of an early modern Chinese, eastward into the Yangtze Delta, the heartland of China's Ming and Qing empires.

Isolated from the centers of Islamic scholarship in other parts of Asia, and with only limited access to Arabo-Persian texts, Liu undertook empire-wide journeys to recover manuscripts and build an archive of Arabo-Persian knowledge on the natural world, scrupulously excerpting, interpreting, and translating their contents. His translation provides us a rare glimpse into a global circulation of knowledge on the human body that is neither enabled by colonial violence, commercial activities, or imperial impositions nor embedded in texts produced by or for medical practitioners. It is the meticulous work of a philosopher whose investigation of the natural world sheds light on a philological dimension in the premodern knowing of the body. Rethinking the economies and mechanism of medical translation, this essay brings to light the contribution of religious texts, hermeneutical methods, and translation tactics in the global dissemination of views on the body and physiological theories.

⁵⁹ On Ma Dexin's translation, see Wang Xi 王希, "Ma Fuchu 'Benjing wuzhang yijie' chutan" 馬復初《本經五章譯解》初探, *Journal of Hui Muslim Minority Studies* 3 (2012): 44–9; and Petersen, *Interpreting Islam in China* (cit. n. 9).

⁶⁰ On that work, see Matsumoto Akiro 松本耿郎, "Ma Lianyuan cho 'Tianfang xingli awen zhujie' no kenkyū" 馬聯元著『天方性理阿文注解』の研究, *Tōyōji kenkyū* 58 (1999): 176–211; and Hu Long 虎隆, "Ma Lianyuan de zhushu yanjiu - shang" 馬聯元的著述研究上, *Zhongguo muslim* 5 (2018): 27–34.