Invisible Bodies
Lu Gwei-djen and the Specter of Translation

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Abstract

This essay explores the ways in which Lu Gwei-djen (1904–91) served as a gatekeeper for interpreting medicine in China in the second half of the twentieth century. After retiring from science in 1956, Lu set out to write one of the first comprehensive English-language histories of medicine in China. Through a close study of Lu's work notes and marginalia from later in her life, this essay examines how she carefully articulated the material characteristics of a “Chinese” medicine that gave rise to jingluo, or therapeutic paths often known as “meridians.” I argue that at the heart of this uneasy comparison was the difficult process of translating across multiple expressions of physiology. By placing Lu Gwei-djen at the center of a feminist intellectual history of medicine, this essay further shows how Lu’s translations were influenced by the social hierarchies in which she was embedded, including cultural, gender, and temporal dualities.

Keywords

Lu Gwei-djen – translation – Chinese medicine – physiology – feminist intellectual history

When Lu Gwei-djen (1904–91) arrived in Cambridge in 1937, she did not intend to stay. Bombing by Japanese fighter jets had interrupted her research on vitamin B1 deficiency at the Henry Lester Institute in Shanghai. While war forced her colleagues to retreat further inland, Lu set out for England (fig. 1).¹ After a difficult six-week journey by sea, Lu arrived in Cambridge as a doctoral student

¹ On the displacement of scientists and research institutions during the Second Sino-Japanese War, see Fu 2016.
and continued her investigation of metabolic diseases. She earned her degree in two years and worked as a research scientist in New York, a professor of biochemistry in Nanjing, and a scientific consultant in Paris. In 1956 she returned to Cambridge as a historian of medicine in China. She remained there until her death in 1991.

Despite the unusual course of her life, Lu avoided publicity. When asked to share biographical information, Lu said, “Let them work it out after I die.” Most of Lu’s obituaries credited her as the woman who had inspired scientist and Sinologist Joseph Needham to write *Science and Civilization in China*. The only full biographical attempt, Wang Guozhong’s *Lu Guizhen yu Li Yuese* 魯桂

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3 Most migrants from China in the nineteenth and twentieth centuries were men, whose movements were restricted by quotas in the British colonies and by the Chinese Exclusion Act (1882–1943) in the United States; see McKeown 1999; Teng 2013. Historian Sucheng Chan (1991) has described how most women who emigrated from China to the United States during this period migrated because of their marriage or family status. According to Chan, this group included the wives of Chinese merchants and laborers, wives and daughters of US citizens of Chinese descent, and US-born women.
4 This quotation was an ironic inclusion in her biography in Pan 1993, 55. Even when the director of the Institute of Natural History at the Chinese Academy of Sciences requested an autobiography, Lu refused. The burden of writing her introduction fell on her colleague Ho Peng-Yoke, recounted in Ho 1990, 25.
珍与李约瑟 (1999), centers on Lu’s early life in China and her later relationship with Needham. Yet, Lu’s voice as one of the most knowledgeable historians of medicine in China remains unheard. Other portraits that exhaust the contents of Lu’s résumé likewise are silent on the depth of her later contributions. Colleagues consistently state that if Lu Gwei-djen had not left for Britain in 1937, the history of science in China as we know it would not exist. Lu’s legacy has reached popular histories of China, but accounts by journalists like Simon Winchester simply cast her as Joseph Needham’s “mistress and muse.”

Paper Trails

To understand Lu Gwei-djen’s intellectual and private life, I will explore the factors that shaped how she negotiated among the professional and political demands of both translating and culturally mediating medicine in China. Trained as a medical scientist, Lu navigated among a range of social identities that were national, political, social, professional, and gendered. She had come from a liberal Nationalist family but sympathized with Communist ideals. She identified as Confucian but participated in Christian rituals. These identities were different but not always at odds. In her youth, Lu’s feminist father had encouraged an uncommon interest in the history of pharmacology, a commitment that extended into her career as a scientist and historian. This interest reinforced the idea that medical theory mattered—not for its philosophical
ephemerality but for its ability to characterize the material attributes of functional physiological systems. Lu’s ambition to capture medicine in its many forms was more importantly historically situated, and the same politics that motivated her intellectually also determined the limits of her expression.

Few accounts of Lu Gwei-djen make use of her Cambridge papers beyond select interactions with Joseph Needham. This article takes on the range of Lu’s activities by closely excavating her private work notes and annotations from roughly 1964 to 1983. During this period, Lu compiled a private dictionary of technical terms in classical Chinese, survived the removal of a lung tumor, suffered a heart attack, revised drafts on the inner elixir, intervened in Joseph Needham’s correspondences, interrogated physiologists on the nature of meridians in China, published her magnum opus Celestial Lancets (1980), and critiqued nervous physiology as the primary explanation for acupuncture-moxabustion practices.\footnote{While \textit{zhenjiu} 针灸 is often translated as ‘acupuncture,’ it involves two distinct therapeutic practices; \textit{zhen} refers to needling and \textit{jiu} refers to burning moxa. While “moxibustion” is the more common spelling of the translation of “jiu,” I have chosen to describe \textit{jiu} as “moxabustion” since moxa, not moxi, is the primary component.}

Though Lu remained publicly obscure, she exercised agency through an extensive paper trail. Her evolving ideas lived in the marginalia, among an array of loose annotations that captured her research. Lu made her presence known through what literary theorist Gérard Genette calls “private epitext,” which in this case would be the unseen graphic inscriptions that existed beyond the published volumes of \textit{Science and Civilisation in China (SCC)}.\footnote{In his seminal work \textit{Paratexts} (2001), Gérard Genette describes public and private epitexts as inscriptions that circulate and inhabit a “virtually limitless physical and social space.”} These were the memos, summaries, and suggestions that Lu composed by hand.\footnote{Anthropologist Matthew Hull (2012) has described how this kind of collaborative authorship becomes particularly distinct in structuring bureaucracy and enforcing certain forms of governmentality. While Hull’s study focuses on Pakistan, its theoretical contributions demonstrate the political significance of paper beyond the cascade of inscriptions of Bruno Latour’s “immutable mobiles” that articulate scientific ideas and networks.}

And through her collection of notes and correspondences, we can further appreciate how Lu’s own aging body was fixed under a biomedical gaze even as she worked to argue for a “Chinese” body.

Reading, revising, and rendering medical history was not a seamless process.\footnote{Here, I take Lu’s annotations as a form of talk that is ritualized, embellished, and produced. On the uneasy transfer of meaning between spoken and written voice, see Goffman 2008.} Rather than clarify, translation distorted the objects that Lu Gwei-djen found meaningful.\footnote{For a recent account of the friction of knowledge transmission, see Lightman, McOuat, and Stewart 2013.} Drawing together different views of the body required her, first,
to identify differences across knowledge systems. Where Needham recognized the “oecumenical” features of science and technology in East Asia that engaged with influences across Eurasia, Lu focused on materia medica and medical practices like acupuncture and moxabustion as being uniquely Chinese. She worked to unite conceptually classical alchemical practices for cultivating immortality with the clinical applications of needling and heating. In her writing, she strategically invoked nervous physiology to explain how needling and heating potentially worked. But in private, she remained skeptical of overextending the explanatory power of nerves. Though she used her training in science to move across diverging ontological claims, she still struggled to assign the same empirical value of biochemistry to historical body practices.

The contradictions that underlay Lu Gwei-djen’s scholarly work ran in parallel to the contradictions that determined her social and political position. After graduating from Cambridge, Lu traveled on her own to India, the United States, France, Italy, Spain, Singapore, Malaysia, and Japan. But after formally joining the SCC project in 1956, Lu subjected herself to a kind of social immobility. She was at the intellectual heart of Cambridge University, but until the end of her life, she remained socially isolated and had no formal teaching appointments. At Cambridge, Lu navigated and reinforced patriarchal hierarchies. Even with her feminist upbringing, she actively endorsed Joseph Needham as the primary author of SCC and allowed him to overshadow her and his many collaborators. She helped write Needham’s biography for his eightieth birthday but insisted that biographies should only be written posthumously when asked to produce her own. “Joseph [Needham] has built a bridge between our civilizations,” she said. “I am the arch which sustains the bridge.” As the invisible arch, Lu’s inscriptions were confined to a particular space and time. Unlike Bruno Latour’s immutable mobiles, these inscriptions did not travel far; they did not circulate. But they did capture a meticulously conceived and tenuously maintained interpretation of otherwise unfamiliar bodies.

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18 Francesca Bray (2010, 588) has emphasized in her review of Simon Winchester’s book that Joseph Needham was not set on displaying the superiority of China, as most biographers have incorrectly surmised. At the same time, he did not actively deny it.

19 It is important to note that while Lu and Needham worked closely on every sentence of the SCC project, the final phrasing in the volume often belonged to Needham. Nathan Sivin, correspondence with author, 2018.

20 Lu 1982a.


22 Anthropologist Bruno Latour has invited sociologists to analytically restore the visibility of documents by examining how graphic objects mediate and distort the ideas that they are meant to carry.
To meaningfully engage with the limits of Lu’s impact, and to engage with Susan Reverby and David Rosner’s critique of “great doctors”—who are often male and already famous—I will locate Lu Gwei-djen’s overlooked role as a cultural and intellectual mediator through her private epitext. Making sense of Lu’s decisions as a translator requires understanding not only her biography but also her broader context of war, protest, revolution, and reform. From Lu’s notes, we can appreciate the ideological and material infrastructure that sustained a project meant to define difference among knowledge systems. Lu worked to negotiate between similarity and difference—a messy mediation often threatened by the trappings of cultural essentialism and exceptionalism.

### Degrees of Difference

National forms of medicine are often tied to national legacies. To resist the absolute boundaries that national legacies draw, subaltern theorists have warned against the risks of cultural essentialism. For instance, sociologist Vivek Chibber has controversially claimed that prominent scholars of the Global South often render their own histories so different from those of their European counterparts that the perceived incommensurability only reinforces orientalist tendencies. Though historians aim to meaningfully identify difference across geopolitical spaces, these attempts can also alienate social and historical constructs from other contexts. I argue that the same unresolved politics of difference informed Lu Gwei-djen’s representation of medical theory in China. Even when Lu insisted on the relevance of early medical practices, she simultaneously intensified the conceptual differences across these practices. Classical texts were made to be both useful and useless, important and unnecessary.

Embedded within the politics of difference was the tedious task of translation. Like Lydia Liu’s “tokens” of unequal exchange, the circulation of signs, texts, commodities, ideas, and techniques represented a rough, iterative,

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23 Reverby and Rosner 2006.
24 According to Chibber (2013), distinguished postcolonial theorists such as Partha Chatterjee and Ranajit Guha have offered elegant arguments for characterizing the structural differences of the Global South, but these arguments have gone too far in assigning completely different types of social categories to the Global South. It’s this absolute difference that Chibber sees as giving Eurocentrism a new lease on life, because difference only further orientalizes the Orient. See also Vanaik 2016.
uneven process. Finding the most faithful interpretation overlooked the work that translation took on in measuring degrees of difference. As literary theorist David Bellos has observed, words and things do not fill the same space, and navigating among these spaces required attention to experience, intention, and politics. When Lu Gwei-djen moved across primary sources in different languages, the ontology of things transformed as they passed through multiple stages of translation. These things—living, dead, moving, static—each defined “Chinese” medicine. But the impossibility of capturing all things in full meant that Lu’s cultural essentialism was not absolute. Her translations were instead one of many interpretations for artifacts that often escaped the capacity of words.

Lu Gwei-djen was a formidable translator because she was a formidable reader. She paid close attention to how her contemporaries represented physiological processes, and she collected translations that aligned with her own perception of the body. For instance, when reading an early edition of *The Meridians of Acupuncture* by the young physician Felix Mann (1931–2014), Lu considered how Mann illustrated and captioned his images. Mann had been working on translating clinical texts from Chinese to English for a general audience and dedicated one of his earlier books to explaining meridians, or *jingluo* 經絡, the extensive network of therapeutic paths that connected the surface of the body with internal viscera. With the help of illustrator Frederick Metcalf, a colleague in the Royal Society, Mann presented a series of modified meridian maps that were accompanied by original captions. Organs that did not appear in the Chinese descriptions of meridian paths featured prominently in Mann’s translation. For instance, he introduced the Greater Yin hand meridian |

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25 Liu 2000. Historians of science have increasingly focused on scientific translations as major factors in mediating and changing sociopolitical, epistemological, and technological processes and products. On evaluating and contextualizing the successes and failures of scientific translation in other linguistic and historical moments, see Elshakry 2008; Frumer 2014.

26 Bellos (2012) also raises questions of sameness where words that refer to the same thing have different meanings. These inconsistencies complicate the ways in which language mediates between words, moments, and objects, which do not figure into speech and communication.

27 Lu Gwei-djen and Joseph Needham first met Felix Mann in 1959. Mann had previously written multiple letters to Lu requesting a meeting. As they grew more familiar with Mann, Joseph Needham increasingly referred patients to Mann’s clinic, given that few acupuncture enthusiasts in England had medical degrees. See Mann 1959.

28 I use the pinyin “jingluo” and the English “meridians” interchangeably as historical artifacts of translation and refer to Lu’s use of the Wade-Giles “ching-lo” to specify her particular perspective, which will be explored later in this article. The use of Chinese characters will correspond to the primary sources.
as “Lung Connecting Meridian.” This renaming explicitly characterized the meridian as being actively connected to the lung.

Lu Gwei-djen noticed. When Mann wrote in his preface that he had relied heavily on the 1963 Shanghai textbook *Lectures on Acupuncture and Moxabustion* (Zhenjiuxue jiangyi  针灸学讲义), Lu pulled out her own copy of *Lectures*. She placed the Chinese text alongside Mann’s book and saw that Metcalf’s illustrations of meridian maps also drew directly from *Lectures*. On the image of “Lung Connecting Meridian,” Lu wrote, “Anon (90) p(515) 反,” which indicated the location and page number of the illustration in her copy of *Lectures* along with the character “反” fan to mark that Metcalf’s copy “inverted” the paths on the hands. And turning to the figure and page number in *Lectures*, she wrote, “Connecting (F. Mann)” (fig. 2). What captured her attention was Mann’s addition of “Connecting,” which gave meridians a new kind of animated agency. They led somewhere, did something. For Lu, the areas from which meridians emerged and terminated—the hands and feet—did not matter as much as the idea that they actively extended across the body.

Upon closer analysis, “connecting” furthermore served as a means for Lu to move between Chinese and English versions of the “same” path. These two representations of meridians were not the same, especially since the images diverged stylistically. Mann’s muscular man stood contrapposto with thick black lines painted on his bare skin. The man in *Lectures* was static without explicit gesturing, and his body featured thin red and blue lines that were scored and dotted. When comparing Metcalf’s drawing of the “Stomach and Spleen Divergent Meridians” with the corresponding image of the Greater Yin foot meridian, Lu wrote “not so identical,” which recognized the stylistic differences between the two images (fig. 3).

Conceptual flourishes were necessary for translation if they helped to clarify the nature of therapeutic paths. Adding words like “connecting” that did not appear in Chinese appealed to Lu. With this view, the body could become a universal entity. Its form remained the same across stylistic boundaries, but its perceived functions required a multiplicity of elaborations. As a translator, Lu relied on this multiplicity to register a body that did not speak for itself. Her perception of two significantly diverging representations as being similar in content and in kind conceptually moved across Wittgenstein’s “family

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29 Lu rejected the translation of therapeutic paths as “meridians”; see below.
30 Nearly fifteen years later, Lu would also caption illustrations as featuring “connecting” tracts in her own rendition of minor meridian branches in *Celestial Lancets*. See Lu 1980, 17.
31 When Mann published his early books introducing acupuncture and the twelve meridians, Lu (1975) described them as among the best English-language sources on acupuncture.
Figure 2 Lu Gwei-djen’s notes on Felix Mann’s *Meridians of Acupuncture* (left) and *Lectures on Acupuncture and Moxabustion* (right). On Mann’s figure, Lu wrote “Anon (90) p (515) 反,” and she wrote “Connecting (F. Mann)” on the corresponding image *Lectures* to emphasize the potential of representing meridians as connecting different parts of the body.

Sources: Mann 1964, 122; *Zhenjiu xue jiangyi* 1963, 515
Lu Gwei-djen’s notes appear on Mann’s figure (left), where she writes “足阳明足太阴经别 Anon (90) p. 511,” before adding “(not so identical)” to indicate the corresponding image in Lectures (right).

Sources: Mann 1964, 131; Zhenjiu Xue Jiyangyi 1963, 511
resemblances,” which more importantly spoke directly to the circumstances under which she made these comparisons.\textsuperscript{32} In other words, her process of reading and translating demonstrates how she carefully collapsed the distance between physiological representations.

**Politics and Purpose**

Lu Gwei-djen’s style of translation was influenced by an era of imagining new futures for China. Born in Nanjing in 1904, she had been surrounded by vibrant intellectual communities that offered alternative models of modernity. Chinese feminism facilitated radical ideologies that theorized and disrupted Confucian hierarchies, which were embedded in legal, ritual, and social institutions.\textsuperscript{33} Politics was complicated, and campaigns to standardize medical practice promoted the integration of native and foreign forms of knowledge.\textsuperscript{34} But rather than establishing a unified body of medical theory, these projects intensified the existing plurality among physiologists and medical practitioners. Historians Sean Lei and Bridie Andrews have closely surveyed the groups of physicians and reformers who transformed medical practice into a space for legitimating the modern Chinese state.\textsuperscript{35} For instance, Tang Zonghai 唐宗海 (1851–1908) drew together native and nonnative knowledge systems to resolve the existing antagonism between physicians of zhongyi 中醫 (“Chinese” medicine) and physicians of xiyi 西醫 (“Western” medicine). But by characterizing zhongyi as based on the transformation of qi, and xiyi as based on the material features of anatomy, Tang only expanded the ideological and ontological divide between the two approaches to the body.\textsuperscript{36}

Associating biomedicine with science and science with modernity resulted in another dramatic break from earlier attempts to converge already pluralistic approaches to the body.\textsuperscript{37} As historians have argued, this conceptual

\textsuperscript{32} According to Wittgenstein’s (2009) “family resemblances,” faces that each have eyes and noses and mouths are not part of the same family, because particular features determine relationship. For a lucid account of resemblances that are qualitatively “determinant” but not qualitatively “identical,” see Khatchadourian 1958.

\textsuperscript{33} Liu, Karl, and Ko 2013.

\textsuperscript{34} Lei 2016; Andrews 2014; Scheid 2002; Taylor 2005.

\textsuperscript{35} Medicine in China at this point still ranged on a broad spectrum from itinerant healers to scholar-physicians. The debates on meridian maps here extend from scholar-elites (Tang Zonghai) to former political exiles (Zhu Lian). To learn more about the spectrum of Chinese healing practices, see Andrews 2014, 26–50.

\textsuperscript{36} Lei 2012, 320.

\textsuperscript{37} Lei 2016, 155.
dichotomy was so profound that medical reformer Yu Yan 余巖 (1879–1954) actively protested against Chinese medicine, which he claimed had no place in developing a sovereign nation.\(^{38}\) Yu insisted that the ontological reality of a uniquely Chinese body in \textit{zhongyi} was “false” and “completely groundless.”\(^{39}\) This was in part due to the fact that Yu had observed how Japan’s model of modernity was an extension of a collective state-centered medical system based on health systems in Germany.\(^{40}\) The more institutionalized the medical practice, the greater its political influence. In China, foreign-run schools that accommodated and educated Western-medical elites were often better funded than Chinese-run institutions.\(^{41}\) Medical, literary, and political reformers increasingly assumed the fundamental inferiority of Chinese endeavors. Physicians trained abroad claimed that \textit{zhongyi} corrupted Chinese politics; they paraded the slogan, “To cure the nation, first cure the people; to cure the people, first cure the medical theories.”\(^{42}\)

With these political stakes at issue, Lu Gwei-djen developed a complex relationship with native and nonnative knowledge. At first, she protested against intellectual, social, and political invasion. As an adolescent, she had apparently said that learning English was for “traitors and fools.” At the same time, she actively participated in the 1919 May Fourth Movement to support reform initiatives.\(^{43}\) In 1922 she enrolled in Ginling College, a Christian school affiliated with Smith College and the University of California. There, she majored in English and chemistry.\(^{44}\) Throughout her undergraduate years, her peers often involved themselves with political issues and missed up to three weeks of instruction to participate in public demonstrations.\(^{45}\) One faculty member compared Ginling students with the women at Smith, observing that Ginling

\(^{38}\) In doing so, medical reformers produced a new kind of dichotomy between \textit{zhongyi} and \textit{xiyi} that rested on different assumptions about the nature of the body that rendered \textit{zhongyi} experiential and subordinate to \textit{xiyi}, which was experimental. See Lei 2002.

\(^{39}\) Quoted in Lei 2002, 337.

\(^{40}\) Bridie Andrews (2014, 146) notes that in the early twentieth century, the first generation of students to study medicine in Japan typically came from northern China and learned German-style medicine. Meanwhile, Chinese students who were sent abroad through missionary connections typically came from southern areas and trained in Britain or North America.

\(^{41}\) In the 1920s China did not have a universal system for medical licensing. For more on professional societies in China, see Xu 2001.

\(^{42}\) Bu 2009.

\(^{43}\) Winchester 2008, 6.


\(^{45}\) The first big student strike was in 1919, which led to the formation of Ginling’s Student Union.
students had “a far more important place in political and general public life.”46 When Lu graduated from Ginling, she continued her training in Beijing and enrolled as a visiting scholar to study pathology and pharmacology at Peking Union Medical College. After two years, she moved to Shanghai to teach biology and biochemistry at St. Johns College before working as a biochemical researcher at the Henry Lester Institute.

Education enacted politics. During Lu’s nine years in Shanghai, the status of Chinese researchers grew increasingly precarious. When the Henry Lester Institute was established in 1932, civilian protest against Japanese incursions into Manchuria prompted Japanese armies to occupy the city.47 Political demonstrations continued to disrupt urban life, and in 1937, the year Lu prepared to leave for Cambridge, members of radical feminist groups also protesting against Japanese forces were detained in German prisons.48 Sympathetic to the ongoing unrest and arrests, Lu performed her own form of nationalism. While in Beijing and Shanghai, she collaborated with Bernard Emms Read (1887–1949), a British pharmacologist and inaugural director of the Henry Lester Institute, to develop a book series on Chinese materia medica.49 If the politics of modern warfare introduced social instability, then constructing narratives of national legacy and cultural knowledge would offer some sense of social cohesion.

Material Medica

When Lu Gwei-djen left China, she took her politics with her. At Cambridge, she studied under the supervision of Dorothy Needham (1896–1987), whom Lu admired for her progressive politics. Both Dorothy Needham and her husband, Joseph, served as delegates for the Association of Scientific Workers on the Cambridge Trade Council, and Joseph Needham had also donated funds to support the relatives of soldiers who died fighting Francisco Franco’s dictatorship in Spain.50 With Dorothy Needham, Lu continued her work on metabolism,

46 Chester 1933.
47 Fu 2016, 281. The Henry Lester Institute had weak connections to the Nationalist government but catered to an intellectual elite that experienced a kind of heightened patriotism. Historian Wendy [Jia-Chen] Fu (2016) has carefully detailed the social and political circumstances of research institutes in Shanghai, tracking the migration pattern of researchers during the Sino-Japanese War.
48 Yu 2006, 14.
49 Pan 1993, 56.
50 Lu 1982a, 7.
analyzing the patient data that she collected in Shanghai. Lu also incorporated in her thesis on molecular biology a cultural survey of nutrition in China. She linked vitamin B\(_1\) deficiency to a longer history of beriberi, which was often associated with foot qi.\(^{51}\) Lu emphasized that this old disease category drew on China’s already long and overlooked history of materia medica:

Such knowledge has certainly existed at least since the 8th century in China ... and the candidate proposes, therefore, to devote the major part of this portion to a chapter on the history of biochemistry, nutrition and medicine which has hitherto escaped attention. This has been largely due to lack of a proper index to the Chinese Classics, and also to ... the extreme divergence of the Chinese language from other languages.\(^{52}\)

For Lu, the perceived ignorance of nutrition in China resulted from two factors: first, no one had attempted to fully catalog historical texts; second, Chinese was too different from other languages for scholars to meaningfully engage with it. Neither was entirely true, but Lu recognized the magnitude of mediation. She compiled in her doctoral thesis a list of medical treatises and their authors, which may have come from her work on materia medica volumes in Beijing. In different drafts of her thesis, Lu adjusted to the Wade-Giles system, transliterated names, corrected spelling errors, and revised captions. She calculated in the margins publication dates and when authors would have lived and died. By way of familiarizing readers with beriberi as “Chio Ch‘i” 腳氣, Lu meticulously listed the contributions of historical and mythical individuals, including “Shen Nung” 神農, “Chou Kung” 周公, “Chen Wang” 成王, “Chang Chi” 張機, “Han Yü” 韓愈, “Hu Se-Huei” 忽思慧, and “Ching Tsong” 景宗. Her list, which used both Wade-Giles and pinyin, was far from comprehensive, but it was a start.

Lu completed her doctoral research in 1939. Like most overseas students at the time, she decided to return to China. But when attending a conference in Berkeley, the events of World War II left Lu stranded in the United States.\(^{53}\) War had again determined the terms of her mobility, previously facilitating it and now restraining it. While working in America, she maintained her correspondence with Joseph Needham, who was discreetly approached by the Chinese

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51 This disease state and its diagnosis involved a range of symptoms and differing explanations. For a comprehensive history of the shifting history of foot qi in East Asia, see Smith 2017.

52 Lu 1939, 2.

53 Lu accepted a research position at Berkeley and continued her work on nutrition, but she developed a severe allergy to acacia tree pollen, which forced her to relocate to Columbia University. See Wang Guozhong 1999, 232.
ambassador to England to help rebuild scientific programs in China. Lu had taught Needham a form of Nanjing-style Mandarin and gave him the language skills necessary to take on the job. For six years, Lu continued her research on metabolism, traveling from California to Alabama and then to New York. She closely followed the news about the war on all fronts and bought war bonds to celebrate American successes in the Pacific.

At last able to return home in 1945, Lu made her way to Shanghai to meet Joseph Needham, who by then had helped to establish the Sino-British Science Co-operation Office (SBSCO) at the British embassy in Chongqing. While working to support Chinese universities, Dorothy and Joseph Needham befriended Guo Moruo (1892–1978) before Guo’s rise to become minister of culture. Lu recognized in Guo a commitment to shared political and social ideologies. Guo recognized in Lu a strategic influence on her former mentors. Even though Lu had grown increasingly homesick after the death of her mother and younger brother while she was stuck in America, Guo and Communist leader Zhou Enlai (1898–1976) urged her to return to Cambridge to support the SCC series.

Lu Gwei-djen’s work as a mediator had more value abroad than at home. While political leaders had to remain in China to be politically relevant, Lu’s mobility gave her politics greater impact. After being reunited with her family for a few years, she prepared to leave permanently. Lu started working as a nutritional researcher at UNESCO in Paris in 1951, the same year that Japan and Germany became members. With tremendous political shifts still under way, in which enemies were becoming allies, Lu retired from her post in 1956 and relocated to the University of Cambridge, where she would officially train herself as a Sinologist and historian of science. She taught herself classical Chinese, collected numerous manuscripts on the history of medicine in China, and advised Joseph Needham on how to manage his finances. Needham had been recruiting collaborators and paying their expenses out of pocket; Lu encouraged him to set up official accounts to collect the royalties from selling SCC volumes. “I should insist on this point for I believe it is not selfish, and on

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54 Winchester 2008, 53.
55 Until the 1950s, there was a range of competing pronunciation standards based on a mix of regional dialects in Republican China. See Chappell 1980; Simmons 2017.
56 Lu 1945.
57 Lu 1982a, 6.
58 Wang Guozhong 1999, 73.
60 Needham’s financial accounts and annual salary indicated that he could afford to pay for the project’s expenses. See Needham 1947.
the contrary more business like,” she urged. Following Lu’s advice, Needham received support from the Wellcome Trust and, by 1958, had officially added Lu Gwei-djen as a collaborator to the project’s formal expenses.

After a few years in Cambridge, Lu had indexed biographical information for over seventeen thousand scientists, engineers, mathematicians, and physicians. In a report to the Wellcome Trust, Joseph Needham highlighted Lu’s research into technical terminology in classical Chinese and the history of epilepsy. He stressed that Lu was “uniquely well equipped” to take on extended research trips to China. When they traveled together, Lu facilitated meetings with political dignitaries and medical practitioners, established personal contacts with new research institutions, interviewed researchers on their conceptions of neurophysiology, gathered literature on different methods of physiotherapy, discussed the interpretation of technical terms in classical medical literature, and consulted early literature in Chinese medical libraries.

Material Physiologies

As Lu Gwei-djen took on her role as a cultural facilitator, translation remained a stubborn obstacle. She surveyed texts in French, German, Spanish, and Japanese to potentially bridge the “extreme divergence” across languages that she had pointed out in her 1939 thesis. In particular, she struggled to characterize the extensive network of therapeutic paths, or jingluo, in the body that informed palpation and anchored most needling and heating sites. As we have seen from Felix Mann’s book, therapeutic paths were often translated as “meridians,” but Lu refused to use this characterization because it suggested to her a kind of cosmological immateriality. For the purposes of this article, I use the pinyin “jingluo” and the English “meridians” interchangeably as historical artifacts of translation and refer to Lu’s use of the Wade-Giles “ching-lo” to specify her particular perspective. Throughout various SCC volumes, Lu often cited a 1956 article from Archives internationales d’histoire des sciences in which

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61 Lu 1956.
62 While Lu characterized these techniques as “Daoist,” her sources also included records from court officials and Buddhist alchemists. See Needham 1958b.
63 Needham 1958a.
64 Needham 1958b.
65 On palpation and pulse diagnosis, see Kuriyama 2002; Hsu 2010.
66 For the purposes of this essay, I use the word “meridians” to refer to jingluo as an analytical category and use jingluo or ching-lo as an actors’ category in the context of Lu Gwei-djen’s own writing.
the authors Pierre Huard and Ming Wong avoided using the term “meridians.” To Huard and Wong, “meridians” misrepresented the circulation of fluid substances in the body. It instead implied a kind of ephemerality that would “betray” classical Chinese texts.67 Lu praised Huard and Wong for their insights and likewise emphasized the fundamentally material qualities of jingluo.

To ground her own perspective, Lu read widely, surveying revisionist accounts of Chinese medicine that discussed these fluid structures.68 When it came to making sense of the visible and physical properties of qi 氣 and xue 血 that animated jingluo paths, medical writers and practitioners in China remained intensely polarized. The work of people like Tang Zonghai and Yu Yan had inspired debates that formed factions among physicians. Those who placed greater emphasis on the material qualities of qi and xue asserted that meridians were an independent system separate from neurological and circulatory networks.69 Others, who placed less emphasis on descriptions of qi and xue, claimed that meridians were nothing but crude and incorrect representations of blood vessels; at the same time, the concept of blood vessels existed in classical texts long before translations of anatomical textbooks were available.70 These debates still remain unresolved a century later.

Lu examined these ongoing controversies with a critical eye. For instance, she carefully read the 1933 book Revised Approaches to Studying Chinese Acupuncture and Moxabustion Therapy (Zengding Zhongguo zhenjiu zhiliao 增訂中國針灸治療學) by the famous medical practitioner Cheng Dan’an 承淡安 (1899–1957). In her own copy of the book, Lu took issue with Cheng’s description of twelve meridians as mirroring cranial nerves. Cheng wrote that because he could not figure out how the twelve meridians worked, it made more sense to deduce that they operated on thirty-one pairs of primary nerves in the body. According to one of Cheng’s colleagues who studied pathology, the body conducted electricity and induced friction among muscle cells to produce the electric current that allowed the body to heal. Cheng pressed, “We need to

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67 Huard and Wong (1956, 114) wrote, “Mais on voit très bien comment s’est développée une manière de trahir les textes chines qui donnait pleine satisfaction à la mentalité occidentale des traducteurs.”

68 Nathan Sivin recalled that while most medical historians were intimately familiar with a handful of historical medical texts, Lu had closely studied hundreds of Chinese- and English-language texts. Sivin, interview with author, 2011.

69 Lei 2016, 75.

70 Interpreting jingluo as blood vessels was not new. In the eighth century, medical commentators had already offered descriptions of arterioles, neuronal branches, and capillary vessels to describe the branching meridian channels. See Lu and Needham 1980, 18.
advance our knowledge about this.”71 Lu wrote “?” in the margin, skeptical of Cheng’s commitment to reducing therapeutic paths to electrophysiology.

Researchers were increasingly emphasizing the ways in which metal needles initiated electric currents in the body, but historically, needles were not always made of metal. Lu knew this and added in her annotation, “But 竹针 has same result.” In other words, bamboo needles produced the same therapeutic effects as metal needles. For Cheng Dan’an’s contemporaries, conceptualizing meridians as nerves relied on the conductive capacity of metal, which presumably galvanized meridians in the same way it galvanized nervous systems. But the more Cheng Dan’an practiced needling along with moxabustion, the less sense this comparison made. How could explaining all the functional properties of classical therapeutics rely solely on metal needles when other forms of delivering treatment—such as using wooden needles and burning moxa—also worked? Frustrated, Cheng later rejected his own impulse to compare meridians with cranial nerves.

For Lu Gwei-djen, nerves were an obvious explanation but not the only explanation or the correct explanation. Rather than comparing jingluo with other physiological systems, Lu simply deferred to the Wade-Giles transliteration of the term, ching-lo. In 1964 she began to compile a reference dictionary, “Index Termini Technologici Medici Sinensio-Anglici,” in which she listed hundreds of explanations and transliterations introducing individual characters and concepts. For particular entries, Lu said that some characters were “so full of meaning that they should be kept as romanised Chinese terms as much as possible.”72 In her discussions with Needham, Lu often maintained that English translations of classical technical terms were misleading, while Needham was more resigned to the insufficiencies of translation.73

Lu aimed to define a particular kind of material body that did not rely on the capacity of nerves alone. In one dictionary entry, she outlined the physiological structure of the jingluo. Rather than directly translating the names of the therapeutic paths, Lu drew on references that illustrated paths as physical structures. In her notes, she called these descriptions “matters concerned with the chhi [qi] circulation” and copied passages that described how paths emerged and terminated at the hands and feet, adding that “paths are deep inside the body and are rather long, starting from the 4 extremities, after penetrating the visera [sic] and than [sic] turn to parts of the neck and head.”74 This

71 Cheng 1933, 51.
72 Lu and Needham 1964.
73 Lu and Needham 1971.
74 Lu and Needham 1964.
network reached all parts of the body and demonstrated a “close relationship with both ... physiology” and the “basic theories of traditional medicine.” Here, Lu’s distinction between “physiology” and “traditional medicine” may be reminiscent of Tang Zonghai’s characterization of xiyi as “anatomy” and zhongyi as “qi transformation,” but unlike Tang’s separation of form and function, Lu equated the functional properties of “physiology” with the functional properties of “traditional medicine.” Both were distinct and both manifested in the corporeal body. But the corporeality of the body required further articulation, which led Lu to rely on the redundancies of translation to extend and expand the ontological features of therapeutic paths.

New Names for New Parts

The “basic theories of traditional medicine” were not abstract but corporeal. To emphasize this corporeality, Lu Gwei-djen pointed out that the series of paths grounding Chinese medical theory also reflected a basic physiological orientation of the body. In this orientation, Yang meridians traveled through Yang areas of the body while Yin meridians traveled through Yin areas of the body. Even though Yin and Yang were relational signs, since an object could be both Yin and Yang depending on its position, Lu instead fixed Yin and Yang to discrete parts of the body. In doing so, Lu rendered these identities as unchanging. Paths began and terminated at the hands and feet, where they switched from Yin to Yang, before passing through the head and internal viscera.

Lu conceptually laid this out these fixed patterns in another dictionary entry. As shown in figure 4, she used a combination of English, Wade-Giles transliteration, and Latin to articulate jingluo (or ching-lo for Lu) as a distinct structural assembly. At the top of the page, Lu wrote “Ching 經” and, beneath it, “Lo 網.” Both Ching and Lo were simply “tracts” of two types that together determined an explicit structure. Ching were the “cardinal” tracts, which Lu reiterated in Chinese as “正經” (zhengjing); Lo were superfluous, to which Lu assigned the Latin “decumane.” In the page title, Lu applied translations of translations—from Chinese to Wade-Giles to Latin—to explain that the objects Ching and Lo were of two different types.

75 Lu and Needham 1971.
76 For yin and yang as relational or comparative properties, see Sivin 1987, 63. I capitalize these terms here to reflect Lu Gwei-djen’s own usage.
77 Nathan Sivin has pointed out that Lu and Needham overlooked the multiple names assigned to circulatory systems, of which jingluo was only one. On the variety of structures that carried qi, xue, and blood, see Sivin 1987, 133–139.
With these redundancies in place, Lu followed the heading with eight transliterations and explanations of “auxiliary tracts.” These tracts were not associated with internal viscer a but rather were associated with particular areas of the body. The first four paths alternated between Yin and Yang parts, while the last four paths were assigned to spatial orientations. These spatial orientations introduced the fundamental ways in which Lu conceptually grounded her explanations and translations of *ching-lo* (*jingluo* in pinyin).

In other words, Lu began by translating the physical location of each tract so that identifying where they were could establish what they were. Thus, to capture the full range of *ching-lo* types, Lu had to establish the range of body parts in which paths were embedded. This involved mobilizing new names for new body parts. As long as the spatial orientation of the body remained a stable object across conceptual boundaries—where a hand remained a hand and limbs remained limbs—then Lu could unproblematically assign new characteristics to define these areas.

Lu continued to elaborate on body parts that could help to define *ching-lo*. In particular, she focused on the duality between interior and exterior spaces. On the lower section of the page in figure 4, she assigned “piao, 表” for exterior spaces and “裡, li” for interior spaces. She then added more redundancies with the transliteration of “piao, outer” and “li, inner,” followed by “piao-li.” The inner and outer areas of the body then could determine what Lu called “pervasive relations or connections” among the different sites on the body. In other words, body parts grounded the *ching-lo* paths—not physiological structures like veins, nerves, or other arteries.

By using body parts to characterize different types of paths, Lu no longer needed nerves or veins to explain *ching-lo*. Naming regions of the body rendered meridians legible, not the organic structures within it. For instance, after identifying “nei” and “wai,” the inner and outer areas of the body could be further separated into “三部, san Pu,” or “3 regions.” These three parts of the body—*shang* 上, *zhong* 中, *xia* 下—required embryological translations to make sense. While *shang*, *zhong*, and *xia* could be translated as “upper,” “middle,” and “lower,” Lu did not use these literal translations. Instead, she described *shang* 上 as “cephalic, proximal, posterior, dorsal”; *zhong* 中 was “trunco-brachial, intermediate”; and *xia* 下 was “pedal, distal, anterior, ventral.” For Lu, spatial orientations again renamed body parts so that she could identify and name meridian paths. These orientations were so important that when we return to the list of the “eight auxiliary tracts” in figure 4, we can see that Lu used spatial orientations in her translations of two primary meridians, *renmai* 任脈 and *dumai* 督脈, which are listed as “ventral median” and “dorsal median.”
FIGURE 4  Lu's notes on ching-lo paths to emphasize their physical orientations. At the bottom of the page, Lu includes the description of "piao 表裡," or "outer" and "inner," to establish distinct parts of the body from which therapeutic paths emerged. While Lu's handwriting changed throughout her later life following her lobectomy and heart attack, her crossbars and cursive r's distinguished her hand from Joseph Needham's. Special thanks to John Moffett for his help in identifying the source of unattributed manuscripts.

SOURCE: LU AND NEEDHAM 1964, S.L.
Redundancy Across Categories

Building from this dictionary entry for *ching-lo*, Lu Gwei-djen and Joseph Needham worked together to visually translate the physiological orientation of the body. The fundamental body parts—the head, hands, feet, and torso—that emerged because of cellular differentiation in embryological development gave rise to different classes of meridians. Needham sketched this general orientation in the same dictionary following Lu’s instructions (fig. 5). To start, he drew an abstract bulge of a body with two arrows pointing in opposite directions. A skinny, paddle-like leg, also accompanied by an arrow, protrudes from one side. In the surrounding text, English inscriptions are in black; Chinese descriptions are in blue. Black labels the head, tail, back, and limbs, or “caudal,” “cephalic,” “ventral,” “anterior,” “dorsal,” “posterior,” “proximal,” and “distal.” Blue further classifies these parts according to Yin and Yang segments. The head, back, and limbs are Yang; the belly, tail, and interior are Yin. A dashed line leading to the belly points to two types of “viscera”: Yang “hollow organs” (*wai*, “outer”) and Yin “solid organs” (*nei*, “inner”).

These inscriptions grew more elaborate. In a smaller diagram to the right, Needham drew a cross section of the body with a front view of the arm. In black, he drew a circle with the notation “medial” at the center and “lateral” flanking either side. In blue, the same arm extended with articulated fingers. Here, Needham wrote, “upper surface Yg” and “lower surface Yn,” to show that the upper surface of the limb was Yang, and the lower surface was Yin. He moved from digit to digit, adding many arrows to label the upper side Yang and the lower side Yin. The relative positions of Yin and Yang, inner (*nei*) and outer (*wai*), were conceptually straightforward, but drawing them on the body required an abundance of arrows.

What was curious about Lu’s conceptual translation and Needham’s visual display was the way in which the names of different body parts overlapped in category but not in kind. The dorsal posterior could be assigned to Yang, but this did not mean that Yang could be translated as the dorsal posterior. In the same sense, the cephalic end was also Yang, but this did not mean that Yang was the cephalic end. Yin and Yang were relative to each other only in the same way that the front was relative to the back. These two relative scales could only be placed alongside each other, but one did not represent the other. Rather, labeling the head, back, belly, and limbs offered a practical redundancy.

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78 Again, these names drew on developmental embryology, which classified clusters of cells that would divide to form different layers of tissues and body parts.
Figure 5  Lu and Needham’s map of physiological orientation. Inscriptions in black detail head, tail, belly, and back. Inscriptions in blue assign each area to Yin 阴 and Yang 阳 or nei 内 and wai 外.

Source: Lu and Needham 1964, 251
Identifying one end of the body as both “head end” and “cephalic end” in figure 5 emphasized “head” twice.

I argue that for Lu and Needham, this redundancy conceptually stabilized the Yin and Yang, nei and wai orientations. Yin and Yang meridians, based on nei and wai areas of the body, represented Lu’s appreciation for the physical quality of meridians. For meridians to be physical, Lu and Needham had to make sure that the template from which Yin and Yang emerged was physiologically enumerated. The head was not just the head but also the “cephalic end.” The tail was not just the tail but also the “caudal end.” Through this redundancy, Lu and Needham could label parts of the body, like the fingers, using directional equivalences of up and down. These directional equivalences could then be used to distinguish between Yin and Yang parts of the hand. Needham highlighted these Yin and Yang parts in blue ink without referencing other spatial references because there were none.

The limits of embryologic labeling mattered because they revealed not only the limits of translation but also the asymmetrical powers of explanation. Caudal, cephalic, ventral, anterior, dorsal, posterior, proximal, and distal parts only reinforced a directional body already on the page. Yin and Yang, nei and wai, extended the meaning of these different directions to characterize functional paths of distinct ching and lo (jingluo).79 In other words, Yin and Yang went beyond directional orientations, serving as an example of what I call “ontological projections.”80 Invisible paths were not an isolated and independent network but arose from a particular organization of the body. As Lu surveyed hundreds of classical and contemporary medical texts, she often encountered Yin/Yang and nei/wai as complex and systematic patterns. These patterns gave rise to meridians, stabilizing their corporeal ontology and, for Lu, establishing them as real, material things.

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79 While nei is often translated as “inner” and wai as “outer,” Lu’s study of classical medical texts led her to complicate this duality. For Lu, nei represented corporeal matter and wai represented something beyond corporeal, an issue I will address below.

80 The idea of an ontological projection is similar to mapping projections in linear algebra where two things are asymmetrically correlated. For instance, when a three-dimensional object casts a shadow on a two-dimensional surface, all the sites from the object map onto the shadow, but the shadow cannot be mapped onto the object. Similarly, physiological orientations are asymmetrically mapped onto categories of Yin and Yang. Special thanks to Dr. Andrew Goldman for his help in further elaborating on this similarity.
Illness Narratives

Like her complex political multiplicity, Lu Gwei-djen also inhabited multiple medical realities. Lu was a meticulous mediator, but the body that she inhabited stood in contrast to the body that she translated in her notes. While she worked to articulate medical practices in East Asia, her own body had been fixed under a biomedical gaze.

In her letters to Joseph Needham, Lu described a particularly unpleasant visit to the hospital in the winter of 1969. She had gone alone that morning. Nurses injected atropine into her neck to keep her from salivating, lifted her onto a cot, and wheeled her down the hall where a doctor announced that her appointment would be delayed.81 The nurses considered parking Lu next to another patient room, to which she vociferously objected before asking to return to her first ward. Hours later, the nurses again injected dose of atropine into Lu’s neck and shuttled her back to the operating room where the doctors inserted a tube down her throat and identified a tumor in her left lung.82

Hungry and thirsty, Lu wrote to Needham, “Just a note to tell you, all has not gone well this morning.” She had been waiting anxiously for two hours and skimmed a copy of the Daily Express. “I am still in the white robe for the operation room, trying hard to keep calm, with very dry mouth & quite hungry,” she confessed.83 She had been feeling unwell, but it was the effect of atropine, and not her diagnosis, that caused her to suffer. Under these conditions, the needle that punctured Lu’s neck to deposit the atropine represented the social and material technologies of a biomedical system. It served a much different purpose from the therapeutic needles that operated on ching-lo—needles that were not the extension of a syringe but an extension of the body. A few weeks later, Lu would again return for her surgery, again be injected with atropine, again shuttled around the ward, and again placed under the gaze of surgeons who marked their target and cut into Lu’s chest. When she awoke, the tumor was gone, along with most of her left lung.

In the course of her diagnosis, treatment, and recovery, we can understand the ways in which materiality of Lu’s body was limited within a biomedical context. From her correspondence with Joseph Needham, ching-lo did not exist

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81 Atropine is a drug based on plant extracts that lowers the activity of muscles and glands regulated by the parasympathetic nervous system, which regulates the salivary glands, urinary tract, digestive tract, and sexual arousal.

82 Lu 1969.

83 Lu 1969.
in Lu’s illness narrative. Meridians did not play a role in her disease state when the nurses punctured her neck and doctors slid a tube down her throat. Her experience of a pulmonary lobectomy significantly differed from the “same” procedure that she observed years later in China with a patient who had been locally anesthetized with acupuncture needles.84 As a medicalized patient in Cambridge, Lu’s translations of the body did not change her experience of it. Once she entered the hospital and draped herself in the white hospital gown, she became immersed within a biomedical context; her body became a biomedical body.

Following the surgery, Lu’s weight dropped to ninety-five pounds. She often felt a deep pain in her gut and was exhausted and short of breath. She found it difficult to hold her pen and writing a few sentences would cause her to sweat excessively. Lu still took extensive notes on medical history and corresponded regularly with Joseph Needham. She continued with her daily routine and remained optimistic, later reporting to Needham, “I feel very well, can eat & sleep and walk a bit, that is about all.”85

Lu’s condition gradually improved. A few years later, in 1972, she traveled with Needham to tour hospitals and interview physicians in China. When she returned from her trip, she suffered a heart attack in 1973. Her doctor prescribed a daily dose of Valium to prevent muscle spasms and thyroxine to steady her metabolism.86 Some of her friends remained skeptical of her ability to fully recover, though she again stabilized with difficulty.87 At the age of seventy-one, Lu traveled to Tibet to transcribe interviews with Uighur physicians and later vacationed in Malta.88

Still intensely productive, Lu and Needham reflected on their declining health. Lu recorded her thoughts in a poem titled “Woes of Lovers as They Get Old,” describing

less intense emotional feeling
loss of urge or drive for s— mutually
“current” not flowing forcefully as in/with youth
lack of gracefulness, awkwardness
  grace of movement
  beauty almost dancing

84 This process was popularly known as “acupuncture anesthesia” or, less popularly, as “acupuncture analgesia.”
85 Lu 1970.
86 Lu 1974.
87 Ho 2005, 150.
88 These events can be traced in Lu’s photos archived at the Needham Research Institute.
Invisible Bodies

insuff natural V₁ secretion (hence artificial aids)
“ankylosis,” rheumatic pains off-putting, awkwardness
decay of body, wrinkles, slackness after thinning
unnecessary frustrations like towel under
less or no guilelessness, naturalness

From this text, the loss of “naturalness” demonstrated a kind of physical atrophy characterized by an emotional erosion that further manifested in a decreasing internal “current.” Though Lu and Needham did not translate qi as a kind of vital energy, the use of “current” to characterize the aging body seemed to suggest a kind of fluid materiality. This fluid body made itself apparent in the skin that slackened as liquids leaked from it. To compensate for the leaking, evaporating, and diminishing body, Lu used ointments to supplement vaginal dryness and relied on towels to guard against involuntary urinary contractions and bowel movements. “Awkwardness” was one of the accessories of age and required active attention. When Needham expressed concern about his work, Lu quipped, “please don’t allow that precious brain to worry: take Wu Wei, it will preserve longevity!” Worrying accelerated the production of waste, although it is unclear here if Lu referred to a kind of philosophical non-action or pharmaceutical methods of preservation. But while Lu continued to translate body practices that maintained health and reversed aging, she did not indicate any attempt to make use of these techniques as her own body changed.

Invisible Interiors

As Lu Gwei-djen managed the accessories of age and aging, she was also drafting her own historical genealogy of nei, to which we were first introduced in her dictionary entry that linked embryological orientations with Yin/nei and Yang/wai parts of the body. Nei as a concept emerged from classical medical theories and body practices—the same theories and practices that gave rise to meridian maps. In 1971 Lu drafted “The Inner Elixir (Nei Tan); Chinese Physiological Alchemy,” which introduced the inner elixir as a “Daoist” method of achieving longevity and immortality. Here, Lu translated nei as “inner” to describe physical interior spaces. She emphasized that the inner elixir, or nei dan 内丹 (nei tan in Lu’s draft), involved a corporeal immortality, since “no other
was conceivable.”91 She warned: “No greater mistake could be made than to analogize nei tan with the ‘spiritual alchemy’ of the West; it was physiological through and through.”92 Lu distinguished nei dan from occult practices to present a “physiological alchemy” that was distinct from the alchemical practices in English contexts.93

Lu actively advocated for a materialist position, where nei represented the interior space of a corporeal body that manifested in the material qualities of meridian paths. But nei as “inner” was not enough to suggest its strict materiality, and Lu further translated nei as “corporeal.” When historian of science Nathan Sivin first encountered this interpretation, he immediately wrote to Needham. In his letter, Sivin pointed out that Lu and Needham had translated the title Huangdi nei jing 黃帝內經, a classical medical text that dates to the first century, as “The Yellow Emperor’s Manual of Corporeal [Medicine].” Sivin found it odd that nei was represented as “corporeal.” He argued that rather than translating nei jing 内經 as “corporeal medicine,” a better rendering would be “the inner canon,” with reference to medical texts that described “the outer canon.”

Lu replied, “Only not true!”94

She insisted that “corporeal medicine” took into account historical uses of nei (inner) and wai (outer), which corresponded to Yin and Yang areas of the body that gave rise to meridian paths. In this context, nei indicated a physical space, which had to be exhibited in the translated title of one of the most famous Chinese medical texts.95 In the introduction to Celestial Lancets, Lu would again translate Huangdi nei jing as “The Yellow Emperor’s Manual of Corporeal (Medicine),” where “Corporeal” featured prominently in the title, leaving “Medicine” in parentheses.96 Even Lu’s translation of Su Wen 素問 appeared as “Questions (and Answers) about Living Matter.” While “living” did not explicitly appear in the Chinese text, Lu included “living” to emphasize that the subject at hand was alive and material.97

91 Lu 1971, 3.
92 Lu 1971, 5.
93 For a detailed history of late nineteenth-century encounters with the occult, see Winter 1998 and Ogden 2018.
95 Though it is unclear whether Sivin knew that he was also corresponding with Lu Gwei-djen through Joseph Needham, Sivin (personal communication) nevertheless recognized Lu’s tremendous contributions to SCC.
Again, materiality mattered in Lu’s translations. She expanded on her growing expertise to show how the *nei dan* as a form of Chinese alchemy was foreign but not entirely unfamiliar. Lu compared *nei dan* practices to yoga, only making the distinction that the inner elixir was more “moderate” because it emphasized hygiene, or *weisheng* 衛生.98 With this characterization, Lu detached Chinese medical theory and practice from other Asian systems. This rendered *nei dan* less radical than its cultural counterparts. The inner elixir was not so foreign because it was based on a corporeal understanding of the body through “retracing one’s steps along the road of bodily decay.”99 In Lu’s explanation, the inner elixir delayed the atrophy of important bodily fluids that possessed *jing* 精, such as semen and saliva, where Yin and Yang again manifested in bodily secretions, organs, and tissues.100

At the same time, while Lu was fully committed to the corporeality of a Daoist inner elixir, her manuscript drafts reveal a kind of conflict in discursively representing *nei dan*. For instance, Lu originally wrote that the early texts on physiological alchemy claimed that “chhi [qi] can preserve the invisible life,” before removing “the invisible.”101 This removal suggests that *qi* occupied a separate ontology in Lu’s own conception of the body. In other words, *qi* as an unseen substance would imply immateriality. While Lu had originally described the *nei dan* technique as expressing the “sanity” and “sobriety” of Daoist philosophers, she later replaced these two words with “empiricism” and “rationality,” as if to elevate the technique’s theoretical rigor to match that of contemporary sciences.102 In her conclusion, Lu further wrote that the “unfamiliar” and “medieval” character of Chinese physiological alchemy “was in a certain sense akin to the insights of modern science,” before modifying this final sentence to say that physiological alchemy “was in a real sense akin to the optimistic and experimental outlook of modern science, especially biochemistry, endocrinology, and geriatrics.”103

Elevating the ontological and empirical virtues of corporeal body practices took work. This work went beyond the translation practices that Lu Gwei-djen exhibited in her private dictionary and necessitated a more explicit argument to justify discursive elaborations of *nei*. Representing *nei* as only “inner” was

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98 Before taking on new meanings at the turn of the twentieth century, *weisheng* represented aspects of Chinese cosmology and was meant to guard life and conquer one hundred diseases. See Rogaski 2004.
99 Lu 1971, 5.
100 Lu 1971, 25.
101 Lu 1971, 8.
102 Lu 1971, 3.
103 Lu 1971, 25. Italics added to represent sections modified in Lu’s draft.
not only inappropriate but downright misleading. Nei was not a relative directional space but a material thing. Like jingluo, nei was “corporeal.” Yet from Lu’s drafts, we can see how she made a special effort to edit out her own ambivalence when assigning corporeality to invisible structures in the body. To Lu, nei dan practices were at first “sane” and “sober” before becoming “empirical” and “rational”; internal alchemies were “foreign” and “obsolete” before becoming “real” and “experimental.” Representing the materiality of things required a strategic selection of words that was shaped by the conceptual and political trappings of translation.

Conclusion

Cultural bridges, however rhetorically vivid, are difficult to construct. Lu Gwei-djen’s intellectual life and illness narratives were embedded within the contradictions of her own subject position. She was a cosmopolitan and highly mobile researcher, but as a woman, she was also influenced by different types of patriarchal hierarchies, some of which she openly supported. When she met political dignitaries in China with Joseph Needham, People’s Daily reporters simply described her as Needham’s “assistant.” Upon her death, she remained virtually unknown in China. In Cambridge, she did not have a formal teaching appointment at the university but secured her professional status as the co-founder of the Needham Research Institute. She was also a founding fellow of the Lucy Cavendish College, but stopped attending business meetings in 1974. Close friends noticed that she never mentioned any of her former colleagues in the biochemistry department beyond the Needhams. Her isolation was not entirely accidental, since she had chosen to work with an openly Marxist faculty member of the university. Politically, Lu and Needham were further estranged from colleagues following Joseph Needham’s investigation into the alleged use of germ warfare by the United States during the Korean War.

104 Reports of Needham’s visits to China from the 1950s to the 1980s describe Lu as his zhushou 助手, or “assistant.”
105 Obituaries for Lu appeared in the Guardian, the Times, and the Independent.
106 Special thanks to Alison Vinnicombe for sharing with me Lucy Cavendish College committee minutes.
107 Ho 2005, 50.
108 Nathan Sivin (personal communication) recalls that when Needham became master of Caius College, colleagues would refer to him as the “Red Master.”
109 Needham’s participation in the germ-warfare investigation had apparently prevented him from being promoted to a professorship. Nathan Sivin, interview with author, 2011. Scientists and government officials rejected Needham’s report confirming the use of germ
It was under these circumstances that Lu focused her attention on managing, organizing, and writing the SCC series.

As Lu negotiated between disciplinary and conceptual boundaries, she embedded herself within the files, notes, translations, revenue records, reports, and drafts to collect, produce, and communicate knowledge about a physical body in spite of her own. The corporeality of the body emerged as an expression of Lu’s attempt to make meaningful a distinctly material body that stood in contrast to her individual experience as a medicalized patient suffering from lung cancer and heart failure. Like her complex political multiplicity, Lu also inhabited multiple medical realities. She used spatial orientations with Latin names to ground nei and wai parts of the body that gave rise to Yin and Yang meridians, which strategically avoided comparing meridians to nerves and veins. But when arguing for the relevance of older medical theories in Celestial Lancets, Lu ultimately concluded that acupuncture-moxabustion was a paradox—clinically proven, yet theoretically antiquated. It was both modern and medieval. “There is a paradox here not yet resolved,” she wrote. Celestial Lancets served as a partial history of medicine in China and, at the very least, stood as a placeholder for a more comprehensive historical narrative that has yet to be produced.

By situating Lu Gwei-djen at the center of an intellectual history of medicine, I have explored how Lu Gwei-djen’s subject position as a scientist-historian, Chinese-British, collaborator-lover shaped and constrained the ways in which she translated medicine in China. These dualities were not mutually exclusive and became problematic only when the politics of translation required definition based on difference. Navigating between cultural differences, gender binaries, and temporal distances demanded diplomacy. Lu mediated this diplomacy, even though her illness narratives competed with the bodies that she rendered meaningful on paper. Beyond serving as the sole inspiration for the SCC project, Lu actively directed what science and medicine in China should look like, burying within it her own complex politics. Differences among bodies were not absolute. Rather, comparing bodies depended on a warfare, and they suggested that he too willingly accepted fabricated evidence. For a detailed account of Needham’s involvement with the International Scientific Commission in China, see Rogaski 2002, 402.

110 Later in life, Lu would recall her mother’s dramatic recovery from cholera after a needling treatment. Wang Guozhong 1999, 7.
111 Lu and Needham 1980, xx.
112 Lu became a British citizen in 1967, explaining to colleagues that it was done out of convenience rather than patriotic sentiment because she could not be bothered to keep reporting to the Public Safety Bureau as a foreigner. See Ho 1990, 26.
range of social and historical circumstances that shaped how Lu interpreted and intervened in physiological processes that she could not afford to lose in translation.

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