Interpreting the Idea of Nerves in Nineteenth-Century China

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In 1878, the influential British physician, Thomas Clifford Allbutt (1836-1925), wrote: "It is dimly felt by society that the reign of bone and muscle is over, and that the reign of brain and nerve is taking its place."[1] Two decades later, in China, this sentiment is echoed in an observation attributed to Yan Fu (1854-1921), the great interpreter of Western thought: "All has "changed from a world of *xueqi* 血氣 to a world of *naoqi* 腦氣 ", from a world of spirit to a world of intellect, from one of vital power to one of brain power.[2] Clifford Allbutt's statement must be viewed against a history of nerves dating to the early third century BCE, against an idea near the core of Western thinking about the body. In China, by contrast, the discourse of nerves is quite new. To be sure, in twentieth-century China, the language of nerves becomes utterly commonplace and the experience of 'nervous weakness' was as ubiquitous as neurasthenia had been in Gilded Age America or in late nineteenth-century France. However, the modern ubiquity of nerves in China must be considered together with its total absence from the past. By this I mean that unlike the ancient tradition of nerves in what we now refer to as biomedicine, nerves did not exist in the medicine of traditional China.

When, then, did the discourse of nerves arise in China? We could look to the use of the term *shenjing* (神經), the word for nerve that was introduced from Japan to China in 1902 by Wang Guowei (1877-1927), in his translation of Motora Yujiro's (1858-1912), 倫理學 *Rinrigaku* [Ethics, 1893].[3] It would be a good part of two decades before the language of nerves entered the daily life of China's coastal cities. Outside of urbanite circles, the imported language of nerves remained ambiguous into the 1930s, as reflected in dialogue primers designed to help foreign physicians talk to patients. "大夫甚麼 叫

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[1] T. Clifford Allbutt, "On Brain Forcing," *Brain; a journal of neurology* 1.1(1878):60.

[2] Anonymous, *Guowen bao*, 1896. Attributed to Yan Fu; more likely, Xia Shuiqing (zi Zengyou).

[3] Michael Lackner, Iwo Amelung and Joachim Kurtz, eds., Terminological database. Motora Yujiro (元良勇神經次郎),倫理學 Rinrigaku [Ethics] 南千住町(東京府): 小野英之助, Minamisenjumachi (Tokyofu): Onoeinosuke, 1893.

神經呀?," *Dafu, shenma jiao shenjing ya*?" "Doctor, what are nerves?").[4] But when the language of nerves did take root, it would come to appear as a lexicon that had always been in place.[5] Nervousness emerged as a widespread term of self-diagnosis, used not as a technical term, but rather as a common idiom of experience. The idea of *shenjing* is a classic case of the dissemination of Western medical knowledge into popular consciousness. The transformation spurred by the new discourse of nerves raises profound questions about the relationship between language and experience, between talking about the body as an object of discourse and the body as the site of experience.

Yet this genealogy of nerves in China, as arising in the early twentieth century, is problematic, because prior to the rise of the language of *shenjing*, we witness extensive translations of Western physiological texts over the last three hundred years of the late imperial period. By 1900, on the cusp of the adoption of Japan's language of nerves, more than a dozen translations for the idea of nerve were in circulation. Of these translations, *naoqi jin* (腦氣筋 brain qi sinew) enjoyed the broadest currency. As a prehistory of *shenjing*, I will consider the term *naoqi jin*.

The origin of the term *naoqi jin* can be traced to the 1620s, to the first translation of the Galenic vision of the body into Chinese. The effort was undertaken by Johann Schreck (1576-1630, Terrenz), a physician born near the Swiss German border, who in 1611, at age 35, joined the Society of Jesus.[6] At that time, Johann Schreck enjoyed a reputation as a gifted healer in the courts of Europe.[7] He sailed for China from Lisbon in 1618.[8] While waiting to enter China, in the Portuguese colony of Macao, Schreck studied the Chinese language for two years. When summoned into Ming China

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[4] Bernard Emms Read (1887-1949), *Hospital Dialogue, English-Chinese Sentences in Dialogue for use by Foreign Practitioners in North China, with An Outline of Chinese Medical History and English Bibliography* (Peking: The French Bookstore, 2nd edition, 1930), 37-39.

[5] Just as in English it is difficult to imagine carrying on conversation without the language of nerves or nervousness.

[6] Schreck's colleague Galileo wrote: "Johann's news saddens me. For our Academy, this is a loss." Fang Hao, p. 221.

[7] Schreck also excelled at chemistry and astronomy; he knew Galileo from Padua and later corresponded with Kepler.

[8] With some twenty others, including Adam Schall von Bell and Giacomo Rho.

(1368-1644), it would be on the strength of his astronomy, and he would be put to work on the official calendar, but his interest in medicine remained strong. While in Macao, he practiced medicine and dissected the cadaver of a priest who had proselytized in Japan.[9]

Schreck entered China in 1621 but did not proceed directly to the Capital. Instead, he stayed in the southern city of Hangzhou, waiting for permission to proceed north towards the Emperor. In Hangzhou, he continued his study of Chinese and began translating. Before leaving Europe, Schreck and other Jesuits had assiduously gathered scientific books and instruments.[10] Among the books, in Adam Schall von Bell's possession, was a 1597 anatomical text written in Latin by Casper Bauhin (1560-1624), a respected Swiss professor of anatomy, medicine, and Latin at Basel University. In 1622, in the Hangzhou home of a Chinese colleague, Li Zhizao, Schreck began interpreting the Latin text into spoken Chinese, dictating to a Chinese scribe.

Working from Bauhin's text, *Anatomica corporis virilis et muliebris historia* [*Treatise on the anatomy of the male and female body*] Schreck and the scribe produced a manuscript in handwritten Chinese, organized into two volumes: 1) anatomy and physiology; and 2) perception, sensation, and movement. When called to Beijing, Schreck put aside the unpublished manuscript and turned his talent to astronomy. Schreck died in 1630. Adam Schall laid in storage the draft that Schreck had titled *A Treatise on the Human Body* (*Renshen shuo*). Four years later, in Beijing in 1634, Schall encountered a man of letters from the highest echelon of China's scholarly world, Bi Gongchen, a "presented scholar" (*jinshi*), who intrigued by Western medicine, urged Schall to complete the translation. Schall could not, though, for he was making cannon for the Ming court, to battle the Manchus. Schall suggested that Bi Gongchen take up the project. Bi Gongchen did, and worked up the text into literary Chinese. According to Bi Gongchen, he endeavored to preserve both the concept and spirit of Schreck's labor; still, his work on the draft increased the text by one-half. Before publishing it in 1634, Bi found volume two shorter than the first. To balance the two parts, he appended the

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[9] Writing up the autopsy, the first performed by a Western doctor in the region, Schreck attributed the priest's damaged lungs to heavy smoking. Ma Boying, 1993: 281.

[10] Such as the telescope, which was the first of its sort to reach China (Goodrich, 1976: 1282).

Mnemonic Techniques of Western Countries (*Xiguo jifa*) by Matteo Ricci, who died in China in 1610. Bi Gongchen titled the work, *Western Views of the Human Body, an Abbreviated Treatise* (*Taixi renshen shuogai*).[11] Ten years later, as the Ming Dynasty collapsed in 1644, rebel troops under the pretender Li Zicheng captured Bi Gongchen and murdered him.

Several explanations attempt to account for why early medical translation efforts by Jesuit luminaries did not take root.[12] I will dwell on these arguments (authorities in China were interested in foreign sciences other than medicine, most prominently astronomy; there was the judgment that Western medicine had little of value to offer, a perception exacerbated by the failure to the translators to provide illustrate anatomical illustrations, which were perhaps the most compelling aspects of the anatomical texts) only to offer this observation: the violence of the time. The chief protagonists of this translation project were killed in the chaos of the Ming/Qing transition. If not killed, their talents were sucked into the maw the mid-17th century chaos. Schall, who inherited Schreck's draft, was pressed to make cannon. Bi Gongchen, who completed the translation, was murdered by Li Zicheng's rebels; Jin Sheng (1598-1644), who read and transmitted Bi's and Schreck's work, died leading troops against an invading Manchu army.[13]

Nerves, and the paramount importance of the brain, are not particularly germane to Chinese medicine. Quite different from the brain-centered view of the body in the West, scholars and practitioners of medicine in China viewed the gray matter with relative indifference. In the normal functioning of the body, the *naosui* 腦髓 was viewed a minor organ. And the very marginality of the brain generated ambiguities in the early texts, a vagueness that moved the Yellow Emperor to question the status of the *naosui*

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[11] 細筋 'fine sinew'; 人身說(概) *Renshen shuo (gai)*, 1630; [*A(n) (Abbreviated) Treatise on the Human Body*] Bi Gongchen (d. 1644) 畢供辰, 泰西人身說概 *Taixi renshen shuogai,*1634.

[12] See, Chu Pingyi. "*Shenti, linglun yu Tianzhu: Mingmo Qingchu xixue zhong de renti shengli zhishi*" [The body, the soul, and Catholicism: knowledge of the human body and physiology within Western learning during the late Ming and early Qing]. *Xin Shixue* [Taiwan] 7(2): 47-98, 1996.

[13] One might also query: Why did not the new leadership of Qing China (1644-1911) take an interest in foreign medicine? The answer is that they did, but the foreign medicine on which the new Qing state concentrated was Chinese medicine. See, forthcoming article by Marta Hanson on the Manchu imperial project of translating Chinese medical texts into Manchu.

(brain and medulla). In organizing his answer, Qibo grouped the brain and medulla with four other puzzling parts of the body: bone, circulatory tracts, gallbladder, and uterus (*gu, mai, dan, nüzi bao*).[14]

But there is a deeper point. **The history of nerves in the West is tied up with volition**. The term chosen by the Greek scientist Herophilus in the early 3rd century BCE for the motor nerves, *prohairetika*, means "capable of choosing, purposive,"[15] In the Western tradition Volitional action is a crucial defining feature of identity. People have volition and the action of nerves is inseparable from the exercise of will. If identity is not defined in this way, then the idea of nerves is not particularly germane or compelling.[16] More than 300 years passed before the term for nerve was settled, because what was being introduced was a different vision of the self.

The language that would take in second half of the nineteenth century came from the translations of British medical missionary, **Benjamin Hobson** (1816-1873), and his collaborator, Chen Xiutang 陳修堂, *A New Theory of the Body* (*Quanti xinlun*), 全體新論 (1851).[17] Whereas Schreck and Bi's *Taixi renshen suogai* was largely forgotten for the better part of two centuries, there appears **to be a thin thread of influence running from Schreck to Hobson**. In skeletal form: Schreck, Schall, Bi Gongchen (d. 1644), Jin Sheng (1598-1644), Wang An (1615-1700?), *Bencao beiyao* (1694), to Wang Qingren (1768-1831),[18] *Yilin gaicuo* (醫林改錯 *Correcting the errors of past physicians*, 1830). Wang Qingren adds *Bencao gangmu* author, Li Shizhen (1518-1593), his list of

[14] The incongruity of the *naosui*, along with other ambiguous sites, such as the gallbladder, demanded its own category, that of the *qiheng zhi fu*, the "atypical hollow viscera" (*Suwen, Wuzang bielun*, 11.1).

[15] Heinrich von Staden, *Herophilus, The Art of Medicine in Early Alexandria*. Cambridge: Cambridge University Press, 1989): 250-251.

[16] Prof. Kuriyama's analysis of identity and muscles strongly influences this aspect of my discussion. See, Shigehisa Kuriyama, *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine* (New York: Zone Books, 1999).

[17] Benjamin Hobson and Chen Xiutang, *A New Theory of the Body* (*Quanti xinlun*), 全體新論 (Hui ai Medical Office, n.p., 1851).

[18] Xiong Yuezhi, *Xixue Dongjian yu WanQing Shehui* [The Dissemination of Western Learning and Late Qing Society]. Shanghai: Shanghai People's Publishing, 1994, reprinted 1995), 74-75.

influences regarding the centrality of the brain to thought,[19] and I suspect that the Muslim scholar and translator, Liu Zhi's 劉智 (1669-1730) ideas about the centrality of the brain might also have came down to Wang Qingren's time.[20]

Hobson's, *A new theory of the body*, a major translation of Western anatomy and physiology into Chinese, devotes one chapter to the brain and the nervous system.[21] Hobson instructs readers that "the soul (*linghun*) does not reside in the brain, instead the brain is the instrument or mechanism (*ji*) by which the soul manifests (*xian*) thought and action (*silu xingwei*)." [*Quanti xinlun*, 16a] Sensation, consciousness, animation--all transpire within and because of the brain and its nervous network:[22]

> the eye without nerves (*naoqi jin*) is incapable of sight, the ear without nerves is unable to hear, the nose without nerves does not distinguish between the fragrant and the foul, the tongue without nerves will know neither sweet nor bitter…none of this falls outside the domain of the brain… Thus, when the entire body obeys the brain's drive, all is well; if, however, the *naoqi jin* of the flesh is damaged, then the body is disabled and useless.

Hobson describes the physiological capacity of nerves, not their pathology. In this vision, nerves animate and enable human action. Through nerves people moved, thought, felt. Hobson's analysis of *naoqi jin* of is picked up in a variety of ways.

Hobson's lexicon is absorbed into the larger medical translation projects of the 1870s, 1880s, and 1890s. Missionary writers, too, adopt and transform the language of *naoqi jin*. "On the Human Body" (1876), for example, an unsigned essay published in, *The Chinese Scientific and Industrial Magazine* (*Gezhi huibian*), explains movement:

> A person wishes to move a limb. From the brain and nerves (*naoqi jin*) this intention is transmitted to the muscles, and then the tendons either expand or contract and, following the person's intention, the limb moves. **It is thus evident that the muscles of the body are entirely governed by the heart** (*yi xin wei zhu*).

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[19] Wang Qingren, *Yilin gaicuo*, "*Naosui shuo*," 24.

[20] Liu Zhi's original name, Liu Jielian, 劉介廉; author of, 天方性理**.**

[21] Chapter 8 of 39, AThe brain is master of the entire body,@ (*Nao wei quanti zhi zhu*)

[22] *Quanti xinlun*, 16a/b.

The text opens by describing nervous function but it ends with a characterization of the heart, not the nerves, as the vehicle of volition and will.[23]

The language of nerves is also picked up by serious thinkers of the age, such as the eclectic intellectual and 1898 martyr, Tan Sitong (1865-1898, 譚嗣同). "All that I do...an utterance, a movement...a recollection" is "initiated by the nerves (*naoqi jin* 腦氣筋) of my entire body and thus manifest." "It is through my nerves that…I am sentient (*zhijue*, 知覺)."[24] Tan Sitong grasped Hobson's idea of nerves as the vehicle of volition and will.

"Theory of a nervous ether."

Tan Sitong: "In all under heaven, all people's nerves are interconnected. If someone emits a good thought, then there must someone who responds, it is like sending a telegram, for 10,000 *li* with no obstructions."[25]

Richard Fryer, Shanghai arsenal translator.
X-ray machine can read thoughts in the nerves.
Zhixin mianbing fa (1897).[26]

Henry Wood (1834-1909), *Ideal Suggestion Through Mental Photography,* (1893)**.**[27]

"Thought sent out in loving waves never returns void." "Humanity is one. Channels through which the divine life shall flow out to invigorate and inspire. Soul-currents."

Dr. Benjamin Richardson (1828-1896), "Theory of a nervous ether" (1871).[28] *Medical Times and Gazette*, May 6, 1871; reprinted, Henry Lawson, ed., *The Popular Science Review*, Volume X, (London: Robert Hardwicke, 1871), 379-387. 'Nervous fluid'

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[23] The passage embeds the heart in the idea of the nerves. To achieve this confusing locution, the author interchanges the words heart (*xin*) and intention (*renxin*), a term containing the word for heart.

[24] *Renxue*, 仁學 1896.

[25] "蓋天下人之腦氣筋皆相連者也. 此發一善念, 彼必有應之者, 如寄電信然, 萬里無阻也." Tan Sitong, letter to Ouyang Zhonggu, pp. 458-468; 七月二十三日(no year), *Tan Sitong Quanji* , p. 462.

[26] 治心免病法 (1897)

[27] Henry Wood (1834-1909), *Ideal Suggestion Through Mental Photography, A Restorative System For Home and Private Use, preceded by a study of The Laws of Mental Healing*.(Boston: Lee and Shepard Publishers, 1893), 120. Went to at least 14 editions, to 1907. Widely published; still available in used bookstores.

What did the idea of the brain and the nervous system displace in China's medicine? Tan Sitong, in his 1898 address "On anatomy"[29], contends that memory, sensory perception, and the ability to comprehend (*wu*) are controlled by the *nao* (brain) and not the *xin* (heart); the nerves being described as the vehicle of the brain's dominance. Yet the importance of the heart is not diminished. It is accorded a different, critical function; it moves the blood that nourishes the brain. In Tan's words, "Thought is assuredly only in the brain. However, that the brain is capable of thought depends completely on the heart's capacity to change the blood (*bianxue*) and nourish the brain (*yangnao*)." Brain replaces heart, but the heart feeds the brain.

Ding Fubao (1874-1952), in his widely disseminated *Questions and Answers about Hygiene, in Nine Chapters* (1901), puts a different nuance on the link between the two parts. "The brain governs the movement of thought, the heart governs the distribution of blood (*nao zhu yunsi, xin zhu faxue*)." The heart circulates blood; the brain circulates thought. Ding Fubao, a leading medical publisher and prolific translator of Western medical texts into Chinese, largely from Japanese, possessed a keen sense of his audience. By accommodating the two parts, he aimed, I think, to preempt anticipated objections.

Ding's characterization of the heart as the once-perceived center of the body, a role that the brain inexorably must displace, echoes the reformist literature of his time. However, I think this notion is mistaken. I am speaking specifically of the idea that in the medicine of China the heart governed the body, as did the brain in Western medicine. To say, however, that the heart did not enjoy a special status in Chinese thinking about the body, especially regarding the site of thought, would also be wrong. Authors such as Ding Fubao could have cited passages from the Confucian canon and China's vast medical corpus to argue the heart's ancient association with thought. As one traces the history of the heart, moreover, we see a gradual elevation of its significance, from the Song period on and especially during the Ming, when medical and philosophical writings on the heart

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[28] Dr. Benjamin Richardson (1828-1896), "Theory of a nervous ether" (1871), *Medical Times and Gazette*, May 6, 1871; reprinted, Henry Lawson, ed., *The Popular Science Review*, Volume X, (London: Robert Hardwicke, 1871), 379-387.

[29] Tan Sitong. "*Lun quanti xue*" [On anatomy; 1898]. In *Tan Sitong Quanji*, vol. 2 [Complete Works of Tan Sitong], Cai Shangsi and Fang Xing, eds. Beijing: Zhonghua shuju, 1981, reprinted 1990, pp. 403-405.

become interconnected. What is more, there were multiple discourses on the heart in the scholarly medical tradition. One passage in the *Inner Canon*, for example, describes the heart as the sovereign (*junzhu zhi guan*). The sovereign heart has been explicated as heading up communication with other parts of the body.[30]

I would argue instead that the idea of the heart as a centralizing force in the body is a relatively late development, perhaps a response to Jesuit arguments concerning the centralizing function of the brain, and is an idea that is at odds with established ideas about the body in China. Pathologies in sight and sound and the other senses, for example, are not traced to a centralizing heart, but rather to the five solid viscera (*wuzang*). Wang Qingren, for example, in 1830, is explicit in relocating the experience of pathologies, in hearing, for example, from the *wuzang* to the brain. In Wang's words, what inhibited hearing was obstructed *naoqi* between ear and brain, not between ear and kidney.[31] In briefest terms, the coordinating function of the brain and nervous system did not displace the heart, it displaced the core of the body, the five solid viscera (*wuzang*).

Why did the word *shenjing* eventually become adopted as the Chinese word for nerve? Part of the answer is that, as the thousands of men who studied and trained in Japan in the early twentieth century returned to China and gained influence, the skills and material they acquired, such as Japan's analysis of biomedicine, became established. Yet biomedicine in China drew on a diversity of sources. As an explanation, it is incomplete.

The word *shenjing* took root in China, I argue, because of the concomitant discourse of nervous weakness that was introduced from Japan at the same time. Nerves first became important not because of their reputed connection with cognition or perception or volition, or the fine points of physiology elucidated by the Jesuits and medical missionaries. Schreck and Hobson ably described the physiological capacity of nerves, but not their pathology. In this vision, nerves are not things that wear out and cause sickness or debility; they animate and enable human action. Yet it was the idea of

[30] Showing a formative relationship between the emerging medical corpus and the political and cultural unification of the Han. In this vision, we also see an irreducible interdependence of cosmos, state, and body Sivin, Nathan. "State, cosmos, and body in the last three centuries B.C." *Harvard Journal of Asiatic Studies* 55.1(1995): 5-37.

[31] On the five mediating apertures (*wuguan*), see, *Lingshu, Wuyue wushi*, 37.2; *Formulas for General Welfare* (1390), (*Puji fang, Fangmai yunqi zangfu, juan 1, Fangmai zonglun, wuchang dalun*).

nervous pathology that took hold first in China's medicine and then soon afterwards in the social imagination. The particular form of nervous pathology that took root was nervous weakness (neurasthenia). Neurasthenia, translated as *shinkei suijaku* in Japanese and then as *shenjing shuairuo* in Chinese, resonated with ideas of depletion that had sustained Chinese medicine since late antiquity. Despite its alien origins, neurasthenia has flourished in China as nowhere else in the world, long after the category was abandoned in the countries of its origin and original popularity. While the idea of nerves is indeed a case of the importation of a Western medical idea, a new idea of physiology, it is not entirely new, being mediated through its resonance with classical notions.

Since the time of Herophilus, nerves have figured centrally in Western thinking about the body, whereas in China the discourse of nerves is quite new. The notion of nerves would thus seem to be a prime example of the incommensurability of traditions. Without question, the internal logic of Western and Chinese medicine is distinct in almost every respect, as is their analysis and treatment of disease.

Yet the bold oppositions that characterize traditional Chinese medicine and Western biomedicine have also masked important resonances. I speak specifically of the thinking behind the idea of nervous weakness. Shared intuitions about depletion played a pivotal role in the entry of nerves into Chinese medicine and society. Part of the persuasiveness of nerves in modern China is its deep-rooted resonance with traditional ideas of depletion. I conclude, then, that the dominant paradigm that currently posits the two traditions as incommensurate, while conceptually and methodologically transformative, also risks eclipsing our understanding of certain shared intuitions about the body.