### DISSECTING MODERNITY: ANATOMY AND POWER IN THE LANGUAGE OF SCIENCE IN CHINA

by

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## Abstract

This study analyzes the construction of modernity by looking at a set of problems that began to be posed in a striking connection in China in the 1910s, related to anatomy, technical language and power. It does so by focusing on a network of people who created and standardized translations for scientific terminology in Chinese, beginning with the terminology for anatomy. This network, lasting from 1915 to 1927, extended to three hundred members, but this study keeps the focus on a much smaller number. Anglo-American physicians were represented by Philip Cousland and Yu Fengbin. Mediating between missionaries and Chinese elite physicians were members of the Jiangsu Provincial Education Association like philologist Shen Enfu, but also Yu Rizhang, also head of the YMCA. Overshadowing these men was Dr. Tang Erhe, government representative and leader of Japanese-trained physicians. Only several years earlier, Tang had almost single-handedly established legal, routinized dissection as the basis of medical education in China. The activities of these men reveal the problems of how scientific modernity would be established as a new orthodox epistemology in the Chinese context.

This study examines the rapid shift, in China, from a cosmology centered in Confucian orthodoxy and the institution of the imperial examination system toward a scientific worldview based on material practices like anatomical dissection and bolstered by a vast new technical terminology. In China in 1910 China was still the Qing empire, anatomy was illegal and medical education occurred only in master-disciple relationships. By 1920, these conditions had changed. Even as politics deteriorated, new forms of mundane power were established. The JPEA-Joint Terminology Committee network coincided with, and accelerated trends towards professionalization, first among anatomically-based physicians, but also scientists and educators. Professional groups formed in 1915, publishing the results of the committee and related attempts to regulate the medical field. This regulation led directly to attempts to abolish Chinese medicine. By following members of this committee, we see the institutionalization of anatomically-based medicine in China through its technical language and anatomical practice. We also see a new form of power that sought to eliminate ambivalence through reductionism.

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# List of Abbreviations

Beijing daxue rikan 北京大學日刊 [Beijing University Daily]
Beijing shi dang'an guan 北京市档案馆 [Beijing Municipal Archives]
China Medical Board, Inc. Archives [located at RFA].
China Medical Commission of the Rockefeller Foundation. 1914. Medicine in
China. Chicago: Univeristy of Chicago Press.
Jiangsusheng Jiaoyu Hui 江蘇省教育會 (Jiangsu Provincial Education
Association, Education Association, Association)
Jiangsusheng Jiaoyuhui Yuebao 江蘇省教育會月報 [JPEA Monthly]
Yixuemingci shenchahui 醫學名詞審查會 [Joint Terminology Committee, Joint
Committee, Committee]
Zhonghua Yixuehui 中華醫學會 [National Medical Association, 1915-1932;
Chinese Medical Association, 1932-present]
Zhonghua Yixue Zazhi 中華醫學雜誌 [National Medical Journal, 1915-1932,
Chinese Medical Journal, 1932-present]
Peking Union Medical College
Rockefeller Foundation Archives.
Zhonghua Minguo Yiyao Xuehui 中華民國醫藥學會 [Republic of China Medico-
Pharmaceutical Association]
Zhonghua Minguo Yiyao Xuehui Huibao 中華民國醫藥學會會報 [Journal of the
ROCMPA]
Kexue 科學 [Journal of the Science Society of China]
Zhongguo Kexueshe 中國科學社 [Science Society of China]
Shen Xinqing xiansheng Wenji 沈信卿先生文集 [Collected Writings of Mr. Shen
Xinqing]

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It was in a second group that I came to gain confidence in my ideas about what I would say about that document (and hundreds more), a group called *Wangshe* 望社. This group was formed out of connections built in seminars and the Choi building document reading groups. The energy and commitment to our work and each other lead to deep friendships and collaborations. I would like to thank Dai Lianbin, Zhang Dewei, Tim Sedo, Desmond Cheung, Malcolm Thompson, Huang Xin, Craig Smith, Anna Belogurova, Frederick Vermote, Dominic Meng-hsuan Yang, Robban Toleno, Kelly Hammond, Paola Iovene, Karl Wu, Guo Weiting, Tom Woodsworth, Sophia Woodman, Leslie Hsieh, Nick Simon, Noa Grass, Heidi Kong, Alex Ong, and Yoel Kornreich. Many graduate students crossed my path at UBC, but especially supportive has been Chelsea Horton. Thanks also to Kelly Whitmer, Phil Van Huizen, Eva and Yvan Prkachin, Patrick Slaney, Jaimie Sedgewick, Henry Trim, and Cory Fairley, Allen Chen, Erin Williams, Steve Ney, Jack Hayes, Wu Yang, Kelly Cairns. Congrats to all those who are already Ph.Ds and Godspeed to those still working!

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### Introduction: dissecting modernity

Government is a *problematizing activity*: ... [t]he ideals of government are intrinsically linked to the problems around which it circulates, the failings it seeks to rectify, the ills it seeks to cure. Miller and Rose, 2008<sup>1</sup>

The methods of the new thought tide are the study of problems ... the future tendency of the new thought ... should be to lay emphasis on the study of problems important to life and society ... to reorganize our national heritage with scientific method.

Hu Shi 胡適, 1919<sup>2</sup>

This study seeks to analyze the construction of modernity by looking at a particular set of problems that began to be posed in a striking connection in China in the 1910s, related to anatomy, technical language and power. It does so by focusing on a network of people who aimed to create and standardize translations for all scientific terminology in Chinese, beginning with the terminology for human anatomy. This network extended to about three hundred members (see appendix 5), but this dissertation keeps the focus on a much smaller number who are both representative and extraordinary at the same time. Anglo-American missionaries were led by Dr. Philip B. Cousland, while Anglo-American-trained Chinese physicians were led by Dr. Yu Fengbin (兪鳳賓 Voonping Yui). Mediating between missionaries and Chinese elite physicians were key members of the Jiangsu Provincial Education Association like philologist Shen Enfu 沈恩孚, but also Yu Rizhang (余日章 David Yui), who was one of China's most prominent Christians as head of the YMCA. Yet almost overshadowing these men was Dr. Tang Erhe 湯爾和 who was not only named the government representative to the early terminology meetings, but was also head of the Japanese-trained group of physicians, and was the man who almost single-handedly established legal, routinized dissection as the basis of medical education

<sup>&</sup>lt;sup>1</sup> Miller and Rose 2008: 61.

<sup>&</sup>lt;sup>2</sup> Quoted in Chow 1960: 219.

in China. These five men and their interlocutors will make many appearances in the study to follow, but biographies, prosopographies or even human agency are not the point of my account. Rather, their activities reveal the larger problems of how scientific modernity would be established as a new orthodox epistemology in the Chinese context.

These problems and the activities related to diagnosing and attempting to resolve them do not comprise all of Chinese modernity, but, it will be argued, they comprise an essential, and understudied, component of it. Denigrated as the "Sick Man of Asia" 東亞病夫 (dongya bingfu) as it was forced into the competitive nation-state system characterized by industrial capitalism and industrial warfare, China adopted this series of problems defined by the globalizing system into which the late Qing imperium (1895-1911) and new Republican state (1912-1927) were compelled by force of arms and economic blackmail to enter.<sup>3</sup> As we will see at various times in this study, the problems may not have been completely new, but the way they were posed and the solutions offered were radically new. Most important to this study, the language in which they were posed was new. The basic problem, to which all others were connected by one or two degrees, as posed by Yan Fu, was how to renew China's wealth and power (fugiang 富強). The new solution was to create a modern group (qun 群, Yan's term), and then a society (shehui 社會, Japanese term), that could be counted and quantified and organized in such a manner as to extract new forms of wealth and power from nature, on the one hand, and from the individual and collective bodies of society, on the other. Science as a method of social organization and inquiry would accomplish this. The widely recognized basis of science and the scientific method was a well-honed method of reductive analysis-dissection.

<sup>&</sup>lt;sup>3</sup> The imperialist wars from 1839-1900 forced the Qing to its knees, while the subsequent indemnities broke its back, especially those resulting from the Boxer Settlement.

Anatomy and dissection were not just about scalpels and cadavers but came to be considered the necessary basis of medicine and of all of science. Anatomy as method, shorn of its medieval and early modern religious motivation of searching for the divine spark of life, and purged of the residue of an anatomical renaissance of the ancients (Aristotle),<sup>4</sup> nonetheless retained the power of reduction. Reductionism, by isolation, identification, and classification, was, and is, a powerful method of increasing man's understanding of and power over nature. Let me be clear, however: the scientific method, if there is a single method, should not be identified as merely a crude reductionism.<sup>5</sup> The *methods* of Euro-American (now global?) science(s) have always included unifying theories, and attempts at scientific holism and interdisciplinarity, and certainly the pendulum in many fields today has shifted towards such attempts.<sup>6</sup> But the power of the sciences to put things together is predicated on first reducing them to the smallest identifiable component: from Harvey's dissected veins and arteries circa 1628, Bichat's tissues circa 1800, Schleiden and Schwann's cells circa 1839, Haeckel's eggs and embryos circa 1870, Pasteur, Koch and Lister's bacteria circa 1880, Morgan's *Drosphila* fly genes circa 1910, to Hopkins'

<sup>&</sup>lt;sup>4</sup> Cunningham 1997; 2001.

<sup>&</sup>lt;sup>5</sup> Reductionism involves a series of debates among biologists themselves that can be simplified as ontological reductionism (each organism is governed by nothing but molecules and their intereactions, also called physicalism or materialism, a stronger version argues that each biological process is identical to a physico-chemical process), methodological reductionism (the idea that biological systems are best investigated at the lowest possible level), and epistemic reduction that argues that knowledge from one branch of science (studying lower forms) be used to better understand another (studying higher forms). Brigandt and Love 2008. My use of reductionism here is connected to ontological and methodological reductionism as described by Bridgandt and Lowe. My goal is not to invent a "nonexistent reductionist—the sort that everybody is against, but who exists only in their imaginations---[who] tries to explain complicated things *directly* in terms of the *smallest* parts" as a straw man against "hierarchical" reductionists like Richard Dawkins. Dawkins argues for explaining each level of phenomena by the level below it, so we would explain a car by various parts in the engine like the fuel injectors, rather than reducing to the level of atoms, electrons and quarks. Dawkins 1986:13.

<sup>&</sup>lt;sup>6</sup> In science, environmental biology is one such field that necessarily crosses multiple boundaries dividing various sciences, and the much deeper divide between nature and culture. See the work of biologist Grace 2006 for a statistical account that uses multiple reductionist hypotheses to move beyond strict reductionism towards more biological realism. Thanks to Paul Weidman for this reference. For sociological accounts moving beyond reductionism in ecology and biology, see Beck 1995 and Latour 1999.

amino acids circa 1912.<sup>7</sup> These scientists, some still driven by a search for the divine spark of life (vitalism), but the latter looking exclusively for biochemical and materialist explanations for the origins and maintenance of *bios*, nonetheless all sought the answers in small, even microscopic, reduction. So Schwann, in 1839 would use the smallest part (cells) to argue for a unified biology of animals and plants: "The object of the present treatise is to prove the most intimate connexion (*sic*) of the two kingdoms of organic nature, from the similarity in the laws of development of the elementary parts of animals and plants."<sup>8</sup> So anatomical reduction may, counter-intuitively, lead to interdisciplinarity and grand theories of nature and the place of humans within it.<sup>9</sup>

It is worth examining another example in some detail to illustrate the centrality of reductive dissection and taxonomic description to the life sciences—that of Charles Darwin and his collaborators. Among the many skills Darwin developed in his life were zoological dissection and taxonomic description and naming of anatomical parts. In 1834, while in South America, Darwin would lament about the imprecision of his dissecting skills: "I do so wish I was a better hand at dissecting."<sup>10</sup>

Charles Darwin did not feel confident publishing his theory of evolution until after he had a large number of meticulously recorded examples of species level evolution. One of those

<sup>&</sup>lt;sup>7</sup> On Harvey see Harvey 1889 [1628]; on Bichat, see Bichat 1812; Ackerknecht, 1967; Foucault 1991 [1973]; on Schleiden and Schwann's cell theory see Schwann, trans. Smith 1896 [1839]; Lawrence 2009; on Haeckel see Haeckel's many works in full tex at Project Gutenberg, especially *The Evolution of Man Vol. 1 and Vol. 2.* (http://www.gutenberg.org/browse/authors/h#a2037); Hopwood 2009; Nyhart 1995; Richards 2008; for a summary of Pasteur, Koch and Lister on microbiology, see Amsterdamska 2009; on Morgan, see Morgan 1908; Kohler 1994; Burian and Zallen 2009; on Hopkins see Needham 1949; Kohler 1982.

<sup>&</sup>lt;sup>8</sup> Schwann, trans. Smith 1896 [1839]: ix.

<sup>&</sup>lt;sup>9</sup> The connection between anatomical reduction and interdisciplinarity or grand theories of nature is not, however, counterintuitive to scientists in action. Thanks to Dr. Daniel Pauly who made this clear to me, and for referring me to the Darwin Correspondence Project below, and to the more recent scholarship on Darwin that corrects the myth that Darwin himself dissected "Darwin's Finches." On this last point, see Grant 1999, but also Sulloway 1982.

Sulloway 1982. <sup>10</sup> Darwin to Henslow, J. S. 24 July & 28 Oct & 7 Nov 1834, accessed on the Darwin Correspondence Project, (http://www.darwinproject.ac.uk/entry-251, 27 July 2012).

examples was based on collaboration with London ornithologist John Gould who was able to dissect and name the finches Darwin had collected in the Galapagos Islands.<sup>11</sup> Another of those examples was demonstrated through painstaking comparative anatomy of barnacles. Over eight years, Darwin compared the anatomy of every specimen he could get his hands on with the abnormal Chilean barnacle nicknamed "Mr. Anthrobalanus."<sup>12</sup> By 1846 he was much more confident and had worked out much of the technical terminology that enabled him to identify minute differences, "I have had two mornings more of dissection & made out some points pretty well-the articulation under [the] mouth is one of the most distinct in whole body; the cheirotherium steps *mostly* point upwards, but some downwards & some obliquely."<sup>13</sup> According to some scholars, the anatomical reduction of barnacles made Darwin's name in science with the four-volume work A Monograph on the Sub-class Cirripedia. Darwin apparently felt that without having published his painstaking work based on mundane manipulations with scalpel, preservation chemicals, and microscope his theory of evolution would not have been accepted.<sup>14</sup> But aside from the processes of dissection, there was another crucial matter to the power of Darwin's unifying theory: naming and classifying.

In a section of his introduction to *Cirripedia* called "On the names given to the different parts of Cirripedes," Darwin ruefully remarks that he had "unwillingly found it indispensable to

<sup>&</sup>lt;sup>11</sup> Grant 1999; Grant and Grant 2008; Sulloway 1982.

<sup>&</sup>lt;sup>12</sup> Sexual reproduction was a key part to understanding the evolution of the crustaceans, and in Mr. Anthrobalanus he discovered a genuine oddity, "The probosciformed penis is wonderfully developed... when fully extended it must equal between eight and nine times the entire length of the animal!" Darwin 1854: 26.

<sup>&</sup>lt;sup>13</sup> Darwin to John D. Hooker, 6 November 1846, (<u>http://www.darwinproject.ac.uk/entry-1018</u>), accessed 27 July 2012.

<sup>&</sup>lt;sup>14</sup> This may be taken as a controversial point for some Darwin scholars, but it seems reasonable to me that Darwin was able to succeed because of his well-established reputation producing solid empirical work: "Darwin's reputation, already well established by his theory of coral-island formation, his work on the geology and natural history of South America, and the very solid mongraphs on barnacles, naturally took to itself the credit for the new theory [vs. Wallace]. It is easier to remember a well-known name than the name of a newcomer; thus reputation acts as a self-regenerative circuit." Hardin 1959: 48.

give names to several valves, and to some few of the softer parts of Cirripedes." This was

because the existing terminology for barnacles was in "utmost confusion":

thus, the valve named in the woodcut the "Scutum", has been designated by various wellknown naturalists as the "ventral," the "anterior," the "inferior," the "ante-lateral," and the "latero-inferior" valve; the first two of these titles have, moreover, been applied to the rostrum or rostral valve of sessile Cirripedes. The "Tergum" has been called the "dorsal," the "posterior," the "superior," the "central," the "terminal," the "postero-lateral," and the "latero-superior" valve. The "Carina" has received the first two of these identical epithets, viz. the "dorsal" and the "posterior;" and likewise has been called the "keel-valve."

The very success of science in the nineteenth century led to a profusion of Latin terms in the

taxonomic sciences.<sup>15</sup> Darwin went on:

The confusion, however, becomes far worse, when any individual valve is described, for the very same margin which is anterior or inferior in the eyes of one author, is the posterior or superior in those of another; it has often happened to me that I have been quite unable even to conjecture to which margin or part of a valve an author was referring. Moreover, the length of these double titles is inconvenient. Hence, as I have to describe all the recent and fossil species, I trust I may be thought justified in giving short names to each of the more important valves, these being common to the pedunculated and sessile Cirripedes.<sup>16</sup>

Before Darwin's theory of evolution was published and began to transform natural studies of life into the modern life sciences that now dominate medical schools and universities around the world, he first spent eight years dissecting stinking barnacles and attempting to standardize the mundane terminology for their most intimate and microscopic parts. This was the same situation in which Chinese physicians, educators, and scientists found themselves in the 1910s—before China could have science they must first establish regularized dissection and its terminology.

John Locke (1632-1704) had said in his *Essay concerning Human Understanding* of 1690 that "ideas and words [are] the great instruments of knowledge," and so "[i]n all discourses

<sup>&</sup>lt;sup>15</sup> Some such directional terms, and their Chinese equivalents, would be debated by the Joint Terminology Committee in China in 1916. Historians of science have tended to skate over the problem of nomenclature, or assumed that it was settled with Linnaeus in the eighteenth century. Nothing could be further from the truth.

<sup>&</sup>lt;sup>16</sup> Charles Darwin 1854: 3-4

wherein one man pretends to instruct or convince another, he should use the same word constantly in the same sense.<sup>17</sup> Such precision and standardization as the spirit of the new inquiries into nature, now known as the Scientific Revolution,<sup>18</sup> is indeed what Linnaeus attempted in his various works with Latin terminology.<sup>19</sup> Linnaean Latin binomial nomenclature was established as a principle since 1753 for the basic scientific task of classifying botany, and the apparent power of this method was applied in other fields also.

One such field of classification that predated Linnaean nomenclature was anatomy. The tendency before Linnaeus was toward geographical particularities for anatomical terminology, where national medical heroes discovered new tissues and surfaces within a few years of those in another nation or empire. As we will see in some detail below, the resulting chaos of Latin anatomical nomenclature was recognized as being so severe by the 1890s that German anatomists began to standardize the terminology for anatomy. In response, over the next two decades projects with varying degrees of success were launched to standardize anatomical terminology for vernacular Japanese, English and Chinese, among other languages.

To summarize the significance of this example, the power of Darwin's later theory of evolution was firmly based in the mundane laboratory work of dissection, and of classification and naming. It would later be strengthened by its synthesis with Mendellian genetics, investigated in the microscopic dissection, naming and classification of genetic changes in the *Drosophila* flies of T.H. Morgan's laboratories. All of the modern biological sciences can thus be said to originate in anatomy as a method, and terminological clarification as a tool for

<sup>&</sup>lt;sup>17</sup> Quoted in Stearn 1966: 34.

<sup>&</sup>lt;sup>18</sup> On the scientific revolution, see Kuhn 1996 [1962]; Shapin 1998; Henry 2008.

<sup>&</sup>lt;sup>19</sup> Botanical Latin since Linnaeus is considered a separate language from Classical Latin, "now so distant from classical Latin in spirit and structure as to require independent treatment;" "Increasing scientific need during the past 250 years for precision and economy in words has made it distinct from classical Latin and it should be treated as such." Stearn 1966: vii, 3.

classifying. Anatomy as method and terminological clarification are, however, often minimized in many accounts of the history of science.<sup>20</sup> The power of the laboratory over public health, government decision-making, business innovation and profit-making is to be found most basically in an assortment of methods of reduction and isolation (dissection) followed by unambiguous identification (fixing nomenclature).

Later in the introduction and in the chapters to follow, I will return to the details and significance of dissection and fixing nomenclature many times; for now I must pass on to develop a working understanding of modernity. In the next section, dissection is transformed from a material activity of steel piercing flesh into a metaphor for analysis.

### Modernity

Among many ways that have been offered to study the amorphous category commonly called "modernity" or "modernization," one particularly productive method is to analyze modernity as a set of problems as indicated in the epigraphs to this introduction. The starting point for this study is found in comparing these two approaches to "problems". Rather than assume the content of modernity or attempt a definition, this study will examine the problems posed by a set of educators, professionals and intellectuals which they identified with the modern challenge. They, rather like Charles fifty years earlier, occupied themselves with anatomy and nomenclature as a route to having their epistemology displace a previous one.<sup>21</sup> Like Darwin, the mundane activities related to dissection and standardizing technical terminology were part of a larger project. But there were obvious differences. Darwin was a wealthy member of the world's most

<sup>&</sup>lt;sup>20</sup> Surprisingly, in an otherwise wonderful account scientific translation, Scott L. Montgomery only discusses standardization in passing, Montgomery 2000: 197-199. So, like Montgomery's prerogative to write the kind of book he wanted to see, the present account is my attempt to respond to my own "nagging desire for a type of book that I found did not yet exist," Montgomery 2000: ix.

<sup>&</sup>lt;sup>21</sup> On Darwin's conversion from creationism and subsequent argument against the predominant scientific theory of his day, see Sulloway 2006 and Mayr 1991.

powerful empire, his largest problem early in life was how to spend his time and make a name for himself while enjoying his family's vast fortune. A queasy stomach and a doubting mind drove him from medicine and the church respectively and toward what would become (long after his death) a new source of wealth and power, the study of the genesis and transformation of life itself. Early twentieth-century Chinese elites, by contrast, looked at the vast edifice of British, German, French, Japanese or American power and sought to identify how to establish such sources of wealth and power for themselves and their nation as quickly as possible. The problems were addressed through a series of reforms after 1860 in the self-strengthening movement, and accelerated after the 1895 loss to Japan, and the debacle of the Boxer Uprising in 1900 and the forced reforms that followed after 1902.

Comparing the two epigraphs above, we identify two options for analyzing modernity in China as a set of problems. The historian or social scientist of China can choose to do one of two things: (1) she can take the perspective of historical actors like Hu Shi, taking this set of problems for granted, and then judge the effectiveness of a particular configuration of government officials and societal elites to achieve a solution to the problems thus enunciated, or (2) like Miller and Rose, she can problematize the whole endeavor of modernity + science + social science analysis and describe how they constructed each other. The first option is well represented in the secondary literature and tends toward books and dissertations with titles about the process of China becoming modern: "The <u>X-process</u> of modern China"; "<u>Y-factor</u> and modern China."<sup>22</sup> China either has, or has not, become modern, however much it is trying to do

 $<sup>^{22}</sup>$  This literature is potentially endless, driven no doubt by publishers and authors seeking a quick audience for their work among anyone interested in "modern China." The following list includes some of my favorite books, and some I have not read, so there is no judgment in inclusion, I merely note that such titles tend to reify modernity. Some recent titles with the tag line "X and the making of modern China," see Schneider 2011, MacKinnon 2008,

so. Many historians of my generation were deeply influenced by Jonathan Spence's magisterial and empathetic textbook, which nonetheless left us pondering, "When will *The Search for Modern China* be complete?"<sup>23</sup> Spence is explicit: "this remains a book about an ongoing search rather than about the conclusion of a search." It is worth quoting Spence at length at this point, given that his book is the most widely read history of modern China in the past twenty years:

I understand a "modern" nation to be one that is both integrated and receptive, fairly sure of its own identity yet able to join others on equal terms in the quest for new markets, new technologies, new ideas. If it is used in this open sense, we should have no difficulty in seeing "modern" as a concept that shifts with the times as human life unfolds, instead of simply relegating the sense of "modern" to our own contemporary world while consigning the past to the "traditional" and the future to the "postmodern." I like to think that there were modern countries—in the above sense—in A.D. 1600 or earlier, as at any moment in the centuries thereafter. *Yet at no time in that span, nor at the end of the twentieth century, has China been convincingly one of them.*<sup>24</sup>

Yet Spence does have a substantial section on how Deng Xiaoping made the Four

Modernizations (sige xiandaihua 四个现代化) of agriculture, industry, national defense, and

science and technology into national policy in the 1978.<sup>25</sup> But for many American China-

watchers like Spence, China has not, and will not, become modern until it has achieved Wei

Jingsheng's fifth modernization, "democracy."<sup>26</sup> In the past century, China has arguably

achieved every other mark of "modernity" or "modernization" put forward by Western social

Yeh 2007, Tuttle 2005, Craft 2004, Dunch 2001. For recent titles elucidating "Chinese modernity" see Qian 2011 and Fung 2010. For a very prominent revisionist history of Chiang Kai-shek that attempts to rehabilitate him in "the struggle for modern China," see Taylor 2009. Thornton 2007 examines "state-making and modern China," while Strand 2011 picks up on the Spence note of incomplete transformation by emphasizing an "unfinished Republic." I do not miss the irony that my dissertation title may itself feed into the reification of "modernity."

<sup>&</sup>lt;sup>23</sup> Spence 1990.

<sup>&</sup>lt;sup>24</sup> Spence 1990: xx (emphasis mine).

<sup>&</sup>lt;sup>25</sup> Spence 1990: 653-658. These were initially defined by Zhou Enlai in 1963 人民日报 (31 January 1963). <u>"在上海举行的科学技术工作会议上周恩来阐述科学技术现代化的重大意义 [Science and Technology in</u> <u>Shanghai at the conference on Zhou Enlai explained the significance of modern science and technology]</u> (in Chinese). *People's Daily* (Central Committee of the Communist Party of China): pp. 1. <u>Archived</u> from the original on 2011-10-20 20:52:47.

<sup>&</sup>lt;sup>26</sup> Spence 1990: 659-666. Democracy is usually defined as a system of electoral politics whereby local and national leaders are regularly deposed or reinstated by a majority of votes (or of electoral representatives) buttressed by a strong independent judiciary which limits the powers of detention of the government, party, army and police forces. Far too often the Western liberal "ideal" is held up against the perceived Chinese "reality" in such accounts.

scientists, including industrialization and control of industry by national elites, national sovereignty over its territory (despite simmering conflicts over Taiwan), urbanization, development of massive programs of science and technology including nuclear power and weaponization, development of complex systems of mass transportation, near universal education and a robust system of public health and medical care.<sup>27</sup> Moreover, China itself claims to be democratic—a fact that cannot be dismissed out of hand by scholars throwing stones from the glass houses of highly imperfect democracies.<sup>28</sup>

Most scholarship about China is no longer in the grip of the "modernization" theory of postwar American sociologists like Talcott Parsons or Edward Shils that posited an idealized American development model for third world countries in its sphere of influence, where "quantitative studies of specific social patterns, in which U.S. realities of the moment were naively treated out of context as proxies for all of human social life."<sup>29</sup> Yet the field of China studies nonetheless remains more or less caught within the logic of judging China by the standards of what is now called modernity.

Frederic Jameson has recently argued that this academic trend to discuss modernity in the 1990s and 2000s is an attempt to re-brand modernity away from its "only satisfactory semantic meaning" associated with capitalism, toward a new product, associated with "the information

<sup>&</sup>lt;sup>27</sup> Each area of modernization, especially health and medicine, faces tremendous challenges. As far as democracy, Taiwan has achieved the "fifth modernization" and, however imperfect, there are checks and balances in the PRC between government, party, army, police and judiciary. There is now a significant level of academic and artistic freedom, and even parts of the popular press enjoy freedom to critique and cajole, even if some of the openness has recently been rolled back.

<sup>&</sup>lt;sup>28</sup> On democratic institutions in China, see Ding 2001; on village elections, see He 2007; on democracy and the press in China, see Zhao (Yuezhi) 1998; on the possibilities of democracy or no democracy in China, see Friedman and McCormick 2000; Zhao (Shuisheng) 2000; Goldman 1994; Nathan 1985; On the limits of American democratic institutions, one can do worse than begin with Williams 2011 [1961] and Herman and Chomsky 1988.

<sup>&</sup>lt;sup>29</sup> Skocpol 1984: 2 "That prestigious work set forth a grid of abstract categories through which all aspects of social life, regardless of times and places, could be classified and supposedly explained in the same, universal theoretical terms." Skocpol 1984: 3; Parsons 1951; Shils 1975.

revolution, and globalized, free-market modernity.<sup>30</sup> Such accounts participate in the discursive project of normalizing the neoliberal reforms begun in the 1980s by right-leaning governments and institutionalized by liberal-democratic governments of the late 1990s and 2000s. In other words, academic studies that perpetuate this new definition of modernity are participating in a political project.

While such studies advance knowledge through exposure of hidden archives, they nonetheless tend to participate unwittingly in the very processes of governing which they claim to only observe. So anthropologists, long the stooges of imperialism and state power over the exotic subjects they claimed to study objectively, now warn all scholars to be aware of our privilege and power to change and represent the people, and the very "society" that we study.<sup>31</sup> The way we frame our studies matters. If we become lost, as is so easy, in the logic of our primary sources, we will see only the problems their authors (inside or outside of the state) attempted to solve.

To the degree the great project of modernity has been identified with the growth of the state, then scholarship tends to become stories about state-building. Indeed, much of the scholarship about modern China addresses issues of state and society and state-building. Bourdieu, ethnologist of France's empire warns us, however, "[t]o endeavor to think the state is

<sup>&</sup>lt;sup>30</sup> Jameson 2002: 13. "What we have here is rather the reminting of the modern, its repackaging, its production in great quantities for renewed sales in the intellectual marketplace, from the biggest names in sociology to garden-variety discussions in all the social sciences ... If free-market positions can be systematically identified with modernity and habitually grasped as representing what is modern, then the free-market people have won a fundamental victory which goes well beyond the older ideological victories." Jameson 2002: 7, 9. In such a configuration, socialists, Marxists and other leftists are portrayed as somehow nonmodern and old-fashioned because they are still committed to state-centric modernist top-down planning. In academia, those on the right are inspired by the economics of the Chicago School, while the left has been largely swallowed by the apparently pragmatic "third way" of theorists of this new definition of modernity like Anthony Giddens and Jürgen Habermas.

<sup>&</sup>lt;sup>31</sup> This self-reflective literature of anthropologists is extensive, given the racist origins of anthropology and the ongoing use of (some) anthropologists by the military in America's foreign wars, but see especially Bernard Cohn 1996; Stocking Jr. 1968; 1998. For a particularly scathing account of recent anthropological shenanigans that has had a wide response within anthropology to make distance with the perpetrators, see Tierney 2000; for an accessible summary of the sins of anthropological racism, see Marks 2002: 159-179.

to take the risk of taking over (or being taken over by) a thought of the state, i.e. of applying to the state categories of thought produced and guaranteed by the state and hence to misrecognize its most profound truth."<sup>32</sup> Bourdieu asks us, like Peter Miller and Nikolas Rose in the first epigraph, to become aware of the processes by which governing poses problems that state officials and public intellectuals like Hu Shi (he was both throughout his life), in the second epigraph, identify as "important to life and society." As analysts, then, we will either participate to one degree or another, in the project Hu Shi identifies with "reorganiz[ing] our national heritage with scientific method," or we can take a deep breath, take a long step back and consider the way that problems are forced upon governments and intellectuals. Such an analysis may open up space to see alternatives, but this is beyond the scope of the present work.

I must return to Bourdieu for a moment, and ask how we, as scholars, may become taken over (or ourselves take over) the state through our inquiry. His response to this question is obvious and clearly subversive: we are taken over by the state through our education in the modern school system. Yet as successful products of this system, we are now to doubt it:

School is the state school where young people are turned into state persons and thus into nothing other than henchmen of the state ... The state ... made me compliant towards it ... and turned me into a state person, regulated and registered and trained and finished and perverted and rejected, like everyone else.<sup>33</sup>

Bourdieu's use of Thomas Bernhard's "idiosyncratic rhetoric" of the state school is intentionally hyperbolic. It is hyperbolic doubt, a certain reflexivity, which we should apply to both the object of our study and to our own best thinking. We should question "all the presuppositions and preconstructions inscribed in the reality under analysis as well as in the very thoughts of the

<sup>&</sup>lt;sup>32</sup> Bourdieu 1994: 1.

<sup>&</sup>lt;sup>33</sup> Thomas Bernhard, *The Old Masters*, trans. Ewald Osers, Quartet Books, London, 1989: 27, quoted in Bourdieu 1994: 1.

analyst.<sup>34</sup> This is the reflexivity of the anthropologist. Such reflexivity is echoed in the work of the science and technology studies scholars, many of whom adopt the methodology of ethnography, like Bruno Latour, and whose insights have informed the following work.

This study is about the activities of a group of elite men—educators, physicians, scientists, missionaries, publishers—who standardized the Chinese terminology for medicine and modern science as the foundational task of institutionalizing anatomically-based medicine, science, and modern education generally in China. These men were all connected to each other through the Jiangsu Provincial Education Association.<sup>35</sup> I argue that the proper frame in which to examine this work is to think of their work in the broadest terms possible—they were establishing a school system, in Bernhard's exaggerated terms, based in the ideology of science, from primary to professional education, in order to produce a modern state which incorporates the life and energies—the *bios*—of all its citizens in the most efficient manner possible. There was a link between an anatomically-based view of the body that turned knowledge of death into knowledge of life, a technical language for things that could be perceived and described, and the growth of state power over life—what has been called biopower.<sup>36</sup> I will return to this concept, but a working definition includes the following: the growth of trust in statistical data sets of

<sup>&</sup>lt;sup>34</sup> Bourdieu 1994: 1.

<sup>&</sup>lt;sup>35</sup> See chapter two.

<sup>&</sup>lt;sup>36</sup> David Macey offers perhaps the most concise and accurate description of biopolitics as a product of Foucault's 1978-79 lectures: "Biopolitics is Foucault's term for the attempts made by governments to rationalize the problems posed by the existence of a population, namely health, hygiene, birth-rates, longevity and race. Biopolitics is a matter of treating the social body, and it provides the rationale for the formulation of health policies from the eighteenth century onwards." Macey 2000: 43. The irony is that it is now obvious that the lectures from 1977-78 titled *Security, Territory, Population* (Foucault 2007), were more addressed to biopolitics than the ones of the following year which have been published under the title *The Birth of Biopolitics* (Foucault 2008) which were more addressed to the emerging relationship between liberalism and neoliberalism. Foucault describes bio-power thus: "By this I mean a number of phenomena that seem to me quite significant, namely, the set of mechanisms through which the basic biological features of the human species became the object of a political strategy, of a general strategy of power … how … modern Western societies took on board the fundamental biological fact that human beings are a species," (2007: 1); and biopolitics as "[1]he development in the second half of the eighteenth century of what was called *medizinische Polizei*, public hygiene, and social medicine … [which] aims to treat the 'population' as a set of coexisting living beings with particular biological and pathological features, and which as such falls under specific forms of knowledge and technique." (2007: 367).

populations (whether of subjects, citizens, wildlife or microbes) and attempts to manage such statistical trends with public health, hygiene, and racial policies.<sup>37</sup>

While this study has benefitted from many focused studies on education, science, medicine, language, elites and the state in modern China, until recently many of them have judged early twentieth century China a complete failure in state-building. Let's look at the specific case of medicine to illustrate how this account will diverge.

### Problem: China as "the sick man of Asia"

One hundred years ago, China was subjugated to foreign powers, and considered the "Sick Man of Asia," a condition carried over since at least the 1860 Arrow War and the Anglo-French Joint expedition to occupy Beijing and burn the Summer Palace.<sup>38</sup> The new Republic of China was socially and morally pathological (seen in anti-opium or anti-prostitution movements), economically ailing (seen in chronic indebtedness), and politically fragile (seen in the almost immediate devolution of the Republican system to autocratic monarchy under Yuan Shikai). And for physicians trained in the new laboratory medicine coming out of Europe, America and Japan, China was also just plain sick. Disease was rampant and holding China's population hostage. Laboratory medicine and public health vaccines and quarantines offered large-scale solutions to many of these problems, but the concerned physicians had almost no medical system to put them into effect. If only Chinese physician-scientists had more political influence as had Rudolph Virchow in Bismark's German Confederation or Nagayo Sensai in Meiji Japan; if only physicians and their allies could mobilize people on a mass level to eliminate the conditions and vectors of epidemics; if only they had money to invest in the institutions of biopower—urban

<sup>&</sup>lt;sup>37</sup> On the origins of statistical thinking, see Porter 1986; 1995; Hacking 1990.

<sup>&</sup>lt;sup>38</sup> On "Sick Man of Asia," see Heinrich 2008; Leung 2009; on the 1860 turning point, see Hevia 2003.

hospitals and rural clinics, elementary and secondary schools, model prisons and quarantine wards, hygienic quarters for urban working classes and poor; if only Western medicine and its strange methods could be understood and accepted by the people so that they would adopt technologies of the self to discipline their bodies and protect themselves from disease.

Leaders of the young professional association for English-speaking physicians, the National Medical Association (founded in 1915) posed the problem of instantiating power over life in the first issue of their journal. One of their number, identified by the initials E.S.T., drew an amateurish but nonetheless powerful image posing the problem of biopower as a dramatic battle between disease and the fledgling medical profession: "Medical work in China is like a Little child trying to wrestle with the giant Disease." Little boy Medicine, although properly attired in a modern Sun Yat-sen suit (no more scholar's robes) and short cropped hair (good-bye to the long, braided queue of subjugation to the Manchus), backed by "medical education" and armed with a policeman's Billy club called "public interest" was nonetheless easily kept at bay by the strong arm of the giant, labeled "public indifference." Why could the people not see the problem clearly, along with the solutions offered? The giant Disease (bing 病), a fierce monster apparently inspired by a two-horned Tibetan Buddhist demon, was naked except for swaddling bands of "ignorance," "quackery" and "superstition"-a veiled reference to the non-standardized or regulated Chinese medicine as practiced and experienced by most of China's people. Although the arm of public indifference seemed strong enough to single-handedly neutralize the



Figure 1 The giant disease "Medical work in China is like a little child trying to wrestle with the giant disease." *National Medical Journal* 1915 1:1, n.p. Public domain.

efforts of the medical profession, the giant Disease had far more powerful and deadly weapons at his disposal, including a quiver full of arrows identified as "patent medicine."<sup>39</sup>

Far more terrifying, however, is the cat-of-nine-tails wrapped around the strong left arm of the giant Disease—"no sanitation"—and tipped with diseases almost too numerous to identify. Plague, hookworm, pneumonia, leprosy, malaria, whooping cough, meningitis, diphtheria, scarlet fever, measles, typhoid, typhus, dysentery, smallpox and tuberculosis-each with a helpless Lilliputian victim tossed hither and yon by the powerful chains of the giant Disease, and threatened by the raised right foot of "poverty." It wasn't that scientific medicine had no weapons against disease. What it lacked was mundane institutional power and raw political muscle.

E.S.T. certainly refers to E.S. Tyau, (1878-1958 刁信德 Diao Xinde)<sup>40</sup> who elsewhere in the journal spelled out his goals in English (only) calling for an expansive role for medicine in an editorial for the new profession. For Diao, the very recent increased "scope of modern medicine" required an increased cooperation between profession, college and government to intervene:

Moreover the science of medicine is entering more and more into the various activities of modern life. The complexities of the problems constantly presented by disease and by the conditions of modern social life and the multiplicity of the means of investigating them, the laboratory facilities which are required to that end, the relation of medicine to public health matters of sanitation both for the individual and for the public, all attest to the marvelous activity of the medical mind.<sup>41</sup>

<sup>&</sup>lt;sup>39</sup> Many of these were produced and sold by overseas Chinese, see Sherman Cochrane 2006.

<sup>&</sup>lt;sup>40</sup> Common spelling of his name was E.S. Tyau, although in the NMA directory of 1932 it was written as Tiao Hsin-te, co-founder of the National Medical Association 中華醫學會 (Now known in English as the Chinese Medical Association), graduate of St. John's University Medical School (1909) and University of Pennsylvania School of Public Health (1915), and subsequently professor and dean at St. John's for thirty years, while also occupying leading roles at Tongren Hospital, Hongren Hospital, and the Red Cross Hospital, all in Shanghai. <sup>41</sup> Diao 1915: 1.

Yet these accomplishments were all abroad, in foreign countries, and medicine in China itself had not yet "emerged from the shadows of the dark ages."<sup>42</sup>

The problem posed by Diao, then, may be restated: how to increase the power of little boy Medicine such that he can keep the giant Disease at bay, if not vanquish the giant completely. The image includes some hints: As of 1915 China had "No System" of medicine or public health, and "No Finance" to implement it. Most of China was untouched by little boy medicine, and the treaty ports were a hodge-podge of semi-colonial administrative systems.<sup>43</sup> Government was too busy with wars and raising taxes and foreign loans, both in order to pay for new wars and pay off previous loans and indemnities.

A more fundamental lack is implicit—language. For Diao and his colleagues reading the bilingual *National Medical Journal (Zhonghua Yixue Zazhi* 中華醫學雜誌), the problem was best expressed with the English of their professional education in Britain and the United States. Diao himself had completed his M.D. at the English only institution for elite Chinese, St. John's University, Shanghai, and his Master's of Public Health at the University of Pennsylvania. Like his fellow co-founders of the National Medical Association and its journal, Wu Liande and Yan Fuqing, Diao apparently felt that the new medicine was best expressed in English. In Diao's picture, the only Chinese word was on the giant Disease—the word *bing* 病 (disease). It was almost as if, for the physicians of the National Medical Association, illness was identified in the Chinese language (or was Chinese simply more elegant in representing disease?). With China identified so strongly as the "sick man of Asia," this hardly seems to be a coincidence. Some articles in the early issues of the *National Medical Journal* were translated and reproduced in both Chinese and English, yet other items, like Diao's editorial in Issue 1 of Volume 1, were

<sup>&</sup>lt;sup>42</sup> Diao 1915: 2.

<sup>&</sup>lt;sup>43</sup> Rogaski 2004; Leung and Furth 2010.

published only in one of these languages. The implicit problem was one of linguistic engineering—to reform Chinese to speak scientifically. If this transformation could be achieved, then little boy Medicine could overcome the dread monster Disease. Diao's image and editorial is a striking example of how the problem of modern China could be stated as one of China's *lack*. In this case, the lack of a properly financed medical and public health system was perceived as a problem of state-building.

### Modernity and the problem of state-building

The anarchy in China is, of course, very regrettable... [b]ut it would be a mistake to exaggerate the evil, or to suppose that it is comparable in magnitude to the evils endured in Europe ... The number of troops in Europe is enormously greater than in China ... the amount of fighting in Europe since the Armistice has been incomparably more than the amount in China during the same period. You may travel through China from end to end, and it is ten to one that you will see no signs of war ... I am inclined to think that the inhabitants of China, at the present moment, are happier on the average, than the inhabitants of Europe taken as a whole.<sup>44</sup>

Republican China is usually represented it as a series of what would now be called failed states. Yet Bertrand Russell, having spent almost a year in China, wrote in his aptly titled, *The Problem of China*, that the situation there was misrepresented in the British press. Nonetheless, the *political* instability of the new Republic was obvious. Sun Yatsen's presidency was aborted after six weeks. The second president, Yuan Shikai, cowed elected officials with staged army riots (Nanjing delegation 1912), assassinations (Song Jiaoren 1913), and simply abolished the parliament (1914) or even the Republic itself (1915)—Yuan died soon after he rescinded his attempt to make himself emperor (1916). Then, only four years after the end of the Qing dynasty, China descended into warlordism and a series of hot and cold wars between regional factions.<sup>45</sup> A decade later Chiang Kai-shek (Jiang Jieshi) reunited large parts of the country and moved the

<sup>&</sup>lt;sup>44</sup> Russell 1966 [1922]: 33.

<sup>&</sup>lt;sup>45</sup> (Zhili-Anhui War 1920; Guangdong-Guangxi War 1920-1921; First Zhili-Fengtian War 1922; Second Zhili-Fengtian War 1924; Jiangsu-Zhejiang War 1924; Beijing Coup 1924; Yunnan-Guangxi War 1925; Anti-Fengtian War 1925-1926).

capital to Nanjing (1926-28), yet during the period of "national reconstruction" (*jianguo* 建國) known as the Nanjing Decade (1928-1937), widespread warfare in China continued. Civil war persisted between factions in his own Nationalist party, against erstwhile warlord allies (Central Plains War 1930), and in Chiang's endless attempt to wipe out the Chinese Communists (1926-1937; 1945-1949). Meanwhile, the Japanese engaged in a month-long bombardment of the Chinese city of Shanghai (1932). These civil wars continued to ensure that more than 44 percent of the budget went not to state-building, but to war-making, followed by 35 percent to debt service. A full 79 percent of the budget could not go to basic tasks of governing or reconstruction. For medicine and public health, in 1929 the Ministry of Health was able to control only 0.11 percent of the total national budget, and by 1936, with incremental growth it still represented only 0.7 percent.<sup>46</sup> Yet even these numbers were significant compared to the irregular state funding of medicine and health between 1912 and 1928.

Despite, or because of, this failure at what was called by the Nanjing decade reconstruction (jianshe 建設), historians of Republican China have long been interested in a phenomenon they identify as "state-building." State-building as a vector of analysis among social scientists and historians generally examines the accumulation of power within formal structures of the state. State-building, or state-making, as Charles Tilly has called it, has focused on the joint capacities of successful modern nation states to fund and wage war in a competitive nation-state system.<sup>47</sup> Following these priorities in the China field, historians have traced the growth of Chinese state capacity to extract resources in order to maintain a monopoly on organized violence. Philip Kuhn's classic study examined the capacity of the late Qing state to

 <sup>&</sup>lt;sup>46</sup> Yip 1995: 62-63.
<sup>47</sup> Charles Tilly, 1975. For an enlightened recent discussion of state-building and those who seek to escape, see James C. Scott, 2009.

manage the eruptions of rebellion by enrolling non-office-holding gentry and their militias.<sup>48</sup> Prasenjit Duara's influential study observed the process of state involution in rural North China when the regularized civil war of the "warlord era" (1916-1927) forced onerous extractions from farmers, the subsequent flight of gentry talent, and the dissolution of the "cultural nexus of power" they had hitherto held in place. But despite the failure of the traditional nexus of power and the social misery it brought in the wake of its unraveling, in the early twentieth century, resource extraction was to be considered a success for state-building. For Duara, state-building as resource extraction for war-making expanded from the late Qing through the warlord and Nationalist era into the Japanese regime.<sup>49</sup> This was heresy to an earlier generation of historians that saw only *disintegration* of state and society under the Republic.<sup>50</sup> For Lloyd Eastman, for example, Duara's claims seemed "utterly ahistorical" in depicting especially "the warlord era as a time of state building."<sup>51</sup> As James Sheridan had put it in his textbook on the Republican period:

By the early 1920s, with central government a shambles, with provincial and local independence backed by a welter of warlord armies large and small, with the nation's ethical and philosophical guidelines in disarray and disrepute, and the intellectual elite internally divided and alienated from the Chinese peasantry, national disintegration could hardly have been more extreme.<sup>52</sup>

Nor was the promise of reintegration and a strong central state fulfilled in the Nationalist's Nanjing decade to follow (1927-1937), for "Chiang [Kai-shek] not only failed to promote social integration, but his own party and government were shot through with factionalism, corruption and inefficiency." Moreover, the Nationalists "ignored in practice the most progressive aspects of the ideology they preached" and so they "lost any power to persuade or inspire China's vast

<sup>&</sup>lt;sup>48</sup> Kuhn 1980.

<sup>&</sup>lt;sup>49</sup> Duara 1988.

<sup>&</sup>lt;sup>50</sup> James Sheridan, *China in Disintegration*; Lloyd Eastman 1974.

<sup>&</sup>lt;sup>51</sup> Lloyd Eastman, "State Building and the Revolutionary Transformation of Rural Society in North China," *Modern China*, 16:2 (1990): 232.

<sup>&</sup>lt;sup>52</sup> Sheridan 1975: 21.

population."<sup>53</sup> The common wisdom was that effective state-building in modern China began only with the CCP policies developed in Yenan and beyond.

Literate elites of the early Republic and Nationalist era left behind endless writings decrying the failure of the state to match their expanding expectations of state capacity, like Diao's medical David to Disease's Goliath. In chapters to follow we will likewise encounter the abject disappointment, by the 1930s, of physician-politician Tang Erhe (chapters 5, 6, and 7) and philologist-educator-politician Shen Enfu (chapter 2 and 4), in the apparent failure of their state and sub-state projects to establish powerful new institutions in China. We should not doubt or diminish the sense of failure encountered by such reformers. But if we attempt to move beyond mere reportage of past attitudes, Bourdieu's "thought of the state," we can look for tectonic changes shifting beneath the stormy surface waters. Evidence for such a tectonic theory of change can be found in the sinological literature. In his chapter in the *Cambridge History of China* on the Republican state, Philip Kuhn noted that local or provincial elite activism in the Republic led to a kind of *unintentional* state-building:

Participation and bureaucracy have been, it seems, interrelated in a close historical nexus; the eagerness of elites (and, to some degree, the broader citizenry) for access to politics did indeed produce some strong surges of institutional reform. But riding the crest were the agencies of the bureaucratic state. These were what remained when the waves receded.<sup>54</sup>

Kuhn's analysis points to the conclusion that "the state" should not be taken as a black box of assumed quantities or deficiencies vis-à-vis civil society, but rather should be understood as the *result* of activities of elites both inside and outside of the bureaucracy. Kuhn and Duara suggest that deliberate power grabs by individuals and political cliques may appear to fail on the plane of

<sup>&</sup>lt;sup>53</sup> Sheridan 1975: 23-24.

<sup>&</sup>lt;sup>54</sup> Kuhn 1986: 360. In comparison, Eastman does acknowledge some "positive and constructive aspects of the warlord period—a growing industry, improved communications, an increasingly cosmopolitan and nationalistic intellectual class" but claims these were not the factors outlined in Duara's argument, Eastman 1990: 232.

classic political history, but their attempts may succeed on another level. The very vocabulary and grammar of power is expanded in the failed attempts of elites like the physicians of the National Medical Association of China. In short, failure to expand state power nonetheless creates greater expectations at both the bureaucratic and popular levels. Failure to fulfill new expectations for increased state capacity does not make such expectations disappear on the state level. Subsequently, successor regimes inherit the expanded linguistic range of state power that they can, and often must, attempt to fulfill. As Miller and Rose have argued, "[t]he ideals of government are intrinsically linked to the problems around which it circulates, the failings it seeks to rectify, the ills it seeks to cure."<sup>55</sup> Modernity as a problematizing activity identifies, and perhaps even creates, new problems to solve, new territories to enclose and regulate. Rather than getting lost in the logic of the state that poses problems, and then as historians judging the state as a success or (more likely) a failure on its own terms, perhaps we can observe the process by which the elites and the state identify new territory to occupy.

In an influential article from 1988, Paul Cohen encapsulated recent scholarship to argue, in a parallel fashion, that we should think twice about labeling the Republic of China as a series of failed states.<sup>56</sup> For Empress Dowager Cixi, Yuan Shikai, and his successor Chiang Kai-shek, we need to differentiate between "intention and result" and move beyond ideological labels of these leaders as "reactionary" which, however satisfying on one level, mask the deeper processes of state-building which continued under their watch.<sup>57</sup> According to Cohen,

<sup>&</sup>lt;sup>55</sup> Miller and Rose 2008: 61.

<sup>&</sup>lt;sup>56</sup> "Failed states" is my term, not Cohen's. Between 1911 and 1927 there were no less than 17 presidents of the Republic of China, the national assembly of elected representatives was suspended more often than it was in session, presidents ordered extra-military assassinations of their political opponents, and Beijing or Nanjing as national capitals did not have the capability to collect taxes from or enforce policies in many provinces.

<sup>&</sup>lt;sup>57</sup>Cohen 1988: 528.

The commonly held view of the Republican era (post-Yuan) as an interregnum between a politically unified late-imperial state and an even more highly unified Communist state is valid enough in terms of the territorial extension of state power. When, however, we shift our focus to the societal reach of this power—the penetration of the state downward to lower social levels ... recent scholarship appears to be tending toward the conclusion that the most characteristic feature of the Republican era may not have been disintegration at all, but rather integration. *No one would deny the existence of high levels of chaos and anarchy during the period. But amid the confusion an intermittent process of state building was under way.*<sup>58</sup>

Cohen's intervention appeared to presage an era of new methods, and new modes of inquiry. Scholarship in the past two decades has subsequently turned toward a more subtle analysis of state-building and state-society relations, building on histories of Chinese industry, education, commerce and elite activity to recognize the full significance of the New Policies implemented after 1902, and especially the end of the Confucian examination system in 1905.<sup>59</sup> The loss of the Qing to Japan in its first modern naval war in 1895, the failure of the Boxer Movement of 1900 to roll back the advancement of Euro-American imperialism demonstrated to Chinese elites and the Qing government that the imperial system centered in the Confucian civil service examination system could no longer withstand Western industrial society and its system of nation-states. In a significant corpus of scholarly literature marked less by attention to the warmaking and mechanisms of fiscal extraction emphasized by the "state-building" model of the 1970s and 1980s, the recent literature of the 2000s tends to emphasize a more diverse set of strategies of government deployed in China. Moreover, the new literature tends to be suspicious of narratives of modernization and of the nation-state.

This new scholarly project, sometimes explicitly and sometimes implicitly, looks particularly to strategies of government based institutionally in medicine, public health, science, social science and the academy or educational institutions more generally. While some of this

<sup>&</sup>lt;sup>58</sup> Cohen 1988: 523, (emphasis mine).

<sup>&</sup>lt;sup>59</sup> This literature is key to chapter two and I will not attempt to list or summarize it here.

literature still pays homage to nationalist discourse (Problem Z and the making of modern China), it tends to move incrementally beyond the straitjacket of nationalist narratives that judge government and elites for solving the problems they identified. This is especially the case with those works of scholarship that have appeared after Prasenjit Duara's 1995 intervention, Rescuing History from the Nation: Questioning Narratives of Modern China, and his follow-up Sovereignty and Authenticity: Manchukuo and the East Asian Modern.<sup>60</sup> Thomas Mullaney has recently questioned the naturalness of the "Han" racial category at the center of the modern Chinese state.<sup>61</sup> Accounts by Timothy Brook, Rebecca Karl, and Rana Mitter and the recent edited volume by Angela Leung and Charlotte Furth on Health and Hygiene in Chinese East Asia, have challenged certainties about which archives hold the papers of "the Chinese state."<sup>62</sup> They raise the question: for whom and by whom is the state being built? The strategies of government described in this new literature were exercised both within and outside of, the formal "Chinese" state: they became visible only with a strong directorial hand panning slowly in widescreen between the Qing empire, the nationalist "Chinese" state, Treaty-Port colonial administrations and the Japanese domination in 1930s Manchuria and occupation in wartime East China or Taiwan from 1895. So we have Ruth Rogaski shifting effortlessly from Meiji Japan to Treaty-port Tianjin and Shanghai and into the Korean war to trace the contours of a discomfiting "hygienic modernity" that incorporates and transforms Chinese bodies.<sup>63</sup> Jia-Chen (Wendy) Fu has examined how biomedical nutrition came to occupy the Chinese body, and Yang Niangun has traced the "re-making" of patients in the radically new institution of the

<sup>&</sup>lt;sup>60</sup> Duara 1995; 2003.

<sup>&</sup>lt;sup>61</sup> Mullaney 2010.

<sup>&</sup>lt;sup>62</sup> Brook 2005; Karl 2002; Mitter 2000; Leung and Furth 2010.

<sup>&</sup>lt;sup>63</sup> Rogaski 2004.
hospital, from nineteenth-century missionary hospitals to the present state and private system.<sup>64</sup> Tong Lam, Yung-chen Chiang and Zwia Lipkin have examined how statistics and social engineering were developed and deployed against "social problems" in social science surveys among the urban poor.<sup>65</sup> Susan Glosser has examined the bourgeois-ification of the Chinese family as a social problem of the New Culture intellectuals, while Robert Culp, Andrew Morris, and Henrietta Harrison have examined the ways in which Qing subjects could be transformed into citizens through, respectively, participation in civics education, capitalist sporting competition, and new rituals disciplining the body.<sup>66</sup> Wen-hsin Yeh, meanwhile, has examined the shift toward "economism" in Shanghai's urban life, while labor historians like Emily Honig, David Strand, Gail Hershatter, and Steve Smith have examined compliance and resistance among the laboring bodies being disciplined in urban factories, brothels and on the streets as rickshaw pullers.<sup>67</sup> Frederic Wakeman's last work could be interpreted in this vein also as an examination of the state discipline of bodies through policing and extra-judicial state terror.<sup>68</sup>

These various components might formerly have been related to the project known as state-building. Although not all of the sinologists listed above would agree with my interpretation of their work, I argue that they have shifted the historical discourse away from the politics of presidents and their officials negotiating with warlords and the Japanese and towards what might be called biopower, power over life itself. Building on this new trend in the sinological literature, this study takes discussion of power in China into relatively new territory. It sees an intersection in the 1910s of language, anatomy and power in the activities of hundreds of Chinese elites who institutionalized science in medical schools, laboratories, universities,

<sup>&</sup>lt;sup>64</sup> Fu 2009; Yang 2006.

<sup>&</sup>lt;sup>65</sup> Tong Lam 2011; Chiang 2001; Lipkin 2006.

<sup>&</sup>lt;sup>66</sup> Glosser 2003; Culp 2007; Morris 2004; Harrison 2000.

<sup>&</sup>lt;sup>67</sup> Yeh 2007; Honig 1986; Strand 1989; Hershatter 1986; 1997; Smith 2002.

<sup>&</sup>lt;sup>68</sup> Wakeman 1995; 1996; 2003.

textbooks and terminology lexicons. The committee of men standardizing terminology began with anatomy and expanded to all the sciences and social sciences. Their activities lay the groundwork for biopower in specific ways, which I will now explore.

There is a striking coherence between this project which I identify with the chaotic warlord period (1915-1927) and Foucault's identification of the anatomo-clinical method with a new, precise language, one century earlier in Revolutionary France. In the Paris hospitals, in the institutionalization of the study of death,

Western man could constitute himself in his own eyes as an object of science, he grasped himself within his language ... from the integration of death into medical thought is born a medicine that is given as a science of the individual.

Anatomy as practice, as a view of the self, as a language, was necessary for the creation of modern man. In his later work, Foucault incorporated the anatomo-clinical gaze into his concept of anatomo-politics as a precondition for biopower. Let us examine these two in turn.

#### From anatomy to anatomo-politics

On the eve of the French Revolution, anatomy was still judged deficient as a useful science, for although "so carefully cultivated, [it] has yet not supplied medicine with any truly important observations."<sup>69</sup> The Renaissance Italian tradition of irregular university anatomical demonstration was transformed in Revolutionary Parisian hospitals where an Enlightenment medicine of classificatory nosology gave way to an anatomo-clinical medicine that made correspondences between patients—organized by symptoms in the upstairs wards—and the lesions discovered in the basement autopsy rooms. The shift in power from Church to state and medical profession over the sick and dead bodies of the poor gave an unlimited number and

<sup>&</sup>lt;sup>69</sup> Louis Sebastien Mercier 1788, quoted in Duffin 1999: 32.

range of pathological specimens for ambitious doctors who soon converged from all over France, Europe and America, to study. Medical schools regularized research and basic teaching in anatomy, and the diagnostic techniques of percussion and auscultation increased the capacity of correspondences to be identified between the living patient and his dissected corpse.

It is uncontroversial to claim that Revolutionary Paris gave birth to anatomo-clinical medicine: the medicine of matching symptoms of the sick patient with lesions discovered in autopsy after death. Erwin Ackerknecht argued for the coherence of Parisian clinical medicine in 1967, and recent work by Dora Weiner and Michael Sauter has confirmed and expanded our understanding of the special urban, revolutionary context, where "a critical shift of power occurred" from religious to secular central management, as nuns were forced to give way to bourgeois physicians:

The anatomo-clinical method required a series of patients to allow for a differential diagnosis of the disease process. It was the city that provided these patients, as well as the cadavers for dissection. The civilian authorities made the doctors responsible for the patients' well-being, thereby sidelining the Church and giving rule over the wards to the doctors ... [poor citizen-patients] had a right to health care but owed society the use of their living bodies and their cadavers for study. This new concept entailed their ready availability in multiple stages of disease and death, making Paris a magnet for medical men, native and foreign.<sup>70</sup>

Although the ideas and practice of clinical medicine had taken shape before the revolution, without the "emotional and intellectual shock of the Revolution" (and surely its violence), there would not have been the opportunity for secular and medical authorities to expand scientific study of clinical pathology.<sup>71</sup> Whereas Enlightenment physicians had been kept from the bodies of patients by nuns, the revolution greatly weakened the power of the religious orders so that

<sup>&</sup>lt;sup>70</sup> Weiner and Sauter 2003: 41.

<sup>&</sup>lt;sup>71</sup> The parallels with Marx's concept of primitive accumulation and its recent updating in Naomi Klein's shock doctrine are striking. Primitive accumulation for Marx is equal to Adam Smith's "previous accumulation," i.e. that accumulation of capital outside of the capitalist system, Marx 1887. Klein's great contribution is to demonstrate in a highly accessible way how such primitive accumulation not only continues to be part of contemporary political economy, but has actually accelerated in recent events, Klein 2008.

"[n]o one questioned the use of pauper patients for teaching purposes nor did anyone protest the use of unclaimed corpses for the study of anatomy and dissection." The French revolution, as a rift in the social fabric, allowed for a medical revolution of scale and power over the bodies of those too poor to protect themselves: "These bodies, living and dead, were absolutely essential to the research and teaching of the Paris School."<sup>72</sup> This was a new enclosure of the commons, but now instead of common pastures, it was the sick and dead bodies of the poor that would be enclosed by "society" under the control of physicians.<sup>73</sup> Moreover, diagnosis and analysis were far more important in the hospitals than therapeutics. Without anesthetic (widely introduced to surgery in the 1840s), and antisepsis and asepsis (1867), knowledge gained from opened corpses was still of little therapeutic use. The primary reason Darwin gave up on medicine as a profession was that he was repelled by the screams of a surgical patient being operated upon in those days before anesthetic.

Historians of medicine have sometimes perceived Foucault's 1963 account (1973 in English) of this revolution as an "indictment" of doctors, a denunciation of a bald-faced conspiracy to establish "power over the hospitalized indigent patient,"<sup>74</sup> sometimes associating Foucault in with anti-medicine advocates like Ivan Illich. Such criticisms misunderstand Foucault's goals and method: "I should like to make it plain once and for all that this book has not been written in favour of one kind of medicine as against another kind of medicine, or against medicine in favour of an absence of medicine."<sup>75</sup> Moreover, Foucault is hardly interested in condemning doctors for their actions or words; for him "[w]hat counts in the things said by

<sup>&</sup>lt;sup>72</sup> Weiner and Sauter 2003: 25.

<sup>&</sup>lt;sup>73</sup> According to a growing body of research, the enclosure of the commons has now extended to the genetic level. Any database search of "biopolitics" and "genetics" will turn up hundreds of items in this vein.

<sup>&</sup>lt;sup>74</sup> Weiner and Sauter 2003: 25.

<sup>&</sup>lt;sup>75</sup> Foucault 1973: xix; compare Foucault 2004, "The Crisis of Medicine or the Crisis of Antimedicine," a recently translated lecture given in Brazil in 1974, where Foucault makes clear that he thinks Illich is on the wrong path.

men is not so much what they may have thought or the extent to which these things represent their thoughts, as that which systematizes them from the outset, thus making them thereafter endlessly accessible to new discourses and open to the task of transforming them."<sup>76</sup> It is an archaeological project of making us aware of buried intellectual artifacts, not condemnation that drives his work. In a lecture given in 1974, Foucault is least circumspect, "...what does make sense—and it is in this context that certain historical studies may turn out to be useful—is to try to understand the health and medical 'take off' in Western societies since the eighteenth century." Why? "It is important to know what model was used and how it can be changed."<sup>77</sup>

Certain kinds of knowledge were possible before the revolution of anatomo-clinical medicine, and not others; for Foucault, it was the possibility of thinking in a new way that was important. Foucault asks us to think the unthinkable: to walk a mile thinking in pre-modern European minds, if you will, in order to escape the scientistic straitjacket of thinking that we have reached the end of intellectual history. We now [1963] see an anatomical body that is the seat of disease, "[b]ut this order of the solid, visible body is only one way—in all likelihood neither the first, nor the most fundamental-in which one spatializes disease." This "exact superposition of the 'body' of the disease and the body of the sick man is no more than a historical, temporary datum," we have not reached the end of medical history, "there have been, and will be, other distributions of illness."<sup>78</sup> Foucault talks of a two hundred year long structure "that has not yet been unraveled," one of which "we are only just beginning to disentangle a few of the threads," that had "constituted the dark, but firm web of our experience."<sup>79</sup> Instead of the standard story of doctors blinded by prejudice and tradition now "free at last of theories and

<sup>&</sup>lt;sup>76</sup> Foucault 1973: xix.
<sup>77</sup> Foucault 2004 [1974]: 19.
<sup>78</sup> Foucault 1973: 3.

<sup>&</sup>lt;sup>79</sup> Foucault 1973: 199.

chimeras" who now were able to "approach the object of their experience with the purity of an unprejudiced gaze," Foucault traces how it was historically possible for Pinel, Bichat and their students to see disease in the anatomical body.

In *The Birth of the Clinic* there are two fundamental aspects of the anatomo-clinical method that are key to this study: the medical gaze and the language of observation. Both are based in anatomy, and both lay claim to a new precision. The key here, is language. That which was visible must be made expressible, "by saying what one sees, one integrates it spontaneously into knowledge," but this performative creation of gaze and language is "also to learn to see, because it means giving the key of a language that masters the visible."<sup>80</sup> The anatomo-clinical gaze was an epistemology of the body institutionalized; institutionalized both in language and institutions of regularized dissection. These took power to establish. The connection between anatomy, language and power is drawn. These three are implicated in the extension of Euro-American medicine to China.

The landslide change for mixing power and anatomical investigation occurred when Wu Liande (Wu Lien-teh, 1879-1960) incorporated Qing bodies into a biopolitical regime during the pneumonic plague epidemic in Northeast China of 1910-1911. With no cure available, Wu's training in the best medical laboratories of Cambridge, Liverpool, London, Paris and Halle led him to perform a post-mortem dissection of the corpse of a female Japanese inn-keeper near Harbin. With his subsequent microscope work, Wu Liande was able to establish the presence of pneumonic plague lesions and pure cultures of *B. pestis*. Human dissection and a makeshift, but controlled laboratory were the lever that Wu needed to overturn the Qing political economy of

<sup>&</sup>lt;sup>80</sup> Foucault 1973: 114.

filial somatic integrity and non-cremation embodied in the Kangxi Edict.<sup>81</sup> This enabled him to cable immediately to Beijing to force "consent to drastic measures, such as compulsory house-to-house visitation, segregation of contacts in camps or wagons, and cremation of thousands of corpses which had accumulated at Harbin and elsewhere." The carefully tabulated cost of "60,000 lives and … monetary losses estimated at 100 million dollars" exchanged for the opportunity to "definitely [lay] the foundation for systematic public health work in China," were implicitly deemed as a worthwhile trade.<sup>82</sup> Wu Liande's post-mortem examinations, laboratory and diplomatic work established a tenuous level of Qing sovereignty that was maintained under the Republican government and Wu Liande's Manchurian Plague Prevention Bureau until the formation of Manchukuo in 1932.<sup>83</sup> A strong precedent had been set for medical professionals to invade and cut open the bodies of individual subjects/citizens in the interests of biopower.

Early PRC historian of anatomy in China, Wang Youqi, describes in a matter of fact nature the expansion of western capitalism and its forms of knowledge as a product of violence and power:

As for the establishment of modern Chinese anatomical studies (*jiepouxue* 解剖學), it really began at the end of the nineteenth century, only sixty years before the present day [1956]. This beginning came as the global situation was in transformation, facilitated by Euro-American scholarship and Japanese education, in the wake of the power of imperialist incursions into our country, thus compelling our country's intrinsic, long-held feudal education system to adopt new ways. After the Sino-Japanese war (1894), our country began establishing schools and hospitals, and anatomy was a compulsory course. This was the basis of how China's modern (*jindai*) anatomical studies were germinated.<sup>84</sup>

I take Wang's statement seriously, and not merely as a product of the re-education movements of

<sup>&</sup>lt;sup>81</sup> See Lei 2010. See Latour 1999 for more on how a scientist moves from a position of weakness vis-à-vis the forces of nature and society, to a position of strength by moving from the uncontrolled site of a farm/urban slum to the controlled site of a laboratory. The laboratory then becomes a "lever" which can move the world.

<sup>&</sup>lt;sup>82</sup> Wong and Wu, 1932: 431.

<sup>&</sup>lt;sup>83</sup> Nathan 1967.

<sup>&</sup>lt;sup>84</sup> Wang Youqi 1956: 2. I have deliberately translated "*woguo* 我國" as "our country" to emphasize the contrast with his use of "*zhongguo* 中國" whereas usually they are both translated as "China."

the mid-1950s (which it nonetheless reflects).<sup>85</sup> Wang is a physician and an anatomist, writing for the pre-eminent scientific society of modern China (the Science Society of China), with vested interests in seeing anatomically-based medicine dominate traditional "feudal" forms, and yet he observes that anatomy did not win its way into China because it was more true. The adoption of anatomy and its view of the body was a product of violent displacement of a preexisting social system and its forms of knowledge, not unlike that of Revolutionary France where, "[o]ld power structures, including the Paris Faculty of Medicine, were swept away, and with them the support for classical medicine of a literary and biographical form."<sup>86</sup>

As the European capitalist world-system spread to China through the imperialist wars of the nineteenth century, all of China's existing systems of social organization and knowledge were challenged, including late imperial Chinese views of the body and the polity.<sup>87</sup> The institutions of Confucian-imperial exceptionalism and their ways of knowledge gave way to the institutions and knowledge of the competitive, multi-polar, nation-state system that had given birth to capitalism in Europe. This knowledge was rapidly becoming institutionalized in the competitive state-university system of Germany where medicine was wed to laboratory science. In this German system that would be transplanted to the United States, Japan, China, and most of the world, (medical) science "was shaped beginning in the 1820s by new or reformed universities that enjoyed considerable autonomy and competed for staff and students through the promotion of 'research."<sup>88</sup> The German research university from its birth was "a machine for the multiplication of knowledge that bears comparison with the reproductive capacities of modern

<sup>&</sup>lt;sup>85</sup> See Schmalzer 2008 and 2006 for important contributions to American sinology taking socialist science seriously. <sup>86</sup> Pickstone [Ways of Knowing] 2000: 108.

<sup>&</sup>lt;sup>87</sup> I follow Immanual Wallerstein's use of world-system to refer not, in the first instance, to a global system, but to a coherent economic system like that of capitalism that formed in Europe in the long sixteenth century and violently expanded around the globe thereafter. For a summary of this approach, see Wallerstein 2004.

<sup>&</sup>lt;sup>88</sup> Bowler and Pickstone (Introduction) 2009: 6.

capitalism," where "systematic linkages" were made between university-based science, industry, and government.<sup>89</sup> At the turn of the twentieth century, Germany was the model for remaking the university and medical education in the United States and Japan. It was the age of industrialized imperialism, with a newly unified Germany and rapidly industrializing Japan attempting to compete with the far-flung French and British empires, and the U.S. pursuing its interests overseas through the false promise of "self-determination" for formerly Spanish colonies like the Philippines, while pushing for an "Open Door Policy" with China, which essentially meant equal opportunity (with Britain) for American corporations in exploiting China's natural resources, labor and growing consumer market.<sup>90</sup>

By the middle of the nineteenth century in Germany the anatomo-clinical method was taken to the microscopic level, searching for pathological causes at the level of tissue (histology) and at the level of the cell (cytology) and bacterium (bacteriology). In the 1880s and 1890s, Americans like William Welch took these sciences and the German competitive university model to Baltimore, while Japanese like Kitasato Shibasaburō established them in Japan. From Baltimore, Tokyo, London and Paris, the new anatomo-politics arrived in China in 1910 with Wu Liande using autopsy to identify the form of the Manchurian plague. Kitasato attended Wu's international plague conference in Harbin, and Welch would soon tour Chinese medical schools as part of the Rockefeller Medical Commission. In the decades that followed, the conditions were right for medical elites and their allies to begin laying down the elements of anatomo-power in the institution of hospitals, so that they could turn the odds in their favor in the battle between little boy medicine and the giant disease, and establish the population-level policies of biopower: public health, eugenics and race hygiene.

<sup>&</sup>lt;sup>89</sup> Bowler and Pickstone 2009: 7.

<sup>&</sup>lt;sup>90</sup> Jespersen 1983.

#### Dissertation overview

This study will develop these themes in two parts and seven chapters. Part one examines how the project of standardizing technological language in Chinese was produced by, and produced, power dispersed in traceable networks. Part two identifies the coincidence of the legalization and institutionalization of anatomy in the 1910s with anatomical language being identified as the first set of terms to be standardized, and how existing forms of power were combined with the new mundane forms of power to establish the medical profession and eliminate "traditional" competition.

Part one begins by making a substantive case for the focus on terminological standardization, introduces the formation and general history of the Joint Terminology Committee, widens the scope of analysis to two overlapping networks responsible for fostering the Committee and ends by narrowing the focus to anatomical terms, discussions, and debates both within and outside of the Committee meeting rooms.

In chapter one I will introduce the basic narrative of the Joint Terminology Committee at the center of this project, from its preliminary meetings in 1915 until the final meeting in 1927. Here I also introduce the insights of science and technology studies that instruct me to follow the actors, rather than beginning with an external framework. Although the Joint Terminology Committee had hundreds of identifiable actors, I nonetheless choose to focus on a limited number in the chapters to follow. Shen Enfu, the influential educationalist appears primarily in chapters one, two and four, while missionary Philip B. Cousland is a key actor in chapters one and three, American trained physician Yu Fengbin in chapters two and seven, and Japanese-

oriented physician Tang Erhe in chapters five, six and seven (Appendix 5 give details on all other participants in the Joint Terminology Committee between 1915 and 1927)

Having established the context of the connections among anatomy, language and power, chapter two looks at a social network in which the work of the Joint Terminology Committee was born and nourished. The primary network through which educators and would-be medical or scientific professionalizers had to pass was the Jiangsu Provincial Education Association (JPEA). This was the organization that facilitated the work of the Joint Terminology Committee, not, as we might expect, the Republican state itself. This largely unknown organization, I argue, occupied a space far more important than its name might suggest. It was not a provincial government organization, although it had features of the state. It is the direct link between the examination system (keju 科舉) of pre-1905 and the new national school system after 1905. The JPEA did not only interest itself in elementary and secondary education. It established universities, including Southeastern University in Nanjing-China's top science institution. The JPEA network expanded through multiple associated organizations to national influence, directly influenced several of Shanghai's pre-eminent newspapers and publishing houses, and facilitated professionalization of physicians and scientists in a host of ways. All of these activities are visible with the network approach and focus on the formation of the Joint Terminology Committee in 1915 through 1927. That this non-state association greatly expanded the potential territory for the state is evident in the attention paid to wiping it out as the Nationalists established their Nanjing government after 1926. A final key feature of the JPEA network was its ability to bring together missionaries with Chinese elite physicians, scientists and educators for

the first time for the project of standardizing Chinese technical terminology (Appendix 4 shows thirty-two super-networkers of the Joint Committee and the JPEA).

Chapter three examines the missionary networks both before and during this merging of professionalizing and standardizing labor. It focuses in particular on the labor of Philip Cousland and his colleagues who, inspired by the standardization of anatomical language then occurring in Germany in the 1890s, sought to standardize the various confusing terminologies for medicine in China. The early success of these missionaries depended on the absence of the independent-minded pioneers of missionary medical translation, the dedicated labor resulting in Cousland's Medical Lexicon in 1908, which was nonetheless not successful outside of missionary circles, enrolling the JPEA network as discussed in chapter two, and enrolling large grants from the Rockefeller Foundation to support their translation project.<sup>91</sup> I demonstrate that they would not have been able to enroll the largesse of the Rockefeller Foundation, who generally supported English language medical education in China, without first having demonstrated their own labor and their ability to enroll elite Chinese.

Chapters one through three examine the process of group formation around the related projects of establishing anatomo-medicine and standardizing anatomical terminology. This process was not without contention and negotiation. Chapter four examines some of the debates around the project of anatomical terminology standardization, both within the Joint Terminology Committee, and attacks launched from without. These debates reveal exactly what was at stake in the process of standardization when government approval of the newly standardized terminology meant that any books not using it would not be published in China. By examining the process of standardizing terminology for specific technical terms for anatomy and the

<sup>&</sup>lt;sup>91</sup> Enrolling is a specific term drawn from Actor Network Theory.

transnational flows of influence from Germany to Japan to the United States, I demonstrate exactly why these seemingly mundane activities could establish power.

Part two is far more explicit in exploring the connections between anatomy and power, examining how power was necessary to establish anatomy, and how anatomy in practice might expand existing forms of power even while creating others.

Chapters five and six follow Joint Committee member Tang Erhe in the decades before, and during the rise of the Committee, as he sought to wed anatomy with power in China based on the model he identified as successful in Japan and Germany. Chapter five focuses on a broad sweep of Tang Erhe's life in power and in medicine, focusing on his methodical activities in establishing anatomo-medicine in China. In this chapter, I explore Tang's classical education in a late Qing Hangzhou academy, his turn to Japan to study military affairs, then medical school before returning to China to establish medical schools, professional associations, and represent the Ministry of Education at the Joint Terminology Committee in its early years standardizing the nomenclature for anatomy in Chinese. More controversial is Tang's collaboration with the Japanese in the 1930s until his death as one of the most powerful collaborators in Beijing, President of Beijing University. Yet Tang's collaboration only demonstrates that biopower may transgress national borders. For those like Tang, was Japan, despite its transgressions against Chinese in wartime, not the more promising leader of an East Asian civilization than the weak ideologies and coalitions of Chiang Kai-shek, instrument of the Americans for economic dominance in East Asia?

Chapter six focuses on a brief educational tour Tang Erhe took in 1917 through the medical schools of the northern Japanese empire (he does not visit Taiwan). I interpret his travel account as a snapshot of the connection between anatomy, language and power in 1917. In a

striking manner, Tang's travel diary, published in two versions, reveals his interests and attitudes and exactly what tools he hopes to adopt from Japan and its empire in Manchuria and Korea. Tang is particularly interested in all things anatomy, from basic education, access to cadavers, access to laboratories, physical anthropology and access to abnormal anatomy, anatomical museums, and anatomical language, including a visit to the man who standardized Japanese terminology for anatomy. Tang's diary descriptions are almost completely without interpretive comment, so for comparative analysis I introduce Tang's colleague (and possible nemesis) E. V. Cowdry of the Peking Union Medical School, who takes a similar trip to Japan to observe anatomy there only two years later. In a powerful way, Tang's trip to Japan, compared with Cowdry's, reveals the now forgotten priorities of medical scientists to see anatomo-medicine established in East Asia.

The mundane power of words and anatomy, and the limits of this power, are illustrated in chapter seven, which examines how and why the Joint Terminology Committee became the launching pad for an all-out attack on Chinese medicine after key members of the Joint Committee like Liu Ruiheng became minister of Health under the Nationalists, and other members like Yu Yunxiu proposed complete abolition of all non-anatomically based medicines. The result was, perhaps, not what either the abolitionists or the defenders of Chinese medicine fully expected or desired. Chinese medicine would not be abolished, but it would instead be transformed as its defenders were forced to preserve tradition by adopting anatomical explanations for the processes of Chinese medicine. Tradition is thus transformed even when it is preserved. Western medicine is itself transformed by the process of standardization (whether in China or the United States). The state (which one?), or a process of governmentalization that cares not whether power is attributed to Chinese nationalists or Japanese in China, expands through the process of standardization. Power that is accumulated does not dissipate when a physician-politician like Tang Erhe is out of power, out of money, or dead. Where does this power accumulate? Biographical accounts tend to overlook the deep reserves of power. This power accumulates in standardized and approved terminology lexicons, in the laws of cadaver collection and autopsy, in routines of the anatomical laboratory, under the microscope where pathological lesions can be found. Such power has a ratcheting effect, expanding even when it seems to be failing because the horizon of new territory to occupy is constantly expanding. This ratcheting power and standardization is a fundamental aspect of what is usually identified as modernity.

And so we come full circle in examining the role played by anatomy and power in the language of science in China. This study argues that the convergence of anatomy and standardized technical language produced a new form of power in China. I follow Foucault in calling this anatomo-power. If it took centuries for multiple motivations driving anatomical study to converge as anatomo-power in nineteenth century Europe, this transformation was "discovered" as a problem for Chinese elites rather quickly in the late nineteenth and early twentieth century. The problem was how to establish anatomo-power over individual bodies so that it could form the basis of biopower over whole populations through public health, eugenics, and race hygiene. This study examines the establishment of the former as the recognized basis of the latter.

# Part I: Language, networks and power

...we need to study the humble and *mundane mechanisms* by which authorities seek to instantiate government: techniques of notation, computation and calculation; procedures of examination and assessment; the invention of devices such as surveys and presentational forms such as tables; the *standardization of systems for training and inculcation of habits*; *the inauguration of professional specialisms and vocabularies* ... the list is heterogeneous and in principle unlimited. Miller and Rose 2008

# **1 Mundane activities: the work of the Joint Terminology Committee in China**

That which cannot be done should not be discussed; that which cannot be discussed should not be done ... To speak well is still just empty talk; to do something well is an authentic fact. 做不到的事不要說說不到的事不要做。。。 說得好還是空話做的好才是實事

Shen Enfu 沈恩孚, early 20<sup>th</sup> C.<sup>1</sup>

This study is about the relationship between language, science and power as these coalesced in the activities of elite physicians, educators and scientists in early twentieth century China. In particular it sees a connection between the logic of standardizing the terminology for anatomy and the practice of dissection as a foundation of, and model for the atomistic taxonomy of the descriptive sciences. Dissection as practice, dissection as method; anatomy in its very mundaneness forms the everyday basis for, and thus the hidden power of, all the reductive sciences. Following the work of Bruno Latour, Michel Foucault and theorists of contemporary biopolitical like Miller and Rose, I am rehabilitating "mundane" here from its ordinary meaning as an epithet for clerical office work, or the laboratory activities assigned by professors to their assistants. As will become clear in this chapter, mundane mechanisms are the primary mechanisms of modern power.

The mundane power of dissection as the hidden power of the reductive sciences is revealed when we observe not only what scientists say about their work, but the activities they actually undertake, especially in transitional periods as they seek to displace existing forms of epistemology and authority. In China, the 1910s were the crucial turning point.<sup>2</sup> It was the first decade of the Republic of China where science and medicine were institutionalized in China

<sup>&</sup>lt;sup>1</sup> Shen Enfu, "New Maxims" n.d. in Huang 1951.

<sup>&</sup>lt;sup>2</sup> This is not to deny the earlier work of missionary and Chinese translators, see chapter three below and Lackner et. al. 2000; 2004; Wright 2000; Elman 2005; Masini 1993.

through mundane mechanisms of the standardization of anatomically-based medical education, the inauguration of professional associations and the unification of scientific terminologies. It is the special insight of this study that these processes occurred simultaneously, often through the actions of the same people.

This work is governed by the assumption that to understand the significance of past human experience we must look at what people and groups *do*, rather than simply what they or their spokespeople *say*. This is a commonplace for anthropologists who live among their subjects, whether Trobriand Islanders or suburban scientists in southern California.<sup>3</sup> Yet for historians who live among written documents, it is difficult to access activities beyond discourse and rhetoric. One needs the right combination of sources, theory and methodology. The sources that provide the basis of this dissertation—previously ignored transcripts of scientific meetings, archives of legal and institutional records, together with prosopographical, biographical, and bibliographic material—allow me to go beyond the rhetoric of historical actors and their writings for posterity. In this dissertation I identify a formative moment of modern Chinese science<sup>4</sup> and biomedicine<sup>5</sup> and follow the action.

#### Scientists in action

Actions speak louder than words: the epigraph above, written by the second chair of the Joint Terminology Committee, Shen Enfu, has become a short-hand methodology for this study. It rings true with insights from the field known as science studies that notably began with

<sup>&</sup>lt;sup>3</sup> Malinowski did his research in the Trobriand islands (1922), while the earliest laboratory studies of scientists "in action" was conducted by Bruno Latour and Steve Woolgar in the Salk Laboratories in Southern California (1979).

<sup>&</sup>lt;sup>4</sup> In this dissertation I choose to identify Chinese science with the term *kexue* 科學, rather than antecedents in the late imperial period and before.

<sup>&</sup>lt;sup>5</sup> I begin with biomedicine to describe what in China is called "Western Medicine" *xiyi* 西醫, but below elect to call this anatamo-medicine to emphasize anatomical knowledge and dissection practice as the core of this medicine.

ethnographic investigations of laboratories to observe scientists in action. This field emerged from a generation strongly influenced by Thomas Kuhn's The Structure of Scientific Revolutions (1962), and the works of Michel Foucault, especially Les mots et les choses (1966) or its English translation The Order of Things (1970). Mostly trained as scientists, sometimes up to the Ph.D. level, these scholars came together at new academic units at Edinburgh, Bath and Paris, and struggled with and refined the basic concepts of Kuhn and Foucault, respectively: that science proceeds incrementally within given theoretical-experimental paradigms until a mass of illexplained data forces the production of a new theoretical paradigm; and that knowledge depends upon certain conditions external to that knowledge, so that when those conditions change, then there is epistemological change. Science studies is thus constructivist about science.<sup>6</sup> Yet *contra* its critics, this is not a constructivism, like that of secular religious studies since the enlightenment, that somehow attempts to make the object of its study disappear by showing how it was humanly constructed.<sup>7</sup> Nor is the aim of science studies to necessarily discredit scientific knowledge and scientific power. Instead, it applies the best methods of science to study science itself. Rather than "blackboxing" the work of scientists as a tribe of virtuous, exceptional geniuses, science studies demonstrates how science is made up so that citizens (including scientists with other specialties) can understand intelligently how to engage science when it becomes controversial.<sup>8</sup> Controversial science can simply be defined as anytime there are conflicts of interest evident in the result of methods of science. The work of scientists is revealed

<sup>&</sup>lt;sup>6</sup> Hacking 1999 is especially helpful on social construction; Sismondo 2008 explains the connection between a more theoretical STS constructionism and the STS constructivism that helps in reform and activism. <sup>7</sup> This particular argument is a common refrain in Bruno Latour's writing. For example, see Latour 2005:

<sup>97-98.</sup> This is not the place to retrace the recent reversal of the secularization thesis, but see Charles Taylor 2007.

<sup>&</sup>lt;sup>8</sup> Collins and Pinch 1998 specifically addresses the issue of citizens and scientific controversy. See also many of the contributions to *The Handbook of Science and Technology Studies (3^{rd} Ed.)* edited by Hackett, et. al. 2008.

to be more like highly skilled craftsmen in community than that of the isolated virtuoso prodigy presented by an earlier generation of heroic scientific biography.

So Bruno Latour and Steve Woolgar entered the Jonas Salk laboratories in Southern California as ethnologists "studying up" the work of scientists in Laboratory Life: The Social Construction of Scientific Facts (1979) and observed how scientists use inscription devices (pens and paper or complex machines that produce diagrams) to create data that will improve the "facticity" of some statements vis-à-vis others. Latour and Woolgar observe that the scientists are a "strange tribe" of "compulsive and manic writers ... who spend the greatest part of their day coding, marking, altering, correcting, reading, and writing." The result of this activity is a "proliferation of files, documents, and dictionaries," produced within the laboratory. The goal is to produce published articles that challenge or refine the results of other published articles that were produced in other laboratories. Two aspects of scientific activity described by Latour and Woolgar need concern us here: the production of dictionaries, both (1) word-definition dictionaries (published and in-house) and (2) "material dictionaries" that might include a refrigerator that houses racks of peptide samples coded and organized according to a given system and identified by a number. In the account to follow anatomical scientists in China recognize that they needed each of these, word-definition dictionaries or lexicons (which are always in progress, even if published), and "material dictionaries" which might be glass-encased samples of skulls, biometric measurements of living specimen skulls, or a growing collection of embryological material that can be compared and analyzed.

In the 1980s the field of science studies exploded, building on a new historical study of scientific controversy, most notably in Steven Shapin and Simon Schaffer's masterpiece, *Leviathan and the Air-pump: Hobbes, Boyle and the experimental life* (1985) that reconstructs

how, in the seventeenth century, laboratories came to be seen as places where truth could be constructed in the first place, with Boyle's laboratory air-pump demonstrations displacing the thought experiments of Hobbes as legitimate scientific knowledge. Along those lines, Harry Collins would suggest that social studies of science, either historical or contemporary, should study moments of controversy in science, before black boxes are closed and contingency is erased. Collins' famous metaphor is that we ought to study the ship-in-the-bottle before the ship is constructed in the bottle.<sup>9</sup> This was widely taken up as a key methodology, including by Latour. Latour published his own historical approach as Les microbes, guerre et paix, suivi de Irréductions (1984), translated as The Pasteurization of France (1988), and a methodological follow-up, Science in Action: How to follow scientists and engineers through society (1988). These works, though critiqued by Collins and Schaffer, nonetheless had a wide influence.<sup>10</sup> So Louis Pasteur, a national hero, is less a genius of discovery, than a genius of enrolling others in his networks by making himself, his microbes, and his microscope-equipped laboratories indispensable. Latour's Pasteur narrows the field from that of his contemporaries, the contagionists, by reducing the field of enquiry from the whole environment—every odor and miasma, seen and unseen-to an identifiable microbe, visibly observed under the microscope.<sup>11</sup> Repeatedly in his work since the 1980s, Latour has insisted that sociology has lost its way when it invokes vague "social factors" that influence science. While seemingly powerful in suggesting how the ruling classes dominate society with science and culture, critical theory, like that of the Frankfurt School, does not do the full labor of analysis by tracing exactly how power is

<sup>&</sup>lt;sup>9</sup> Collins 1985.

<sup>&</sup>lt;sup>10</sup> An idiosyncratic reading of Shapin and Schaffer led to Latour's *We Have Never Been Modern* (1993) "If, unlike Shapin and Schaffer themselves, we pursue the logic of their book to the end…" Latour 1993: 27.

<sup>&</sup>lt;sup>11</sup> This is the same move made by the Malay-British-Chinese, Wu Liande, in the 1910 Manchurian Plague epidemic. Wu, unproven and inexperienced, nonetheless manages to enroll powerful political connections at court (by threatening to resign if foreign scientists do not accept his authority) to enable an autopsy of a Japanese inn-keeper which produces tissues that can be brought back to his controlled environment and examined under the microscope to demonstrate that the plague bacillus is airborne. See especially Lei 2010.

accumulated at one point. For Latour, a concerned sociology of inequality and injustice in the contemporary world is neutered by seemingly powerful explanations that actually offer no information about how such conditions are constructed. Latour argues that we must here take our lessons from historians of technology, who see the history of power and accumulation (and inequality and state-building) in the history of man's use of tools. From the use of fire and stone hammers, to the use of the mouldboard plough and double-entry bookkeeping, or gunpowder and magnetic compasses, or the more recent recombinations of multiple tools into highly technological instruments of inscription (perhaps combining clocks, thermometers, gasolinefueled pistons, etc.).<sup>12</sup> To properly study power in society, we must study the way people enroll other people into their networks. But we must also include *things* (or tools) in our accounts of these networks to demonstrate how networks are extended and made sustainable. In such accounts stasis must be explained just as much as change. "Tools" are the missing key to human "social" networks. These things include the inscriptions (laboratory notes, technical articles, textbooks), including words and collections of words (dictionaries and lexicons), and Latour's material dictionaries-refrigerators or cabinets full of classified specimens. But these tools should also include any number of things that hold networks of people and knowledge together, such as purpose-built buildings, innumerable hand tools that increase the capabilities of human hands, antiseptic counters and tables, microscopes and related paraphernalia, X-ray machines, and even sources of light (see chapter six).

It is at this point that I return to the work of Foucault and those who took up his project of historical epistemology and researches into anatomo-politics and biopower. The realm of scholarship closest to science studies among the recent deluge of work in these areas is that of

<sup>&</sup>lt;sup>12</sup> Two excellent examples are Bray 1986, on agricultural technology, and Headrick 1981, on the "tools of empire."

Nikolas Rose and his colleagues who have taken up the project outlined by Foucault.<sup>13</sup> Their project seeks to find in mundane activities the *exact mechanisms* by which power/government is instantiated. Like Latour, they seek to trace fully the rise of specialized vocabularies and the standardization of new disciplines, like those for anatomo-medicine and science examined in this study. Power is extended, not amorphously from social elites, but specifically through the development of a huge array of inscription techniques usually associated with the field sciences: surveying, mapping, fingerprinting, collecting, classifying, etc. If possible, an encyclopedic collection of specimens for dissection and analysis is amassed in one location, such as a museum of comparative anatomy or zoology, the Smithsonian Institute, the Harvard Arnold Arboretum, Kew Gardens or the Le Jardins du Roi.<sup>14</sup>

So Darwin slowly amassed power for his theory by first conducting years of work in the field sciences (the voyage of the Beagle), then situating Down House (Darwin's residence and personal research center) at the center of a global network of collectors who would send him carefully identified samples of barnacles and other specimens, and libraries of inscriptions classifying these specimens.<sup>15</sup> Power resides in the combination of the collections, the

http://www.timeshighereducation.co.uk/story.asp?storyCode=405956, accessed April 25, 2012.

<sup>&</sup>lt;sup>13</sup> Miller and Rose 2008; Rose 2007; Barry, Osborne, Rose 1996; but this should also include much of the work of Ian Hacking, Arnold Davidson, and Paul Rabinow, as well as work building on Georges Canguilhem, a major intellectual influence on Foucault himself. For common texts, see Burchell, Gordon and Miller 1991; Gane and Johnson 1993; Jones and Porter 1994; Peterson and Bunten 1997; Foucault, Rabinow and Rose 2003; Gutting 2005. For new works by Foucault, see his newly translated and published lectures by Palgrave 2006-2012. The Times Higher Education shows that in 2007, before most of these recent lectures were published, Foucault was the most cited scholar in the humanities, with over 2500 citations in that year alone, matched only by Pierre Bourdieu at just under 2500, with Jacque Derrida at 1800, Anthony Giddens at 1300, Erving Goffman and Jurgen Habermas at 1000, Max Weber, Judith Butler, Bruno Latour, Sigmund Freud and Gilles Deleuze at about 900, and Thomas Kuhn, Karl Marx and Friedrich Nietzsche trailing the list at just over 500 citations.

One can also point to all work by Latour who places himself in the Foucaultian tradition, even if taking a major departure in some respects, and thus most work that follows Latour and Actor Network Theory. See the bibliographic website maintained by John Law http://www.lancs.ac.uk/fass/centres/css/ant/ant.htm, accessed April 25, 2012. <sup>14</sup> Livingston 2003.

<sup>&</sup>lt;sup>15</sup> Darwin 1839.

classificatory lexicons based on mundane dissections, and finally, the published book or scientific article that places these collections in a larger context.<sup>16</sup>

So too in China would the field sciences be predominant, from the botanical collections of nineteenth-century British naturalists, to American-trained Chinese botanists Bing Zhi and Hu Xiansu who established the biology department at Southeastern University in Nanjing, and the Fan Memorial Laboratory in Beijing (both founding members of the Science Society of China and regular participants in the Joint Terminology Committee).<sup>17</sup> But as we will see in chapters five and six, anatomy and physical anthropology were also field sciences, of a sort, seeking to build up collections of normal specimens and "monsters" for comparative purposes. But if specimens and measurements were sent only to Aleš Hrdlička's Smithsonian collections, or to Tokyo's imperial university anatomical museum, then the China-based scientist (whether Chinese or not) would abdicate much of the power of his collecting to the recognized authority.<sup>18</sup> So missionary/Rockefeller scientist N. Gist Gee would shift his collecting patterns in the 1920s to maintain a full museum in Suzhou, then Beijing, and China's scientists would begin to propose laws against the exportation of specimens abroad.<sup>19</sup> Beijing-based anatomists E. V. Cowdry and Davidson Black would advertise for specimens to build their local collection that would lead to the discovery of Peking Man (see appendix one).<sup>20</sup> As with the overwhelming predominance of Chinese natural resources and surplus labor extracted in the form of cheap goods, most specimens continued to be drawn into the "centers of calculation" in Paris, London,

<sup>&</sup>lt;sup>16</sup> Latour 1987: 21-62.

<sup>&</sup>lt;sup>17</sup> Fan 2004; Haas 1988; 1996; Schneider 1988; 2003; Hu 2003; Glover, et. al. 2011.

<sup>&</sup>lt;sup>18</sup> "In China Gee collected all sorts of things for America's national museum..." Haas 1996: 115; Hrdlička was honorary member of Chinese Association for Anatomy and Physical Anthropology, see appendix 1.

<sup>&</sup>lt;sup>19</sup> Haas 1996; Furth 1970.

<sup>&</sup>lt;sup>20</sup> See appendix 1 for reproduction of a call for anatomical specimens of all kinds. See Schmalzer 2008: 33-46 for an sophisticated account of who exactly discovered Peking Man.

New York and Tokyo.<sup>21</sup> It was the enormous influx of capital in China at the Peking Union Medical School, combined with the selective return of the American Boxer Indemnity as support for science (the China Foundation), that allowed local centers of calculation to be established in China at Nanjing, Shanghai and Beijing to stem the tide of overseas expropriation. And this begins to occur specifically in the 1910s when, in addition to the influx of capital in the form of buildings, equipment, scientists' salaries and student scholarships, two interconnected conditions are met: (1) a small, but (exponentially) growing number of scientists and physicians begins to fully reproduce itself, and (2) a technical language of classification is standardized. The current study explores each of these conditions in some detail, focusing on the first science to be established, anatomy and its sub-disciplines of histology, cytology, and physical anthropology.

Without these insights from science studies, many previous accounts of science in China are naïve about the possibilities and limitations of Chinese science. They take the assumptions of Cold War sociology as a prescription for third-world modernization on an idealized American model (or following the Marshall-plan model of post-war Europe or Japan). They assume the stable content of "modern science" which is then "transferred to China" and "diffused through culture and institutions."<sup>22</sup> And they take the word of each successive group of critics of science in China, that China has no science (to speak of).

We cannot enter into laboratories in Republican China, yet to understand science in China we must go beyond the intellectual debates *about* science, like those of the early 1920s over China's lack of science and the ability of science to address all human problems. These debates, most famously the "Science and Philosophy of Life" debates of 1923 between

<sup>&</sup>lt;sup>21</sup> This term is from Latour 1988: 215-257.

<sup>&</sup>lt;sup>22</sup> Schneider 2003: 1.

prominent intellectuals like Carsun Chang (Zhang Junmai) and Ding Wenjiang (with salvos from Liang Qichao and Hu Shi), argued between two positions of whether science could be applied to all aspects of human life, or whether scientific solutions to problems should be limited to technological issues only, as apparent to Liang Qichao after touring war-torn Europe. That debate relied heavily on philosophical arguments, themselves adapted from European critics of scientific modernity like Henri Bergson. We have multiple accounts of the Chinese debate, biographies of scientists as politicians, but the path forward, following the insights of sciences studies, is to examine the activities of scientists.<sup>23</sup> We must look carefully to see what scientists, scientifically-trained physicians, and promoters of science actually did.<sup>24</sup>

This account begins almost a decade before these debates as the New Culture Movement (*xinwenhua* 新文化) was getting underway. I not only ask the reader to consider what this early institutionalization of science has to say about China particularly, but also what it has to say about the globalizing sciences *at that moment in time*. Thus the following account aims to be of interest to both historians of modern China and to historians of science. This is not, then, a case study of how China failed or succeeded to absorb "universal" science which was created whole in Europe. Science and medicine is the production of humans in specific social situations and is therefore never static. Despite the attempts of the logical-positivists of the Vienna Circle to prove the contrary, "Science" in 1915 (or 1930) was not any more unified than it is today. Yet dreams of the power of a single scientific "method" applied equally to a new set practical and social

<sup>&</sup>lt;sup>23</sup> On the science vs. philosophy of life debate, see Chow 1960: 320-337; Furth 1970: 94-135; Wang Hui 2006: 80-117; Rocha 2011.

<sup>&</sup>lt;sup>24</sup> In this regard, the Levonsonian-era intellectual accounts of Ding Wenjiang, Hu Shi, and other intellectuals, exemplified in works like Charlotte Furth's *Ting Wen-chiang: Science and China's New Culture*, 1970, Danny Kwok's *Scientism in Chinese Thought, 1900-1950*, 1965, can be compared with Furth's later work on medicine which takes the anthropological method to examine exactly what physicians did, i.e. *Thinking with Cases: Specialist Knowledge in Chinese Cultural History* 2007.

problems made it seem so well into the 1950s, even in the heart of Europe and America.<sup>25</sup> In the following account Chinese "May Fourth" (modern) intellectuals are no more, or less, scientistic than their counterparts in Europe and America.<sup>26</sup> There was no failure of Chinese intellectuals and scientists to fully grasp science. Chinese scientists and physicians wrestled with the relevance and proper method of science to apply to social problems just like their teachers and contemporaries in Germany, Japan or the United States. Their preoccupations and activities will be evaluated on their own terms, rather than from a teleological position which looks to the past only for "success stories" that explain today's "true" knowledge.

Historians of China agree that early twentieth-century elites embraced a discourse of science to save the nation, that this discourse gradually became dominant between the New Culture/May Fourth period (1915-1923) from Chen Duxiu's "Mr. Science and Mr. Democracy" through to Hu Jintao's current formulation of "Scientific Socialism" to maintain a "Harmonious Society."<sup>27</sup> Yet what exactly is Chinese science, and should it be distinguished from "Western" or "universal" science? For decades intellectual and literary historians of China have either assumed the content of a (Western) science more or less faithfully *transferred* to China, focusing particularly on the degree to which Chinese intellectuals from Wang Tao to Liang Qichao to Ding Wenjiang accurately discussed science in their writings. The century long (i.e. 1850-1950) process of abandonment of Confucianism as a method, a tool of political legitimacy and an epistemological basis for knowledge was met by an increasing faith in science as method and

<sup>&</sup>lt;sup>25</sup> Neurath, Carnap & Morris 1955. Remarkably this positivist encyclopedia of scientific knowledge included the first edition of Thomas Kuhn's *Structure of Scientific Revolutions* which was to play such a critical role in developing relativist and constructivist views of science in the 1960s until today. Compare Galison and Stump 1996.

<sup>&</sup>lt;sup>26</sup> Compare Kwok 1965.

<sup>&</sup>lt;sup>27</sup> See the collected writings of Ren Hongjun titled *The Dream of Saving China with Science [Kexue jiuguo zhimeng*], Fan, et. al. ed. 2002.

source of epistemic and political authority. This process was addressed in some depth by Joseph Levenson and his intellectual progeny.<sup>28</sup> Yet until recently, almost no historical analysis was conducted to see how science was actually practiced in China.<sup>29</sup> To do this the analyst must look beyond the obvious rhetoric about science to the ample records of scientific activity. Scientific activity required a multitude of routine activities to institutionalize political and epistemological legitimacy, and thus trust. The first scientific field to thus institutionalize was anatomo-medicine. One of the best-documented of these tasks was the unification of its terminology, beginning with the terminology for the human body.

## A suitable nomenclature in Chinese

The 1910s saw the attempts of Chinese elites to standardize terminology to stem the confusion of the various systems of nomenclature. According to Liang Qichao (Levenson's protagonist of the crisis of Chinese modernity), earlier translation had been a scattershot effort, "disorganized, unselected, incomplete, ignorant of conflicting interpretations, concerned solely with quantity."<sup>30</sup> Indeed, throughout the 1910s and 1920s we see ongoing calls for standardization of Chinese technical terminology to resolve these basic problems. After the 1915 preparatory meeting of the Joint Terminology Committee, the prominent Shanghai physician Yu Fengbin wrote, "If we expect to spread medical knowledge among our compatriots, there is no better way than to establish a suitable nomenclature in Chinese."<sup>31</sup> He went on to argue that European languages were not sufficient,

<sup>&</sup>lt;sup>28</sup> The key works most relevant to this study are Levenson's trilogy 1969; Crozier 1968; Furth 1970.

<sup>&</sup>lt;sup>29</sup> I see this trend beginning to change in the salutary shift towards history of science and science studies interaction with Chinese history that becomes noticeable in the late 1990s, but especially in the past decade. See especially Rogaski 2004 and Fan 2004. <sup>30</sup> Translated from Liang Qichao in 1920, cited in Douglas Reynolds, *China*, 1898-1912, 124.

<sup>&</sup>lt;sup>31</sup> Yu Fengbin, "Terminology in Medical Publications in Chinese," 21.

China needs a medical nomenclature of her own. We have so far been dependent on a foreign medium of communication to acquire our medical knowledge. This state of affairs is practicable only in the so-called transitional period, and if we have the welfare of future generations at heart we should make it possible for every course in medicine to be taught and studied in our mother tongue.<sup>32</sup>

It was not just a matter of national sentiment, but of practicality. For physicians, nurses, and seekers of general knowledge, a unified Chinese terminology must be established for disseminating basic knowledge in textbooks, and advanced knowledge in professional journals. A plethora of transliterations into Chinese dialects by isolated translators in the nineteenth century had ensured terminological confusion for the scientific educators of the twentieth century. This situation was further confused by the massive influx of Japanese terminology which used kanji (漢字)—Chinese characters.<sup>33</sup> Missionaries began to attempt the work of standardizing these competing terminologies but had neither the breadth of knowledge in Chinese and Japanese, nor the social influence to make their unified lexicons stick. It was in the new Republic, when Christianity seemed about to play a key role in China through well-positioned Chinese Christians, that missionaries were able to network with Chinese educational and publishing elites to accomplish this seemingly unexciting task. We will see in chapter four below that some Chinese, even medical professionals, originally thought that the *mundane* work of standardizing Chinese technical terminology meant *unimportant* work. But if, as Bacon famously said, knowledge is power, and all knowledge is contained within the boundaries of language, then those who control the standardization of language have power indeed. Or, perhaps it is more accurate to say that those seeking to standardize technical terminology for science realized that the new sciences in

<sup>&</sup>lt;sup>32</sup> C. Voonping Yui [hereafter Yu Fengbin], "Terminology in Medical Publications in Chinese," NMJ 2 (1916): 20.

<sup>&</sup>lt;sup>33</sup> Several works have deeply informed my thinking on this phenomena. See Liu 1995 and Masini 1993, but also the collected essays in Lackner, et. al. 2001 and 2004, especially the essay by Sun Guowei. Joshua Fogel's oeuvre on Japan-China cultural interactions and Douglas Reynolds (1993) on the "golden era" of Sino-Japanese relations following the Sino-Japanese War of 1895.

China would have only *limited* power without standardizing its terminology. Better yet, we should think back to Bourdieu, and, rather than imagining elites exercising their will in a show of brute power, instead see them as creating a system through their standardizing activities, which was, or would soon be, taken over by the state: a system of mundane power. Discussions attempting to standardize the term for cartilage as *ruǎngǔ* 軟骨 (flexible bone), *fúgǔ* 腐骨 (tofu bone) or *cuìgǔ* 腌骨 (brittle bone), or merely *rèn* 肕 (tough with a "flesh" radical), then begin to have more than technical significance. The priority of this activity among professionalizing physicians, scientists and educators demonstrates its centrality to the establishment of a new form of knowledge. Precise, technical language was the key to knowledge that could be turned to powerful acts of intervention in the world.

Everything in this dissertation—language, anatomy, networks, power—comes out of a multifaceted study of the transnational committee that came together to standardize medical and scientific terminology between 1916 and 1927. This committee, the Medical Terminology Investigation Committee (*Yixue mingci shenchahui* 醫學名詞審查會) and its second iteration as the Scientific Terminology Investigation Committee (*Kexue mingci shenchahui* 科學名詞審查 會) was referred to in English publications (and will be in this study) as the Joint Terminology Committee (1916-1918) and the Scientific Terminology Committee (1919-1927).<sup>34</sup> As Bruno Latour instructs, "[t]here is no reason to give up following scientists simply because they are handling paper and pencil instead of working in laboratories or travelling through the world."<sup>35</sup> Nor, I would argue, should we stop following the scientists because they are networking with generalist educators and missionaries, or debating endless lists of Chinese technical terms.

<sup>&</sup>lt;sup>34</sup> I find "Joint Terminology Committee" and the shortened form "Joint Committee" to be preferable to the more accurate translations I have provided or abbreviations based on them like "MTIC" or "STIC".

<sup>&</sup>lt;sup>35</sup> Latour 1988: 235.

## Zhengming/rectification of names

Although the movement toward anatomically-based medicine and Western science was largely a product of rejection of tradition, nonetheless, Confucian concepts and terms could be rehabilitated. An interesting case is the regular use of references to the Confucian project of rectifying names. In 1916 Yu Fengbin wrote a thought piece for the National Medical Association arguing that the very first task of the medical profession was to standardize terminology (*tongyi mingci* 統一名詞). If words were not rectified, then speech would not be in accordance with reality (*mingbuzheng zeyanbushun* 名不正則言不順). Echoing Yu, a year later in the same journal, Liao Deshan would claim, somewhat more eloquently that if the names of the myriad things under heaven were not put right (*mingbuzheng* 名不正), then speech would not be in accordance with reality (*yanbushun* 言不順). If speech were not in accordance with reality, then matters could not be accomplished. This was especially true, Liao argued, for the terminology for medicine.<sup>36</sup>

Chinese thinkers have long recognized that there is power in the seemingly mundane activity of naming something properly. In the *Zilu* Chapter of the *Analects* of Confucius (Kongzi), there is a memorable exchange between Master Kong and his disciple Zilu that is striking for the parallels with the case at hand. It is worth noting that Confucius was speaking into a world of inter-state conflict, warfare, and chaos—not unlike that in Republican China. He saw proper words and proper behavior by the exemplary person (*junzi* 君子) as the key to creating lasting peace based in a hierarchical, but predictable, political and social order.

Asked by his disciple Zilu how he would manage the state of Wei were it turned over to him, Master Kong replies, "Without doubt, I would first insure that names are used properly!"

<sup>&</sup>lt;sup>36</sup> Yu 1916: 16-19; Liao 1917: 19.

Zilu the impetuous student is stunned by this reply. It seems too impractical and mundane. Why is proper naming even important? The master rebukes his disciple: Are you really that stupid? If you were an exemplary person, you would know to defer on matters you do not understand. The reason names are so important, the master lectures, is that if they are not used properly, then language will not be used properly. If language is used improperly, then matters cannot be managed and accomplished appropriately. Appropriate human action, especially the action of the ruler and his coterie of exemplary persons, is dependent on proper identification. Thus a negative feedback mechanism began: rituals and music that govern the smooth running of society stop flourishing; chaos obtains in the application of laws and punishments; the people will not know what to do with themselves. The exemplary person can, and should, put an appropriate name to things. When things are named appropriately, they can be properly spoken of. But the exemplary person will not name things carelessly, for he knows what is at stake.<sup>37</sup> For Confucius, speaking and naming must be done right in order for the actions of the ruler to be appropriate, and we see the Confucian discourse clearly in Liao's words.

The Chinese concern for proper naming and its connection to ordering the world from antiquity is further evident in the Han Dynasty dictionary by Xu Shen 許慎, the *Shuowen jiezi* 說 文解字 (Explaining single-component graphs and analyzing compound characters) (100 CE). This fundamental word book collected 9353 Chinese characters and classified them into 540 categories according to radicals—almost identical to the organizing system still used today. The Han Learning (*Hanxue* 漢學) scholars of the Qing dynasty considered the *Shuowen* a basic

<sup>&</sup>lt;sup>37</sup> Paraphrased and translated from Ames and Rosemont 1998: 161-162 (Analects 13.3). We can see the Confucian influence on Shen Enfu in his "New Maxims" quoted above in the epigraph for chapter one. Shen says, "That which cannot be done should not be discussed; that which cannot be discussed should not be done" and in the same maxim, goes on to say that "to speak well is still just empty talk; to do something well is an authentic fact."<sup>37</sup> Although less about settling on appropriate terminology for the phenomena of nature, Shen Enfu nonetheless links the realm of discourse to the realm of action.

reference, writing so many commentaries on it that scholars looking up a single word would have to search through dozens of books.<sup>38</sup> The classic commentary of the Qing was by Duan Yucai (段玉栽 1735-1815), while the task of compiling the many learned commentaries on the *Shuowen*, was taken up by Ding Fubao, the same self-trained physician encountered in chapter one who made his fortune translating Japanese medical books, but made his name with *Shuowen* philology and his still unequalled dictionary of Chinese Buddhism.<sup>39</sup> Another author of a short book on the *Shuowen* was Shen Enfu.<sup>40</sup> In fact, the *Shuowen* was one of the main reference works consulted by the men of the Joint Terminology Committee when researching old terms. With this in mind, the following words from Xu Shen's original Han dynasty preface become salient:

In ancient times, Baoxi 包犧 came to rule the world. Looking up, he contemplated the phenomena in the sky, and looking down, the markings on the earth. He observed the patterns on birds and animals and their adaptations to the earth. From nearby, he took some hints from his own body, and elsewhere from other things. Then he began to make the eight trigrams of the *Changes* 易八卦 to pass on to others the regular patterns in the world.

Later, when Shen'nong 神農 made knots in rope to direct and regularize activities, all kinds of trades and professions were multiplied, and then artificial and refined things sprouted and grew.

Cang Jie 倉頡, scribe for the Yellow Emperor, on looking at the tracks of the feet of birds and animals, realizing that the principles and forms were distinguishable, started to create graphs, so that all kinds of trades/professions could be regulated, and all categories of people could be kept under scrutiny.<sup>41</sup>

 $^{40}$  Shen 1916. We will return to this in the discussion below.

<sup>&</sup>lt;sup>38</sup> See Elman 1984.

<sup>&</sup>lt;sup>39</sup> Ding worked on his "Collected Glosses on the Shuowen Jiezi" for 33 years, collecting 182 different books on the Shuowen, a total of 1036 juan. This was originally published in 1928, with additional volumes in 1932, then reissued in Taiwan in 1959, and in Beijing in 1988, and again in a beautiful edition in 2006. It cannot be emphasized enough that anyone studying ancient Chinese will pass through Ding Fubao's collected glosses on the Shuowen.

<sup>&</sup>lt;sup>41</sup>古者包犧氏之王天下也,仰則觀象於天,俯則觀法於地,視鳥獸之文與地之宜,近取諸身,遠取諸物;於是始作易八卦,一垂憲象.及神農氏,結繩為治,而統其事.庶業其繁,飾偽萌生.黃帝之史倉頡,將鳥獸远之迹,知分理之可相別異也,初造書契.百工以乂,萬品以察 Xu Shen 許慎, *Shuowen jiezi* 說文解字,100

What these semi-legendary founding figures of Chinese culture are said to have done millennia before Xu Shen, was to see patterns in the natural world and, for Baoxi, create the trigrams of the Classic of Changes (Yijing 易經), divide society into its trades and professions in order to produce refined things. Language, knowledge of nature, social control, and even the assigning of trades or professions, are all linked in this preface almost two millennia before the Joint Terminology Committee meetings and their critics. The juxtaposition of these two ancient texts along with that of Xunzi in the first epigraph and their reprisal among standardizing physicians in the twentieth century raise a series of striking questions. What role did committees of exemplary men, as the members of the Joint Committee might consider themselves, have in standardizing names for things? Were they merely, as Xunzi seems to claim, approving terms that had already become customary and widely accepted? Did names have "no intrinsic actualities?" Or, were they rather something that the *junzi* had control over, a sacred duty to ensure that names and the rituals that follow would keep social order? Would names be found by proper observation of phenomena in nature itself? And if so, could the right name actually lead to regulation of people's occupations and social control? By what mundane mechanisms could we trace the connection between naming or standardizing terms and social control?<sup>42</sup>

#### Building trust

Modern forms of government, commerce, and science seek to establish trust through standardization and objectivity. Standardization aims to eliminate ambiguity in communication,

CE. My translation is adapted from that of K. L. Thern, in Mair, ed. *The Shorter Columbia Anthology of Traditional Chinese Literature*, (NY: Columbia, 2000), p. 348.

<sup>&</sup>lt;sup>42</sup> I will respond to these questions directly in the conclusion to this chapter.

activity and commerce between strangers, while objectivity promises accurate, logical and dispassionate realism in its communications.<sup>43</sup> Both attempt to eliminate the possibility of error through personal judgments and the irrationalities of human passions. But ironically, personal networks are required to establish the impersonal conditions of standardization and objectivity. Recent research has demonstrated how the shift to modern social features were facilitated by the personal networks of three Shanghai men, educator Huang Yanpei, comprador Wang Yiting, and gangster-cum-leading citizen Du Yuesheng.<sup>44</sup> Huang Yanpei and his network at the Jiangsu Provincial Education Association were essential, also, to establish the committee to standardize medical and scientific terminology. The issue in 1915 was bridging the gaps between the wellestablished missionaries and the several groups of Chinese elite professionals just returned from overseas study.

In the nineteenth century missionaries protected by unequal treaties, preaching their knowledge of Christianity, science and medicine represented a threat to Chinese elites. Their system of knowledge and morality were accurately recognized as subversive to public order and elite authority. Yet with the end of the examination system among other reforms in the wake of the Boxer settlement, the secular educational interests of Chinese elites and Christian missionaries converged. The rise of a social gospel among most missionaries in the early twentieth century meant that Christianity was becoming more about science and civilization and less about religion.<sup>45</sup> This was far more palatable to the Chinese elites and governments seeking to spread modern education. The 1910s saw the rise to national prominence of a relatively large number of Chinese Christians in various fields, including politics at the provincial and national

<sup>&</sup>lt;sup>43</sup> For literature on standardization, see Lampland and Star, eds. 2009; on objectivity, see Daston and Galison 2007 in particular for images of objectivity and Porter 1995 for the relationship between quantification and objectivity. <sup>44</sup> Dillon and Oi 2008.

<sup>&</sup>lt;sup>45</sup> Lian Xi 1997.

level, education, medicine and social reform.<sup>46</sup> This group, as it rose to national prominence in the Republic, mediated between foreign missionaries and classically-trained Chinese elites in a way never before possible. The gap between the production of missionary-generated knowledge and mainstream Chinese knowledge narrowed.

On 22 February 1915, Shanghai's most prominent newspaper, the *Shenbao* (申報, *Shanghai News*, f. 1872), reported on a story under local news that the Jiangsu Provincial Educational Association was hosting a symposium to investigate medical terminology.<sup>47</sup>

The Jiangsu Provincial Educational Association 江蘇省教育會 was headquartered prominently at the West Gate between the old city of Shanghai and the French Concession (see Appendix 2). The Medical Missionary Association 博醫會 had already been in existence for several decades by 1915,<sup>48</sup> but now these medical missionaries had initiated a Joint Committee to discuss a methodology to standardize the terminology of medicine with all professionals, researchers, editors and translators of scientific literature. This *ad hoc*, non-governmental group was establishing a new structure to manage the crisis of legitimate knowledge in the wake of the end of the Confucian imperial examination-bureacracy system and the fall of the imperial structures themselves (1905 and 1911 respectively). Political change had led to epistemological change.<sup>49</sup>

<sup>&</sup>lt;sup>46</sup> Dunch 2002; Bays 1996.

<sup>&</sup>lt;sup>47</sup> "Jiangsusheng jiaoyuhui shencha yixue mingci tanhuahui jishi" 江蘇省教育會審查醫學名詞談話會記 事. Ding Fubao also published an account of this meeting and I draw from it where the Shenbao account is lacking. See Appendix 1.

<sup>&</sup>lt;sup>48</sup> But readers of the correspondence section earlier that month may have noticed an introduction to the CMMA which was holding its biennial meeting at the Sichuan Road YMCA. "Boyixuehui tonggao" 博醫學會通告 [Public notice of the China Medical Missionary Association] *Shenbao* 3 February 1915.

<sup>&</sup>lt;sup>49</sup> Chapter two explores this in some detail.
Huang Yanpei, acting head of the Educational Association, had arranged a meeting for this purpose one day earlier on February 21.<sup>50</sup> Huang Yanpei was one of the most prominent men in the city and the province, as well as a rising national star in elite educational circles. *Shenbao* readers would know what most students of Chinese history today do not—the Jiangsu Provincial Educational Association was an institutionalized network with as much *influence* nationally as any Beijing-based government institution.

Shen Enfu was general secretary of the Educational Association and also one of the most active politicians on the self-government city council of the Chinese city of Shanghai. Yu Rizhang might be recognized for his prominent educational activities with the Educational Association, and for his work as a nationally prominent speaker and leader in the Chinese YMCA. Other prominent members of the Educational Association included Yang Jinsen or Guo Bingwen. Guo was also an editor at China's largest publishing company, the Commercial Press (established 1897), and Zhuang Yu (1868-1930) occupied positions at the press and the Educational Association as well. Their boss, head editor at Commercial Press, Zhang Yuanji, was also present. Clearly, the standardization of medical terminology was important to the publishing world of Shanghai, which supplied most of Republican China with textbooks and more advanced books on modern knowledge.

Not to be outdone, the China Book Company (established 1912) which had only recently broken away from the Commercial Press (to capitalize on producing Republican textbooks in the months before the Republican Revolution), was represented by its head, Lu Feikui. Flanking Lu were several of China Book Company's editors including the scientist Wu Jiaxu, Ouyang Pucun, and its head editor, the former and future minister of Education, Fan Yuanlian. These men—in

<sup>&</sup>lt;sup>50</sup> Since 1907 when its most prominent founder, industrialist Zhang Jian, had attempted to step down, but had been encouraged to maintain his name on the Association's masthead without involving himself with the Association's workings. Schwintzer 1992, 181.

particular Zhang Yuanji, Zhuang Yu, Lu Feikui, Huang Yanpei and Shen Enfu—would be recognized by any reader of the *Shenbao* or the weeklies and monthlies of the two prominent presses as some of the most prominent men who had mastered the Confucian cannon, the late imperial tradition of philological activism based in the southern Yangzi region (*Jiangnan* 江南). But they had also played a significant role in introducing Japanese distillations of Euro-American texts. In other words, these men bridged two worlds of knowledge about the world.

The importance of Japanese terminology to China would have been clear to anyone conversant with non-missionary medical texts. At the Shanghai meeting, Chinese physicians were represented by Japanese-trained deans and administrators from two government medical schools in the lower Yangzi region. These men belonged to the Republic of China Medico-Pharmaceutical Association and were attached to the Japanese-model Suzhou and Hangzhou medical schools.<sup>51</sup>

Missionary physicians travelled the furthest distance with two from Beijing, two from Nanjing and two from Shandong's capital, Jinan, including Gao Silan—Dr. Philip B. Cousland, chief editor of the missionary association's English-Chinese medical lexicon first published in 1908.

Also attending were two professors of Nanjing Higher Normal School (1915-1921); later National Southeastern University, 1921-1927; National Central University 1928-1949) who would be particularly interested in the production of science and medical textbooks. Also present was the Shanghai manager of the newly established journal *Kexue* 科學 (*Science*), the journal of the Science Society of China.

<sup>&</sup>lt;sup>51</sup> This association of medical graduates returned from Japan, founded by Dr. Tang Erhe will be explored in more detail below.

The chair of the meeting, Huang Yanpei carefully explained (with Yu Rizhang translating) how Dr. Cousland had contacted Yu Rizhang about this matter.<sup>52</sup> Yu, together with Yang Jinsen asked Huang Yanpei to set up a meeting with prominent educators, physicians and publishers *together with* the missionaries.

This first meeting was on familiar territory for the missionaries—the upper floor meeting room of the American Presbyterian Mission Press (established at Shanghai 1860) had been publishing missionary bibles and translated books on Western learning for decades, including Cousland's Medical Lexicon, on behalf of the Medical Missionary Association Publication Committee.<sup>53</sup> Huang told those assembled that the proliferation of books on medical science had led to multitudinous technical terms that should now be rendered correct and unified. The best way to do this was to bring together all those concerned to hammer out a methodology to standardize and unify the technical terms. It was obvious to any serious Chinese reader that disunified terminologies led to confusion, both at the level of production and dissemination of technical learning.

The second half of the nineteenth century had been an age for enthusiastic translations of the new learning in China, but the enthusiasm, creativity and stubbornness of individual Chinese and missionary translators led to epistemological chaos. How could medicine be established as a self-reproducing profession and system for researching and managing the health of individuals and the nation without a unified translated terminology?

Chairman Huang announced that Du Yaquan had sent correspondence. Du was the wellknown chief scientific editor for the Commercial Press, and chief editor at that press's most

<sup>&</sup>lt;sup>52</sup> We might presume Cousland approached Yu, who had an MSc from Harvard and excellent English, at least partly because he was one of China's most prominent Christians as well as being a prominent educator, although this is not clear in the *Shenbao* account.

<sup>&</sup>lt;sup>53</sup> In fact, the founders of the Commercial Press had apprenticed here before starting their own initially modest printing operation.

popular and longest running monthly, the *Eastern Miscellany* [*Dongfang zazhi* 東方雜誌]. Ding Fubao, a self-taught physician and prominent publisher of popular medical books, brought his "Chinese-Western Disease Terminology List" and "Drug Terminology List."

Philip B. Cousland (Gao Silan), representative of western medicine, then spoke to the gathered assembly,

[I want to] acknowledge that the Provincial Educational Association did not fail to enlist many people to discuss medical and pharmaceutical terminology. This is very exciting. Several decades ago Western medicine was introduced into China, yet did not garner the trust of society.

Cousland, the medical missionary, the initiator of this meeting, expressed his excitement that most of China's publishing elites were gathered in one room to address this problem, the problem of establishing trust through standardizing terminology. Western medicine had been introduced to China since the mid-nineteenth century, and Cousland himself had been attempting to spread his medical gospel (along with the Christian one) since 1883.<sup>54</sup> Cousland had been part of the first professional association for physicians in China since 1886 (the first medical missionary association in the world), had been part of the desultory first incarnation of the terminology and publication subcommittee since 1890, and had reorganized and energized that committee in 1901, resulting in the publication of the English-Chinese Medical Lexicon of 1908. Cousland had submitted a copy of this lexicon to Yan Fu's Qing Translation Bureau, which had rejected it. This was only the most recent rejection of medical missionary work by Chinese elites.

<sup>&</sup>lt;sup>54</sup> Zhang 2001, 325.

Organization Name	Number and rank of representatives present
Jiangsu Provincial Education Association	7 (Vice-president, top administrators)
江蘇省教育會	
Commercial Press 商務印書館	4 (Chief editor, other editors)
China Book Company 中華書局	4 (Director, Chief editor, other editors)
Chinese YMCA 基督教青年會	2 (Youth Secretary, Lecture Secretary)
Science Magazine 中國科學社雜誌	1 (Manager)
Peking Union Medical College 協和醫學院	2 (Director and another missionary)
Zhejiang Government Medical College 浙江專	1 (Director)
門醫學校	
Jinling University Medical College 金陵大學	2 (missionary physicians)
醫學校	
Cheeloo/Jinan Union Medical College 齊魯大	2 (missionary physicians)
學醫學校	
Nanjing Normal College 南京高等師範學校	1 (president)

Table 1 Organizations represented at February 21, 1915 symposium on medical terminology<sup>1</sup>

In the late Qing period, elites often stirred up local people to attack missionary clinics and churches, using images of devilish foreigners concocting magical medical potions from the gouged out eves or ground remains of Chinese babies.<sup>2</sup> This situation had changed significantly by the 1890s, and particularly in the new century, but the official rejection of the missionaries' labors had occurred only seven years earlier, in 1908.

Cousland did not now mention this rebuff. Nor did he mention a related factor that weighed against missionary translated terms: the translated compilations from Japanese that had flooded the Chinese book market since the turn of the century. The Commercial Press first established a Bianyisuo (編譯所 translation-compilation bureau) to dominate this re-routing of foreign knowledge,<sup>3</sup> and key promoters and beneficiaries of this method were present in the

<sup>&</sup>lt;sup>1</sup> See Appendix 5, items in grey for full list of those attending. <sup>2</sup> Cohen 1963: 90.

<sup>&</sup>lt;sup>3</sup> Meng Yue 2006, 1-61.

upper floor room of the American Presbyterian Mission Press on that day in February.<sup>4</sup> Missionary attempts to create and standardize a rational terminology were now being overcome by a flood of neologisms from Japan. Cousland initiated this meeting to attempt to develop a methodology to choose between terms and create a nationally unified terminology for textbooks, classroom teaching, research laboratories and scholarly publications.

In previous decades missionaries had posed a structural threat to Chinese educated elites politically (through their protection under the unequal treaties which also extended to their converts) and epistemologically through their teachings and translated books and journals. Christianity and their new learning threatened the epistemological and political balance of the empire, especially when it was protected by gunboats and unequal treaties.<sup>5</sup> Very little trust existed between most missionaries and most Chinese elites.<sup>6</sup> But this situation was now radically different after the 1900-1902 international armed invasion and occupation of north China and the center of government in Beijing. The subsequent Qing capitulation to drastic liberal reforms which increased protections for foreigners in China almost completely disestablished the old elites centered in the institutions of the examination system and imperial bureaucracy. A new generation of elites left the academies (*shuyuan* 書院) and began to enter new institutions (schools, or *xuetang* 學堂) that focused primarily on Western learning. Many others went to Japan to study, with the numbers accelerating from two hundred seventy-four in 1901 to twenty-four hundred three years later, and peaking at twelve thousand in 1906 (see figure 4).

<sup>&</sup>lt;sup>4</sup> Zhang Yuanji, Lu Feikui, Zhuang Yu, Fan Yuanlian, Jiang Weiqiao, Guo Bingwen, Wu Jiaxu, Ouyang Pucun

<sup>&</sup>lt;sup>5</sup> Cohen 1963.

<sup>&</sup>lt;sup>6</sup> John Fryer and Xu Shou, or Wang Tao and James Legge may seem to be exceptions. But these exceptions prove the rule—Xu and Wang were elites dislocated to Shanghai and Hong Kong by the ravages of the Taiping, and thus were looking for new activities and new sources of legitimacy. Cohen 1974, on Wang Tao, Reardon-Anderson 1991 on Xu Shou and Fryer.

Year	1896	1898	1901	1902	1903	1904	1905	1906	1907	1909	1912
No. of students	13	61	274	608	1300	2400	8000	12000	10000	3000	1400

Table 2 Numbers of Chinese Studying in Japan<sup>7</sup>

These reforms also opened up new space for Chinese elites to organize politically in hitherto unprecedented provincial assemblies, semi-official chambers of commerce and educational associations, the most prominent of which was that based in the cultural and economic hub of China, in the southern Yangzi region (Jiangnan).<sup>8</sup> The unofficial capital of this region since the Taiping civil wars was semi-colonial city of Shanghai, protected by the gunboats of the European powers. Elites from Hangzhou, Suzhou, Nanjing, and smaller cities and towns of the region maintained primary residences in Shanghai and began meeting in the native place guild halls (*huiguan* 會館, 17<sup>th</sup>-20<sup>th</sup> C.) and then the "associations of fellow-provincials" (*tongxianghui* 同鄉會, 20<sup>th</sup> C.), in meeting rooms of presses or in public gardens.<sup>9</sup> Shen Enfu, a leader in the Joint Terminology Committee despite not knowing English or medicine, was deeply involved in self-government councils of Shanghai's Chinese city, moved easily among the region's commercial elites and along with his close friend Huang Yanpei, was among the most influential leaders of the Jiangsu Provincial Education Association.<sup>10</sup>

<sup>&</sup>lt;sup>7</sup> Translated and adapted from Li Xisuo 2007: 207-208.

<sup>&</sup>lt;sup>8</sup> On provincial assemblies see Thompson 1994 and Rankin 1986; on chambers of commerce, see Fewsmith 1985, Elvin and Skinner 1974, ; on the educational associations and the JPEA in particular, see Bastid 1988, Xiao-Planes 2001, Schwintzer 1992.

<sup>&</sup>lt;sup>9</sup> Meng Yue 2006 for the rise of Shanghai, for use of public gardens for organizations, and for position of presses as public spaces; See Guo 2003 and Goodman 1995 for native place networks in Shanghai.

<sup>&</sup>lt;sup>10</sup> On Shen's self-government activities in Shanghai, see discussion below. Huang Yanpei edited and published Shen Enfu's collected works in 1951 even while he was being asked by Mao Zedong to be Minister of Light Industry in the New China.

The old elite families rapidly shifted to take advantage of the new forms of elite power in society, moving to the cities, investing in industry and educational institutions. Families that could afford to sent one or more children to Japan, overseas, or to missionary and newly established government schools teaching the new learning. These new elites were the benefactors of the Republican Revolution, and as will be demonstrated below, several Joint Committee Members had played key roles in 1912. A prominent Chinese Christian like David Yui (Yu Rizhang), educated at St. John's University in Shanghai and Harvard in the U.S., soon to become the head of the Chinese YMCA, could now play a mediating role between missionaries like Cousland and his colleagues and influential Chinese intellectuals. In the 1910s, collaboration with foreigners did not seem a betrayal or a loss of sovereignty, and trust could be established with a common agenda.<sup>11</sup>

But trust depended upon more than personal social networks, as important as these were.

Trust must also be established through the production of things, in this case terminology lists.

Cousland explains in specific detail that the primary problem the missionaries had with

translating medical books was the Chinese terminology.

Therefore, [we] first translated several kinds of books, but [dealing with] the terminology was very difficult. First [we] used established Chinese terms, [but] more than one or two of them were found to be unsuitable. At that time, there was no organization for communication among Western physicians [in China],<sup>12</sup> and [those] in each place set their own terms. This caused great difficulties for Chinese studying medicine. Afterward, [we] established one terminology committee.<sup>13</sup> This medical-pharmaceutical terminology investigation committee had five or six members who took medical terms and edited them to become a dictionary. [We] engaged Chinese people to help establish standard principles.

<sup>&</sup>lt;sup>11</sup> Nothing significant has been written in English on the Chinese YMCA since Shirley Garrett (1970), but for understanding the importance of Chinese Christian elites for mediating between missionaries and non-Christian elites in the 1910s see Dunch 2002. This situation changed and became far more complicated and fraught in the 1920s with the advent of Communist/Nationalist joint radicalization of students throughout China in preparation for the Northern Expidition, especially after the 1925 May Thirtieth Movement, and the movement to recover educational rights from foreigners in China.

<sup>&</sup>lt;sup>12</sup> I.e. before 1886 establishment of China Medical Missionary Society

<sup>&</sup>lt;sup>13</sup> Established in 1890, but not effective until reorganization in 1901 with Cousland as chair.

Cousland and his colleagues employed pundits who were collaborators and dependent upon stipends from missionaries for their living.<sup>14</sup> Many of them had some sort of classical education, but these were not the sort of confident and dominant Chinese elites seated around the table with Cousland this day. On 21 February 1915 Cousland came as an equal to the table. Pundits were contracted labor, men like Shen Enfu brought not only considerable knowledge of Chinese literature, but also deep connections with the presses, universities, and returning overseas students. The Japanese-trained physicians brought their lists of terms and Cousland brought his English-Chinese Lexicon. The Chinese assembled brought their own ideas about how to find a methodology to translate and standardize medical terminology and Cousland brought his.

The principles Cousland and his missionary colleagues had established were elaborated as follows, in order of priority: (1) use suitable ancient Chinese terms; (2) translate newly established terms from Japanese; (3) make a translation of the meaning of the term; (4) transliterate the sounds of particularly difficult terms.<sup>15</sup>

Old terms in common use in Chinese were the most preferable, while terms used in existing translations from Japan were considered second. But the missionaries had significant classroom experience in addition to their translation work and had found that some terms that were useful in written translations were not useful in classroom lecturing. And hence the need for the present committee to reform the situation. Cousland hoped that the committee, once formally established, would "be able to take the best term, the most simple, the most accurate terms and examine them and decide once and for all, then this would be beneficial." But while the missionaries understood the scientific side of the problem, they did not have skills to speak of in

<sup>&</sup>lt;sup>14</sup> See Hatcher 2005 on the origin of the term "pundit/pandit."

<sup>&</sup>lt;sup>15</sup> See Appendix 7 for a comparison of various proposed methologies to standardize existing terms and create new terms.

"literary embellishments and beauty." Thus the success of the project depended upon mutual cooperation.

If such cooperation between missionaries and wealthy, educated and powerful Chinese elites had not been possible in the late Qing, it now seemed desirable to those present. Zhou Wei and Wang Yugang, two Japanese-trained physicians of Tang Erhe's camp, asked the Educational Association to establish a subsidiary research organization for medical studies. Chairman Huang Yanpei, however, was reluctant: "This association has many kinds of attached research groups using the association building to organize.<sup>16</sup> But the number of association members who study medicine is not great. If someone realistically takes responsibility, only then could an attached group be established." Educated readers of the *Shenbao* might already be aware of the proliferation of subsidiary groups attached to the Educational Association. It made sense, in 1915, for these educated elites to look to a semi-official networking organization like the JPEA, to organize, rather than looking to city, provincial or national governments. It made sense that elites organize themselves, set the ball rolling, and once the organization was fully established, to then ask the weak central government to send a representative, and then eventually approve their work.

So Huang Yanpei agreed in principle that the Educational Association could be used to organize a subsidiary association for medicine. It was the Joint Terminology Committee for Medical Terminology, soon to expand to cover scientific terminology. Huang offered a methodology for organization of local cells that would feed into the larger (national) organization, to be organized with Dr. Philip Cousland at the center of the network. Each area, whether Suzhou, Hangzhou or wherever, would organize a local committee and then notify Cousland. Writings from physicians from each area would be collected (and supposedly

<sup>&</sup>lt;sup>16</sup> See Appendices 8 and 9 for full list of subcommittees and associated organizations and their publications.

analyzed by term) and then reported to Cousland. Cousland should then revise his list of medical terms accordingly and then redistribute to all medical schools, medical associations, thus disseminating all opinions as widely as possible. The final stage of preparation for the first technical meeting of the terminology committee would be to wait for opinions from all Chinese and Western physicians and scientists. When all the groundwork was laid by the physicians and scientists operating through the Jiangsu Provincial Education Association, the Peking government would be notified and petitioned to dispatch an official representative.

Cousland and all the Western doctors approved this methodology without exception. All the Chinese elites present also approved without exception. The meeting was then concluded with mutual thanks and adjournment.

Although Shanghai's major daily newspapers carried accounts of the Joint Terminology Committee and pictures of the committee in subsequent years would appear in prominent and serious weeklies like *The Eastern Miscellany*, it was not front page news.<sup>17</sup> The Committee's activities occupied a significant part of the early journals of professional associations—that of the National Medical Association *Zhonghuayixuehui* 中華醫學會 and of the Science Society of China *Zhongguokexueshe* 中國科學社.<sup>18</sup> Shorter reports can be found published around page eight or ten each in the *Shenbao* and the *Republican Daily* while the committee was in session each year. Yet this dissertation will argue that the thousands of pages detailing the minute activities of the committee reveal that these ostensibly mundane, taken-for-granted activities of eliminating ambiguity in the market for medical and scientific terminology were far more than a sideshow to the military and political alliances and betrayals that occupied the front pages. Establishing a social power required a multitude of mundane activities, including the

<sup>&</sup>lt;sup>17</sup> See conclusion.

<sup>&</sup>lt;sup>18</sup> National Medical Journal 中華醫學雜誌 (founded 1915) and Science 科學 (founded 1915), respectively.

standardization of technical terminologies, their publication and dissemination and acceptance by all concerned parties.

What kind of response did this 1915 call to action meet? To see the importance of the Joint Terminology Committee, we can examine a statistical view of the usage of two precise terms in Chinese periodicals of the 1910s and 1920s that are conclusively linked to the work of this committee in its two expanding phases. The first term is medical terminology (vixue mingci 醫學名詞), and the second, scientific terminology (kexue mingci 科學名詞). It is now possible to search the titles of all articles for most of the journals produced in Republican China through a database produced by the Shanghai Municipal Library.<sup>19</sup> A keyword will give a complete list of entries in just over eighteen thousand journals in their incomparable collection.<sup>20</sup> Each of these references directly relates to an author of the periodical piece (not including regular newspapers) arguing for the need to standardize technical terminology or reporting or debating on the work of the Joint Terminology Committee (see charts 1.1 and 1.2 below). They have titles referencing the specific title of the Joint Terminology Committee with modifiers like "Minutes of the first meeting..." (1917), or "Constitution ... (1917)," "Correspondence for the Joint Committee (1924)," or more specific ones like the 1925 "the problem of transliterations in medicopharmaceutical terminology." These items, particularly the long reports found in the *National* Medical Journal 中華醫學雜誌 between 1916 and 1927, account for hundreds of pages. Most of these reports have not been analyzed, even in the substantial Chinese language literature about

<sup>&</sup>lt;sup>19</sup> UBC and other major Chinese collections gained access to this search engine between 2008 and 2010. See *Quanguo baokan suoyin* 全国报刊索引

<sup>(</sup>http://www.cnbksy.com/ShanghaiLibrary/pages/jsp/fm/index/index.jsp).

<sup>&</sup>lt;sup>20</sup> Zhu Junzhou (ed), Shanghai tushuguan 2004, lists 18485 journals in its collection. As far as I know all of these have been indexed in the National Index to Chinese Periodicals and Newspapers, "Republican Periodicals" section.

the language standardization project of the Republican Period.<sup>21</sup> I will have more to say in chapter two about the significance of the particular journals in this list to understanding the networking patterns of Chinese educational elites and professionals in the 1910s and 1920s. For now I would like to focus on the number of articles and their grouping according to publication and year. The most obvious pattern is the shift from the medical terminology work to its expansion to include all of science between the years 1918 and 1919. Looking only at the first row of charts 1.1 and 1.2 we see that the National Medical Journal was the most significant journal publishing about the terminology committee, both in its first incarnation focusing on medical terms where 20 of 57 (35%) of "medical terminology" items appeared in that journal (chart 1.1), and even in its second incarnation when the various scientific groups like the Science Society of China (SSC zhongguo kexueshe 中國科學社) joined it and it broadened its activities to all of scientific terms where 44 of 105 or 42% of "scientific terminology" items appeared in the *National Medical Journal* (chart 1.2). The only other journal to come close was *Science*, the journal of the Science Society of China. Even this much celebrated promoter of standardizing scientific terminology had only 24 of 105 items, or 23% for the term "scientific terminology" (chart 1.2). Throughout this period, the National Medical Journal consistently had the longest articles on medical and scientific terminology, beginning with the fifty-two page detailed transcript for the first two years meetings (1916-1917). But there were also many shorter reports similar to those in the JPEA Monthly, or those that appeared after 1918 in Science.

We can also see that in the most exuberant years of the May Fourth period (1918-1920) key periodicals like the *Beijing University Daily* demonstrated significant interest in the progress of the committee work. The JPEA was associated with several of the journals in charts 1.1 and

<sup>&</sup>lt;sup>21</sup> This literature is best exemplified in Zhang Daqing 1996 and 2001 and Zhang Jian 2007.

# Table 3 Appearance of "medical terminology" (*yixue mingci* 醫學名詞) in Republican journals, 1915-1925<sup>1</sup>

Year (1915-1925)	15	16	17	18	19	20	21	22	23	24	25	_
中华医学杂志 National Medical Journal		5	10	4				1				20
教育研究 Educational Research		2	10									12
江苏省教育会月报 JPEA Monthly		3		5								8
中华民国医药学会会报 ROC Medico-												
Pharmaceutical Association. Journal			3	1								4
教育周报 Education Weekly		1	1	2								4
中华教育界 Chinese Educational World	2											2
东方杂志 Eastern Miscellany		2										2
民国医学杂志 Republican Medical												ĺ
Journal									1		1	2
中西医学报 Chinese-Western Medical J.	1											1
晨报副刊 Morning Post Supplement											1	1
绍兴医药学报 Shaoxing Medico-Pharm.												ĺ
J.		1										1
Total	3	14	24	12	0	0	0	1	1	0	2	57

Table 4 Appearance of "scientific terminology" (kexue mingci 科學名詞) in Republican journals, 1914-1926

Year (1914-1926)	14	16	17	18	19	20	21	22	23	24	25	26	_
中华医学杂志 National Medical Journal					3	6	5	5	8	7	6	4	44
科学 Science		1				1		2		2	14	4	24
北京大学日刊 Peking University Daily				3	2	4							9
江苏省教育会月报 JPEA Monthly				1	1						1	2	5
民国医学杂志 Republican Medical Journal									2	2		1	5
教育周报 Education Weekly			1		2								3
同德医药报 Tongde Medical Journal										3			3
东北文化月报 Northeast Culture Monthly								1	1				2
中华教育界 Chinese Educational World										1	1		2
浙江省教育会月刊 Zhejiang PEA Monthly										1			1
江苏省教育会年鉴 JPEA Annual Mirror									1				1
教育杂志 Education Journal					1								1
中华工程师会会报 Chinese Engineering													
Assoc.	1												1
清华周刊 Tsinghua Weekly										1			1
东方杂志 Eastern Miscellany						1							1
Total	1	1	1	4	9	12	5	8	13	17	23	11	105

<sup>&</sup>lt;sup>1</sup> These charts were generated using a database available in the Shanghai Library and now at an increasing number of North American research libraries. The searches were performed in 2007 and 2008 and were confirmed with the database at Yale Sterling Library in 2010 and at UBC library in 2011. Many of these articles appear in the bibliography.

1.2, not just the *JPEA Monthly* and *JPEA Annual Mirror*, but also *Educational Research* and practically all other major journals on education. As we shall see in chapter two, the JPEA was also at the center of the May Fourth and New Culture Movements—in Shanghai. The work of institutionalizing, rationalizing and unifying the language for the new learning was at the forefront of elite culture between 1915 and 1925. The JPEA and its overlapping networks of influence formed the nexus, we shall see, for the professionalization of medicine and science in modern China. The key to this nexus was a tentative, new atmosphere of trust established between foreign missionaries and Chinese educational elites.

The 1915 meeting described above only hints at the full significance of the standardization work. The preceding account introduces some of the primary actors—individuals, professional groups, elite networks-of this dissertation. The significance of the Jiangsu Provincial Education Association as a site for elite networking, profession formation, and the "landing strip" of the New Culture in China is explored in some detail in chapter two. A weak central state need not result in wholly futile attempts to govern, even if these attempts come from non-governmental sources and did not bear fruit immediately. The relationship between the missionary impetus to heal and translate while contributing to the rationalization and standardization of the Chinese language is analyzed in chapter three. The Joint Terminology Committee allows me to refuse to analyze missionaries separately from Chinese elites—in this account missionaries are Chinese elites, albeit with off-shore sources of income and legitimacy. Chapter four probes deeply into the work of scientific language standardization in action—in it I will follow some of the most controversial terms debated at the various sessions of the Joint Terminology Committee between 1916 and 1926. Science and its language are always created by people living, debating and arguing, although rarely can any one individual or group control the

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outcomes. Chapter four thus explores the various influences on the terminology committee and their stock of technical terms through the extraordinarily well preserved debates—some of them recorded "live" in meeting transcripts, and others in published criticisms of the work of the terminology committee.

#### Overview of the Joint Terminology Committee, 1916-1927

At this point it is appropriate to overview the work of the committee. Several points should become clear from this account: that the standardization of anatomical terminology led to the standardization of the technical terms for all of the new sciences in China; that the work was significant enough to enroll many interested actors, including the Beiyang Government's Ministry of Education (1916-1917), as weak as that was; that association with the Beiyang Government and the Jiangsu Provincial Education Association became a liability between 1925 and 1927 such that membership in the committee dropped precipitously, even as key members would individually find a way to enter the new government organization to replace the Joint Committee; and we see the rise of Dr. Lu Dexin, a Chinese member of the China Medical Missionary Association who became Philip Cousland's protégé and maintained continuity for medical and anatomical standardization work from 1917, through the Nationalist era (1928-1937) and even into the Maoist period. But the most important theme emerging from this account is the increasing self-bureaucratization inherent in the work of the committee-in the absence of a strong state, elites created the bureaucratic power to standardize terminology. The more successful they were, the more that an expansive state like the Nanjing Nationalist Government would want to take over their work.

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After the February meeting of 1915 in the upper room at the American Press, work proceeded to organize the first joint technical meeting.<sup>2</sup> In January 1916, Philip Cousland, on behalf of the CMMA terminology committee, edited a set of draft lists in four booklets sent out to a variety of medical professionals. These were officially introduced to interested representatives from other groups one month later, when the National Medical Association, founded by Wu Liande, Yan Fuqing and Yu Fengbin, was holding their first annual meeting in Shanghai at the YMCA.<sup>3</sup> Four core groups were already apparent at this meeting: the National Medical Association, the Medical Missionary Association, the Medico-Pharmaceutical Association, and the Jiangsu Provincial Education Association. The Medico-Pharmaceutical Association indicated that their draft lists were almost complete. Given that there were already two sets of draft lists, Yu Fengbin of the NMA indicated there was no point in his group drawing up another one. All of the groups agreed that hard work and cooperation from all corners of the medical world was essential to making the project work. At this preparatory meeting, they agreed that each of the four groups could send a maximum of five representatives, that a new draft list would be made up for each year, that the Education Association would be the communications headquarters for correspondence, that they would request the Ministry of Education send a representative for their sessions and ask them to promulgate approved lists. Significantly, this

<sup>&</sup>lt;sup>2</sup> Several Chinese scholars have published overviews of the work of the Joint Terminology Committee, and the following summary is based on the best of these. The earliest substantive account was that of Zhang Daqing of the Peking University Medical History Research Center. In 1996 Zhang published a six-page article addressing the background, development and an analysis of the Joint Committee up to 1927. In 2001, Zhang published a second article of seven pages about the pre-eminent role of Philip B. Cousland in the work of standardizing Chinese medical terminology. Other accounts have been published in books like Li Yashu and Li Nanqiu's 2000 edited reference work on the history of scientific translation in China, and short pieces by Li Nanqiu scattered in various scientific translation journals (1995; 1998; 1999). More recently, Wen Changbin, then at Shanghai's Jiaotong University, published a series of articles (2004; 2005a; 2005b; 2006a; 2006b) and dissertation (2005c) cover the work of standardizing scientific terminology in greater depth than had been accomplished by to that date, focusing on the post 1927 period. Most recently, Zhang Jian of the Shanghai Academy of Social Sciences has published a chapter on the scientific terminology standardization in a book on the institutionalization of science in early twentieth century China (2007).

<sup>&</sup>lt;sup>3</sup> "Yixuemingci disanci tanhuahui jishi," 1916: 39. See map for location of the YMCA and other important Shanghai sites.

would also not be a closed group—any organization or individual professional could propose a draft list of terms and ask the committee to investigate. That summer, in the second week of August, the Joint Terminology Committee held its first substantive meeting to discuss the terminology for anatomy, beginning with 1182 terms for osteology. At the end of the week, these terms had all been discussed and decisions made.<sup>4</sup> This meeting was characterized by various missionaries becoming suspicious of certain Chinese terms, followed by Shen Enfu explaining the philological history of the term, only to have their doubts melt away. With great effort, the Chinese secretary recorded transcripts of the debates writing (by hand) an average of five thousand Chinese characters per day and a total of more than thirty thousand for the week. These transcripts, an absolutely unique historical source, allow for the close reading of the decisions of the committee in chapter four. Subsequent transcripts would become far more terse, especially those published in *Science*, where the reports on the terminology committee eventually became merely an introductory paragraph and long lists of term decisions (see figure 5).

Less than one year later, during the second week of January 1917, the second meeting of the Joint Terminology Committee commenced. A new association joined the committee, the Science Professors Research Association (SPRA), which was actually another subsidiary of the Jiangsu Provincial Education Association. For the sake of efficiency, the Joint Committee was divided in two, one to continue with anatomy terms, and chaired by Yu Rizhang, the other beginning to standardize terms for chemistry and chaired by JPEA and SPRA member Wu Heshi. The anatomy group, having finished with osteology, moved on to terms for ligaments, muscles and internal organs. The SPRA and the Medico-Pharmaceutical Association had each compiled draft lists of terms for chemistry on which the discussion in that group was based. At this meeting it was determined to establish a Shanghai-based executive for medical terminology to

<sup>&</sup>lt;sup>4</sup> See chapter four for exceptions and details of this meeting.

manage daily activities, each group being allowed to elect one member. Yu Rizhang was chosen as head of this permanent executive that was staffed with Dr. Beebe, Shen Enfu, Yu Fengbin, Wang Qizhang and Wu Heshi for the CMMA, JPEA, NMA, ROCMPA and SPRA, respectively.<sup>5</sup>

These members wrote a constitution for the Joint Terminology Committee that made clear limits of participation from each constituent group, a two-month advance warning for submitting draft term lists from constituent groups to the committee, and from the committee requesting an official representative from the Ministry of Education. The constitution established rules of method, including the necessity of a two-thirds majority to unify term correspondence (i.e. one BNA Latin term to one Chinese term), and use of two Chinese terms if any one term had less than two-thirds. These two terms were then ranked according to vote. If any committee member was still unhappy with a term, then the committee would wait until the next day to decide on it. Finally, if there were draft lists for two or more fields of science, the committee would divide into groups in order to save time. The constitution expanded the deadline for interested scholars to reply to published committee results from three to four months, set an annual committee date start (solar calendar, July 5) and minimum (two sessions) and maximum (two weeks) length for each annual terminology conference. The committee would be temporarily based in the Shanghai Xiefang Road headquarters of the Education Association, fees would be split among the constituent groups, and a two-thirds majority was required to change the constitution.<sup>6</sup>

After the first meeting, the executive sent its first set of committee-approved terms to the Ministry of Education for approval, leading to publication of an approved term list for anatomical terminology and a grant-in-aid of one thousand *yuan*. At the now regular summer

<sup>&</sup>lt;sup>5</sup> Zhang 1996: 49.

<sup>&</sup>lt;sup>6</sup> "Yixuemingci shenchahui zhangcheng" National Medical Journal 3:3 (1917): 4-5.

meeting, the constitution was ratified by the full committee, with the proviso that, given the keen interest of professionals from all the new sciences to standardize Chinese terminology and participate in the project, the group change its name to Scientific Terminology Committee (*Kexuemingci shenchahui* 科學名詞審查會) and open up membership to other groups that wished to join. At the 1918 meeting the name change was approved and three sub-committees were formed, with Shen Enfu, Wu Heshi and Yan Zhizhong as respective chairmen for anatomy, bacteriology and chemistry. The fifth meeting added a delegation from Science Society of China, members of which were now completing their graduate degrees at Cornell, Harvard and Columbia. Another group of scientists also joined the committee--the China Natural Science Study Society—bringing the total number of participants in the terminology meetings to a total of forty, including representatives from the Ministry of Education. The committee recognized that after five years, they had standardized over ten thousand terms, no small feat when a single contentious term might take three hours of discussion.

Up to 1919, all Terminology Committee meetings had been held in Shanghai at the Fangxie Road headquarters of the JPEA, but 1920 and 1921 saw the committee convene first in Beijing, hosted by the Peking Union Medical College, then in Nanjing, where it was hosted by the Science Society of China. 1922, 1923 and 1926 returned the committee to Shanghai, while 1924 and 1925 the committee convened in Suzhou and Hangzhou respectively. These meeting places confirm a constellation of the scientific and medical institutions in China in these years which were clearly centered only in East China, and the Jiangnan region (Lower Yangzi River), focused on Shanghai, Nanjing, Suzhou and Hangzhou where a preponderance of physicians, scientists, and educational institutions were concentrated. Beijing was also important, but clearly the centrality of Shanghai both geographically, and as the center of educational, medical, scientific and publishing circles made it the most obvious place to meet.<sup>7</sup> In 1925, the committee called a separate committee on the standardization of transliterations to work out a complete chart of sounds, balancing northern and southern pronunciations, enrolling the opinions of outstanding scholars like Cai Yuanpei (蔡元培), Chen Duxiu (陳獨秀), Qian Xuantong (錢玄同) through correspondence.<sup>8</sup> Each year the number of organizations sending representatives expanded, and the total number of representatives increased to a peak of sixty-three in 1924, thereafter falling to thirty-four and twenty-seven respectively in the last two years of the committee, likely due to national unrest in the wake of the May Thirtieth Movement in 1925 and the spread of anti-warlord and anti-foreign movements in 1925-26. Some members may also have been repositioning themselves away from connection to the JPEA and Beijing Ministry of Education as these were increasingly the target of propaganda attacks for being corrupt warlord institutions.

Between 1916 and 1926, the committee met to standardize terminology twelve times, investigating medical sub-disciplines of anatomy, histology, embryology, bacteriology, immunology, pathology, parasitology, pharmacology, physiological chemistry, surgery, physiology, and the sciences of organic and inorganic chemistry, the various branches of physics, zoology, botany and mathematics. The basic method of choosing fields of science to standardize was according to the interest of participants; if a terminology list was prepared by a group, they must present it in advance so that the committee could inform interested scholars in advance that this subject would be discussed at the next meeting. In 1926 they published their accomplishments and work in progress in a chart format in both specialized journals, but more importantly, also in the *Shenbao* where it would get a wide distribution (see Appendix 1).

<sup>&</sup>lt;sup>7</sup> Chapter two will argue that the JPEA was a national organization and was more important in practice than the Beijing Ministry of Education.

<sup>&</sup>lt;sup>8</sup> "Yixue mingcizhong zhi yiyin wenti," National Medical Journal, 11:5 (1925): 329-330. See Kaske 2008.

On Christmas Day, 1927, with a brand new Nationalist government in Nanjing establishing their University Council (abolishing the "corrupt" Ministry of Education in Beijing) with an official committee for standardizing translated terms, the Scientific Terminology Committee executive met to discuss how to proceed. They decided, likely under unofficial duress.<sup>9</sup> that their days of helping the central government had come to an end. With permission from the membership, the Scientific Terminology Committee would negotiate with the University Council headed by Cai Yuanpei. The Scientific Terminology Committee would decidedly not be converted into the new organization, the Translated Terminology Standardization Committee (Yimingtongviweiyuanhui 譯名統一委員會). The JPEA and Ministry of Education were abolished, but professional associations like the National Medical Association and the Science Society of China managed to negotiate adequately to maintain themselves and send representatives to the new official terminology committee. Notable members of the new committee included Wang Yunwu of the Commercial Press and Hu Shi. Scientists and physicians who had been involved in the old, unofficial committee were able to find a place in the new one, including Bing Zhi, Zheng Zhenwen, He Lu, Jiang Lifu, and Philip Cousland's Chinese protégé from the CMMA publication committee, Lu Dexin. The new committee moved to expand its coverage to social sciences like law, education as well as more commercially important fields such as mineralogy, geology and petrology. In November of 1928 the newly formed University Council headed by Cai Yuanpei was became the Ministry of Education,<sup>10</sup> and the new committee was again reorganized by February 1929 with subcommittees for mathematics, physics, chemistry, medicine, pharmacology (a total of twenty-one

<sup>&</sup>lt;sup>9</sup> See chapter two on the disbandment of the JPEA and Huang Yanpei's involuntary flight to escape an assassination order.

<sup>&</sup>lt;sup>10</sup> Linden 1968.

and growing) and a total membership of 240 people.<sup>11</sup> In 1932 there was a further reorganization and name change to National Institute for Compilation and Translation (*Guolibianyiguan* 國立編譯館), a clear reference throwback to the late Qing government institute headed by Yan Fu (i.e. *Bianyiguan* 編譯館).<sup>12</sup>

### Anatomic modernity meets semiotic modernity

The meeting on the second floor of the American Presbyterian Press toward the end of February 1915 was the beginning of a second, crucial stage of what has been called China's "semiotic modernity."<sup>13</sup> The first stage might be said to be the flood of Japanese learning (*dongxue* 東學) that arrived via translations from Japan at the turn of the century. By the middle of the last decade of the Qing, there were thousands of books from Japan. Yan Fu, Liang Qichao, Sun Yatsen and many others, like those present at the February meeting in 1915, took advantage of the affinity between the written languages of Japan and China to introduce "written languages, modern concepts, vocabularies, texts, and graphics."<sup>14</sup> The third phase might be said to be Leo Lee's "Shanghai Modern" of the 1930s, when writers invented a modern Chinese literature by borrowing and experimenting with genres and styles from Europe and Japan.<sup>15</sup> This dissertation argues for a second phase, building on Meng Yue's first "semiotic transaction of vocabularies [which] generated a modernity of words,"<sup>16</sup> that is, the standardization and unification of technical terms.

<sup>&</sup>lt;sup>11</sup> Zhang Jian 2007: 84-85.

 $<sup>^{12}</sup>$  See esp. Wright 2001.

<sup>&</sup>lt;sup>13</sup> Meng 2006.

<sup>&</sup>lt;sup>14</sup> Meng 2006: 31.

<sup>&</sup>lt;sup>15</sup> Lee 1999.

<sup>&</sup>lt;sup>16</sup> Meng 2006: 32

By 1927, the Joint Terminology Committee network had extended from the four primary scholarly and professional associations of 1916 to eleven regularly contributing member organizations and many more temporary ones. All major medical and scientific associations had contributed, as had all major universities. The Committee had standardized and made public their unified terminologies for a long list of sciences, beginning with anatomy and sciences closely allied to medicine like chemistry, bacteriology, histology, pathology, physiology, pharmacology, biochemistry and extending to zoology, botany, physics, mathematics, and mineralogy. This process continued under the Nationalists with standardization and creation of Chinese terms for new fields of knowledge as far across the spectrum as mental disorders, soil sciences, naval engineering and musicology, continuing separately in Taiwan and PRC after 1949. Individuals like Lu Dexin would connect all three eras, editing and publishing Cousland's Medical Lexicon from 1917 to the 1950s.

We are still living in the era begun in 1915. When a Chinese speaker reads a technical term with which she is not familiar in a textbook or magazine, she need only look it up in any general dictionary and find its meaning, and in the *Hanyu Dacidian*, she can find examples of usage just as English speakers do with the Oxford English Dictionary. If it is not present in a general dictionary, she will be able to find the word in a specialized dictionary. For medicine, this might be the *English-Chinese Dictionary of Standardized Medical Terms*.<sup>17</sup> In Taiwan, she may look it up in a disciplinary lexicon in the official series established in 1929 by the National Institute for Compilation and Translation (*Guolibianyiguan* 國立編譯館) and promulgated by the Ministry of Education that took over the work and many of the standardizers from the Joint

Terminology Committee. These lexicons, like glaciers in an ice age, continue to accumulate new material slowly, except in new and subdivided fields which develop quickly.

Zhang Daqing, head the medical history division of Peking University, has said that the Joint Terminology Committee was the first common project of China's scientific community, as well as one of its longest-running activities, involving the greatest number of participants.<sup>18</sup> I have counted over three hundred participants who showed up at least once to a Committee meeting between 1915 and 1927 (see Appendix 1 and subsets). In the following pages I will demonstrate that in order to understand the role of the sciences in modern China, or to understand how the practice of sciences changed because of their career in China, we must follow the scientists. And when we follow what early scientists did in the crucial New Culture era, we see a nexus forming of anatomy, language and power.

<sup>&</sup>lt;sup>18</sup> Zhang 1996, 50.

# 2 The social network: generalists and professionals between the Jiangsu Provincial Education Association and the Joint Terminology Committee

... the Jiangsu Provincial Educational Association [was consulted] to introduce all those professionals and enthusiastic research scientists who edit and translate scientific books to engage together to find a method to discuss [selecting medical terminology]. Ding Fubao 丁福報 1915<sup>1</sup>

When all kinds of scientific terms entered into people's daily lives through the media and textbooks, efforts to explain science and the world with traditional resources quickly lost their impact.

Wang Hui 2009<sup>2</sup>

On 21 February 1915, Shen Enfu (沈恩浮 1864-1949) attended the preliminary meeting on the

second floor of the American Presbyterian Mission Press in Shanghai on medical terminology.

Shen was a prominent member of Shanghai's "gentry democracy," a philologist, and an alumnus

of Shanghai's prestigious Longmen Academy, who had overseen its transformation into a

modern Teacher's College after 1905. But Shen Enfu was no physician, and neither were more

than half of the twenty-nine others present. It was, in fact, an eclectic group that came together

on that day in February: two educators, six missionary physicians, three major publishing house

heads, six prominent editors, half a dozen Japanese- or American-trained physicians, two YMCA

leaders, the principal of Nanjing Teacher's College, and the Shanghai editor of the journal of the

Science Society of China. Shen Enfu was there, together with his JPEA executive committee

colleagues Huang Yanpei (黃炎培, 1878-1965),3 and Yu Rizhang (David Z. T. Yui, 余日章,

1882-1936), to bring together these various elites in sustained action to establish a professional terminology for medicine: institutionalized as the Joint Terminology Committee (JTC

<sup>&</sup>lt;sup>1</sup> Ding 1915: 3-6.

<sup>&</sup>lt;sup>2</sup> Wang Hui 2009: 150.

<sup>&</sup>lt;sup>3</sup> Huang Yanpei was a household name in urban Republican and Maoist China at least until the 1950s when he was Minister of Light Industry. For key works, see Huang 2000; Schwintzer 1992; Xu 1988; Curran 1992; Yeh 2007: 36-40, 48; Yeh 2008.

yixuemingci shenchahui 醫學名詞審查會).<sup>4</sup> Shen Enfu, Huang Yanpei and Yu Rizhang mediated the creation of this organization through their powerful social network, the Jiangsu Provincial Education Association (JPEA, *Jiangsusheng jiaoyuhui* 江蘇省教育會). Including Shen, Huang and Yu, seven of those present, from physicians to publishers to educators, were members of the JPEA. Yu Rizhang became the first chairman of the Joint Terminology Committee, and when other business took him away, Shen Enfu took over. During its existence, there was never any question that an executive officer of the JPEA would chair the committee or that the JPEA would be the network hub of this project (see Appendix 2 for map of JPEA and other Shanghai-based associations described in this chapter).

The abolition of the imperial civil service examinations in 1905 created a crisis of knowledge, institutions, and authority in China. By the 1930s many recognizably modern institutions would come to occupy the empty center of China's cultural and educational economy. But it was the transitional, non-governmental, Jiangsu Provincial Education Association that filled the immediate void created by the abolition of the examination system. It then fostered many of the modern institutions that would supersede it, notably universities, laboratories, associations we would now call educational NGOs, and professional associations for educators, lawyers, journalists, scientists and physicians. This chapter gives an account of this influential Republican network of knowledge production and, in particular, its activities in scientific terminology standardization.

The JPEA existed as a continuous organization from 1905 until 1927, bridging the institutional gap between the late imperial examination and academy system until the Nationalists (*Guomindang*) established the University Council (大學院 *daxueyuan*, 1927-1928)

<sup>&</sup>lt;sup>4</sup> Later, Scientific Terminology Committee (Kexue mingci shenchahui 科學名詞審查會).

and then a reformed Ministry of Education and Academia Sinica (中央研究院 zhongvang vanjiu *yuan*, 1928-present) as China's research hub.<sup>5</sup> From their Shanghai headquarters in the bustling West Gate (ximen 西門) commercial center (Appendix 2), the JPEA and its leaders anchored multiple, overlapping networks that extended throughout China and beyond. One of the most important networks extended to the new professional associations for physicians and scientists. Yet the relationship between the JPEA and professionalizing Chinese physicians and scientists only becomes highly visible when we put the work of the Joint Terminology Committee at the center. In other words, examining both together allows us to recognize the true significance of each. Before 1915 there were no professional groups for physicians or scientists in China. After February 1915, standardizing technical terminology became a primary professional activity of Chinese physicians and scientists. This committee was made possible by the JPEA, not by the anemic Beiyang Ministry of Education, although the approval of the latter was requested. The committee was initiated by missionary physicians, mediated by key JPEA members, and joined by key representatives of the professional groups for biomedicine and the sciences. The committee's founding in 1915 occurred simultaneously with the birth of two professional associations for Chinese physicians, and with that of the key professional association for Chinese scientists. It continued until 1927 when it was swallowed by the expansive Nationalist state that destroyed and displaced the JPEA network.

<sup>&</sup>lt;sup>5</sup> The JPEA began in 1905 as the Jiangsu Study Association (江蘇學會), later that year Jiangsu Education Service General Association (江蘇學務総會), then became the Jiangsu General Education Association (江蘇総教育會) in 1906 in response to legislation of the Ministry of Education (學部, and then in 1912 again changed its name according to new Republican legislation governing Education Associations. Gu 2009: 38-46.

#### *Networking to build new institutions*

The Jiangsu Provincial Education Association by itself could not replace the examination system of late imperial China-that void was too large. Along with other provincial associations, its original role was as an advisory committee to the Imperial Ministry of Education.<sup>6</sup> Yet almost immediately under its early reformist leaders, the JPEA stepped beyond these bounds. The examination system had acted as arbiter of orthodox knowledge, mechanism of imperial control of elite activism, and conversely, of elite access to imperial power.<sup>7</sup> Its abolition left a structural vacuum for elite ambition. Those elites who had the money and prestige to join the JPEA gathered to debate: what would replace that eight hundred-year old system of social mobility and control? They had been successful in the Confucian examination system, yet now they rejected this system, seeking to replace it with learning from the West as the key to national wealth and power. Now techno-science would be the key to industrialization and capital accumulation.<sup>8</sup> These men included the industrialist-politician-reformer Zhang Jian (張謇, 1853-1926),9 vocational educator Huang Yanpei, future president of Peking University, Jiang Menglin (蔣夢 麟, 1886-1964),<sup>10</sup> and prominent journalists like Bao Tianxiao (包天笑, 1876-1973) of The Eastern Times (Shibao 時報).<sup>11</sup> By 1915 the JPEA also included YMCA chairman Yu Rizhang, and the chief editors of China's two most prominent modern presses, the Commercial and China Presses. Tightly interwoven webs of associations meant that the JPEA umbrella included China's first generation of laboratory-trained scientists like Bing Zhi (秉志,1886-1965), the brothers Hu

<sup>&</sup>lt;sup>6</sup> Yeh 1990: 82-83.

<sup>&</sup>lt;sup>7</sup> Ho 1962; Miyazaki 1976; Elman 2000; Wu 1973.

<sup>&</sup>lt;sup>8</sup> Schwartz 1964; Köll 2003; Cochran 1980; 2000.

<sup>&</sup>lt;sup>9</sup> On Zhang Jian's role in the JPEA see Bastid 1988; Chu 1965; on his role in industry and establishing Nantong as a model modern city, see Köll 2003. <sup>10</sup> Yong Ma 2007; Weston 2004.

<sup>&</sup>lt;sup>11</sup> See Gu 2009: 52-53. Bao did not want to join the JPEA, but later followed others from his native place.

Gangfu (胡剛復, 1892-1966) and Hu Mingfu (胡明復, 1891-1927), university builders like Guo Bingwen (P. W. Kuo, 郭秉文, 1880-1969), and physicians like Wu Jishi (吳濟詩, n.d.) and Yu Fengbin (俞鳳賓, 1884-1930).<sup>12</sup> Some of these men, like Zhang Jian, were conservative reformers who represented Jiangbei, the poorer region of Jiangsu north of the Yangzi River. Others, like Huang Yanpei, had flirted with revolutionary ideas in the late Qing and had a firm powerbase in the greater Shanghai and Pudong region south of the Yangzi. Their collective goal was to industrialize and "scientifi-cize" (科學化) China and transform its people, beginning with vouth. Education in its broadest possible interpretation was the method. Education included a complete reorganization of primary education and transformation of the prestigious late imperial academy system into Normal Schools (to train teachers of the masses). Later these became fullfledged elite universities. Huang, Shen and Yu were the key promoters of vocational education to train China's lower middle classes. But this was only one part of their larger project. Gu Xiuqing has recently argued that the goal of the Jiangsu Provincial Education Association was no less than to "initiate a new system of knowledge" for all of China.<sup>13</sup> Their activities included, but were not limited to planning elementary school curriculum, expanding vocational schools, or ensuring students participated in art or physical education.

In searching for the roots of modern institutions in China, many historians have correctly focused on the importance of the Chambers of Commerce.<sup>14</sup> In fact, the Chambers of Commerce became a breeding ground for experimentation with capitalist forms of social organization, and became the model for the provincial education associations. Yet this connection has largely been

<sup>&</sup>lt;sup>12</sup> For a complete list of JPEA members in the Joint Committee, see Appendix 5.

<sup>&</sup>lt;sup>13</sup> Gu 2009: 164.

<sup>&</sup>lt;sup>14</sup> See Rowe 1984 and 1989 for a response to Max Weber's characterization of the Chinese city, which had dominated discussions of Chinese city up to that point. Compare William Skinner and Mark Elvin ed.1974 and Skinner, ed., 1977.

overlooked, and the overlapping memberships of key founders of educational associations and chambers of commerce, like Zhang Jian, have generally not been recognized in single accounts.<sup>15</sup> Even those accounts that do examine the Jiangsu Provincial Education Association barely register the vast scope of the networks emanating from the association.<sup>16</sup>

# Engineering the shift from "the principle of heaven" to scientific epistemology

The end of the examination system led to a collapse the existing socio-political order in the first half of the twentieth century. Elsewhere Wang Hui has argued that traditional knowledge was displaced and sublimated by scientific worldview and its omnivorous classificatory system.<sup>17</sup> As expressed in the epigraph above, Wang claims that it was explicitly the spread of a *vocabulary* of scientific terms into Chinese people's daily lives that displaced traditional knowledge forms.<sup>18</sup> One key to initiating this new system of knowledge was the production and editing of textbooks by lower middle class wordsmiths, as Robert Culp has demonstrated; another was the standardization of the technical language in which the new system of knowledge would be transmitted, shared and debated.<sup>19</sup>

A close examination of the formation of the Joint Terminology Committee demonstrates how this project was incorporated into the regular activities of the JPEA. Expanding the focus of analysis to the related activities by Joint Committee members under the aegis of the JPEA reveals the relationship between the JPEA and the JTC as a key node in the larger network of knowledge production and dissemination (See Appendix 4). The project to unify the terminology

<sup>&</sup>lt;sup>15</sup> See Fewsmith 1985: 30-31; Garrett 1974: 216; also Bergére, 1989: 54; Rankin 1986: 207 recognizes that the Chambers of commerce and educational associations appeared about the same time in the core areas of Zhejiang. <sup>16</sup> For previous accounts, see Xiao-Planes 2001, on the first decade of the JPEA; Schwintzer 1992: 124-214;

Yeh 1990: 119-121 and Yeh 1984: 17-23; Chen 1971; Keenan 1977: 67-68; 81-110; 111-126.

 <sup>&</sup>lt;sup>17</sup> Wang Hui 2009: 139-170. Compare Luesink 2009: 149-176 on Chinese medicine subsumed under the
"new" medicine. See Jin and Liu 2009: 27-70 for statistical models showing this shift from *tianli* to *gongli* to *zhenli*.
<sup>18</sup> Wang Hui 2009: 150.

<sup>&</sup>lt;sup>19</sup> Gu 2009: 164-174 discusses this together with the work to standardize a national language.

for medicine and science was an essential point for professionalization: establishing a modern profession required eliminating the epistemological ambiguity of multiple translations and the creation of high-standard educational institutions that could teach in Chinese, with standardized Chinese textbooks. In order for science to be propagated in China, science must first learn to speak Chinese: simple, elegant, and unambiguous.

Terminological unification would allow professional knowledge to be popularized for the consumption of young people who were being drawn out of the strictures of the extended family and into the imagined community of a nation-state. Anatomy, the first scientific terminology the JTC standardized, taught a new way of being in one's body. An anatomical view of the body was tied to a bourgeois individualism that encouraged production and consumption,<sup>20</sup> and thus the vocational education for industry and commerce so important to JPEA leaders like Huang Yanpei and Shen Enfu.<sup>21</sup> Anatomical knowledge, along with its newly standardized terminology, would now be incorporated into other projects of the JPEA like civics education, physical education, public health and boy scouting.<sup>22</sup> All of these became integral parts of the new knowledge system being created in the nexus between the Jiangsu Provincial Education Association and the JTC. All of these components became key aspects of the Chinese state when the Nationalists forced the JPEA to dissolve and incorporated the JTC in 1927.

#### "The education lords"

In 1927 as the Nationalist armies approached Shanghai, local Communists and labor unions ordered the Jiangsu Provincial Education Association to be closed, seizing all of its property and books. Huang Yanpei, Shen Enfu and the other JPEA leaders, were declared to be

<sup>&</sup>lt;sup>20</sup> Sappol 2002; See also Jin and Liu, *Research on the History of Concepts*, 2009, 131-133 for the growth of the discourse of the individual (*geren*). <sup>21</sup> Gewurtz, 1978; Yeh 2008.

<sup>&</sup>lt;sup>22</sup> See also Culp 2007: 163-208; Morris 2004; Rogaski 2004.

"education lords" (xuefa 學閥) for their overweening dominance of education in Jiangsu and beyond. As early as 1924, the Communist periodical Chinese Youth (Zhongguo gingnian 中國青 年) had attacked JPEA leaders Huang and Shen, saying they controlled all of Jiangsu's education through their positions on the schools' boards of directors and so also influenced faculty hiring decisions and production of curriculum material. The education lords, moreover, exercised a monopoly over national affairs through the Federation of Provincial Education Associations and the National Association for the Advancement of Education. Like the "warlords" (junfa 軍閥) who were tearing China apart with their self-absorbed power games, the education lords were the direct representatives of imperialists, compradors and large capitalists.<sup>23</sup> But the education lords' power was not limited to educational organizations. They were not *merely* lords of education writ small. They also controlled the Shenbao, the Commercial Press, the Zhongnan Bank, foreign commercial enterprises, and school-owned business enterprises which they appropriated for their own use.<sup>24</sup> To these criticisms, the communist propagandists could have added that JPEA leaders had an overweening influence over the *Shibao*: in the late Qing that newspaper's editorial employees had almost all been members of the JPEA. Their influence extended to the board of directors of Amoy (Xiamen) University in Fujian Province, and to the board of the China Foundation for the promotion of Education and Culture that controlled the second remission of Boxer Indemnity Funds.<sup>25</sup> But for the Communists the most despicable activities of the education lords were expelling politically active students at universities and middle schools and promoting

<sup>&</sup>lt;sup>23</sup> Schwintzer 1992: 670.

<sup>&</sup>lt;sup>24</sup> Zhang Jian himself was a partial owner of the *Shenbao*, Schwintzer 1992: 670-671.

<sup>&</sup>lt;sup>25</sup> On JGEA, Zhang Jian, Huang Yanpei and the *Shibao*, and the shift to support for the *Shenbao* after 1911, see Judge 1996: 43, 182, 195-197, 208; For China Foundation Trustee list where Huang Yanpei, Guo Bingwen, Jiang Menglin and allies Hu Shi, Zhang Boling, Fan Yuanlian, Ding Wenjiang, and Columbia University Professors Paul Monroe and John Dewey dominated the 1920s Trustees

<sup>&</sup>lt;u>http://www.chinafound.org.tw/ec99/eshop1387/e\_board.asp</u> (accessed 20 July, 2011). The other important foreign members were largely associated with the Rockefeller Foundation, the other major source of funding for medicine and science. See Sun 1986: 386 for commentary on the list of initial members of the board of Trustees.

vocational education to make slaves of students, giving them only enough knowledge to earn their next meal.<sup>26</sup>

The accusations fell close to the mark: Huang Yanpei had indeed funded many of his schools and projects of the JPEA with money from military governor (warlord) Sun Quanfang— who held the purse strings in Jiangsu in the 1920s. Both the right and left wing of the Nationalist Party saw the JPEA network of control over education as a hindrance to Leninist party control. In the chaotic political atmosphere in Shanghai in the wake of the Northern Expedition, Huang Yanpei withdrew to Shanghai's foreign concessions. He was then informed that his name was on an assassination list, so he fled to Dalian. JPEA subcommittees like the JTC were absorbed into the suddenly expanding state, their origins outside of the state quickly forgotten. The Joint Committee was first absorbed into Cai Yuanpei's short-lived University Council, then by the Beijing Ministry of Education and Academia Sinica.

The Nationalists recognized that in order to wield modern power, they must control education and ideology. After all, what is a modern state without universal compulsory education as chief agent of socialization? As Wang Hui has put it:

Changes in sovereignty and the legal basis of the modern state cannot be separated from the production of new knowledge and ideology. Hence reconstituting the educational institutions and system of knowledge is an important aspect of the construction of modern sovereignty. In 1906, with the abolition of the civil service examination system ... a new education system, and the scientific knowledge to go with it, was legally established ... Since then, every national reform has been accompanied by changes in educational institutions and the system of knowledge.<sup>27</sup>

<sup>&</sup>lt;sup>26</sup> Schwintzer 1992: 671-672.

<sup>&</sup>lt;sup>27</sup> Wang Hui 2009: 142-143.

As for control of ideology, the right wing of the Nationalist Party used long-standing connections in Shanghai's underworld to execute Chiang Kai-shek's orders to massacre thousands of left wing members of the party who were Communists.<sup>28</sup>

In contrast to the decimated Communists, Huang and Shen survived the purge and returned to Shanghai and the Chinese Vocational Education Association once stability had been re-established.<sup>29</sup> But their far-reaching network had been displaced. This may be considered an ambiguous legacy. From a biographical or institutional perspective the Nationalist abolition of the JPEA meant that Huang, Shen and the JPEA had failed. This is the perspective taken by Ernst Schwintzer in his biography of Huang Yanpei (which ends in 1927), by Xu Jilin's account of Huang Yanpei's "infinite perplexities," as a public intellectual in a chaotic era, and by shorter accounts of the JPEA like that in Yeh Wen-hsin's Alienated Academy.<sup>30</sup> Shen Enfu himself took a negative view: he wrote a memoir called "Autobiography of the man of no accomplishments" (Wuchengren zhuan 無成人專) emphasizing how completely he felt the Nationalists had destroyed his life's work after 1927.<sup>31</sup> States have institutional momentum and memory, but networks based on prestige and key figures outside of the state must be continually repaired and maintained. Although these key figures did not lose all of their position and prestige, the ground underneath them had shifted so completely that the extended networks established before 1927 no longer existed.

But a longer perspective allows a different evaluation and suggests a connection between the strengths and weaknesses of this network in its twenty-two year arc. We can distinguish

<sup>&</sup>lt;sup>28</sup> See Martin 1996: 79-112.

<sup>&</sup>lt;sup>29</sup> Huang and Shen 1930: 43-44.

<sup>&</sup>lt;sup>30</sup> Schwintzer 1992; Xu 1988; Yeh 1990.

<sup>&</sup>lt;sup>31</sup> Shen Enfu, "Wuchengrenzhuan," in Huang Yanpei, ed., 1951; originally published Shen Enfu, "Shen Xinqing's Autobiography (Originally, 'Man of No Accomplishments')" [in Chinese], *Dazhong* 19 (1944), 129-130; reprinted in *Renwen*, 1:2 (1947): 3-4; compare Huang Yanpei, "Shen Xinqing xiansheng zhuan," 1951. On the second life of the Chinese Vocational Education Association under the careful watch of the Nationalist government, see Yeh 2008: 40-41.

three periods of the JPEA, visible only in hindsight: (1) the 1905-1914 rise and fall of a gentry democratic institution; (2) the 1915-1923 rebirth of the JPEA as a nationally-influential politicocultural institution in the political disintegration of the warlord period; and (3) the 1923-1927 loss of the political center as the JPEA was increasingly identified as a bastion of reactionary elite power.<sup>32</sup> The rest of this chapter will emphasize the second period since it is crucial to understanding the extra-state networks at the heart of this chapter like the Joint Terminology Committee which most accounts have ignored.

# Scope of the JPEA networks circa 1925

In 1925 the Jiangsu Provincial Educational Association published a twenty-year retrospective that illuminates the scope of their influence. Rather than seeing an organization devoted only to educational affairs in Jiangsu, we see more evidence of their reach beyond provincial boundaries. Rather than an official provincial government organ, we see an elite non-governmental organization,<sup>33</sup> its membership voluntary and its executive unpaid.<sup>34</sup> Most importantly we see clearly the enormous ambition and reach of the new education into realms of private life previously untouched.

<sup>&</sup>lt;sup>32</sup> The term "gentry democracy" comes from Mark Elvin's pioneering dissertation work on the selfgovernment movement of Shanghai in which Shen Enfu was directly involved, published in part in Elvin 1969. Xiaohong Xiao-Planes has written the most detailed study of the first period, arguing that the association became less powerful and important after Yuan Shikai's crushing of constitutional opposition in 1914. Her account ends here when she says the organization became involved only in vocational education. Wen-hsin Yeh, Margo Gewurtz and Ernst Schwintzer have written extensively on the development of vocational education under the leadership of Huang Yanpei after 1917.

<sup>&</sup>lt;sup>33</sup> But Chauncey 1992: 96-117 explores the ambiguities of the JPEA displacing the provincial education bureau.

<sup>&</sup>lt;sup>34</sup> Gu 2009: 66.
Table 5 Organization of activities of Jiangsu Provincial Educational Association, c. 1925<sup>35</sup>

The core of the association is represented in the first eight categories from this publication (figure 7): school education, social education, vocational education, boy scouting, physical education, civics education, surveys, research and publishing. Together these activities demonstrate the dream of complete social reformation through the institutionalization of commercial and industrial education.

Each of the eight categories of the Jiangsu educators' activity represented up to thirteen subcategories. These ran the gamut from new media to physical education to summer teacher upgrading courses. To spread the new ideas, new forms of media and communication featured heavily, from public lectures and speech competitions to films and drama, as well as all manner of publications and original research about the state of educational reform. A new relationship between students, their bodies and their environment was to be established through programs in hygiene and public health, physical education, boy scouting and military training. New forms of education were central: law and politics classes, along with vocational education and guidance classes, and a national language and phonetic alphabet seminar. Vocational education would tie industry to student training, and surveys would determine rates of employment amongst

<sup>&</sup>lt;sup>35</sup> Jiangsu Provincial Educational Association, 1925.

graduates of all schools. Physical education would prepare a generation ready to participate in the Far Eastern Games to help China shake off its image as the "sick man of Asia."<sup>36</sup> There were a host of Jiangsu-specific subcommittees that fell under the last two categories of figure 7. These included committees for promoting education, for administering education, for funding education, suggestions to the Provincial Assembly on a system of appointment of school directors, etc.

The JPEA networks extended to the national level through a series of cooperating organizations and "miscellaneous items" described in the 1925 publication. These included the National Federation of Education Associations (1911 Gesheng jiaoyu zonghui lianhehui 各省教育總聯合會; after 1915 Quanguo jiaoyuhui lianhehui 全國教育會聯合會), and a group subsidiary to it for reforming the local school administration system (taolun gaige difang jiaoyu xingzheng zhidu wenti 討論改革地方教育行政制度問題).<sup>37</sup> This group, based at the JPEA headquarters, set the agenda for education nationwide.<sup>38</sup> Cong Xiaoping has argued that, "[b]y the late 1910s, educational associations nationwide had formed a hierarchical network [the National Federation] that tied national, provincial, and county organizations together and functioned as an alternative to the central, provincial, and county government education bureaus:"<sup>39</sup> With this organization, headed by key JPEA members and based under their influence in Shanghai, the tail was wagging the dog. The "corrupt" Ministry of Education in Beijing<sup>40</sup> acted merely as a rubber stamp for decisions made at the National Federation based in Shanghai. Prominent leaders of the JPEA like Huang Yanpei and Shen Enfu did not want an

<sup>&</sup>lt;sup>36</sup> Morris 2004.

<sup>&</sup>lt;sup>37</sup> JPEA 1925: 31-32; 37.

<sup>&</sup>lt;sup>38</sup> JPEA 1925: 31.

<sup>&</sup>lt;sup>39</sup> Cong 2007: 82.

<sup>&</sup>lt;sup>40</sup> Linden 1968: 763.

official appointment in the warlord-dominated Beijing Ministry of Education.<sup>41</sup> Their influence was ensured by their social dominance in the wealthy lower Yangzi region and military and civilian leaders could not avoid working with them, nor JPEA leaders with the warlords.<sup>42</sup> JPEA critics were correct in identifying the overweening influence of Huang Yanpei and Shen Enfu.

JPEA national dominance was further extended through the Chinese Education Improvement Association (Zhonghua jiaoyu gaijinhui 中華教育改進會, founded 1918).<sup>43</sup> This organization was formed to improve the exchanges of scholarship and educators between China and other countries. It had hundreds of members in eighteen provinces, as well as numerous members among overseas Chinese and students in Europe and America.<sup>44</sup> JPEA centrality was reinforced by the composition of multiple overlapping groups that came to form this organization. Other component members of the Education Improvement Association were the National Association for Vocational Education (Zhonghua zhiye jiaoyushe 中華職業教育社), the Ji'nan School in Nanjing (Ji'nan xuexiao 暨南學校, later University), National Nanjing Teachers College (Nanjing gaodeng shifan xuexiao 南京高等師範學校, after 1921 Southeastern University, Dongnan daxue 東南大學) and National Peking University.<sup>45</sup> The JPEA had created, staffed, or continued to manage four out of five of these organizations, and was not without influence at Peking University.<sup>46</sup>

<sup>&</sup>lt;sup>41</sup> Huang Yanpei was Jiangsu commissioner of education in 1912-1913, and rejected an appointment as minister of education in 1921, Xu 1991: 1115; Shen Enfu was appointed head of Hunan Education Bureau in 1917, but did not take it up, Xu 1991: 430.

<sup>&</sup>lt;sup>42</sup> Schwintzer 1992.

<sup>&</sup>lt;sup>43</sup> Which had previously been known as the Society for the Promotion of New Education

<sup>&</sup>lt;sup>44</sup> JPEA, 1925: 34.

<sup>&</sup>lt;sup>45</sup> JPEA, 1925: 33-34; Keenan 1974: 227. Note that Keenan recognizes the "powerful Kiangsu Educational Association" but does not explain either how it was powerful or its direct relationship to these other organizations. Huang Yanpei petitioned the Ministry of Education to establish the Ji'nan School in October 1917, Xu 1991: 1115.

<sup>&</sup>lt;sup>46</sup> Huang and Shen and the JPEA were the primary force in forming the Vocational Education Association, and hosted its offices at the JPEA headquarters at West Gate, Shanghai. On Huang's role in founding the Jinan

Through these two organizations the JPEA can also be seen to be a key institution in the standardization of vernacular Chinese as the written language of China. Both the National Federation and the Education Improvement Association were essential to the vernacular movement in the New Culture Movement of the 1910s and 1920s. Elisabeth Kaske has shown how important the pre-1919 networks were to the shape of modern vernacular Chinese, and how rapid was the shift from classical to vernacular after 1917.<sup>47</sup> During this period, Hu Shi, the most famous proponent of vernacularization, was closely linked with Huang Yanpei and other key leaders of the JPEA. Moderates, liberals and radicals disagreed on details but not the need for change, and the JPEA was a natural networking point for these groups in the decades after 1912.

Peking University has been celebrated many times in Chinese and English historiography as the center of the New Culture movement (1917-1923), so we should consider how connected this institution was into the JPEA-networks. Jiang Menglin, a JPEA member and close associate of Huang Yanpei, became the longest serving President of Peking University, long after more famous faculty like Cai Yuanpei and Hu Shi had left that institution. Before there was a New Culture/May Fourth Movement at Peking University (1917-1923), there was the JPEA network to prepare the institutional groundwork with its wide-ranging social network.<sup>48</sup> In the 1920s, the JPEA network continued to hold the constitutionalist, reformist line in southern universities in Shanghai, Nanjing and Xiamen, providing a safe haven for Peking University professors fleeing the anti-intellectual atmosphere of the capital.<sup>49</sup>

Organizations based in the JPEA by 1925 included committees for selecting students to study in the U.S. with funds from the remission of Boxer Indemnity Funds—these students

School in October 1917, see Xu 1991, 1115. On Huang's influence at Peking University and with Hu Shi, see Lin 2007: 103-109; Weston 2004: 180.

<sup>&</sup>lt;sup>47</sup> Kaske 2008; 2004.

<sup>&</sup>lt;sup>48</sup> On influence of Huang Yanpei and Jiang Menglin of the JPEA, see Lin 2007.

<sup>&</sup>lt;sup>49</sup> Weston 2004: 238-249.

would become the first professional Chinese scientists.<sup>50</sup> Part of these funds built and maintained Qinghua University in Beijing as the leading scientific institution in North China, becoming a preparatory school for Chinese students for graduate education in the U.S.<sup>51</sup> A second portion supported the best science students to study advanced degrees abroad. These Chinese science students formed a cohort in the U.S. in the 1910s, many of them entering Cornell University's agricultural studies department, then transferring to the "hard" sciences at Harvard, or to Columbia University's School of Education to study with John Dewey or Paul Monroe.<sup>52</sup> They formed the Chinese Student's Association and launched a journal,<sup>53</sup> then used their journal and networks with JPEA educators in Shanghai to create a trans-Pacific network. Key among them was Guo Bingwen, a president of this association, student of Paul Munroe at Columbia University Teacher's College, and later president of Nanjing Teacher's College/Southeast University. Shanghai publishers printed and distributed the journals these students produced: some English, some Chinese and some bilingual.

To demonstrate these direct links, we might look to the co-hosting of a speech given in 1917 by the American Minister to China (political scientist Dr. Paul S. Reinsch), announced in *The Globe (Huanqiu)*, the journal of the Global Chinese Student's Association, and co-hosted by the JPEA, the Chinese Vocational Education Association, the Shanghai General Chamber of Commerce, the Shanghai YMCA, and the American Returned Students Association.<sup>54</sup> Disseminating the new knowledge required a coordinated web of individuals and associations.

<sup>&</sup>lt;sup>50</sup> U.S. scholarships included those provided by the Nanyang Brothers Tobacco Company to allow students to study agriculture and commerce. JPEA 1925: 36; on the Boxer Indemnity scholarships, see Michael Hunt 1972: 539-559; on the special relationship, see Hunt 1983.

<sup>&</sup>lt;sup>51</sup> Bieler 2004; Chih Meng 1931: 1-16; Weili Ye 2001; Schneider 2003; Jian Zhang 2005.

<sup>&</sup>lt;sup>52</sup> Dewey spent an unplanned two-year sojourn living and travelling in China and many lectures at the JPEA and Southeast University. See Dewey 1973; Zhenhuan Zou 2010; Schwintzer 1992.

<sup>&</sup>lt;sup>53</sup> See Schneider 2003: 33-40.

<sup>&</sup>lt;sup>54</sup> *Huanqiu*, 2:4 (1917), n.p.

Among those who led in organizing the Chinese Student's Association and its journal, Hu Mingfu, Bing Zhi, and Zhao Yuanren (趙元任) formed the nucleus for what would quickly become an even more important association: the Science Society of China (SSC, *Zhongguo kexue she* 中國科學社). The SSC networked through the JPEA in Shanghai and allowed multiple scientific specialists to form professional associations. The SSC networked with other scientists' organizations that operated through the JPEA, most specifically, the Science Professors' Research Association. Scientists returning from the U.S. used the JPEA network to land jobs in JPEA-dominated universities like Nanjing's Southeastern University, Amoy University in Xiamen, or Shanghai's Datong or Tongji Universities.<sup>55</sup> In addition to institutionalizing scientific research and education, the SSC, through its journal, *Science (Kexue)*, would have a revolutionary effect on Chinese language and literature by pioneering publication with horizontal typeset alignment.<sup>56</sup>

The JPEA network did not stay static in the 1910s. It expanded and adapted with the new institutions it helped found: institutions where teachers, engineers and scientists were teaching, translating, and producing the new system of knowledge. And as men like Hu Mingfu and his scientist brethren took up positions at Datong, Southeastern or Nanyang University, the JPEA shifted from its original constituency of gentry to professionals, whether educators, physicians or scientists.<sup>57</sup> This was a deliberate shift: Huang Yanpei and Shen Enfu introduced a disproportionate number of new, professionalized members to the association.<sup>58</sup>

One activity essential for the new professionals of the JPEA was standardizing terminology. They recognized that in order for the new knowledge and sciences to be

<sup>&</sup>lt;sup>55</sup> Schneider 2003: 33-63; Keenan 1977: 81-125; Yeh 1990; Bieler 2004; Ye 2001.

<sup>&</sup>lt;sup>56</sup> Kexue 1:1 (1915); Wang Hui 2009.

<sup>&</sup>lt;sup>57</sup> See especially Gu 2009: 127-138. See, Schwintzer 1992: 141-188.

 <sup>&</sup>lt;sup>58</sup> See for example *Jiangsusheng jiaoyuhui yuebao* January 1917, 28; March 16, 1917; June 1918; October 1920, 20; November 1920, 19; April 1922; July 1922. This is confirmed in Chauncey 1992: 106.

institutionalized in China equivalences must be set for technical terms. Biologists in Nanjing must be able to take a flask of formaldehyde off the shelf labeled as *jiaquan* 甲醛 and know the exact properties of the substance, while school children in Suzhou or Tianjin must be taught the same word for Louis Pasteur ( $B\bar{a}s\bar{i}de'$  巴斯德) in order to understand how the processes he defined might make foods more hygienic. Publishers, like Zhang Yuanji of the Commercial Press, were particularly interested in this project.<sup>59</sup> There was a standardizing impulse in the air in the 1910s as products, peoples and knowledge began to flow across China's borders more than ever before. Standards for translated terminologies or exchange rates allowed for the establishment of trust in an increasingly globalized world where personal, clan and native-place connections were no longer sufficient for exchange. But personal, *particular* networks like that at the JPEA were needed to establish the *universal* standards in the first place.

### A Shanghai-based web extends through modernizing institutions

The analysis above is enough to attempt to graphically represent the network of activities based in the JPEA. This graphic of figure 8 is built both from the explicit JPEA self-account of 1925, and supplemented by the links this chapter has emphasized, including those to the NMA physicians and the SSC scientists. There is a direct link, for example, between vocational education and medical education, or between the Science Professor's Research Association and the Science Society of China. For science and premedical training, this link was most directly institutionalized at Southeastern University in Nanjing, established under close guidance of the JPEA with Guo Bingwen as president and Huang Yanpei and Shen Enfu on its board of directors. What its library and laboratories sometimes lacked were made up through shared facilities with the neighboring Science Society of China.

<sup>&</sup>lt;sup>59</sup> JPEA, 1925: 36.





Shen Enfu, with whom this chapter began, may be used to illustrate the JPEA networks. Shen is an exemplar transitional intellectual with a foot in each world. He was a *juren*—a provincial graduate of the imperial examination system. In 1905 Shen wrote the constitution for the Jiangsu General Education Association, establishing it as a self-government elite association devoted to education and generalist elite power expansion. During this time, Shen was also a key member of what Mark Elvin has termed gentry democratic self-government in Shanghai.<sup>60</sup> But these local elite concerns were soon dwarfed by educational activism as the JPEA expanded in the new Republic. Shen Enfu personally connects all facets of JPEA activity depicted in figure 6 above, from elementary education, through supporting the formation of the science association, to sitting on the board of governors of Southeastern University, to establishing national education

<sup>&</sup>lt;sup>60</sup> Elvin 1969; Some of Shen's missives as speaker of the Shanghai Consultative Council can be found in the 1924 *Shanghai City Bulletin (Shanghaishi gongbao)*. Thompson 1995 in English and Zhou 2005, in Chinese have now superseded Elvin's account. On Shen's specific involvement, see Zhou 2005: 118; 148; 256.

associations. And Shen Enfu, despite not knowing medicine, science or any foreign language, chaired the Joint Terminology Committee.

YMCA leaders like Yu Rizhang joined the JPEA, and together these organizations promoted lectures as a way to inform and transform the new citizenry.<sup>61</sup> Journalists, physicians, lawyers and scientists used the lecture and meeting rooms of the Educational Association to organize.<sup>62</sup> Aside from its importance as a site of elite networking, the physical location of the Educational Association was significant; it occupied a building near Shanghai's West Gate (*ximen* 西門), where the old Chinese city met the French Concession at 348 Fangxie Road (方斜 路).<sup>63</sup> The circular city wall that had served to protect against bandit incursions was removed in 1913 to improve transportation and commerce. The West Gate had always been the most important city gate, and now this well-known urban district spilled out to the southwest of the actual site of the "old west gate."<sup>64</sup> The West Gate area was a major shopping area with indoor and outdoor markets, and, after 1917, a massive public recreation ground. It was here that the JPEA led in organizing protests of 10,000 to 20,000 people during the May Fourth movement (see Appendix 2).<sup>65</sup> If Peking University was the center of the new culture and May Fourth Movement in Beijing, in Shanghai it was the JPEA.

The Jiangsu Provincial Educational Association, like the Chamber of Commerce, was a midwife to new forms of social organization and power. By the 1910s, when large numbers of overseas trained scientists, physicians, lawyers and educators returned to China, this educational

<sup>&</sup>lt;sup>61</sup> On the revolutionary significance of public speaking in this period, see Strand 2011: 52-96.

<sup>&</sup>lt;sup>62</sup> On journalists, see note 23 above; for physicians and scientists see discussion below; lawyers used the JPEA as a meeting place in 1923 and 1924. Shanghai lüshi gonghui baogaoshu, 13 (1924): 2; 4-5; (14): 3-4; 5-7.

<sup>&</sup>lt;sup>63</sup> The JPEA had several facilities in Shanghai, in addition to branch offices in Suzhou and Nanjing; the Lawyers identified their meeting at "outside of West Gate at the JPEA at Linyin Road (林蔭路)."

<sup>&</sup>lt;sup>64</sup> This area has retained and regained prominence, as demonstrated in a recently constructed subway stop named *laoximen* (Old West Gate 老西門).

<sup>&</sup>lt;sup>65</sup> Chen 1971: 78-79; 90; 101; 168; 170-171: 186-190; Bergère 2009: 179, note\*\*.

association became the logical networking node for the returned students to organize themselves—and their new knowledge—in translated form. The JPEA was closely linked with the Global Student's Association (GSA, 環球學生會), with multiple overlapping members, including JTC stalwarts Huang Yanpei, Yu Rizhang, Yu Fengbin, Wang Licai, Wu Heshi.<sup>66</sup> This association and its Chinese-language periodical were run by established educational leaders of Shanghai as opposed to current Chinese students in the U.S., as was the case of the Chinese Students Association and its English-language journal.<sup>67</sup> Established in 1915, the headquarters of this association was also the Shanghai publishing center of the periodical of the Science Society of China (SSC), *Science*, on Bubbling Well Road in the International Concession.<sup>68</sup>

Physicians working through the educational association, formed professional associations to establish their interests and hegemony in the medical field, and scientists for theirs. One project brought all of them together: standardizing the Chinese terminology for the new system of knowledge.

The JPEA expanded by *ad hoc* committees, like the Joint Terminology Committee, whenever there was a core group of JPEA members with the skills appropriate to the task. It did this in 1914 to establish the Science Professors Research Association.<sup>69</sup> In 1915 Huang Yanpei initiated the formation of the Joint Terminology Committee when asked whether the JPEA would not establish a subsidiary medical research organization,

<sup>&</sup>lt;sup>66</sup> These authors appear all in volume 1, issue 3, sometimes twice with alternate names. Each article is numbered separately. Wang Licai, "What my compatriots should pay attention to in the education of young children,"; Huang Renzhi (Yanpei), "Scholarly pursuits and practical industry,"; Yu Rizhang, "The True Philosophy of Education,"; Yu Fengbin, "Hygiene in Summer,"; Wang Licai, "An unrestrained discussion of hygiene,"; Wang Licai, "The struggle of life,"; Huang Yanpei, "Twenty questions for youth to engage in introspection,"; (Wu) Heshi, "The omnipotence of money and the omnipotence of status,"

<sup>&</sup>lt;sup>67</sup> Ye 2001; Bieler 2004: 135; 277.

<sup>&</sup>lt;sup>68</sup> Xiong 2007: 608.

<sup>&</sup>lt;sup>69</sup> "Jiangsusheng jiaoyuhui li'ke jiaoshou yanjiuhui chengli," [Establishment of the Science Professor's Research Association of the JPEA], *Jiaoyu zazhi [Education]*, 6:12 (1914), 88.

[The JPEA] has many subsidiary research associations using the association to organize, but medical studies is not a strength of the members of this organization. Only if there are people willing to take complete responsibility can we establish [it].<sup>70</sup>

With this prompting, physicians Yu Fengbin and Wu Heshi led the JPEA to become the national headquarters for the terminology standardization project.

The overlapping networks that produced the Joint Terminology Committee become clear by looking closely at those participants in the JTC who were also members of the Jiangsu Provincial Educational Association (see Appendix 4). There were twenty-eight men who represented the JPEA at least once between the 1915 and 1927. Three JPEA members—all also prominent editors at the Commercial Press—attended the 1915 planning meeting only (Guo Bingwen, Yang Jinsen, and Zhuang Yu). Their single attendance demonstrates a significant interest in the establishment of the Joint Committee for these titans of Shanghai print capitalism. Yet they were content to let others participate in the detailed work of standardizing terminology. Six JPEA members attended at least one of the annual meetings before 1927 (Chen Pincheng, Chem 1921; Gu Shanchen, Math 1923; Song Gubin, Physiology, Pathology, Bacteriology 1923; Xu Zhaonan, Physics 1921; Ye Hancheng, Pharmacology 1924; Zhong Hengcheng, Mineraology 1924).<sup>71</sup>

Of those JPEA members who attended the Joint Committee sessions for two or more years, we begin to see some significant patterns of cross-association. The next category includes prominent members of the Science Society of China, two of whom also represented the Ministry of Education at some of the meetings they attended, one who was also an official representative of the Commercial Press, and one who represented four associations over his eight year involvement in the JTC, Wu Jishi. Wu Jishi was a member of both the Science Society of China

<sup>&</sup>lt;sup>70</sup> Ding, "An account of a meeting the JPEA investigation medical terminology," 1915, 3-6.

<sup>&</sup>lt;sup>71</sup> See Appendix 5 for sources.

and the Republic of China Medico-Pharmaceutical Association, as well as the JPEA and an official representative of the Ministry of Education.

Table 7 JPEA members at JTC meetings, Science Society of China

Bing Zhi	JPEA/SSC	1921; 23-25	Zoology
Hu Mingfu	JPEA/SSC	1920-21; 23-26	Physics; Math
Duan Yuhua	JPEA/SSC/Com. Press*	1923-24	Mathematics
Hu Gangfu	JPEA/SSC/Ed. Min.*	1921-22	Physics
Wu JishiJPEA/S	SC/Ed. Min./ROCMPA*	1917-18; 1921-26	Anat; Path; Physio; Chem

The fourth category represents the Science Professors Research Association as a "nested" or subsidiary research organization of the JPEA. While three of the four members only represented these two "nested" organizations, Wu Heshi also represented Ministry of Education and the

China Press.

Table 8 JPEA members at JTC Meetings, Science Professors Reasearch Association

Huang Songlin	JPEA/SPRA	1922-26	Zoology; Mathematics
Xue Liangshu	JPEA/SPRA	1922-25	Zoology
Chen Mutang	JPEA/SPRA	1917-19; 21; 24	Chem; Med; Apparatus
Wu Heshi	JPEA/SPRA/Ed. Min/China Pr.	1915; 1917-1927	Anat; Path; Physio; Parasitology; Chem

Only three JPEA members of the Joint Committee were also representatives of a medical association, in addition to Wu Jishi already mentioned, were Yu Fengbin, a founding member of the National Medical Association and Yu Yunxiu of the ROCMPA, famous for attempting to use the Nationalist Ministry of Health to abolish Chinese medicine in 1929.

Table 9 JPEA members at JTC Meetings, JPEA/Medical Association

Wu Jishi	JPEA/SSC/Ed. Min./ROCMPA*	1917-18; 1921-26 Anat; Path; Physio; Chem
Yu Fengbin	JPEA/NMA*	1916-24; 26-27 Anat; Chem; Micro; Path; Physio; Para
Yu Yunxiu	JPEA/ROCMPA*	1921-24; 1926-7 Path; Physiology; Parasitology

Three representatives of the major presses were longtime members of the JTC. Gu Shaoyi was a science editor with the Commercial Press who attended the Joint Committee meetings consistently between 1917 and 1922. Duan Yuhua and Wu Heshi have been mentioned above.

Table 10 JPEA members at JTC Meetings JPEA/major press

Gu Shaoyi	JPEA/Com. Press*	1917-19; 21-22	Chemistry; Medicine; Apparatus
Duan Yuhua	JPEA/SSC/Com. Press*	1923-24	Mathematics
Wu Heshi	JPEA/SPRA/Ed. Min*/China Pr.*	1915; 1917-1927	Anat; Path; Physio; Parasitology; Chem

Nanjing Teacher's College represents a significant category. In 1919 and 1921, Zhang Zhun represented this institution. Zhang's boss, Guo Bingwen, was its founder and the man who, with the help of Shen Enfu and Huang Yanpei and the JPEA, turned this institution into Southeastern University, the only Chinese-founded university the Rockefeller supported as a center for pre-medical science education.<sup>72</sup> Most Nanjing-based SSC members were later also on the science faculty of Southeastern University.

Table 11 JPEA/Nanjing Teachers College (from 1921 Southeastern University)

Zhang ZhunJPEA/Nanjing Teachers1919; 1921(Guo BingwenJPEA/Nanjing Teachers1915

Chemistry; Medicine; Apparatus planning meeting only)

The final category includes the three JPEA leaders at the center of this chapter: Huang, Yu and Shen (figure 16). Huang operated as a facilitator to help organize the JTC in the crucial years of 1915 and the first technical meeting in 1916. Yu Rizhang, the first chairman of the JTC moved easily between his role as head of the Chinese YMCA and his role as a prominent secretary at the

<sup>&</sup>lt;sup>72</sup> RFA, RG 4 (CMB) Series I, Subseries II 1919-1929, Box 63, File 1546 National Southeastern University, 1921- July 1922

JPEA. But most significant was Shen Enfu, politician and philologist, who attended meetings each year between 1915 and 1927.<sup>73</sup>

Table 12 JPEA members at JTC Meetings, only JPEA

Qiu Chongman	JPEA	1924-26	Mathematics
Xia Shenchu	JPEA	1923-24	Physiology; Path.; Parasit.; Chem.
Zhang Jingcheng	JPEA	1922-23	Botany
Huang Yanpei	JPEA	1915-16	Preparatory only
Yu Rizhang	JPEA	1915-1918	Anatomy
Shen Enfu	JPEA	1915-19; 21-24; 26-27	Anat; Chem; Executive

From this data we observe that the same individual can belong to more than one network or association. This point is often made for an *individual* in a biography. In such cases the overlapping networks of some of these men can be reconstructed with the help of biographical dictionaries of Republican China. The most common approach to move beyond biography is prosopography, an approach more common in the history of medicine and science than in Chinese history.<sup>74</sup>

A corollary to this first observation is that there may be good reason to represent multiple organizations to a group like the JTC. While my sources do not allow me to access the motivations of these super-networkers, several inferences can be drawn from the available data. Most of the rapidly proliferating associations and organizations of this time had goals that were limited in scope by their constitution. Membership in multiple organizations represented an individual with varied interests. Success in one field might open up invitations to join other associations, whether as a regular or honorary member. While those participating in the Committee from the SSC were all trained scientists, we know that other Chinese were given

<sup>&</sup>lt;sup>73</sup> Qiu, Xia and Zhang were latecomers to the JTC and do not stand out in the meeting transcripts.

<sup>&</sup>lt;sup>74</sup> Buck 1980, and Vittinghoff 2004, are the most explicit uses of prosopography to understand scientists in China, although Vittinghoff limits herself to the late nineteenth century.

memberships in the SSC based not on scientific work, but based only on their prominence and their donations to the endowment fund. Zhang Jian is an obvious example, who was given an honorary membership (名譽社員) in the Science Society of China. Slightly less eminent men like the diplomat Wu Tingfan, and the politicians Tang Shaoyi, Fan Yuanlian, and Huang Yanpei received sponsoring memberships (贊助社員), while Cai Yuanpei received a Special Membership (特社員).<sup>75</sup>

The data presented in figures 8 to 16 suggests that some associational memberships could be more prestigious than others. This chapter has claimed that during the period in question, 1915-1927, the Jiangsu Provincial Education Association was one of the most prestigious associations in all of China. Evidence for this claim can be found in the interconnectedness of the educational association among so many other of the most important associations of the period, its state-like functions, and the deliberateness with which we have seen the Leninist parties sought to eliminate its influence in the 1920s. It made sense for early Science Society of China members Bing Zhi, the brothers Hu Mingfu and Hu Gangfu, Duan Yuhua, and Wu Jishi to use membership in the JPEA to connect with publishers and established science writers like Wu Heshi and his colleagues in the Science Professors Assocation. Or, when at the 1915 founding meeting for the JTC, Huang Yanpei said the JPEA did not have many members with medical expertise, we can see the space opened for Yu Fengbin to take a prominent role in the JPEA in matters of health, hygiene, publishing, and medical terminology.

Finally, the data also suggests that one individual representing multiple organizations to the Joint Committee may indicate higher status in a particular meeting, but this was not necessarily the case. Supporting this claim we see the influence of Wu Heshi, present at all

<sup>&</sup>lt;sup>75</sup> Zhang 2005: 170.

meetings between 1915 and 1927 (except 1916) as a representative of the JPEA, the China Press and the Ministry of Education (figure 14). Likewise Wu Jishi represented both medical and scientific organizations in addition to the JPEA and the Ministry of Education (figure 13). Conversely, among those representing only one organization, there is no evidence that Qiu Chongman, Xia Shenchu and Zhang Jingcheng exercised significant influence (figure 16). But just as often the most influential men at the terminology meetings represented only one organization. Most notable was Shen Enfu who was recognized for his skills as a political and educational leader and for his philological expertise; there was no need for him to represent multiple associations. Likewise Yu Rizhang, chairman of the Chinese YMCA and prominent JPEA member, was not recognized in relation to the YMCA in the context of the JTC. Like Shen, Yu was prominent enough among all those present to be above multiple representations (figure 16). With this brief survey of the JPEA-JTC super networkers, we turn now to evidence of professionalization in the network.

# The JPEA-Joint Committee nexus and professionalization of physicians and scientists

What did or did not constitute a professional group in Republican China? In 1910 Ding Fubao, and other self-trained physicians, organized the Chinese-Western Medical Research Association in order to publish a journal, this group was concerned with propagating ideas about Western medicine and hygiene through profitable publications, not establishing standards for practitioners or a relationship with the government.<sup>76</sup> Also in 1910 Malay-born, Cambridgetrained Wu Liande (Wu Lien-teh), having just arrived in China, attempted to form a professional association of Chinese physicians, but "received insufficient support."<sup>77</sup> In 1913 Wu helped form

<sup>&</sup>lt;sup>76</sup> Zhongxi yixuebao 1(1)1910; On Ding's presence at the NMA meeting, Wong and Wu 1936: 604.

<sup>&</sup>lt;sup>77</sup> Wong and Wu 1936: 604.

a small organization of Euro-American-trained Chinese physicians in Beijing during the Medical Missionary Conference. The opportunity to establish a national organization came at the next Medical Missionary Conference held in Shanghai in 1915. Leaders were Wu Liande, the Yale-trained Yan Fuqing and the University of Pennsylvania-trained Yu Fengbin. The goal of the new association was to make the medical profession respected by government and the public through ethical standards and consolidation of efforts.<sup>78</sup> It was perhaps more than a coincidence that the first planning meeting of the JTC took place during the same Medical Missionary Conference in Shanghai in 1915. This was the same year that the Science Society of China began publishing their journal, *Science*, and the Shanghai-based manager of that publication was also present at the JTC planning meeting. The JPEA played more than a passing role in all of these new organizations. Yet the prominent role of the JPEA in professionalization of medicine and science has not been recognized in previous accounts.<sup>79</sup>

The JPEA was the right organization at the right time to broker and mediate cooperation between potentially competing groups of proto-professionals, whether they be elite self-taught physicians and scientists, or those trained in Japan, Europe or North America. This can be seen in the coincidence of the formation of the JTC with the formation of professional associations in 1915-1916 and in how the JPEA supported early groups of physicians and scientists in the next twelve years of its existence through JPEA committees, and institutions supportive of scientific teaching and research, most notably Southeastern University.

Previous accounts of the development of professionals in China have emphasized the state-society axis along which professionalization occurred. While such a model can illuminate some aspects of professionalization, it obscures others. It focuses only on the professional group

<sup>&</sup>lt;sup>78</sup> Zhonghua yixue zazhi, 1:1(1915), 50-51; Wong and Wu 1936: 604.

 <sup>&</sup>lt;sup>79</sup> On the NMA see Zhonghua yixuehui 2010; on the widely studied SSC, see Zhang 2005; Buck 1980;
 Wang Zuoyue 2007: 558-570; Jia Sheng 1995.

itself and its relation to the state. When the central government was weak, as in Republican China between 1915 and 1927, the state may not be the only, or even the most important agent in which professionalization occured.<sup>80</sup> In the Beiyang period when the state was weak, the JPEA-Joint Committee nexus assumed some of the roles the state would later undertake. In other words professionalization should be understood in terms of the relationship of nascent professional groups to the JPEA rather than in terms of their relationship to the state. This is not to say that the state played no role, for the state, weak as it was, was used by professionals and educators of the JPEA-Joint Committee nexus in the process of their professionalizing goals: they craved its imprimatur, but grew used to its impotence. But the state-society relationship is not where the real story lies.

Was this the beginning of professionalization of knowledge production in China? No. The physicians and scientists who organized themselves into professional associations between 1914 and 1916 and sent representatives to the JTC were building directly on a foundation of professionalized textual criticism (kaozheng 考證) associated with the academies of the Jiangnan region.<sup>81</sup> Proto-scientists, like Wang Tao, Xu Shou and Xu Jianying, who lived off the proceeds of their translations and publications, can also be considered professionals, but only in a qualified sense.<sup>82</sup> Peter Buck argues that the professionalization of scientists of the Science Society of China was built directly on the existing networks of natural studies (gezhi 格致 and lixue 理学)

<sup>&</sup>lt;sup>80</sup> Xiaoqun Xu 2001: 247, argues for a fluid, "symbiotic" view of state-society relations, but nonetheless sees only the axis of state-society in the "rise of professional associations." Xu mentions the JPEA several times as a "public association." Xu also mentions the Research Society for Constitutional Government, established "before 1906" which included intellectuals like Yuan Xitao, Shen Enfu, Huang Yanpei, Shi Liangcai, Chen Leng, and Di Chuqing (86). "All those people were to become influential figures in the educational-cultural circles in Republican Shanghai." In note 14, Xu explains, "Yuan Xitao and Shen Enfu were active in the Chinese Society for Improving Education. Huang Yanpei was known for his role in founding and operating the China Vocational Education Society, among other things..." The problem with Xu's approach is that does not see the connection between these late Qing constitutionalists and the constitutionalism and professionalization spurred by the organization they established in *the late Qing* and continuing until 1927—the JPEA. <sup>81</sup> Elman 1984.

<sup>&</sup>lt;sup>82</sup> Vittinghoff 2004; Wright 2000; Elman 2005.

fostered in the same Jiangnan academies out of which the JPEA had been born.<sup>83</sup> Gu Xiuqing argues that the JPEA iteself, by the 1910s, was beginning to show strains of a rift between the rural gentry led by Zhang Jian, and the professionalized educators like Guo Bingwen, educated in the U.S., with Huang Yanpei and Shen Enfu occupying a middle space. Huang and Shen successfully held the center in the 1910s, but found this more and more difficult in the 1920s.<sup>84</sup> Elite philologists like Shen Enfu, editors at the major presses, and Ding Fubao, through their direct participation, demonstrate the direct link between the late Qing activist philology movement, the professionalizing publishing and educational fields, and the professionalization of medicine and science in the JPEA-Joint Committee nexus. Professionalization of elite learning in China was not necessarily new, nor was specialist group formation of professional scientists and teachers.

But the professional associations of physicians and scientists forming in the mid-1910s were new in significant ways. They were built on constitutional models borrowed from the JPEA, which had in turn borrowed them from the Chambers of Commerce. The new groups thus had formalized structures, unlike the professionalization of the *kaozheng* or *gezhi* movements that were based on personal, native place and educational networks. Second, this was the first time that any Chinese physicians had ever become professionalized. Chinese gentry physicians in the past had practiced strictly for their friends, and those who depended upon medicine for a living and served the middle or lower strata of imperial China were considered uncultured at best and quacks (yōngyī 庸醫) at worst. Such medical practitioners did not organize vis-à-vis the state.<sup>85</sup>

<sup>&</sup>lt;sup>83</sup> Buck 1980: 113.

<sup>&</sup>lt;sup>84</sup> See also Xiao-Planes 2001; Chauncey 1992: 106-107; Cong 2007: 83-85.
<sup>85</sup> See Grant 2003; On "quacks", compare Wong and Wu 1936: 143 with Yi-li Wu 2010: 54-83; 257-8 n. 4,

In 1915 the Japanese-trained physicians who came together under Tang Erhe in the Republic of China Medico-Pharmaceutical Association, and the American and European-trained physicians who came together under Yu Fengbin and Wu Liande in the National Medical Association immediately sought to establish constitutions for their organizations. These documents were published in early issues of their associational periodicals with explicit criteria for membership and voting proceedures for the executive, for regular meetings of the membership and executive, and for their journal to circulate associational information and original or translated research among members and beyond. But beyond these activities, they sought access to the state, weak or strong, to regulate themselves and existing non-anatomo-medical practitioners. They sought state regulation on medical training standards, on access to cadavers for anatomical training and research, and for approval of the terminologies for anatomy, chemistry, etc. which they were now to standardize.<sup>86</sup>

All of these processes are clear in the first volumes of some medical journals of the 1910s and 1920s, and absent in others. For example, Ding Fubao established the Chinese-Western Medical Research Society and Journal to encourage interest in Western medicine in China. But Ding did not have the qualifications to be a regular member of either major medical association formed in 1915 (i.e. NMA or ROCMPA). Yet Ding was present at both the 1915 founding meeting of the JTC, and at the 1915 founding meeting of the National Medical Association.

<sup>&</sup>lt;sup>86</sup> Contrary to this account, Xu 2001: 134 claims that the National Medical Association was primarily a national scholarly association that "did not attend to the issue of professionalization," and argues that the Medical Practitioners' Association of Shanghai (*Shanghai yishi gonghui* 上海醫師公會), founded in 1925, was the first organization to do so. Xu's evidence of MPAS professionalizing activities include all activities of the NMA and the ROCMPA in the 1910s, including constitutions limiting membership, and an attempt to uphold standards, and an attempt to build public health with the state, and mutual protection of interests, see *Zhonghuayixuezazhi* 1(1) 1915; 1(2) 1915, etc. and *Zhonghuaminguoyiyaoxuehuihuibao* 1(1) 1917; 1(2) 1917. Every meeting of the NMA recorded in its English and Chinese publications, or recorded in Wong and Wu 1936: 666-667, includes such professionalizing activities.

Based on his actions, Ding Fubao realized that his role had been to act as midwife to the professionals and so his study society did not attempt to form a profession.<sup>87</sup>

In contrast, the published institutional documents of the NMA and ROCMPA demonstrate that in intention and activity, these associations were attempting to form a medical profession. The NMA was not, as Xu Xiaoqun has claimed, merely "a scholarly association" that did not care about "the issue of professionalization."<sup>88</sup> All of these activities which are here termed "professionalization" were intended to increase the status of their group, attract qualified professionals from outside their native-place and classmate networks, and spread a scientific and anatomo-medical and scientific worldview as widely as possible within China. Xu states that Republican Chinese professional groups (lawyers, journalists and physicians) sought "to establish professional standards and obtain professional status and privileges recognized by the state and society at large, which is the essence of professionalization."<sup>89</sup> Yet Xu's state-centric focus on the Nanjing Decade misses the nuances of early professionalization. The present account demonstrates that professionalization of physicians and scientists in China coincided with the attempts to standardize medical and scientific terminology, and that both activities required the Jiangsu Provincial Education Association—the state was important, but was only one actor in these activities.

Like the founders of the NMA and ROCMPA, the scientists Hu Mingfu and Bing Zhi followed the constitutional pattern to set up the Science Society of China. They established their journal and sent a representative of their Shanghai journal to the first planning meeting of the Joint Committee. Upon their return to China in 1918, they registered with the Ministry of Education. In 1915, in the second edition of the journal of the Chinese Science Society, Science

<sup>&</sup>lt;sup>87</sup> Zhongxi yixuebao 1:1(1910), 23; 4:9 (1914), 1-2; 4:10 (1914), 1-10
<sup>88</sup> Xu 2001: 135.

<sup>&</sup>lt;sup>89</sup> Xu 2001: 11.

(*Kexue* 科學), political and cultural luminaries wrote calligraphic prefaces, lending their cultural prestige to the new association and its journal. The content of the inscriptions was less important than the cachet of being associated with the calligraphers. The longest of these inscriptions was written by Shen Enfu (two pages), and another was written by Huang Yanpei (one page). The other contributors were Cai Yuanpei, Li Yuanhong (the president of the Republic of China), and Fan Yuanlian, sometime minister of education and chief editor at the Commerical Press. Each of these inscriptions was solicited by the Science Society of China because of the social, economic, industrial, or political power represented by the calligrapher.<sup>90</sup>

The power of science and medicine in Republican China was not diffused inevitably from West to East.<sup>91</sup> Institutional studies tend to demonstrate the inevitability of their topical subject matter, whether the Science Society of China or the two medical associations examined here. To explain how science and medicine became institutionalized China, we must work in multiple dimensions and follow the networks.

### Conclusion: How the JPEA-Joint Committee nexus anticipated the Nationalist state

Chinese elites sought access to hidden wealth of mental and physical labour power among the people through new education and social organization. Formal education would now be spread to an ever larger number of individuals who would be incorporated into various levels of industrial production. In a time of a weak central state and an ascendant national bourgeoisie, the gentry-merchant activists of the JPEA created new institutions and associations to remake Qing subjects into Republican citizens. Elite activity took the form of ongoing educational reforms as traditional knowledge became "Chinese national culture" and the multitudinous dialects of China were reformed into a "national language" with a phonetic alphabet. The literary

<sup>&</sup>lt;sup>90</sup> Kraus 1991: 36.

<sup>&</sup>lt;sup>91</sup> Compare Basalla 1967: 611-622.

language was relegated to classical studies, and the vernacular replaced it as the written language, standardized for all of China. Books and periodicals were researched, published, translated and revised. The classic figure of the educated youth as consumptive scholar who did no physical labor, was now to be remade by teachers trained in the main points of school hygiene and physical education, through military training, and the adoption of the Boy Scout model. Schools would remake boys (and increasingly girls) into physically strong citizens. Vocational education would encourage middle class youth to use their hands, social education would train the illiterate with lectures, plays and films, and civics education would clearly articulate how to be a modern citizen of Republican China, a new nation-state.<sup>92</sup>

These far-reaching activities of the Jiangsu Provincial Education Association were enacted during a confusing time when a nascent Chinese bourgeoisie experienced a "golden age" of prosperity and self-government freedom, even as warlordism and peasant immiseration led to uncontrolled urbanization and industrial exploitation. The gentry leaders of the JPEA saw a power vacuum; the late Qing new policies and the Republican Revolution had wiped away the troubled institutions of the imperial era. JPEA leaders like Huang Yanpei and Shen Enfu sought to foster new educational organizations and institutions that would mobilize the hidden labor power of China's people and put it to the use of the China they sought to build, led by enlightened constitutionally-minded gentry-professionals. They built overlapping networks centered at the JPEA headquarters in Shanghai that had national influence. They enrolled foreign-trained professional physicians, educators and scientists into the JPEA, overseeing a transition from Confucian-trained gentry to Western-trained professionals. All of these social actors sought the approval of the state, but power and influence were elsewhere. Founding members of medical associations and of the Science Society of China plugged themselves into

<sup>&</sup>lt;sup>92</sup> Jiangsu Provincial Educational Association, 1925.

the existing networks centered at the JPEA at the West Gate of Shanghai's old city. They and their colleagues found academic positions in universities that were a part of the JPEA network. The JPEA connected these young Chinese professionals with the missionaries and together a consensus emerged in 1915 that organizing constitutionally-based professional associations, and standardizing the Chinese terminology for medicine and science were now essential. Together they accrued incremental power to govern areas of life hitherto ignored in China—live bodies, microbes, cadavers, laboratory animals, and the new terminology used to discuss and dissect these novel objects.

There was no way that the Nationalist Government based in Guangzhou, then Nanjing would allow such a situation to continue. The JPEA networks had expanded too far, too fast. They had the power to influence education from the millions of primary school textbooks printed at the Commercial and China Presses to graduate research at the SSC biology laboratories at Southeastern University in Nanjing. In a way, the JPEA network anticipated the modern state to come. The difference was that the JPEA had wide influence, even while it lacked the coercive power the Nationalists would bring. After 1927 the JPEA networks were displaced. Key professionals from the JPEA-JTC nexus entered government or even party service. Physicians and scientists now used the increased prestige of state institutions to continue to pursue the same goals of standardizing terminology, building the profession and its institutions, and attempting to eliminate competition. If the JPEA had functioned as an ad-hoc national ministry of education, then Yu Fengbin had been national secretary of medicine. Yu Fengbin died prematurely in 1930, but continued the standardization of scientific terminology under Hu Shi and the Nationalists before his death.<sup>93</sup> It should be no surprise that another JTC member, Liu Ruiheng, became Minister of Health to the Nationalist government after 1928, or that another, Yu Yunxiu, used the

<sup>&</sup>lt;sup>93</sup> Wen 2006: 72.

Committee and the Ministry to agitate for making the practice of *Zhongyi* (Chinese Medicine) illegal in China. That the professionalizing physicians of the new medicine did not succeed in abolishing the old medicine is less important than the fact that the latter group defended themselves by creating professional groups who could successfully lobby the state.<sup>94</sup> The twenty-year transitional era of the non-governmental generalists like Shen Enfu had given way to professionals embedded in the state.

<sup>&</sup>lt;sup>94</sup> Lei 1999.

# **3** Rockefeller capital, missionary labor: the gospel of translation in China

If we could only get a small group of just the right sort of scholars at work on this question of medical terminology, and the representation were such as to secure adoption of their recommendations by the entire Chinese medical profession, we should undoubtedly be doing a good service in supporting the work. William H. Welch to Wallace Buttrick, March 6 1916.

# Introduction: "just the right sort of scholars"

Missionary labor was essential to the professionalizing process of terminology standardization. By the mid-1910s, Rockefeller capital inputs also became critical, as they promised to far overshadow any existing financial sources contributing to medicine. Rockefeller dominance represented a larger shift in American religion and missions away from a clerical focus on a gospel of conversions toward the influence of business models of wealthy laypeople, and toward a social gospel in which medical care and public health measures were a growing part. This chapter will argue that the combination of missionary labor and Rockefeller capital inflow worked itself out in a gospel of translation in China, evidenced specifically in the eventual financial support for the missionary translation and terminology work: specifically the Publication Committee of the China Medical Missionary Association headed by Philip B. Cousland, and the CMMA Translation Bureau based at Cheeloo University School of Medicine in Jinan, Shandong.<sup>1</sup> By the 1920s, this work included the labor of missionaries, pundits and Chinese physician-translators.

<sup>&</sup>lt;sup>1</sup> This picture emerges from a deep archive of correspondence on the topic of medical terminology in the Rockefeller Archives in Tarrytown, New York, Philip B. Cousland's own heavily annotated copies of his lexicons, and various other archival reports.

But the cooperation between the China Medical Board of the Rockefeller Foundation and existing missionary work did not happen without a struggle. The CMB wanted to support only the most advanced physician-scientists working exclusively in English. They sought to transfer the American version of the (German) research and teaching hospital to China. To enroll the CMB, Cousland and his colleagues had to build and maintain new networks to gain access to this new source of funding. The Rockefeller money-managers held a tight purse, whether they were Baptist ministers *cum* administrators like Wallace Buttrick, or physicians as prominent as William H. Welch, the "Dean of American Medicine."<sup>2</sup> Despite decades of translation labor, stolen between hospital and teaching duties, China's medical missionaries were not "just the right sort of scholars" in William Welch's mind in March of 1916.

Dr. Philip B. Cousland was an "open-minded, capable"<sup>3</sup> and "undoubtedly a useful man,"<sup>4</sup> but no longer able to live in China for long periods due to ongoing health issues. Roger Greene concurred that without Cousland in the middle of the project, "I do not yet feel that we have gotten hold of the right men to take charge of such work."<sup>5</sup> The Rockefeller medical men<sup>6</sup> wanted the best available men for any project they supported, and they did not seem to trust the quality of the missionary labor thus far. Why throw good money after bad?<sup>7</sup>

The right sort of scholar, in late 1915 and early 1916, seemed to be Edmund Backhouse, an Oxford-trained independent scholar of the Chinese language and co-author of *China Under the Empress Dowager* and *Annals and Memoirs of the Court at Peking*. Following on these

<sup>&</sup>lt;sup>2</sup> Obituary, New York Times, May 2, 1934.

<sup>&</sup>lt;sup>3</sup> Welch to Buttrick, March 8, 1916. RF RG4 1.1 Box 10, Folder 136.

<sup>&</sup>lt;sup>4</sup> Greene to Buttrick, January 3, 1916. RF RG4 1.1 Box 10, Folder 136.

<sup>&</sup>lt;sup>5</sup> Greene to Buttrick, January 3, 1916.

<sup>&</sup>lt;sup>6</sup> This phrase is borrowed from the title of the classic account of Rockefeller medical philanthropy, Brown 1981.

<sup>&</sup>lt;sup>7</sup> They were not opposed to supporting the missionary work, but were careful: "It is fortunate in the light of what we already know, that we did not make such a grant as Dr. Ingram requested, although there was not much danger of doing this at anytime." Welch to Buttrick, March 8, 1916, referring to a letter from missionary J. H. Ingram, October 20, 1915.

bestsellers, Backhouse was working on a bilingual dictionary and seemed far better connected than Cousland and his under-staffed and overworked committee of occasional translators. The medical missionaries had petitioned the Rockefeller foundation repeatedly, asking for financial support for their standardization and translation work since May 1914. They were a familiar and known quantity, and their existing translations and lexicon were not uniformly praised. Backhouse, on the other hand, had an aura of mystique around him, apparently becoming "almost a hermit in Peking"<sup>8</sup> and moving in rather more rarified circles than the missionaries, having access to scholar-intellectuals like Yan Fu, Ma Liang and the son of Zeng Guofan, Zeng Guangquan (曾廣銓 1871-1940)—all men with superior translation capabilities and the social connections necessary to do a proper job of standardizing medical terminology for China.<sup>9</sup> Like some other facts, Backhouse got Zeng Guangquan's identity wrong—he was the grandson of Zeng Guofan, not the son.<sup>10</sup> And these men were perhaps too old to be interested in such technical work.

But no matter, Backhouse knew the right people and seemed to have the right connections in England as well. In fact, Backhouse had already finished his Chinese-English dictionary improving upon the classic by Giles by giving full literary references for each entry, and Clarendon Press in Cambridge had begun work on the first volume. But the press now required of Backhouse a deposit of £6000 to continue with the work, an amount Backhouse was currently unable to provide. Backhouse's hopes were on getting a professorship of Chinese at

<sup>&</sup>lt;sup>8</sup> Roger Greene, for his part, had contact with Hu Shi of Peking University, and suggested him for the job, although Backhouse was not convinced Hu would leave his prominent post for such a task. Yan Fu and Ma Liang were probably too old, according to Backhouse. Greene to Buttrick, 4 February 1916. RF RG4 1.1 Box 10 Folder 136, Chinese Medical Terminology. Compare these privately written words to the title of Sir Hugh Trevor-Roper's infamous biography that presents strong evidence that Backhouse as a confidence man and a fraud, *The Hermit of Peking* and one cannot help but wonder the degree to which Backhouse deliberately cultivated this image, or even used these words to describe himself.

<sup>&</sup>lt;sup>9</sup> Greene to Buttrick, 4 February 1916. RF RG4 1.1 Box 10 Folder 136, Chinese Medical Terminology. <sup>10</sup> See Hummel 1970.

Oxford, "which would give him freedom for research and other independent work such as this," and from such a position, he would be able to induce the university to help with publication of his dictionary. Roger Greene was clearly charmed by Backhouse, and suggested to Buttrick that they find a way to offer financial support to Backhouse without upsetting his delicate pride. After all, Backhouse was willing to advise the terminology work.

For the task of standardizing medical terminology, Backhouse suggested a small committee of four to five men: one medical man, a lexicographer, and a Chinese scholar, but not more than one: "He thought that it would be better not to have more than one Chinese as a responsible member of the committee, though others should be employed in subordinate capacities and might be freely consulted." Backhouse's disdain for Chinese scholars in this matter was not complete, for given the right man, "the negative decisions of the Chinese member should ordinarily govern on questions of terminology."<sup>11</sup>

Similar to Backhouse, Charles Lewis, a Red Cross missionary surgeon of some renown, suggested a small super-committee for the task of standardizing Chinese medical terminology.<sup>12</sup> It should include two Chinese scholars "the very best who know medicine, or one of them at least ... His Chinese education must be first class," two missionaries, "the very best in both Chinese and medicine," and "one good Japanese if there is one." The super-committee would work for five years "and produce a classic with China's authorization as the standard of this country and the only recognized one. This will do away with two, three or half dozen names for one thing as it is now. With this standard every thing in a medical line could be systemized and

 <sup>&</sup>lt;sup>11</sup> Greene to Buttrick, February 4, 1916.
 <sup>12</sup> American missionary administrator Robert Speer wrote a biography of Lewis which is partly available online, http://www.vlib.us/medical/Siberia/SibDoc.htm)

there is no reason why China could not say and do anything in a medical line that it can in any other tongue."<sup>13</sup>

Both Backhouse and Lewis recommended limiting the influence of missionaries and Chinese on the terminology committee and keeping the size of the committee small. They give no explicit reasons for this later suggestion, but apparently a small committee would be more efficient in both the time needed to make decisions about terms, and more cost effective in bringing the men together on a regular or permanent basis.

While the decision-making mechanisms of Rockefeller financial power were moving in a series of trans-Pacific letters, cables and board room meetings at China Medical Board Headquarters at 61 Broadway in New York, Philip B. Cousland and his colleagues were not idly waiting for Rockefeller largess. They were negotiating a rather *large* committee in Shanghai. Without the help of the Rockefellers, they managed to enlist elite Chinese scholars a generation younger than Yan Fu and Ma Liang through David Yui and the Jiangsu Provincial Education Association (chapters 1 and 4). This network also enabled the missionary-initiated network to enroll the state through Tang Erhe (chapters 2 and 7). In the end it would be Philip Cousland—not Backhouse or any Rockefeller medical man—who would be praised by medical historian Zhang Daqing as "establishing a foundation for subsequent editing and unifying medical terminology for medical dictionaries" in China.<sup>14</sup> And not only did Cousland and the missionaries make themselves into "the right sort of scholars" for the job, they also secured significant Rockefeller China Medical Board funding for almost a decade. They made themselves indispensable to the standardization project.

<sup>&</sup>lt;sup>13</sup> Extract from letter from Chas. Lewis, April 14, 1915.

<sup>&</sup>lt;sup>14</sup> Zhang 2001: 330.

But in the winter of 1915-16, the continuation of medical missionary education in China was at stake in the question of Rockefeller funding for terminology and translation work. Or so the missionaries presented it to members of the Rockefeller China Medical Commission. The Rockefellers were aiming to remake medicine in all of East Asia by building a Johns Hopkins for China in Beijing, taking over the existing missionary union medical school there. A second medical school was planned for Shanghai, the property purchased not far from the West Gate center of the city (see "Rockefeller Institute" on map in Appendix 2). Shanghai's Harvard Medical School and St. John's English language medical schools would be folded into the new institution there. As a matter of principle, the Rockefeller Commission decided to train physicians in English only. Chinese had only a meager medical literature, an inadequate nomenclature, and would be difficult for highly trained American research scientists to learn. Much of the project of missionary medicine depended upon Chinese medical translation and instruction.

The coming of Rockefeller capital upset the existing order of things so significantly that it potentially threatened American support for the missionary work in China: *not* supporting Chinese-language medical schools or Chinese translation and terminology work practically equaled a show of disapproval of those projects. Missionary boards, churches, and wealthy benefactors would take note, and withdraw funding, leaving the field to the idiosyncratic priorities of the Rockefeller Foundation. And what then would become of Mandarin-language medical education in East China at Nanjing or Jinan or the labor of the missionary translators?

# Missionary medical terminology labor from Hobson to Cousland

Chapter one introduced Dr. Philip B. Cousland as the prime mover in bringing the longstanding missionary translation project into contact with professionalizing Chinese. Cousland had been a member of the China Medical Missionary Association Publication and Terminology Committee since its founding in 1890, and after 1901 became its chair.

For the Protestant Anglo-Americans missionaries who came to China after 1835 in increasing numbers, translation was part of their cultural DNA. If it wasn't translation and retranslation of the Bible into the vernacular, it was the "propagation of useful knowledge" that would convince the unsaved of the technological superiority of Christian civilization. Either way, Chinese could be saved through translation and the dissemination of the written word.

In 1908, Philip Cousland published the first attempt at a complete lexicon of English and Chinese medical terms. The opening pages of this lexical intervention began with a historical note that tied the work of his committee to that of his Protestant translation predecessors, particularly Benjamin Hobson, John Kerr, John Dudgeon and John Fryer (figure 5-1).

According to Cousland's short history, Hobson's was the first "serious attempt to create a scientific medical terminology in Chinese." Benjamin Hobson (1816-1873) was an English Protestant missionary sent by the London Missionary Society to Macao in the year of the outbreak of the First Opium War 1839. He spent twenty years in hospitals in Portugese-controlled Macao, British Hong Kong and in Canton (Guangdong) and later Shanghai. He is best-known for his publication of five medical books in Chinese in the 1850s, especially his *New Treatise on the Human Body* (1850).<sup>15</sup>

<sup>&</sup>lt;sup>15</sup> See discussion in chapter five.

John Glasgow Kerr (1824-1901) was an American Presbyterian physician who took over Peter Parker's Canton Hospital (Guangzhou Boji Yiyuan) after 1854, treating hundreds of thousands of patients and training hundreds of Chinese medical assistants, including Sun Yatsen, in addition to pioneering mental health incarceration in China, presiding as president of the Medical Missionary Association of China at its founding in 1887, and translating and authoring many books. According to Cousland, writing in a memorandum to Roger Greene in 1916, "Dr. Kerr's terms were fairly consistent but as other translators introduced different terms the position became rather confused for teachers and students."<sup>16</sup>

These other translators included John Dudgeon, John Fryer and others. They were all good scholars, but also proud and stubborn, generally happy to have a standardized terminology, but only if it followed their own ideas.

John Dudgeon (1837-1901) was a Scottish missionary physician who served at the Beijing hospital established by William Lockhart after 1863. He resigned from the London Missionary Society over a conflict between medical and missionary work. He was appointed Professor of Anatomy and Physiology at the forerunner of Peking University—the Imperial College (*Tongwen guan*)—during the 1870s and 1880s. He published the second classic work on anatomy of this period, a topic explored fully by Gao Xi in her recent book about him.<sup>17</sup>

John Fryer (1839-1921) was an English-born missionary who would become one of America's first China scholars, establishing the Chinese department at the University of California. From 1863 to 1865 he was professor of English at the Imperial College in Beijing, then became head of the Anglo-Chinese School in Shanghai. At this time he edited a Chinese newspaper (*Wanguobao*) and various books on science and medicine. Dudgeon and Fryer shared

<sup>&</sup>lt;sup>16</sup> Cousland to Greene, 1916

<sup>&</sup>lt;sup>17</sup> Gao 2009.

1850 to 1858.—The first serious attempt to create a scientific medical terminology in Chinese was the translation by Dr. Hobson of Canton, of a series of small text-books with a list of terms in English and Chinese.

1871 to 1890.—Nothing further was done until Dr. J. G. Kerr of Canton, took up the subject, and for over thirty years, from 1871 to 1898, issued many translations of foreign medical works and also several nomenclatures in English and Chinese.

There should also be recorded the work in Anatomy and Physiology of Drs. D. W. Osgood and H. T. Whitney of Foochow and Dr. Dudgeon of Peking; in Materia Medica that of Dr. Porter Smith of Hankow, and in Therapeutics and Pharmacy of Dr. S. A. Hunter of Shantung. In addition, Dr. Fryer of Shanghai, and Dr. J. C. Thomson of Canton, compiled vocabularies in some branches of medicine.

**1890.**—The lack of uniformity in the terms used by the various translators was so serious a hinderance to medical education that the Medical Missionary Association of China at its first Conference held in Shanghai in 1890 appointed a Terminology Committee to draw up a standard medical nomenclature.

**1901.**—The first meeting of this committee was not held till 1901, when the subjects considered were Anatomy, Histology, Physiology, Pharmacology and Pharmacy, and a pamphlet containing the chosen terms was issued.

**1904.**—The terminology Committee met for the second time in 1904 and published lists of terms in Pathology, Medicine, Surgery, Obstetrics, and Gynecology.

**1905.**—The third meeting took place in 1905. A Bacteriology and Materia Medical nomenclature and also revised terms in Anatomy, Histology, Physiology, Pharmacology and Pharmacy were issued.

**1905.**—At the second Conference of the M. M. A. of China the work of the committee was approved and the committee reappointed. A Publication Committee was also appointed to bring out a series of medical text-books, using this standard nomenclature.

**1907.**—The third Conference of the Association continued the work of the committee and appointed Dr. P. B. Cousland as Chinese Editorial Secretary to give his whole time to this work.

During this year the Terminology Committee met on several occasions and did much in revising and adding to the lists of terms. The compilation of a Medical Lexicon was also commenced. During the compilation many terms were added and proof sheets were sent out to all the members of committee, so that errors and additions might be appended. a similar trajectory in that both left their mission-oriented work and moved toward more secular educational work and what I have here called the "gospel of translation."

There were others as well, including Osgoode and Whitney of Fuzhou, Porter Smith of Hankou, Hunter of Shandong, and Thomson of Guangdong. All made contributions to the medical literature in Chinese, but in these years before the full incorporation of China into the global capitalist system, poor transportation and communication still obtained between the farflung regions occupied by the missionaries of China. Before the catastrophe of the Boxer movement and its aftermath, the railway and telegraph had made very little impact in China, and each translator worked in isolation. By 1890 the books and word lists of various authors circulated, but terminological chaos ensued:

The lack of uniformity in the terms used by the various translators was so serious a hindrance to medical education that the Medical Missionary Association of China at its first Conference held in Shanghai in 1890 appointed a Terminology Committee to draw up a standard medical nomenclature.<sup>18</sup>

This committee was formed with good intentions, but did not meet again for over a decade until 1901, when it became known as the "committee on Chinese medical terms."<sup>19</sup> Although Philip B. Cousland had been part of the original committee, he now took a leading role in making its work active. It seems that it was only the death of Kerr and Dudgeon both in 1901, (Fryer had become Agassiz Professor at Berkeley), that enabled the younger, more open-minded men to begin work on standardizing terms.

Work of the terminology committee proceeded apace, and significant standardized booklets of terms were published for various medical subjects, beginning with anatomy and its sister disciplines of physiology and histology. A second meeting in 1904, and a third in 1905

<sup>&</sup>lt;sup>18</sup> Cousland 1908.

<sup>&</sup>lt;sup>19</sup> Neal to Judson, May 21, 1914.

expressed both the increasing ease of transportation in the post-Boxer empire, and the increasing importance allocated to terminology work as the foundation of improving medical education and healthcare in China. At the 1905 meeting, only the second national meeting of the C.M.M.A. since its founding in 1886, the terminology committee was reappointed and a publication committee was established to translate a set of textbooks using the newly standardized terminology. By 1907 momentum was increasing as the C.M.M.A. began it pattern of bi-annual meetings, and Cousland became devoted to the work of translation and terminology unification full-time. The terminology committee met several times and steadily circulated proof-lists of terms among members as Cousland lead the committee toward its first great product: the English-Chinese Medical Lexicon.

Cousland's first lexicon formed the basis for a new and productive era of C.M.M.A. translated textbooks. As another key member of the committee, James Neal wrote, fixing terms and publishing go "hand in hand" as regular business. Each meeting of the committee would first work out the new terms and revise old ones, and "second attending to the details of the publishing business which has now grown to rather large proportions."<sup>20</sup> These books circulated widely with much excitement among Chinese scholars interested in the medicine, but as Tang Erhe said at the first Joint Terminology Meeting in 1916, the missionary books were usually quickly deposited high on a shelf after purchase due to frustrations with terminology.<sup>21</sup> But dominating all of the Chinese market for medical texts was hardly the goal of the missionary textbooks. Their main goal was simply to train their own students in Chinese.

<sup>&</sup>lt;sup>20</sup> Neal to Judson, May 21, 1914.

<sup>&</sup>lt;sup>21</sup> Yu 1917: 35.
#### *Medical education in Chinese*

Near the end of 1915 John R. Mott (1865-1955) received a very direct letter from Dr. R. T. Shields of Nanking University School of Medicine outlining why the influx of Rockefeller capital into the Chinese medical field would fatally challenge missionary medical education in Chinese. It would be fatal, at least, if high quality missionary education and translation work in Chinese was not funded by Rockefeller money. John R. Mott, who presided over the great World Missionary Conference of 1910, held in Edinburgh<sup>22</sup> had been a driving force behind the YMCA and Student Volunteer Movement for decades, and thus had played a role in recruiting hundreds of missionaries from Yale, Columbia and other university campuses in the late nineteenth century.<sup>23</sup> In 1915 he was a non-travelling member of the China Medical Board of the Rockefeller Foundation, and Shields, a fellow American, was appealing to Mott to defend the vested interests of missionary medical education in Chinese in a dense and passionate eight-page letter.

Medical education in Europe and America was in rapid flux as the influence of prominent educator Abraham Flexner's reports on medical schools of 1912 and 1913 sought to standardize medical education everywhere on the model of Johns Hopkins.<sup>24</sup> What this practically meant was the closing of hundreds of proprietary medical schools in the U.S. and Canada, which were run on a shoestring by various private practitioners.<sup>25</sup> This was exactly the model of the small medical missionary schools existing in China at this time (see Appendix 6). By the second version of his report, in 1924, Flexner was interested enough in directly influencing China that he requested that free copies be sent to key educators in China: "If you will prepare a special list

<sup>&</sup>lt;sup>22</sup> Stanley 2009.

 <sup>&</sup>lt;sup>23</sup> Clifton 1974: 91-109; Lautz 2009: 3-21.
<sup>24</sup> Flexner 1910; 1914.

<sup>&</sup>lt;sup>25</sup> Starr 1982.

for distribution of my Medical Report in China and Japan, I shall be glad to send the book as suggested. A.F.<sup>26</sup>

Abraham's brother, Simon, a physician and first head of the Rockefeller Institute (now Rockefeller University, in New York) travelled with the second China Medical Commission of the Rockefeller Foundation in 1915. This commission was investigating how to establish two English language, research and clinically-based medical schools in China. Although Simon Flexner had specifically remarked to Shields that the Chinese-language medical schools and translation work should be continued, they had offered no promise of financial aid for the continuation of this work. The message seemed clear to Shields:

By not giving financial aid to <u>any</u> mission school teaching in the Chinese language, the China Medical Board practically show their disapproval of the continuance of such schools. This fact will, I fear, make it increasingly difficult for such schools to secure funds and teachers from the home lands.<sup>27</sup>

If this led to a smaller number of Chinese language medical schools doing higher quality work, this would be a happy outcome. But if it resulted in American, Canadian and British mission boards and churches losing interest in the Chinese language medical work altogether and leading to the closing down of such institutions, "then many of us believe a serious blow will be given to the missionary enterprise in this country, and also the day when modern medicine will be given to the Chinese in their own language will be greatly delayed."<sup>28</sup>

The fear of having the lifework of dozens of devoted missionaries who had taught and translated into Chinese wiped out, however unintentionally, was clearly great for Shields, even if his portrayal of a threat to the whole missionary enterprise in China was probably overblown.

<sup>&</sup>lt;sup>26</sup> June 5, 1924 Abraham Flexner for Roger S. Greene, Memo. RFA, RG 4 (CMB) Series I, Subseries II, Box 48, File 1110, Abraham Flexner, 1919-1927, ""In addition to those mentioned in your list I propose to send a copy to Dr. Lim of Amoy University, Dr. S.P. Ch'en, and perhaps later on one or two others."

<sup>&</sup>lt;sup>27</sup> Shields to Mott.

<sup>&</sup>lt;sup>28</sup> Shields to Mott.

His strategy in the letter soon becomes clear. He separates out two worthy "high-level" missionary medical schools teaching in Chinese, those in Jinan, Shandong and his own in Nanjing: the Cheeloo University School of Medicine (also known as Shantung Christian University) and Nanking University School of Medicine, respectively. Shields acknowledges that these two were not up to the level of Flexnerian ideals, and neither were any missionary medical instructors. But the work of these two medical schools was clearly superior to that at "these onehorse, imitation institutions with very little reason for existence and no hope for improvement." No, "Tsinan [Jinan] and Nanking [Nanjing] are the only schools worth considering in this part of China, the status of Peking having been already settled."<sup>29</sup> The Union Medical College of Beijing was to become the first Rockefeller Institution, while the second proposed institution would be in Shanghai and consolidate the English medical education of St. John's and Harvard there.

In this private communication, Shields pulled no punches about his feelings about Japanese-model medical schools in his neighbourhood: "It is pathetic to see and hear of the numbers of so-called practitioners of Western medicine scattered throughout China." In his view, only mission hospitals and schools had offered a proper demonstration of foreign medicine in China: "There are medical schools—two within two hundred miles of us—where almost all the professors are returned students from Japan, teaching in a mixture of Chinese, Japanese, German and English, or whatever else they know enough of, to fool their students with. These two schools last winter had two hundred and fifty students in them, and all they have to do to graduate will be to stay their allotted time." Shields was almost certainly referring to Tang Erhe's colleagues in the newly formed Republic of China Medico-Pharmaceutical Association at Suzhou and Hangzhou, respectively 134 and 176 miles away from Nanjing in the lower Yangzi

<sup>&</sup>lt;sup>29</sup> Shields to Mott.

River region.<sup>30</sup> Shields offers no evidence of having visited these medical schools, but he had probably read the report of the first China Medical Commission of the Rockefeller Foundation published in 1914. Members of the Commission had met some of the Japanese-trained medical Chinese teachers at these schools: "None of these, so far as the Commission's observations went, was educated in any one of the Imperial Universities." They were trained in the "second-grade schools" because entrance requirements for the University medical schools were too high for Chinese who were foreigners to the language and education system.<sup>31</sup> The Commission had not heard of the Hangzhou school before leaving China, so had no information about it, and of the Suzhou school, it was "only in its second year, and it is therefore perhaps not wholly fair to judge it." Suzhou had five professors trained in Japan, a year of pre-medical instruction in physics, chemistry and mathematics, but had only a "tolerably adequate laboratory for elementary physics and chemistry." One highly celebrated dissection (the first legal one in Jiangsu) occurred at the hospital, but there was no regular arrangement for cadavers.<sup>32</sup>

While Shields disapproved of such medical education, and that occurring in the few remaining small missionary medical schools, Chinese students of the middling sort still needed a place to train; and hospitals needed rank-and-file physicians to man them. Flexnerian standards at Beijing and Shanghai would require not only scientist physicians and world-class facilities, they also required highly-trained students with pre-medical education and excellent English. Such pre-requisites were difficult to secure among Chinese students given the low-status of medicine as a profession in most of the country (Guangzhou seems to have been an exception). Those with good English tended to go to America, and Shields knew of only seven Chinese students in the US studying medicine of the many thousands there. Without the high-level

<sup>&</sup>lt;sup>30</sup> Shields to Mott.

<sup>&</sup>lt;sup>31</sup> CMC 8-10.

<sup>&</sup>lt;sup>32</sup> CMC 14-15.

medical missionary schools like those in Nanjing and Jinan, "Chinese students who are unable to go to Shanghai or Peking will be driven necessarily to the so-called medical schools or the Government schools, which are worse, and neither they nor their future patients can have a very adequate idea of what Western medicine really is."

Shields foresaw the objection that medical missionary schools were still only training hospital assistants, as they had done under the Qing dynasty until recently. Yes, they were trying to get physicians for mission hospitals, and they had not the resources to train professors or research-oriented physicans, but in addition to a need for the proposed Rockefeller-funded "model schools in Peking and Shanghai of the very highest efficiency" there was yet a great need in China for "rank and file" physicians who could staff hospitals: "My plea is that we should have in East China at least one school teaching medicine to the Chinese in their own language, and accepting as students as high a grade as we can get at present in reasonable numbers, raising the standards as fast as possible."<sup>33</sup> This was a dynamic and flexible plan that sought to recognize the existing missionary work already established. What was the nature of this work?

#### From medical aid to missionary medical schools

In the nineteenth century, medical work was justified for the middle class Anglo-American missionaries jumping aboard the tea and opium ships of their cousins and classmates to China. It was justified by the example of Jesus Christ as the "Great Physician" but it was also justified as a practical matter of "breaking down Chinese walls" to the gospel message: "The history of missions shows that medical work is the key that unlocks the door to heathen hearts."<sup>34</sup>

<sup>&</sup>lt;sup>33</sup> Shields to Mott.

<sup>&</sup>lt;sup>34</sup> Osgood 1908, 12.

No great miracles were needed, just "[s]imple help like the pulling of a tooth, the lancing of an abscess, the giving of a dose of quinine, or the application of sulphur ointment"-these were enough for missionaries to move into regions that had previously been unwelcoming (and illegal) for missionary work. What this practically meant was that the dozens of outpatient clinics set up in small rented facilities, with their waiting rooms and long lines, allowed for preachers to evangelize those seeking treatment with the physician in the next room.

From early on, missionary physicians realized they could multiply their impact by training Chinese medical assistants: "The need of native help presses sorely on some of us" and if they could find such help they would "be relieved of much of the routine and drudgery..."<sup>35</sup> The impetus toward attempting to train fully-formed physicians in nascent medical schools with a handful of pupils increased toward the end of that century. Medical missionaries would "train their assistants to properly sterilize dressings and instruments and prepare themselves, the operating room and the patient for operation. One of them must be trained to become an anesthetizer."36

Hands-on medical training was soon supplemented with written translations: "The best medical works must be translated into the vernacular. The doctor himself must learn to put it all into their language and thought." The best approximation of the clinical teaching method was adopted by the medical missionaries as "every clinic becomes a recitation, every movement an example."<sup>37</sup> These assistants must be Christian converts, and medical missionaries bore "the responsibility of instructing these babes in Christ in lessons of cleanliness, social purity and

 <sup>&</sup>lt;sup>35</sup> Beebe 1889: 1-3.
<sup>36</sup> Osgood 1908: 17.

<sup>&</sup>lt;sup>37</sup> Osgood 1908: 18-19.

sanitary science.<sup>38</sup> But more importantly were the missionary translations on physiology and anatomy that followed only after translations of the Bible in priority and were spreading among Chinese as public school textbooks.<sup>39</sup> These were the translations of Hobson, Dudgeon, and by the first decade of the twentieth century, of Cousland and his colleagues in the publication committee of the Medical Missionary Association.

By the second decade of the twentieth century the medical missionary accomplishments in China were acknowledged as substantial to members of the Rockefeller Commission who noted that "it is surprising to find the missionary societies now embarked not only in religious propaganda, but as well in large educational and eleemosynary undertakings, hospitals, asylums, schools, colleges, and universities" tasks that "western nations do for themselves, either at the public charge or from individual beneficence."<sup>40</sup> As such, missionary investment in medical education and service increased, and a split emerged between those who felt medicine was "merely a means of getting a hearing for evangelical preaching" and those who felt that a "new conception of the nature and purpose of the missionary cause" was necessary to bring not only Christianity, but also the benefits of western civilization.<sup>41</sup> It was clearly the second conception of medical education that the Rockefeller Foundation approved of-put the best of scientific medicine first, buttressed perhaps by Christianity, rather than the other way around. Lay involvement and funding increased the impetus toward a social (civilizational) gospel. Increased translation and publication led to cooperation in medical education. Steps toward cooperation and professionalization of medical missionaries began with the formation of the Medical Missionary Association of China (CMMA) in 1886. Centuries of Protestant inter-

<sup>&</sup>lt;sup>38</sup> Osgood 1908: 21. Compare Beebe 1889: 4, who agrees that medical missionaries have no duty to train non-Christian students.

<sup>&</sup>lt;sup>39</sup> Osgood 1908: 21.

<sup>&</sup>lt;sup>40</sup> CMC 1914: 18.

<sup>&</sup>lt;sup>41</sup> CMC 1914: 18.

denominational antagonism in the homelands began to be reversed on the mission field as Scottish Presbyterians worked with American Congregationalists and Canadian Anglicans to establish standards for medical schools, hospitals, and unification of medical terminology for the medical books they printed. At the 1913 meeting of the CMMA it was decided that no new medical colleges be started in China until the most promising existing institutions be improved, and nine already conjoined missionary medical schools were selected: those at Moukden (Fengtian), Beijing, Jinan, Chengdu, Hankou, Nanjing, Hangzhou, Fuzhou and Guangzhou. Such decisions could not stop the Ivy League missionaries as Harvard, Penn and Yale sponsored independent medical schools at Changsha (Yale) and Shanghai (Harvard and Penn).

Appendix 6 combines, in chart format, information given by the Rockefeller China Medical Commission of 1914, with information from other sources to fill in gaps. The data demonstrates how recently, as of the second decade of the twentieth century, organized medical education had been established in China. While some of the southern medical schools had grown out of a long practice of training hospital assistants (Canton Hospital off and on since 1836; St. John's Medical School since 1896), the organized training of physicians by more than one or two instructors really only started *after* the massive cultural and educational changes brought about with the end of the imperial examination system in 1905, the same decade when Japanese medical education became significant. Secondly, the information makes clear that the number of medical instructors was very small, with fourteen in Beijing, ten in Shanghai at Harvard (not all full-time), and eight in Nanjing; the rest had only five or less. The number of students and graduates was also very small, while the physical plant and income of each institution still "rudimentary."<sup>42</sup> Was the China Medical Commission damning with faint praise?

<sup>&</sup>lt;sup>42</sup> CMC 1914: 18.

The only great financial benefit accrued to missionary institutions to 1914 was that missionary salaries were small and "coolie" construction labor was cheap.

## Philanthropy and the language of medical work in China

It will be seen that a vital question connected with the subject of standards for medical education in China is that of the language which shall be the medium of instruction.<sup>43</sup>

In the 1910s and 1920s, what Rockefeller philanthropy meant for China was scale and standards. Western medicine could now be introduced fully on the terms of the best American appropriation of the German university system: the Johns Hopkins model. Abraham Flexner's influential reports on medical education in Europe and North America had the effect of consolidating numerous proprietary medical schools into elite private and great public university medical schools. First Harvard, then Chicago, then dozens of other proprietary medical schools only half-associated with universities were transformed from money-making schemes for busy private practitioners into the research and clinically-based institutions with which we are now familiar. As we have seen, with the publication of the China Medical Commission report, *Medicine in China* in 1914, these standards began to be felt in China. These standards primarily involved increasing scale through massive capital investments in the physical plant of the medical schools and associated clinical hospitals, ensuring they had electric lighting, lantern slide machines for instruction, Roentgen-ray (X-ray) machines, and large student laboratories with state-of-the-art microscopes. Large salaries were also required to ensure that the faculty would not seek to do private consulting outside of their university duties. Pre-medical scientific education in the universities would ensure a properly prepared base of student material, and a

<sup>&</sup>lt;sup>43</sup> CMC 1914: 82.

shift from rural to urban campuses would ensure plenty of clinical and anatomical material for instruction.

The final foundation stone of reformed medical education was language. There were three languages of modern medicine by 1914: French, German and English. Scientifically trained doctors must preferably be able to read literature in all three languages, but at least one or two. Chinese or even Japanese was not sufficient—after all, even Japanese medical students learned largely in German.<sup>44</sup>

According to the report of the China Medical Commission, using Chinese as a medium for training medical men was insufficient on numerous counts, it could best be described as "taking students who are not educated very far and giving them a hasty and more or less superficial training." Such superficiality would not meet the need for physicians "because it does not really train physicians"—graduates are useful only as hospital assistants, but not as fully independent physicians. Yes, the Commission understood the benefits of using Chinese: it would (1) enable students to learn medicine without first learning a foreign language; (2) shift the burden of effort from many generations of students, each person spending four to six years learning English, to the teacher, each spending only about three years learning Chinese with which to teach for a full career; (3) keep graduates in closer contact with their Chinese patients and (4) avoid becoming alienated from their own culture; (5) avoid the problem of losing potential medical men with good English to the much higher salaries of business; but furthermore, (6) there was such a need for a large body of medical practitioners that all means must be made to produce them as quickly as possible. Those who supported this view were a

<sup>&</sup>lt;sup>44</sup> CMC 1914: 81-85; Flexner 1910; 1912; 1925; Kaufman 1976; Numbers 1980; Ludmerer 1985; Bilroth, 1876, trans. Welch 1924.

slight majority of the faculty at the Peking Union Medical College (by a ratio of 8:7) and by the full faculties of the Union Medical Schools at Jinan and Hankou.<sup>45</sup>

But an overall majority of medical missionaries supported teaching in English, including the minority at P.U.M.C., the Faculty of the proposed Yale Medical School in Changsha, by St. John's and Harvard in Shanghai, by the Faculty of the Canton Christian College of the proposed school at Guangzhou, and that of the Union Medical College of Fuzhou, not to mention the English at Hong Kong University, the Germans at Qingdao (who teach in German). Their reasons for holding this view were that (1) middle school students could learn enough English for medical work, and thus no special language training would be needed; (2) the literature of medicine was infinitesimal in Chinese and necessarily outdated in the process of translation; (3) that English instruction would allow a large number of well-qualified professors and not put the distracting necessity of learning Chinese upon them, and so on. Even the Chinese military medical school in Tianjin used foreign languages to teach medicine, and "practically all the western trained Chinese physicians with whom we have talked share this view, as do many influential Chinese educators."46

But the most damning statement of the missionary translation, publication and terminology labor thus far was that the second group of medical missionaries supporting instruction in English "say that neither the terminology of the missionaries nor that of the Japanese is satisfactory, and that on the whole the English textbooks are easier for the students to understand than the Chinese translations."47 In other words, in the published, official judgment of

<sup>&</sup>lt;sup>45</sup> CMC 1914: 82-84. It is not clear why the Union Medical College associated with Nanjing University was not mentioned in the Report as supporting use of Chinese. <sup>46</sup> CMC 1914, 83-84.

<sup>&</sup>lt;sup>47</sup> CMC 1914: 84.

the Rockefeller China Medical Commission, missionary terminology and translations were worse than useless.

## How Cousland enrolled Rockefeller capital

By 1915, Cousland, the champion of missionary terminology, was sick, officially retired, and unable to spend long periods of time in China. If we accept the private correspondence of Shields, the whole missionary project of teaching medicine in Chinese was in danger becoming a footnote in the story of the Rockefeller medical impact in China. The medical schools teaching at Nanjing and Jinan "have been put in a difficult position" by the promise (threat?) of Rockefeller money and Flexnerian standards to the Chinese medical field. Yes, the Commission was not suggesting the Chinese-language medical schools close, in fact, just the opposite had been said by Dr. Buttrick who had "remarked several times that the China Medical Board did not want to interfere with the work of the Missions and they did not want to 'quench the smoking flax."" Along the same lines, Dr. Simon Flexner had "remarked that he thought the mandarin schools should be continued, and that translation work should be continued." But polite words in person were cheap, and without financial support for this work, the published and widely circulated words of the commission in their report would certainly seal the fate of medical education in Chinese for all prospective donors and existing missionary boards.<sup>48</sup> Moreover, the Rockefeller Foundation was looking to non-missionary scholars like Edmund Backhouse and Charles Lewis for help in any Chinese terminological and translation work.

But between 1915 and 1916, Backhouse drifted off the radar of the Rockefeller Foundation. He did not take up an invitation to visit the China Medical Board in New York: "Mr. Greene said that Mr. Backhouse was coming to the United States, probably arriving some time in

<sup>&</sup>lt;sup>48</sup> Shields to Mott.

March, 1916, and had been asked to call at this office. There are, however, no records of his having called here.<sup>349</sup> Roger Greene's suggestion of financially supporting the publication of Backhouse's dictionary seemed like a bad idea back in New York.<sup>50</sup> The full truth may not have been clear to them, but Backhouse was fleeing China after negotiating fraudulent arms deals between China and England, and would soon be rejected from consideration of the professorship at Oxford when doubt was cast on the authenticity of some of the large number of texts he was donating to the Bodleian Library as part of his negotiations with them.

Meanwhile, missionaries Cousland, McAll, Ingram, Shields, and Neal and their younger colleagues did not give up in their correspondence with the China Medical Board. James B. Neal of Cheeloo University Union Medical School wrote in 1914 immediately after the visit of the first China Medical Commission arguing that the work of the committee was invaluable and that three full-time missionary translators were necessary. Against criticisms of the translated approach to medical education in China, Neal wrote: "The criticism has often been made that, owing to the scarcity of books in Chinese and the poverty of the language, it is impracticable to train medical students through the medium of Chinese to a sufficiently high standard, but the committee is confident from its own experience that the language is capable of expressing the meaning of any medical idea and that with an adequate force of translators, such as is contemplated in the above recommendations, a continual supply of medical books in Chinese of the highest standard can be furnished to students and physicians and the list of terms can be kept up to date."<sup>51</sup> Cousland wrote later in 1914 from Edinburgh that he was resigning his distant secretariat of the committee, and likewise hoped for a grant to support two or three men "set

<sup>&</sup>lt;sup>49</sup> M. K. Eggleston Memo, September 20, 1916, RFA, RG4 CMB, 1:1, Box 10, Folder 136.

<sup>&</sup>lt;sup>50</sup> Murphy to Buttrick, March 21, 1916.

<sup>&</sup>lt;sup>51</sup> Neal to Judson, May 21, 1914. Quote is from attached published Report of Publication and Terminology Committee, CMMA Conference, February 1915

apart" for the work, along with "a regular office with good Chinese pundits."<sup>52</sup> On New Year's Eve of the same year Cousland sent a letter to Roger S. Greene from his new Asian base in Yokohama where he was a neighbour of Greene's uncle, H. Lorris, a diplomat in Japan. Cousland emphasized that most missionary labor had been free, but hardly worthless, in that this labor had produced "the only Chinese medical textbooks" apart from some "semi-popular small books translated from the Japanese" (presumably those of Ding Fubao's *Wenming Press*).<sup>53</sup> It was unclear to Cousland at that time the attitude of the Government toward the work of the missionaries, but Cousland's attitude was that it was "our plain duty … to go on[,] as we have begun ever seeking to improve the quality of our work and placing it at the disposal of all who will use it"; any cooperation with Chinese, whether public or private would be done "joyfully and wholeheartedly."<sup>54</sup>

But good intentions were not enough. The appeal for funding was rejected by the CMB on March 1, 1915. This decision was based on the published report of the China Medical Commission (see discussion above) since missionary terms were not yet acceptable and that CMB support should be only for English instruction. Greene sent the bad news several days later.<sup>55</sup>

But the pleas from the missionaries continued. "I regard the Lexicon as indispensable," wrote J. H. Ingram to William Welch, "if it is not revised or a new one produced the condition will be chaos."<sup>56</sup> P. L. McAll quoted China's most famous Western-trained physician, Wu Liande, that "it is … an axiom that no self-respecting nation will remain content to learn

<sup>&</sup>lt;sup>52</sup> Cousland to Sage, September 15, 1914. RF RG4, 1.1 Box 10 Folder 135

<sup>&</sup>lt;sup>53</sup> Cousland to Greene, December 31, 1914.

<sup>&</sup>lt;sup>54</sup> Attached report of Cousland (n.d.) Cousland to Greene, December 31, 1914.

<sup>&</sup>lt;sup>55</sup> Greene to Cousland, January 27, Greene promises the issue will get a hearing; March 1 1915 Docket of Board Meeting: Translation of Medical Textbooks; Greene to Cousland, March 4, 1915.

<sup>&</sup>lt;sup>56</sup> Ingram to Welch, October 20, 1915.

scientific subjects in a foreign language." McAll then found a new argument for translation and terminology work that bypassed the sensitive issue of medical standards for physicians: nurses were needed and they could only be expected to learn in Chinese. This was a brilliant case to bring, for nurses needed books on all branches of basic medicine based on a standardized set of medical terms. That this tactic worked is demonstrated by internal correspondence of CMB officers who said of nursing translations, "The more we can concentrate this sort of service the better."57

Cousland became the head of the Chinese Nurses Association in 1914, probably in part to encourage Rockefeller support for terminology work. The only solution to the problem of medical education in Chinese, for McAll, was a permanent translation bureau in Shanghai with two full-time and four half-time foreigners, two English speaking Chinese and "Chinese pundits as required."58

# If you support the work, show me the money!

Cousland sent multiple budgets demonstrating that a relatively small grant would allow the translation and terminology work to improve and continue. By September 20, 1916, after the first meeting of the Joint Terminology Meeting, the CMB seemed poised to provide a grant for the work of the CMMA Publication Committee. Margery K. Eggleston, office manager at the CMB at 61 Broadway in New York began summarizing the various grant applications made by Cousland and his missionary colleagues to determine the range, which I have transferred to a table format in figure 18 below. Cousland and his committee were asking for up to \$13,100 gold (i.e. gold-backed American dollars) to support a Shanghai-based translation and terminology

 <sup>&</sup>lt;sup>57</sup> Embree to Greene, March 11, 1921.
<sup>58</sup> McAll to Commissioners of the Rockefeller Foundation, CMB. October 21, 1915.

bureau with two full time and four part time foreign physicians, two English speaking Chinese, and Chinese pundits as needed, and no less than \$1200 to support Cousland's valued pundit, Mr. Tchoo (Zhu Wo'nong 朱我農). Although it is difficult to estimate historical amounts in the middle of the world war and even as the gold standard itself was in question, still, using a variety of calculations, it is clear that \$13,000 was not an insignificant amount.<sup>59</sup>

	No. 1 Central Office in Shanghai See McAll 10.21.1915	No. 2 Central Bureau in Shanghai, See Cousland 1.3.1916	No. 3 Central Bureau in Shanghai, minimum Cousland 1.3.1916	No. 4 Support Jinan (Cheeloo) Cousland 9.3.1916	No. 5 Support Tchoo in Edinburgh Cousland 9.3.1916
Salaries and	2 @ \$2500	2 @ \$2500	1 @ \$2500	~	~
foreign	= \$2000	= \$2000			
physicians					
Half salaries for	4 @ \$1000	4 @ \$500	~	~	~
foreign	= \$4000	= \$2000			
physicians					
English-	2 @ \$1200	Pundit in	Pundit in England	~	\$1200
speaking	= \$2400	England	\$600		
Chinese		\$600			
Rent, running	\$1700	\$1000	\$1000	~	~
expenses,					
pundits, etc.					
Misc.	~	Cousland	Cousland	For literary work	~
		allowance \$600	allowance \$600;	for books and	
			House rent for Dr.	journal	
			Fulton \$300		
Total	\$13,100	\$9200	\$5000	Amount not stated	\$1200

Figure 3 Grant Applications from the Publication Committee of the CMMA<sup>60</sup>

Then, at the request of Buttrick, Cousland was requested to call at the New York office of the

China Medical Board to discuss the various applications made by the Publication Committee of

<sup>&</sup>lt;sup>59</sup> Ranging from 2010 equivalent of 190,000 to 3.4 million USD depending whether calculating using the GDP deflator or relative share of the GDP respectively Samuel H. Williamson, "Seven Ways to Compute the Relative Value of a U.S. Dollar Amount, 1774 to present," MeasuringWorth, 2011. http://www.measuringworth.com/aboutus.php accessed December 28, 2011.

<sup>&</sup>lt;sup>60</sup> MKE September 20, 1916.

the CMMA, "in particular a supplemental proposal regarding allowances for the salary and travel of a Chinese pundit who assists Dr. Cousland in his work."<sup>61</sup> Given that Cousland had worked for years without a salary, expenses paid by the Publication Committee and private friends, and that the war in England had depleted his income and the contributions of friends, Buttrick and Simon Flexner agreed to a small grant to aid Cousland and his pundit, Zhu Wo'nong. Flexner wrote that "I think there may be some point in considering Mr. Tchoo's status early in case he is to assist Dr. Cousland in some work which he regards as urgent." Therefore, Buttrick reported that the Director of the CMB had decided "that it would be a very great help to our work and to the work of translation in China if we were to make the following appropriations to Dr. Cousland for the year 1916-17:

"For Dr. Cousland, as part stipend and travel ......\$1000 For Chinese pundit Salary ...... 1,000 Travel from London to China with wife and child .... 500 \$2500",62 Total

Simon Flexner explained his reasoning for this amount in a candid and friendly letter to Buttrick, indicating that he had "read Dr. Cousland's letter with much interest" but was confused about the location of Zhu, "Do I understand that Mr. Tchoo is now in Scotland?" But some help for Coulsand's work was in order, and Zhu was seen as indispensible, "I think there may be some point in considering his status early, in case he is to assist Dr. Cousland in some of the work which he regards as urgent." But \$13,000 was too much, and the work of the Publication Committee was not yet important enough to set a strong precedent of heavy support, and Flexner recommended against it.63

<sup>&</sup>lt;sup>61</sup> Interview with Dr. P.B. Cousland, October 17, 1916, RF RG4 1:1, Box 10, Folder 136 <sup>62</sup> Interview with Cousland, October 17, 1916.

<sup>&</sup>lt;sup>63</sup> Sept. 25, 1916 Simon Flexner to Dr. Buttrick

Yet the first small grant was a wedge in the door for further appropriations to the CMMA work that reached \$12,000 Gold (for \$10,000 Mex.) by 1920. How did Cousland and his colleagues convince the CMB to fund them? Persistence was certainly a factor. So was consistency. Unlike Backhouse's brief interest in the work, Cousland kept up steady and polite pressure, and appeared in person in New York when summoned.

But, perhaps just as importantly, the missionaries had demonstrated that they could interest and then enroll the elite educators and publishers of Shanghai. Although there is no direct evidence, this sudden and *independent* ability to network with elite Chinese educators seemed to make a difference in the Rockefeller decision to support the work of the C.M.M.A. Publication Committee.

# The importance of enrolling the publishers

A joint committee representing the two Chinese societies, the Publication committee [of the CMMA], the translation bureau of the big Chinese publishing houses and selected eminent Chinese scholars would seem to be the ideal arrangement.<sup>64</sup>

R. T. Shields' account of the preparation for the 1915 meeting is worth exploring for the

light it sheds on both the meeting itself, for breaking out of Cousland's (below) or Ding Fubao's

(chapter one) accounts, and for looking for hints of why the CMB suddenly became willing to

fund the work of the C.M.M.A. Publication Committee:

That the Chinese themselves appreciate the work ... is shown by some incidence at the last meeting of the Medical Association in Shanghai. Mr. David Yu [Yu Rizhang] and Dr. Fong Sec [鄺富灼 Kuang Fuzhuo 1869-1931] visited the Publication Committee while we were at work, Dr. Sec., as you probably know, is one of the leading translators of the Commercial Press.<sup>65</sup>

<sup>&</sup>lt;sup>64</sup> RF RG4 1.1 Box 10 Folder 136, Chinese Medical Terminology. January 3, 1916, Greene to Buttrick, Intro to Cousland report.

<sup>&</sup>lt;sup>65</sup> Shields to Mott.

Fong asked if the Commercial Press could send one of their scientific translators to work with the missionaries for the rest of the meetings, "which, of course, we were delighted to agree to and I think his meetings with us were of mutual benefit." This visit was followed up by a formal visit by a committee from the JPEA, who asked the missionaries if they would attend a meeting they were proposing to discuss the issue of medical terminology in Chinese. Shields notes the presence of "not only representatives of the big publishing houses in Shanghai," but also of the Suzhou and Hangzhou government medical schools, as well as others "more or less interested." An agreement was struck where the JPEA would take the advance proofs of the new C.M.M.A. lexicon and "send them around China for suggestions and criticisms." Then a new meeting would be held, and the new Joint committee would ask the Chinese Government to appoint a committee.<sup>66</sup>

Cousland also mentioned the 1915 meeting in his report to the China Medical Board later that winter emphasizing his newly successful efforts at enrolling Chinese actors: "At our last meeting in Shanghai in February, 1915, we for the first time managed to get in effective touch with the Chinese publishing houses and Chinese medical men trained in Japan."<sup>67</sup> Cousland highlighted the common ground with these two groups in this report, including their appreciation of the missionary labor, and his agreement that a central bureau should be opened in Shanghai which had "always been our ideal," but which had been stymied by Cousland's health issues. Yet it was Cousland's labor that was in the center of this collaboration, all present "agreed that I draw up lists of terms from Chinese and Japanese sources." By the time of the report, Cousland had already drawn up lists of base terms in Anatomy, Histology, Embryology and Physiology, "a work involving much research." But if, as the Suzhou and Hangzhou Japanese-trained physicians

<sup>&</sup>lt;sup>66</sup> Shields to Mott.

<sup>&</sup>lt;sup>67</sup> RF RG4 1.1 Box 10 Folder 136, Chinese Medical Terminology. January 3, 1916, Greene to Buttrick, Intro to Cousland report.

suggested, up to ninety per cent of terms could be adopted wholesale from Japanese, then Cousland hoped the next meeting in the winter of 1916 could come up an overall guiding principle that would eliminate certain kinds of labor in the future: "E.g., if we are to adopt all suitable Japanese terms or to go in for wholesale transliteration it is obvious that time need not be spent hunting up or translating Chinese terms." The key contribution of others was the mediation of the JPEA who would "send these lists out to the various medical schools in China, compile the resulting criticisms and return them to me." Modified lists would be re-issued and then discussed in the next meeting of the Joint Terminology Committee, then the government would be asked to appoint representatives to work with the committee to finalize and approve the terms.<sup>68</sup>

But Cousland's missionary committee also had an important role in mediation labor between the two nascent Chinese medical associations. The Joint Terminology Committee formation was coincident with the professionalization of the Chinese physicians, for it was "[s]ince that meeting in Shanghai [that] the Chinese we met with have formed a Society of Medicine and Pharmacy [ROCMPA]," while Yu Fengbin's group, the National Medical Association of China, had formed the winter previously, "representing men trained in English." Cousland saw a rift between the NMA and the ROCMPA, as the English-trained group "has shown no desire to work with the Society of Medicine and Pharmacy." Other evidence is not clear on the situation between 1915 and 1917, but evidence from the associational journals demonstrates that, by 1917 at least, NMA elites were members of the ROCMPA and Tang Erhe was a member of the NMA. But in late 1915, for Cousland, "it is important for our work that the two get together" one group representing "the scientific side" and the other "men who are better

<sup>&</sup>lt;sup>68</sup> RF RG4 1.1 Box 10 Folder 136, Chinese Medical Terminology. January 3, 1916, Greene to Buttrick, Intro to Cousland report.

Chinese scholars and know more about Chinese and Japanese terminology." It was the tripartite combination of these two with the Publication Committee that would take the terminology work to its completion, "We are trying to arrange for this."<sup>69</sup>

By May of 1918, the China Medical Board stated clearly in internal correspondence, and directly to Cousland that they would increase funding for the Publication Committee of the CMMA because of the ability to enroll the elite Chinese physicians:

Dr. Houghton and I have discussed this application and are agreed that it is desirable to grant it. The present cooperation of Japanese-trained and foreign-trained physicians in the work of developing a medical terminology makes the work of the Publication Committee of greater value every year, and I believe that it fully deserves the degree of assistance now applied for.<sup>70</sup>

The missionaries were finding a way to cooperate on an equal basis with foreign-trained

Chinese physicians. Cousland claimed a significant role in this process. But success for the

missionary enrolment of Rockefeller capital also depended on less equal relationships.

## Missionary and pundit labor

He will be the greatest help to me out there, and save me much drudgery.<sup>71</sup>

A final key to convincing the Rockefeller purse-holders to open for the missionary terminology work seemed to be their demonstration that they knew how to manage subordinates. Key to the contributions of missionary labor was the cheap labor of Chinese pundits. Pundits were Chinese scholars highly literate in the classics who could advise upon missionary translations. These men can be seen as a direct parallel with the pandit, or teacher, of colonial

<sup>&</sup>lt;sup>69</sup> RF RG4 1.1 Box 10 Folder 136, Chinese Medical Terminology. January 3, 1916, Greene to Buttrick, Intro to Cousland report.

<sup>&</sup>lt;sup>70</sup> Greene to Houghton, April 9, 1918.

<sup>&</sup>lt;sup>71</sup> Cousland to Steele, October 19, 1916.

India, who formed a relationship with English or German Orientalist scholars.<sup>72</sup> Both before, but especially after, the abolition of the imperial examination system in 1905, the labor market was flooded for highly classically literate men. If, like Cousland's pundit Zhu Wo'nong (Mr. Tchoo), they had an excellent knowledge of English, they could demand a higher wage. But if their knowledge was only of the Chinese classics, they could be hired and dispensed with as casual labor.

Clearly, these were not men of means and prestige and power, like Shen Enfu or Huang Yanpei. These were downwardly mobile scholars, unable to retrain for a vastly different economic-intellectual-political system, selling their intellectual labor on the open market to support themselves.<sup>73</sup> They had spent their lives preparing for the Confucian examination system with the potential prize of an official post, but unlike Shen Enfu or Tang Erhe they had been unable to shift toward the new educational goals and political realities in the tumultuous decade between 1895 and 1905.

#### Have pundit, will travel

The best way to explore the pundit-missionary relationship is to look at the example of Cousland and Tchoo (Zhu), although we should keep in mind that other missionaries were not as fortunate in establishing such fruitful and long-term relationships with pundits.

The relationship between Cousland and his pundit was by no means unambiguous: it was both . This is clear in the correspondence regarding the allocation of the first grant to support Cousland and Zhu. In the October of 1916, as Cousland was waiting for expected good news from the CMB in New York, Zhu Wo'nong was living in London with his wife and daughter,

<sup>&</sup>lt;sup>72</sup> Hatcher 2005. Girardot 2002.

<sup>&</sup>lt;sup>73</sup> One thinks of Liu Dapeng in Henrietta Harrison's remarkable account, Harrison 2005.

attempting to gain work, having recently been aiding Cousland's translation work in Edinburgh. Available sources do not make clear if Cousland and Zhu had initiated their relationship in China or in the U.K., nor do we know Zhu's educational background. What is clear is that Cousland and Zhu had a good working relationship, that Zhu was a valuable working partner for Cousland, and that Zhu was talented enough to find a teaching position in London, "He must decide <u>now</u> between this and the lectureship in London."<sup>74</sup> By 1917 we find that this position was to have been at the School of Oriental Studies in London at a salary almost double what Cousland was able to offer him.<sup>75</sup> It is also clear that although Cousland trusted Zhu's work and hoped to "train him for press work, so he can carry on in my absence," at this critical stage Cousland micromanaged Zhu's finances through his proxy, Dr. Reverend J. Steele in London: "<u>you</u> had better take the passage and pay for it … and let him handle as little money as possible." Perhaps this was because of Zhu Wo'nong's only liability in Cousland's mind—his "English wife who is far from being a help to him,"<sup>76</sup> who was a "foolish London girl without any ideas [of] housekeeping."<sup>77</sup>

But Cousland needed Zhu Wo'nong in China for the January 15-22, 1917 meeting of the Joint Terminology Committee, a window of less than three months from his mailing. If Zhu chose to stay in London, Cousland would need to find another pundit in China or Japan as soon as he arrived. But this would clearly be a serious setback for Cousland, "I do hope this arrangement will go through." Far more preferable would be a continuation of their relationship,

<sup>&</sup>lt;sup>74</sup> Cousland to Steele, October 19, 1916.

<sup>&</sup>lt;sup>75</sup> Cousland to Buttrick, October 20, 1917.

<sup>&</sup>lt;sup>76</sup> Coulsand to Buttrick, October 17, 1917.

<sup>&</sup>lt;sup>77</sup> Cousland to Buttrick, October 20, 1917.

and if Zhu chose to come by sea, rather than by Trans-Siberian rail "he can carry on his translation work en route."78

Apparently Zhu's \$1000 gold salary equaled £200, and was to cover all expenses including rent in Japan.<sup>79</sup> But what kind of job security would Zhu have with Cousland, given the risks of relocating around the world during a global war? Cousland asked Steele to assure Zhu that the annual position would be just as stable as a term of several years, "if he does the work." Moreover Zhu would have only Cousland as supervisor, not the Publication Committee as a whole. Writing letters back to New York as he made his way from Chicago, to Montana, to Seattle and then Vancouver, where he would sail for Japan, Cousland was not certain that the CMB would definitely fund him at all, or that Zhu would continue to work for him given his English wife and a prestigious lectureship in London.

The CMB made the appropriation, Zhu turned down the prestigious lectureship in London and Zhu and his family "successfully passed the [German] submarines." Meanwhile Zhu proved himself a "hard and keen worker and a most efficient translator," so that he "quite comes up to expectations." One year after they had settled into their routine of translation in Yokohama, Cousland could not say enough good about Zhu's work, they were "exceedingly fortunate in obtaining the services of so able a man and so good a Chinese scholar." Indeed, although Zhu was not a medical man, his experience of translating with Cousland for several years meant that the Publication Committee could now produce not only a very high quantity of work, but also a higher quality, "so that we now have no reason to be ashamed of it."<sup>80</sup> In return, Buttrick and the CMB were "...pleased to know you are enjoying your work with your assistant," and gratified

 <sup>&</sup>lt;sup>78</sup> Cousland to Steele, October 19, 1916.
<sup>79</sup> Cousland to Steele, October 19, 1916.

<sup>&</sup>lt;sup>80</sup> Cousland to Buttrick, October 17, 1917.

that their grant was appreciated: "We are glad to know that our little money has been of such real help to you."<sup>81</sup>

Zhu Wo'nong was also able to attend the summer meeting of the Joint Terminology Committee on Anatomical Terminology in Shanghai in Cousland's place, and "from his work with me and his eminence in Chinese he was able to wield a strong influence in favor of our views."82 These views would not hold the line against the wave of Japanese terms (and adaptations of Japanese terms), but Cousland was nonetheless pleased with Zhu's showing (see chapter 6 for more on Zhu and Cousland's attempts to divert from the large-scale acceptance and adaptation of Japanese terminology).

During the next years of global war, prices continued to rise, and exchange rates fluctuated between Japan, like the U.S. on the gold standard, and China, on the silver standard. On October 17, 1917, Cousland requested an increase of \$20 gold per month on Zhu's behalf, aside from his spendthrift wife, "[p]rices of everything have gone up and are still rising," and Zhu had to withstand the exchange rates moving against them, political pull from his friends "in the South of China and from the big publishing houses."83 Cousland was afraid of losing Zhu to better offers. But only three days later, the situation had developed: "Tchoo has laid his affairs before me and I find he is evidently in financial straits & that only his collecting monies due him by the Commercial Press in Shanghai for literary work done for them last year has enabled him to get along."<sup>84</sup> It was the rise in the cost of living combined with his wife's spending habits that had put them in this situation. "It will be a terrible blow to us to lose Tchoo with all his ability and experience." Moreover, the development of pay equity between Chinese and non-Chinese

<sup>&</sup>lt;sup>81</sup> RF, RG 4, CMB, Box 10, Folder 137 Textbooks, 1917-1918 March 12, 1917 Buttrick to Cousland (Yokohama).

 <sup>&</sup>lt;sup>82</sup> Cousland to Buttrick, October 17, 1917.
<sup>83</sup> Cousland to Buttrick, October 17, 1917.

<sup>&</sup>lt;sup>84</sup> Cousland to Buttrick, October 20, 1917.

faculty at the Chinese-speaking Nanjing University gave a precedent for Cousland to suggest a larger grant for Zhu. Cousland reminded Buttrick that Zhu had turned down a £360 salary in London, which demonstrated that he was "a scholar of repute." An increase from \$1000 to \$1500 gold was necessary, otherwise Cousland could only put him on piecework, allowing him to "work long hours" in order to make more money, "and when the grant is exhausted he must quit!"<sup>85</sup> Cousland needed to hear by cable before beginning of fiscal year, December 1, but the CMB would not meet before December 4. The cable came December 5 "Granted." The crisis of losing a key pundit was averted for one more year.

Cousland's second request was for more direct grants from the CMB for full time Chinese translators in China. This was granted at the rate of \$1920 Mexican, along with \$1200 for house rent and \$540 for two copyists, an even lower level of Chinese labor.<sup>86</sup> The principle of the Rockefeller Foundation was to slowly increase good work of the Publication Committee of the CMMA, but this would not include taking over missionary salaries, "it was contrary to our policy to take over the support of men who were already being maintained in China by other organizations." But pundit (advisory), translation or other Chinese labor was fair game, "particularly … the employment of special Chinese translators and writers."<sup>87</sup> If Zhu was worth \$1500 in 1918, then "Two Chinese-educated translators" were worth \$1280, at Mexican \$80 per month (silver currency used in China equal at equivalence of \$1 Gold to Mex. \$1.50).<sup>88</sup>

With missionary and pundit labor now funded on a regular basis, it was time to take things to the next level and establish an institutional home for translated medicine in China.

<sup>88</sup> Budget of the Publication Committee of the China Medical Missionary Association. Year beginning Oct. 1, 1918, attached to Greene to Buttrick, April 9, 1918.

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<sup>&</sup>lt;sup>85</sup> Cousland to Buttrick, October 20, 1917.

<sup>&</sup>lt;sup>86</sup> Buttrick to Greene, May 28, 1918.

<sup>&</sup>lt;sup>87</sup> Greene to Buttrick, April 9, 1918.

# *The translation bureau*

We are of course anxious to see a good first class Translation Bureau established here in intimate connection with this Medical School.<sup>89</sup>

From 1918 until 1937, the capital of medical translation in China became Jinan, the capital of Shandong Province. Originally Shanghai had appeared as the most logical place for this translation bureau of the China Medical Missionary Association; of Qilu Medical School it was said that it was unlikely that "this Mandarin-speaking group will be able to successfully perpetuate itself."<sup>90</sup> But conditions changed with the 1917 union of the three missionary medical schools teaching in Chinese in East China—Hankou Medical School, Nanjing University Medical School and Qilu University School of Medicine. Now a "majority of the Publication Committee of the China Medical Association" were members of the faculty of the School of Medicine at Jinan, so Qilu had, according to its own publicity, "taken the lead in making modern medical science truly indigenous to China."<sup>91</sup>

The results of finally establishing a central translation bureau in Jinan were several, the most obvious being that it allowed translators (now including Chinese) to have regular meetings and consultations with their colleagues, increasing efficiency and productivity. It also meant the production of a Chinese language medical journal, *Qilu yikan (Tsinan Medical Review)*, which was published from 1921 until 1931 when it was folded into the Chinese edition of the Chinese Medical Journal (*Zhonghua yixue zazhi* 中華醫學雜誌). Finally it allowed a concentration of the

<sup>&</sup>lt;sup>89</sup> J.B. Neal to Greene, Budget of the Publication Committee of the China Medical Missionary Association, Year beginning Oct. 1, 1918. Attached to Buttrick to Greene May 28, 1918.

<sup>&</sup>lt;sup>90</sup> George Vincent to Simon Flexner, August 13, 1919, Simon Flexner Papers, quoted in Bullock 1980: 4142.

<sup>&</sup>lt;sup>91</sup> Training Christian Physicians for China: Shantung Christian University School of Medicine, Tsinan, China (c. 1926).

best faculty and students at one institution, thus giving the China Medical Board the confidence in the institution to support it.

As seen above, initial, failed attempts of the CMMA Publication Committee to secure Rockefeller funding included budgets for an Shanghai office, Chinese copyists, and translators. The 1917 budget included only funds for Philip Cousland's expenses and Zhu Wo'nong's salary and travel. The 1918 budget allowed further funding for Chinese translators, copyists, etc, "in order to put its translation work on a more secure footing."<sup>92</sup> The faculty of the Chinese-speaking missionary medical schools of Hankou, Nanjing had moved to Jinan where Qilu University gave space for a translation bureau.<sup>93</sup> The Publication Committee asked to use Rockefeller funds to support foreign missionaries full time in their translation work, but this was contrary to the policy of the CMB. So, the Publication Committee asked their own mission boards for permission to set aside fractions of their working time solely to translation; half time from Drs. Ingram and Gillison, one quarter time from Dr. Shields, one tenth time from Dr. Beebe, and one eighth time from Dr. Neal. Dr. Cousland, "in spite of prolonged absence from China, has taken a leading part in the work,"94 and his friends and inherited wealth seemed to return to enable his full time work, while Dr. Cormack had one quarter support from individual contributions. Each missionary's labor was calculated to be worth exactly \$2400 gold, so half time was \$1200, one quarter was \$600, and so on.<sup>95</sup> Such exact accounting for missionary labor gave further confidence to the CMB to fund the Publication Committee. In 1918, Neal, president of the

<sup>&</sup>lt;sup>92</sup> Greene to Buttrick, April 9, 1918.

<sup>&</sup>lt;sup>93</sup> Report of the School of Medicine of Shantung Christian University.

 <sup>&</sup>lt;sup>94</sup> Report of the Publication Committee, 1915-1916, China Medical Missionary Association. Year
beginning Oct. 1, 1918, attached to Greene to Buttrick, April 9, 1918.
<sup>95</sup> Budget of the Publication Committee of the China Medical Missionary Association. Year beginning Oct.

<sup>&</sup>lt;sup>93</sup> Budget of the Publication Committee of the China Medical Missionary Association. Year beginning Oct. 1, 1918, attached to Greene to Buttrick, April 9, 1918.

greatly expanded Union Medical School at Jinan, wrote extensively about the existing condition and goals for the translation bureau:

We have put down nothing for office expenses here in Tsinan, as it was thought that for the first year at least we should not need extensive offices,- nothing more than we are quite prepared to provide in our own quarters. Later we may need something more elaborate. We are of course anxious to see a good first class Translation Bureau established here in intimate connection with this Medical School, and are hoping that Dr. Gillison will organize such, but at present, coming from such an active life as he has been living in Hankow, he does not feel able to pledge more than half his time to such work.<sup>96</sup>

In 1919, Dr. P.L. McAll was returning from his home furlough and was able to "give his time to translation" his salary paid for two years from the Medical Department of Shantung Christian University.<sup>97</sup>

In 1920 Cousland challenged the Rockefeller Foundation officers of the CMB to take the translation work more seriously, "I expect to be in Toronto this winter and if there is any prospect of your Board seriously considering the problems of medical translation in China I shall be glad to go to New York to consult."<sup>98</sup> Cousland had heard that the planned CMB medical school for Shanghai had been dropped because of cost overruns in Beijing, and suggested that a portion of that money now be freed up for translation work.

The goal of the Translation Bureau was "to complete the set of medical textbooks (over forty) required by Chinese students of medicine, and to bring out new, up-to-date editions of books already published."<sup>99</sup> To accomplish this they cooperated with everyone possible. In addition to all those involved in the Joint Terminology Committee, they asked the faculty of the PUMC for advice to compile that list of forty medical textbooks to complete a core curriculum

<sup>&</sup>lt;sup>96</sup> Budget of the Publication Committee of the China Medical Missionary Association. Year beginning Oct. 1, 1918, attached to Greene to Buttrick, April 9, 1918.

<sup>&</sup>lt;sup>97</sup> Cousland to Greene, October 11, 1919.

<sup>&</sup>lt;sup>98</sup> Nov. 1, 1920 Coulsand to Vincent, RFA, RG 4 (CMB) Series I, Subseries II 1919-1929, Box 39, File 859 China Medical Missionary Association, 1919-1921

<sup>&</sup>lt;sup>99</sup> Cheeloo Weekly Bulletin, October 1<sup>st</sup>, 1927, <u>The Translation Bureau</u>.

for Chinese language medical education, as Roger Greene remarked, "[t]he committee ... is evidently anxious to follow the best advice it can get on the subject."<sup>100</sup>

During the summer of 1926 anti-foreign violence of the Northern Expedition forced the four foreign members of the Translation Bureau to relocate to coastal Qingdao—"Books, manuscripts, lexicons etc. are more portable than patients and students"—and so continued their work making progress on works of Anatomy, Histology, Materia Medica, Medical Jurisprudence and Pathology. Dr. Lu Dexin (Leo Teh Chin) took over the work at Jinan, and continued his translations on diseases of the skin and eye.<sup>101</sup>

Financial aid from the CMB to the translation bureau at Jinan continued in two to three year cycles with 1926 as the cut-off: "By this time commercial organizations will doubtless have the translations work fairly well in hand and it will not be so necessary for any outside organizations to care for the burden of translation..."<sup>102</sup>

By 1927, the translation bureau could "more properly be regarded as the Executive of the Publication Council of the China Medical Association, since apart from the quarters it occupies in the Medical School, its obligations are met by the Council [on Publication]."<sup>103</sup> Five of eight members of the Publication Committee were members of the Medical Faculty of Qilu, and Dr. McAll was editorial secretary of the Council. Not only did Qilu now dominate the missionary translation project, but "[t]he Publication Council is the only body in China which is seriously

<sup>&</sup>lt;sup>100</sup> CMB, Peking China, October 20, 1919. Roger P. Greene to George E. Vincent (General Director, CMB, 61 Broadway NYC).

<sup>&</sup>lt;sup>101</sup> Cheeloo Weekly Bulletin, October 1<sup>st</sup>, 1927, <u>The Translation Bureau.</u>

<sup>&</sup>lt;sup>102</sup> June 28 1923 Greene to Goodrich, RFA, RG 4 (CMB) Series I, Subseries II 1919-1929, Box 39, File 861 China Medical Missionary Association, 1923

<sup>&</sup>lt;sup>103</sup> October 5, 1927 From RS Greene to RM Pearce, Subject: Pharmacopoeia for China

Attached Cheeloo Weekly Bulletin, October 1<sup>st</sup>, 1927, <u>The Translation Bureau.</u> RFA, RG 4 (CMB) Series I, Subseries II 1919-1929, Box 85,

File 1989 Translation of Medical Books, 1919-1927

undertaking the translation of medical literature."<sup>104</sup> Aside from doctor salaries, the Translation Bureau (of Qilu University School of Medicine)/Publication Council (of the CMMA) had become self-supporting and boasted an annual budget of \$22,000.

# Lexicology

*Cousland's Medical Lexicon*, in nearly half a century, was continually the most important English-Chinese medical dictionary, providing an important contribution in the introduction and spread of Western medicine into China, moreover, establishing a foundation for subsequent editing and unifying medical terminology for medical dictionaries.<sup>105</sup>

Cousland's medical lexicon was first published in 1908, when it was rejected generally by educated Chinese and specifically, as we have seen, by Yan Fu heading up the Qing Translation Bureau.<sup>106</sup> But missionary labor for medical terminology was nothing if not persistent, and consistent. Undeterred by tepid acceptance at best, and outright rejection on other fronts, Cousland and his fellow translators continued, hoping only to make a contribution and spur concerted action, when possible. The second edition of the lexicon was published in 1915, in time to aid in negotiating the formation of the Joint Terminology Committee. By 1917 with the full-time assistance of Zhu Wo'nong and the advice of educators and philologists like Shen Enfu, and the independent physicians like Yu Fengbin and Tang Erhe, the lexicon was no longer something of which to be ashamed. As the terms for anatomy, then physiology, chemistry, bacteriology, etc. began to be standardized and approved by the ministry of education, these became the terms of Cousland's medical lexicon and this book became more and more essential for medical professionals. New editions appeared in 1923 and 1924, and then after the Nationalist Revolution, four times in the 1930s, even after the outbreak of the second Sino-

<sup>&</sup>lt;sup>104</sup> Cheeloo Weekly Bulletin, October 1<sup>st</sup>, 1927, <u>The Translation Bureau</u>.

<sup>&</sup>lt;sup>105</sup> Zhang Daqing 2001: 330.

<sup>&</sup>lt;sup>106</sup> Benjamin Schwartz translates this institution as the Committee for the Compilation of Technical Terms within the Ministry of Education, and Yan Fu's role as "Chief Revisor," "The position did not arouse any great enthusiasm in Yen Fu" according to his chronicler. Schwartz 1964, 213.

Japanese War (see figure 20). This is more than a little remarkable, given that Cousland had died in 1930. But Cousland's life labor in the Lexicon—*Gao Shi yixuecihui* 高氏醫學辞彙—did not die when Cousland passed away in Victoria, Canada. P.L. McAll and Lu Dexin continued to publish it in his name. They continued publishing it in his name after the war was over in 1945. In Communist China Lu Dexin was appointed to the national translation bureau, and, although taking Cousland's foreign name off of the cover, continued to acknowledge him in the preface. In Hong Kong and Taiwan Cousland's Medical Lexicon had such purchase that lexicons continued to be published with this title until 1984, the most recent publication date available on the *Worldcat* global library database.<sup>107</sup> These post-1949 lexicons eliminated the historical chronology, however. Chinese equivalents for English medical terms had become fixed and the history of the Joint Terminology Committee, Rockefeller capital and missionary labor was forgotten. The gospel of translation was complete.

First Edition	1908			
Second Edition	1915			
Third Edition	1917 (Reprints, 1918, 1920, 1921)			
Fourth Edition	1923			
Fifth Edition	1924 (Reprinted with Appendix 1926)			
Sixth Edition	1930			
Seventh Edition	1931 (Revised and Appendix 1933)			
Eighth Edition	1934 (Revised and Appendix 1937)			
Ninth Edition	1939 Council on Publication, Chinese Medical Association			
Tenth Edition	1949 Council on Publication, Chinese Medical Association			
Eleventh Edition	1958 (Revised and reprinted) Hong Kong: Chinese Medical Association			
$15^{th}$ , $17^{th}$ , $20^{th}$ , $30^{th}$ ,	1964 (revised and enlarged; 1967; 1975) Taipei: Xin lu shudian			
Newest edition	1984 11 <sup>th</sup> revised Hong Kong: Nandao chubanshe			

Table 13 Editions of Cousland's Lexicon

<sup>&</sup>lt;sup>107</sup> This is a revised and enlarged version of the eleventh edition, originally published in 1958. See figure 20.

# 4 Things are named by agreement: Joint Terminology Committee debates and the public

Names have no intrinsic appropriateness. Things are named by agreement. When an agreement has been made and abided by and become customary, it is called an appropriate designation. That which is different from what has been agreed upon is called an inappropriate designation. Names have no intrinsic actualities. When an agreement has been made and abided by and become customary, it is called an appropriate name to an actuality. 名無固宜,約之以命,約定俗成謂之宜,異於約則謂之不宜。名無固實,約之以命實,約定俗成,謂之實名。名有固善,徑易而不拂,謂之善名。Xunzi 荀子 Ch. 22.<sup>1</sup>

For a long time now, we have heard that there is such a thing as the Joint Committee for Scientific Terminology. Every year it investigates medical terminology, but we treated this activity as unimportant ... it was no concern of ours how many pieces of paper were wasted—so we paid no attention. 我們早就聽見有什麼科學名詞審查會。年年審查醫學名詞,但是我們對於這種無足輕重的舉動,本來是抱這樣的見解。。。不過多幾張廢紙與我們無關。Chen Fangzhi et. al. 1925<sup>2</sup>

In 1925 ten Chinese physicians based at the medical schools of Tokyo and Kyushu

Imperial Universities, two of the most prestigious medical institutions in Japan, published a

scathing critique of the work of the unified term list of the Joint Committee. It was published in

both the Republic of China Medical Journal 民國醫學雜誌, founded in 1923 in Shenyang and

focused on Japanese medical developments, and in the supplement of the Beijing Morning News

晨報副刊, a popular intellectual forum. After listing their names,<sup>3</sup> led by Chen Fangzhi 陳方之

(1884~1969), then at the Pathology Department of Tokyo Imperial University, the statement

launched into the kind of vitriol that had become standard issue among Chinese intellectuals

during this period of cultural and political revolution. Although from Zhejiang Province, Chen

<sup>&</sup>lt;sup>1</sup> A concept from the 22<sup>nd</sup> chapter of *The Book of Master Xun*. According to Xun, this is the way right names should be obtained. Guo and Wang eds. 2002: 348.

<sup>&</sup>lt;sup>2</sup> Chen, et. al. 1925a and 1925b.

<sup>&</sup>lt;sup>3</sup> Chen Fangzhi, Tokyo Imperial University, Pathology, Chu Jinfang, Tokyo Imperial University, Anatomy, Xia Yuding, Tokyo Imperial University, Pharmacy, Yang Zitao, Kyushu Imperial University, Pediatrics, Tan Datong, Kyushu Imperial University, Surgery Two, Dong Daoyun, Kyushu Imperial University, Internal Medicine Five, Xia Yuming, Kyushu Imperial University, Obstetrics, Dai Xiamin, Kyushu Imperial University, Medicine, Peng Yushu, Kyushu Imperial University, Medicine, Ge Shaolong, Kyushu Imperial University, Medicine.

(from Yingzhou near Ningbo) was unlike his fellow provincial, Tang Erhe (from Hangzhou), in several important respects. Tang had a significant classical Chinese education before he spent the 1900s in Japan at military, then medical school, but had returned two years before the Republican Revolution. In contrast, Chen had spent the late Qing studying at a preparatory school in Sendai (g. 1912), which gave him the necessary Japanese language skills and medical knowledge to compete with the best Japanese students to study at the Imperial Medical University where he graduated in 1918. He went on to research internal medicine, pathology and infectious diseases before receiving a Ph.D. in 1926, returning to China to become Chief army medical officer for the Nationalist Revolutionary Army as it set out on the Northern Expedition to re-unify China (and wipe out its erstwhile allies, the Communists). Chen then took up top positions in the Nanjing government apparatus after 1927. In Japan, then later in China, Chen was the first Chinese to do research into the question of schistosomiasis (xieji chongbing 血跡蟲 病), a parasitic disease endemic to south and central Chinese rice paddies and waterways.<sup>4</sup> Chen was a new generation of physician researcher who spoke with the full authority of Japanese laboratory medicine. Tang Erhe may have established anatomo-medicine in China with legal access to dissection material, histological investigation into the pathology of tissues, and basic professionalization, but Chen Fangzhi was about to take China fully into the twentieth century with state of the art bacteriology allied with a strong state and public health programs.

Two threads of Chen's biography are important here: his scientific specialization representing a new level of professionalization among Chinese physicians; and his deep connection with the Nationalists who, as we saw in chapter four, were critiquing the "corrupt" Ministry of Education, the Warlords and the "Education Lords" like Shen Enfu and his

<sup>&</sup>lt;sup>4</sup> Chen Fangzhi (1884-1969), Xu 1991: 1014. For campaigns to eradicate schistosomiasis in the Maoist era, see Gross 2010; Li Yushang 2010.

prominent colleagues at the JPEA. Both of these gave Chen and his colleagues reason to critique the work of the Joint Terminology Committee as the product of illegitimate organizations. These Japanese-trained medical scientists essentially had two critiques of the work of the committee, an explicit questioning of the approved terms of the committee, and a more implicit questioning of the social authority of the committee. This is a perfect test case for my assertion in this dissertation that the power of physicians and scientists was based in a traceable network where human networks are held together with things, including the products of human labor that may include, among other tools, a five-language standardized medical lexicon. The Jiangsu Provincial Education Association network was strong and influential in a weak polity, facilitating a large number of activities through subsidiary research groups like the Joint Terminology Committee. These activities would have been ephemeral if they were not in some way institutionalized with the kind of mundane technologies discussed so far. Published multi-lingual texts hold the network together. The test case, then, is the public acceptance of the Joint Terminology Committee and its Ministry of Education-approved terminology booklets. The challenge from the Japan-based medical scientists proceeds on a two-pronged attack on the legitimacy of the Ministry of Education that had approved the terms, and secondly on the document/tool itself that had held the committee together for almost ten years. The test is to see how well the committee network can hold up under the strain of such an attack.

Chen Fangzhi and his co-authors focused on the approved terminology itself. Far be it from them to be concerned about a reference book on medical terminology; they were furious because the terminology list had, seemingly without their knowledge, attained normative force affecting which books would be published in the lucrative medical market. In the spring of 1925, a certain "friend" of the authors, having edited several textbooks on anatomy, excitedly told his good news to a "scholar of science." The scientist burst his bubble: "This book of yours—the Ministry of Education won't approve it. The Ministry has already issued its final authorized book of medical terms. You haven't used their terms, so as a rule, they won't give you approval." When the Japan-based authors of the critique heard about this encounter and realized that aside from the examination copy of medical terms published by the Ministry of Education, there was also an authorized version that had the force of the scholarly community behind it. No longer an issue which they could ignore, they realized that they must properly "pay their respects" by acquiring the book and taking a look for themselves.

There were not pleased with what they found. In their extensive complaint, they claimed that the authorized book was as difficult to swallow as the ghost stories of Pu Songling.<sup>5</sup> Chen and his colleagues felt the authorized Ministry of Education lexicon of Medical Terminology was so bad that it was not even worth their time: "It is so terribly inferior that we felt we must criticize, but in the end we only read one section, since we hold our own time to be too precious to throw away on empty pursuits."<sup>6</sup> Chen and his colleagues proceeded to denounce errors in the approved terminology list for anatomy published by the Ministry of Education. These insurgents against the Ministry publication found one hundred and eighty errors categorized under five headings.

One hundred and eighty errors? The anatomy list in question was the first hard-fought product of the Joint Terminology Committee: all the networking and organizing at the Jiangsu Provincial Educational Association by Cousland and the missionaries, David Yui, and Huang

<sup>&</sup>lt;sup>5</sup> Pu Songling 蒲松齡, 1640-1715, was best known for his *Strange Stories from a Chinese Studio* 聊齋誌異, a collection of 500 concise stories, most of them about supernatural characters that include magical foxes, ghosts, scholars, and court officials. The reference to Pu is, here, a short-hand for absurdity.

<sup>&</sup>lt;sup>6</sup> Yinwei women henkexi jiangziji kebaogui de guangyin, duozhiyuxuhua 因爲我們很可惜將自己可寶貴的 光陰,多擲于虛牝.
Yanpei using their prominence to attract all interested scholars and physicians, all the national and international networks of Tang Erhe in establishing anatomo-medicine in China as allied to the state, decades of missionary lexical refinement under Cousland, the professionalization of physicians and everything else described in this dissertation that led to, and resulted from, the project to standardize and unify the Chinese terminology for medicine. The terminology list of the Joint Committee was the product of approximately six hundred hours of combined man hours of discussion time for each year's five-day session with an average of thirty participants each year.<sup>7</sup> Between 1916 and 1925 the Joint Terminology Committee had met on ten separate occasions for a total of at least 6000 man hours of committee discussion, not including duplication during break-out subcommittees.<sup>8</sup> Nor does this include the uncounted hours each member spent toiling over terms and correspondence from colleagues and critics outside of the Joint Terminology Committee for fifty weeks per year between committee meetings, or the decades of labor of Cousland and his colleagues before 1915 (chapter 5). Now all of this labor and intellectual capital was being challenged. Did Chen Fangzhi not realize that these questions had been open for discussion and settled for several years?<sup>9</sup> Nine years after it had begun its work, a new generation of Japanese-based Chinese medical scientists formed a serious challenge to the legitimacy of this non-governmental committee whose work had been approved by the weak Ministry of Education.

# Shending/approval

<sup>&</sup>lt;sup>7</sup> The Joint Committee usually spent four morning hours in discussion for five days for one or two weeks. There were on average between twenty and thirty committee members each year in the early years when they worked on the terminology for anatomy.

<sup>&</sup>lt;sup>8</sup> They met twice in 1917, in January and August, meetings 2 and 3.

<sup>&</sup>lt;sup>9</sup> And coming from a group of Chinese medical students in Japan, was this a challenge to Tang Erhe and his professional association for physicians?

To understand the stakes involved in Chen Fangzhi's challenge to the authority of the Committee and the authority of the Ministry of Education, I will perform a close reading of the first list produced by the Joint Terminology Committee (here referred to as The General Committee on Scientific Terminology) and approved by the Ministry of Education in 1919. Then, in the following section, I will carefully recreate the debates over terms in the committee meeting transcripts. It is only with such close attention that we can perceive the process of the construction of technical words that form the basis of a new epistemology and evaluate the potential social power of standardizing terminologies.

We could have also selected the booklets produced by the Joint Committee for terms for viscera, sense organs, skin (1917), pathological anatomy (1919), for angiology and neurology (1918).<sup>10</sup> Like the other terminology lists, the 1919 approved terminology list for anatomy-osteology has no preface, no introduction, no explanation whatsoever of its provenance or construction. No matter which of these documents that Chen Fangzhi and his colleagues read, the key Chen et. al. observed on the cover page would be that this was "approved by" (*shěnding* 審定) the Ministry of Education (figure 21). *Shending* is an ancient compound term, going back at least to the Han Dynasty *Records of the Grand Historian* of Sima Qian. Read by all educated Chinese in the Late Imperial period, Sima Qian's history created three Chinese idioms (*chéngyú*) in the following quote which is now given as usage pattern for *shending* in at least one classical Chinese dictionary: "Enough feathers can sink a boat, a load of many light things can break the axle of a cart, public clamor can confound right and wrong, slander can destroy family ties; therefore I hope the king will examine and approve (*shending*) his plans carefully."<sup>11</sup> In this

<sup>&</sup>lt;sup>10</sup> Shanghai: Yixuemingci shenchahui.

<sup>&</sup>lt;sup>11</sup> Quoted in Chen Fuhua, ed. Gudai Hanyu Cidian, Beijing: Shangwuyinshuguan, 2003

usage, *Shending* is not to be taken lightly. Improper or incomplete examination and approval could have dire consequences. Had the Ministry been too quick to approve the work of the Joint



Figure 4 Medical Terminology I, Anatomy: Osteology, 1919, General Committee on Scientific Terminology. Public domain.

Terminology Committee? Would a load of many small anatomical terms break the axle of the cart?

Pages one to seventy-nine comprise a list of 1182 Latin terms in a seven columned chart listing German, English, Japanese equivalents and then three variations of Chinese terms.<sup>12</sup> We will come back to these. To learn more about the production of this terminology list, we must examine the list of investigators on page eighty, and the information given on the unnumbered final page. Who produced the booklet? On the list of investigators, we see many names by now

<sup>&</sup>lt;sup>12</sup> The 1916 version printed for the Joint Committee Meeting, had 1132 terms.

familiar to us. We see Ministry of Education Representative Tang Erhe. We see China Medical Missionary Association representatives James Boyd Neal, P. L. McAll, R. T. Shields, and J. G. Cormack. We see nine representatives of the Republic of China Medico-Pharmaceutical Association, made up of Japanese-trained physicians and dominated by Tang Erhe, who have not featured in the foregoing account, including Wang Zunmei, Li Ding, Fan Shaoluo, Sha Shijie, Peng Shuzi, Hua Hong, Wang Ruoyan, Sheng Zaiheng and Zhao Yuhuang. We see five members of the National Medical Association, including Liu Ruiheng, Yu Fengbin, Wang Bichen, Zhou Zhongheng, and Tang Nai'an. Finally, we see three representatives from the Jiangsu Provincial Education Association, including Joint Terminology Chairman Yu Rizhang, Shen Enfu, and Wu Heshi. We are told that each group is limited to three attending members.<sup>13</sup> This is all.

When we look to the final unnumbered page, we see more information in English and

Chinese. Copies of the eighty page document are available for eighty cents Mexican (8 jiao 角)

at the following places:

Presbyterian Press, Peking Road, Shanghai 美華書館,上海北京路<sup>14</sup> Government Medical College, Peking 國立醫學專門學校,北京後孫公園<sup>15</sup> Shanghai Public Hospital, Nantao, Shanghai 公立上海醫學院,上海南市三秦碼頭 Chekiang Medico-Pharmaceutical College, Hangchow 浙江醫學專門學校,杭州<sup>16</sup> [Jiangsu Medico-Pharmaceutical College, Suzhou]<sup>17</sup> 江蘇公立醫學專門學校,蘇州滄浪亭 Kiangsu Educational Association, West Gate, Shanghai 江蘇省教育會,上海西門林蔭路 National Medical Association, Nanking Road, Shanghai 中華醫學會,上海南京路三十四號<sup>18</sup> St. Luke's Hospital, Hongkew, Shanghai 同仁醫院,上海虹口 Commercial Press, Honan Road, Shanghai 商務印書館,上海河南路

<sup>&</sup>lt;sup>13</sup> We know from other sources that more than three might show up on any particular day, but only three could vote, since each group could generally be expected to vote in a block.

<sup>&</sup>lt;sup>14</sup> Missionary publishing house, where the first 1915 meeting was held, described in chapter 1.

<sup>&</sup>lt;sup>15</sup> Established with Tang Erhe as first director, see chapters five and six.

<sup>&</sup>lt;sup>16</sup> Founded by Tang Erhe in 1912, see chapter two.

<sup>&</sup>lt;sup>17</sup> English translation is mine as this item was only included on the Chinese list.

<sup>&</sup>lt;sup>18</sup> The National Medical Association had moved from Quinsan Gardens (*Kunshan huayuan*) to their own facilities since 1916.

All of the men listed above belonged to one or more of the above institutions: two major presses, two Shanghai hospitals, three Japanese-style medical schools, and the headquarters for the English-oriented overseas-trained physicians. All but one of these institutions was located in the Jiangnan region of east-central China, that includes Suzhou, Hangzhou, and Shanghai.<sup>19</sup> Tang Erhe, together with his Government Medical College in Beijing (Beijing Medical Professional School) is clearly the link between Shanghai publishing and the Beijing government. The terminology list was copyrighted (*banquansuoyou* 版權所有) by the Joint Terminology Committee in March 1919.

Now we are left with seventy-two pages of terminology charts listed under the following columns: Latin, German, English, Japanese, old translation, original Chinese term, and finally the approved term. There are several ways to begin to process the information in the term lists. The first is to use the categories given to calculate simple statistics to analyze the selection of finally approved terms. The goal here is to find some correspondence between the 1919 "approved" terms and the first instance a term appeared, whether it was already present in the Chinese language before the nineteenth century, if it was an "old" translation from the nineteenth century, or if it was a Japanese neologism.

Each term listed has a Latin entry, followed by its German and English equivalents, and these are followed by a column for Japanese terms, old translated terms, old Chinese terms, and finally the Approved terms. In order to emphasize chronology, I will reorder the East Asian term categories as (1) Old Chinese term, which is a term existing in common usage before the 19<sup>th</sup> century missionary translation project beginning with Hobson in 1850, (2) Old translated term, which we could define as beginning with Hobson's 1850 *New Treatise on the Whole Body*, and

<sup>&</sup>lt;sup>19</sup> This is the only address list I have for some of these associations, which later moved or disappeared.

culminates in the missionary attempt to standardize these terms in Cousland's first medical lexicon of 1908, (3) Japanese term, which could be said to overlap chronologically since the Japanese interest in European anatomical studies goes back to the late 18<sup>th</sup> century, although standardization becomes important only in the late nineteenth century and finally (4) the Approved term negotiated by the members of the Joint Terminology Committee between 1916 and 1919, and approved by the Ministry of Education.

As described in chapter one, we know that the Latin terms were standardized in 1895 in Basle by an international group of anatomists, made up primarily of those from Germanyspeaking universities. This was known as the Basle Nomenclature Anatomia, or BNA. The BNA was a list of correct Latin terms for human anatomy that were visible to the naked eye, and it reduced the total number of such Latin terms from an estimated 30,000 to 4500.<sup>20</sup> It was the first attempt to standardize anatomical terminology, and formed the basis of further Latin and vernacular standardization projects. For example, an attempt to standardize American English vernacular equivalents had been prosecuted by Lewellys Barker of Johns Hopkins in 1907, whose text and list of BNA terms forms a comparison here.<sup>21</sup> But for our analysis here we are primarily interested in the last four categories in the 1919 document, the Chinese and Japanese terms. These include the Japanese terms, old translated terms (i.e. missionary), old Chinese term, and the newly-coined approved term. As we saw in chapter three, Japanese standardized terminology for anatomy had been pursued single-handedly by Buntarō Suzuki (鈐木文太郎) in his 1905 Kaibōgaku Meishū (解剖學名彙), also based on the 1895 Basle list, and Tang Erhe discussed terminological issues with Suzuki on his 1917 tour of Japan. Chapter five examined

<sup>&</sup>lt;sup>20</sup> Barker 1907: 2.

<sup>&</sup>lt;sup>21</sup> Barker 1907.

the networks built by Philip B. Cousland and his medical missionary colleagues since 1901 as he attempted to standardize previous missionary terms.

With basic arithmetic, we can analyze the categories, and figure 24 below represents the results. The list includes 1182 numbered Latin items for osteology (guge 骨骼), a term that refers to the basic skeletal structure. The Joint Terminology list was therefore about one-fourth of that total. A minority, yet significant proportion of the terms in the 1919 list are general terms which will form compounds to describe various parts of the body of which there are three important categories I list below in English in order to give the reader a sense of the type of terms dealt with in standardizing anatomical terminology:<sup>22</sup>

1. Terms indicating the position and direction of the parts of the body:<sup>23</sup> vertical, horizontal, median, sagittal, frontal, transversal, medial, intermediate,

2. Terms relating to the extremeties:<sup>24</sup> proximal, distal, radial, ulnar, tibial, fibular

3. General anatomical terms:

accessory, entrance, wing, alveolus, ampulla, ring, angle, handle, cave, aperture, apex, appendage, ... embryo, eminence...<sup>25</sup>

These terms, whether for position and direction, for extremities, or general anatomical terms, tended to be used again and again to form prefixes or suffixes for specific tissues. Many of these terms would not have a separate entry in a medical dictionary, they would only be used in combination. For example, the last term under the third category above is *occiput*. In Cousland's Medical Lexicon, Ninth Edition, occiput (houding 後頂; zhengubu 枕骨部) does have its own

<sup>&</sup>lt;sup>22</sup> The following discussion will include long lists of anatomical terms, and for this I ask the reader's indulgence. There is simply no way to give a sense of terminology work without reproducing some of the sheer number of terms. I will put the terms in italics to offset them for the reader who would prefer to skip to the discussion.

<sup>&</sup>lt;sup>23</sup> Title from Barker 1907: 14-16, and term order is the same as the Joint Terminology List, which followed the BNA. <sup>24</sup> Title from Barker 1907: 14-16.

<sup>&</sup>lt;sup>25</sup> Jiaoyubu shending 1919: 1-17.

term entry, but it is more useful as an adjective in *occipital* (*zhengubude* 枕骨的; *houdingde* 後 頂的),<sup>26</sup> or as a suffix in *occipito-anterior occipito-posterior*, *occipitofrontal*, *occipitofrontalis*, *occipito-parietal*.<sup>27</sup> A term like occiput was important in craniometry, physical anthropology, but also for specifying methods childbirth to physicians and midwives. Due to their wide use in constructing longer technical terms, many of such words were the hardest fought decisions of the Joint Committee in its first, two-week meeting in the summer of 1916.

But numbers can be misleading, including the total number of terms. 1182 is better defined as the number of standardized Latin BNA terms addressed in the 1919 approved terminology list for osteology. Neither English, nor Japanese, nor the final approved Chinese terms were unified to one vernacular term correlated to one BNA Latin term. A better number for us to work with is 1356—the number of approved Chinese terms I have counted for 1182 Latin terms. The Joint Committee would allow two terms to remain if a two-thirds majority vote could not be achieved for one term. In other words, complete unification of terms—one standardized Latin term for one Chinese translated term—was not always achieved. The difference is important when we start to determine which category of terms became dominant beyond the comments of committee members since each category, except BNA Latin, may have two or more terms, one of which may become the approved term. To illustrate, let us take the example of the term for vertical, which has two terms for each of the following categories: Japanese, old translation, and approved translation (table 14). We can see several things

<sup>&</sup>lt;sup>26</sup> "The Occipital Bone (ob, caput, *against the head*) is situated at the back part and base of the cranium. It is trapezoid in shape and is much curved on itself. It presents as its front and lower part a large oval aperture, the *foramen magnum*, by which the cranial cavity communicates with the spinal canal. The portion of the bone behind this opening is curved and expanded and forms the *tabula*; the portion in front is a thick, elongated mass of bone, the *basilar process*; while on either side of the foramen are situated the *lateral* or *condylic portions*, bearing the condyles, by which the bone articulates with the atlas. It presents for examination two surfaces, four borders, and four angles…" Gray 2003 [1903]: 181-182.

<sup>&</sup>lt;sup>27</sup> Cousland's Medical Lexicon was edited by Lu Dexin after the death of Cousland in 1930.

Table 14 Verticalis, 1919

	Latin	German	English	本國舊名 Old	舊譯名 Old translation	日本	決定 Approved
#				Chinese		Japanese	
	Verticalis	senkrecht	Vertical	直 zhi	鉛直豎,垂直	鉛直,垂直	垂直, 鉛直
18					qianzhishu, chuizhi	qianzhi,	chuizhi, qianzhi
						chuizhi	

happening in this example. First, we see that the Chinese root of this basic directional term is old and long in common use: *zhi*. This character is common to each of the variations in the last three columns. Second, we see that the second of the two old missionary terms, *chuizhi*, is a direct match with the second Japanese term, while the first of the two old missionary terms, *qianzhishu*, is identical with the primary Japanese term except for a suffixed clarifier (*shu* has the same meaning as *qianzhi*, vertical, upright, perpendicular). This suggests that it was a loan word to Japan, and now a return graphic loan to China. In fact, both Japanese terms were adopted in this case, although the preference was reversed. We can also see the Japanese and modern Chinese terminology preference for two or three character compound terms as compared to the classical Chinese preference for single character terms.

A second example of multiple terms in various columns reveals more possibilities.

	Latin	German	English	本國舊名 Old	舊譯名 Old	日本	決定 Approved
#				Chinese	translation	Japanese	
57	Alveolus	Die kleine Auschöhlung	Little Hollow, Alveolus	~	脬, 窗 pao, wo	小腔,小 胞 xiaoqiang, xiaobao	小泡,小窩, 小槽 xiaopao, xiaowo, xiaocao

Table 15 Alveolus, 1919

In table 15 we see the term alveolus, indicating a "little hollow" which can be used to identify a large number of small "cells" in the body: from the honeycomb pits in the mucous membrane of the stomach, to an air cell in the lungs, to the tooth socket in the jawbone. Here we see that there is no relevant old Chinese term, and there is a much wider range in the available options, none of

which were selected unaltered. The Japanese proclivity to add the suffix *xiao* (little) to a single term is maintained. Following Classical Chinese, missionaries had attempted to coin and refurbish old abandoned characters or forge new ones by adding sound components to a meaning radical, but these missionary single character terms are here rejected (with the exception that one of them is combined with *xiao* to form the second approved term). The first approved term is a variation on the second Japanese term, changing the radical from *rou* (flesh) to *shui* (water), while the second missionary term is also adopted with the *xiao* (little) suffix, and a third, new term is coined and accepted by the Joint Terminology Committee itself, *xiaocao* (little groove).

With these examples in mind, let us turn to examine the statistics I compiled comparing three categories of source terms with the list (1356, rather than 1182) of approved terms (table 16). Beginning with the old Chinese terms, we see that fully 245 of 1356 terms were accepted, which is 18.1 percent. Accepted old Chinese terms include positional terms:

Anterior (*qian*前), Medius (*zhong*中), Posterior (*hou*後), Internus (*nei*內), Externus (*wai*外), Dextus (right, *you*右), Sinister (left, *zuo*左), Longitudinalis (*zong*縱), Superior (*shang*上), Inferior (*xia*下), Superficialis (*qian*淺), and Profundus (deep, *shen*深);

... terms describing the shape of the anatomical item:

Ala (wing, yi 翼), Angulus (angle, *jiao* 角), Antrum (Cave, *dou* 竇), Apex (Tip *jian* 尖), Appendix (*fu* 附), Arcus (Arch, *gong* 弓), Basis (Base, *di* 底), Bracchium (Arm, *bi* 臂), Canalis (Small Channel, *guan* 管), Caput (Head, *tou* 頭), Cauda (Tail, *wei* 尾), Caverna (Cavity, *dong* 洞), Circulus (Circle, *huan* 環), Collum (Neck, *jing* 頸), Columna (Pillar, zhu 柱), Cornu (horn, *jiao* 角), Corona (Wreath, *guan* 冠), Corpus (Body, *ti* 體), Crus (Leg, *jiao* 腳), Dorsum (Back, *bei* 背), Extremitas (*duan* 端), Facies (Surface, *mian* 面), Flexura (Bending, *qu* 曲), Folium (Leaf, *ye* 葉), Formatio (Formation, *jie/gou* 結 / 構), Fornix (Arch, *qionglong* 穹窿), Fundus (Bottom, *di* 底), Funiculus (Thin rope, *su* 索), Genu (Knee, *xi* 膝), Glomus (Skein, *qiu* 球), Labium (lip, *chun/yuan* 脣 / 緣);

... and terms indicating location:

Lamina (Layer, *ceng/ban/ye* 層 / 板 / 葉), Latus (Flank, *ce* 側), Limbus (Border, *yuan/bian* 緣 / 邊), Limen (Threshold, *yu/jie* 閾 / 界), Linea (Line, *xian* 線), Liquor (Fluid, *ye* 液), Lobus (Lobe, *ye* 葉).

We might observe that even in these standardized terms, several Latin terms make use of the same Chinese character, as with *jiao* 角 (for Angulus and Cornu), and with *ye* 葉 (for Folium, Lamina, and Lobus).

Old translated terms are the smallest number, at only 103 of 1356, or 7.6 percent. Any interpretation of this low percentage of precedence needs to be tempered by noting that many missionary terms were identical with the corresponding old Chinese term, so this was not a complete rejection of missionary terms. In other words, many old Chinese terms were missionary terms by default. However, even if each old Chinese term were counted as identical with the old missionary translated term—which they were not—this still only accounts for 25 percent of the total approved terms.

Table 16 1919 Approved list for anatomy: osteology<sup>28</sup>

Category	本國舊名 Old Chinese	舊譯名 Old Translation	日本 Japanese	決定(新名) [newly coined] Approved term <sup>29</sup>	Total
Authorized term	245	103	328	680	1356
Percent of total	181%	76%	24 2 %	50.2 %	100.1.%
(1356)	10.1 /0	7.0 /0	24.2 /0	30.2 /0	100.1 /0

The newer Japanese terms occupy a full 24.2 percent of the final approved terms on their own, or 328 of 1356. So Ligamentum (ligament) would be *rendai* 韌帶, one of two selected terms for Nervus (nerve) would be *shenjing* 神經, and Anatomia (anatomy) would be *jiepouxue* 解剖學. In addition, Japanese generally adopted a good number of old Chinese and old translated missionary terms. So Tubus (tube) was *guan* 管, Umbo (prominence) would remain *tu* 凸,

<sup>&</sup>lt;sup>28</sup> Compiled from the list of 1182 identified osteological body parts/items listed and identified in Latin, German, and English before listing the four categories above. Although there were 1182 body parts/items, some of the terms had two, and occasionally three approved terms after deliberation, so by my count there were 1356 total terms in the list. Scientific Terminology Committe 1919.

<sup>&</sup>lt;sup>29</sup> this represents those that fit none of the above.

Viscera (internal organ) would retain both words from Chinese medicine *zangfu* 臟腑 and Trachea (windpipe) would remain *qìguǎn* 氣管, although the old translation had attempted to add the word general or primary *zong* 總 to the term *qi* tube/air tube to form *zongqiguan* 總氣管. Moreover, a significant number of the 50.2 percent newly coined terms were but slight variations on the respective Japanese terms. Using only Mandarin readings—as the terms would have been read by most Chinese and missionaries—Sagittalis (Sagittal) would thus be *shizhuangmian* 矢狀 面 to the Japanese *shizhuang* 矢狀, and Radialis (radial) *raoce* 橈側 to the Japanese *naoguce* 撓 骨側, Ulnaris (Ulnar) *chice* 尺側 to *chiguce* 尺骨側, Tibialis (Tibial) *jingce* 頸側 to *jingguce* 頸 骨側, and Fibularis (Fibular) *fei'ce* 腓側 to *feiguce* 腓骨側. The Joint Committee merely dropped the term *gu* 骨(bone) for the last set of five terms.

The final category is that of newly coined terms and occupies fully half of the total. These are clearly based on the Japanese terms, but are modified. Here we see several patterns become clear based on earlier decisions of suffixes and prefixes: *wo* 窩 (nest/place) as a suffix in Japanese terms always becomes *ao* 凹 (concave/hollow) in the approved term. We see this in Fossa subarcuata (Subarcuate fossa) when *huxingxiawo* 弧形下窩 becomes *huxingxia'ao* 弧形 下凹, or Fossa sacci lacrimalis (Fossa of lacrimal sac) as *leinangwo* 涙囊窩 becomes *leinang'ao* 涙囊凹. Meanwhile, the suffix *qi* 起 (rise) in the Japanese term becomes *tu* 凸 (protrude), or is dropped altogether, and *zhi* 櫛<sup>30</sup> (comb) becomes *ji* 山脊<sup>31</sup> (crest) where Cristae sacrales articulare (articular sacral crest) *guanjiejianguzhi* 關節薦骨櫛 becomes *guanjiejianguji* 關節薦 骨脊. In contrast the suffix *mian* (surface) is retained from Japanese terms to the approved term,

<sup>&</sup>lt;sup>30</sup> Zhì is the standardized pronunciation, but this word is still often pronounced as *jié*.

 $<sup>^{31}</sup>$  This term should be one character including both 山+脊, but my word processing software does not have the compound word.

as in Facies anterior lateralis (external surface) *waiqianmian* 外前面, or Facies posterior (posterior surface) *houmian* 後面. Other patterns can be seen when more complex terms that include the suffix *jiehen* 截痕 become *qieji* 切跡, as in Incisura jugularis (Jugular notch) where the Japanese *jingjiehen* 頸截痕 becomes *jingqieji* 頸切跡 in the 1919 approved Chinese list. I will discuss how such decisions were made below, but for now it is sufficient to note the general pattern that the Japanese term was clearly influential, even if the Joint Terminology Committee felt free to tinker with the Japanese terms according to their sense of an appropriate term for Chinese.

A final consideration in interpreting the statistics of Table 16 is the number of terms each category lacked (out of 1182). That is, they were not represented by a BNA term under each category, whether old Chinese, old translation, or Japanese term (see Table 17). Here we find that 842 terms, or 71 percent, had never been represented in the Chinese language before missionary translations. The significance is that in Chinese, there simply had never before been a word or a concept relating to the anatomical surfaces uncovered by scalpel and forceps and observed by the gaze of the anatomo-clinically-trained physician. But perhaps even more surprising is the number of approved terms that did not have an old missionary translation—this number is 624, or about 53 percent. This likely speaks to the rather general nature of anatomical books like those of missionaries Hobson or Dudgeon. The lack of specificity can be attributed at least partly to the fact that in the nineteenth century no medical schools of any size or standard were established anywhere in China (see chapter 3 and appendix 6). In contrast, Buntarō Suzuki's 1905 terminology list, produced after, and based on the BNA, was missing only ten terms, an "error" rate of less than one percent.

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Category	本國舊名	舊譯名	日本	決定(新名)
	Old Chinese term	Old Translation	Japanese	[newly coined] Approved
		(missionary)		term <sup>32</sup>
No vernacular	842	624	10	0
term before JTC				
Percent	71%	53%	0.8%	0

Table 17 Corresponding term lacking, according to category

With this information we can make some comments about the nature of the 1919 approved terminology list to build an understanding of the Joint Committee's work, insights that will be important when we examine the debates of the Joint Committee itself recorded in the published transcripts, and in examining the detailed critiques of Chen Fangzhi and his colleagues in 1925. The first is to affirm how important the standardization work of the BNA (1895) was in providing an example for Japanese (1905), Americans (1907), Philip Cousland (1908), and the Joint Terminology Committee (1919). Each major round of standardization and unification of terms had a worldwide effect in what was then becoming a wired world. Newspapers and journals could telegraph information around the world almost instantaneously as submarine transoceanic cables were laid connecting ports.<sup>33</sup> With easy and cheap rail and steamship transportation available, professionals could get together for regular and extended conference meetings to hash these matters out. The age of rail in China really began only in the late 1900s and 1910s, and with it came more frequent meetings of the China Medical Missionary Association, and subsequently of the National Medical Association, and the Joint Terminology Committee that met concurrently.<sup>34</sup>

Secondly, we observe from a new perspective the connection between language and anatomy. Existing old Chinese terminology could only "see" so many surfaces. The anatomo-

<sup>&</sup>lt;sup>32</sup> This category represents those that fit none of the above.

<sup>&</sup>lt;sup>33</sup> On the telegraph, see Headrick 1991.

<sup>&</sup>lt;sup>34</sup> On the age of rail in China, see Elleman and Kotkin 2010; on railway politics in late Qing China, see Mary Rankin 1971: 197-199.

clinical gaze is possible only when used in conjunction with scalpel and an existing (or adopted) set of terms correlated to visible tissues. As Foucault put it, "all that is *visible* is *expressible*," and "it is *wholly visible* because it is *wholly expressible*."<sup>35</sup> The anatomo-clinical gaze is translated and institutionalized in Chinese only through the mundane activity of translation and standardization of anatomical terminology, terminology which by its increased powers of expression allows for increased powers of vision. In this new epistemology, as we will see in the final chapter, Chinese medicine was to be perceived as blind and inadequate for its inability to see, name and dissect the multitudinous tissues of the body.

Missionary terms, in the context of the 1919 approved list, can be seen as transitional. Less than eight percent of missionary neologisms were accepted in the 1919 approved terminology. Given the extensive hours devoted to this project, one would expect that Cousland and his colleagues might be disappointed. In the "Historical Notes" section of Cousland's Lexicon, 1926, 5<sup>th</sup> edition, we can see Cousland express this disappointment, as they had desired a complete, rationalized reworking of Chinese terminology "avoiding Western errors, medieval and recent," but the lure of the easily translated Japanese terms was too great, "the majority of the members were not prepared for this and preferred in most cases to follow the Japanese example in simply translating the Western terms—good, bad and indifferent." For Cousland this led to regret for "a number of unhappy and confusing names [that were] perpetuated." Yet despite such regrets institutionalized in his lexicon preface for decades, even after his death, Cousland balanced his critique by acknowledging that standardization of the medical lexicon was a great advance, "and it is of the utmost importance that all should proceed to use it, however irksome the change may be." And indeed, there were "obvious advantages in having a

<sup>&</sup>lt;sup>35</sup> Foucault 1994 [1963]: 115, emphasis in original. I adjusted the original translation slightly by removing "that" between these two phrases for the sake of clarity of meaning here.

terminology somewhat closely allied to that used in Japan.<sup>36</sup> Japanese *kanji* terms, or close variations, appear to have won the day in Chinese anatomical terminology. To the degree this was true, why then would Chen Fangzhi, after spending fifteen years in Japan, have so many quibbles with the terminology established by the Joint Terminology Committee? To examine how a majority of Japanese terms were accepted or adapted, we turn now to the transcripts of the Joint Terminology Committee. Like the discussion above, these debates are detailed and technical, exactly what we should expect from scientists attempting to establish their fields of knowledge. We cannot expect to demonstrate how words have social power if we are unwilling to trace how they were constructed and agreed upon.

# Jiepouxue/anatomy

On August 7, 1916, the first meeting of the Joint Terminology Committee began at eight in the morning.<sup>37</sup> They met at the Jiangsu Provincial Education Association in the West Gate area of Shanghai, just outside of the old walled city. A roll of nineteen was taken (see Table 18), and Yu Rizhang of the YMCA was elected chair having received thirteen votes (to one vote each for Drs. Yu Fengbin and Liu Ruiheng of the National Medical Association). Yu Rizhang declined the nomination, saying "I don't know medicine," but Ministry of Education Representative, Dr. Tang Erhe, prevailed upon him to chair since he had the majority. Yu politely accepted expressing his intention to do his best.

Table 18	Composition	of the Joint	: Terminology	Committee in	August 1916 <sup>38</sup>
	1		0,		0

Organization	Members attending
Ministry of	Tang Erhe
Education	

<sup>&</sup>lt;sup>36</sup> Cousland 1924.

<sup>&</sup>lt;sup>37</sup> The following is based on "Yixuemingci shenchahui diyici kaihui jilu 醫學名詞審查會第一次開會記錄" 1916: 30-38.

<sup>&</sup>lt;sup>38</sup> See Appendix 5 for sources of English and Chinese names.

СММА	J.G. Cormack (Kong Meide/Meige), R.T. Shields (Shi Er'de),
	P.L. McAll (Meng Heli), James Boyd Neal (Nie Huidong)
ROCMPA	Sha Shijie (z. Fengqian), Li Ding (z. Shenwei), Wang Ruoran (z.
	Houqing), Wang Zunmei (z. Qizhang), Fan Shaoluo (z. Pucheng),
	Sheng Zaiheng (z. Peicong), Zhao Yuhuang (z. Yaonong)
NMA	Wang Bichen, Yu Fengbin, Zhou Kui (z. Zhongheng), Tang Nai'an, Liu
	Ruiheng (z. Yueru)
JPEA	Yu Rizhang, Shen Enfu (z. Xinqing), Wu Binxin (z. Heshi)

Yu reminded those gathered that the preparatory committee that had met in May had set three guidelines to facilitate debate and discussion of terms They were: (1) each person would have a maximum of three minutes in order to save time;<sup>39</sup> (2) if someone had new evidence to offer, then he could speak again; (3) if delegates could not agree on a particular term and it was deemed to be unimportant, then it could be set aside for future discussion. A list of terms had been prepared by the Republic of China Medico-Pharmaceutical Association based on the BNA and Japanese lists. Chairman Yu indicated there were over one thousand terms, so it was close to identical to the approved 1919 list of 1182 BNA terms described above. Yu Rizhang opened formal discussion of terms with the first one on the list: *anatomia (jiepouxue* 解剖学).

Table	19	Anatomia,	1919
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	Latin	German	English	本國舊名	舊譯名 Old translation	日本	決定
#				Old		Japanese	Approved
				Chinese			
	Anatomia	Die	Anatomy	2	體學,身體構造學,	解剖學	解剖學
1		Zergliederungskunst			解剖學 tixue,	jiepouxue	jiepouxue
					shentigouzaoxue,		
					jiepouxue <sup>40</sup>		

In order to convey a sense of the richness of the discussion, I translate this debate below in detail. It is worth remembering that this conversation occurred in 1916 before vernacular mandarin had become the standard language of China: the New Culture movement was launching in the new

<sup>&</sup>lt;sup>39</sup> This must refer to having three minutes maximum per term, but this is not clearly stated.

<sup>&</sup>lt;sup>40</sup> I have added *pinyin*.

journals. Chinese grammar and punctuation had not been studied or standardized.<sup>41</sup> Founders of the Science Society of China and its journal, *Science*, would play an overweening role in that process, "the problem of establishing a national language and the scientific recasting of language intimately related," and the journal *Science* itself the first Chinese publication to publish horizontally, from left to right.<sup>42</sup> But as we saw in chapter four, in 1916 the SSC members were still occupied by their studies in the U.S. and would not join the work of the Joint Terminology Committee until 1918. For now it was this ragtag conglomeration of physicians, educators and missionaries who would attempt to establish the scientific recasting of language.

The first term was *anatomia*. But Tang Erhe immediately noted that the Medico-Pharmaceutical Association had drafted a booklet of terms for inorganic chemistry—he recognized that time was limited, but for "selfish reasons" hoped that there might be some time to look it over quickly. Chairman Yu responded that there was time in the afternoon to research the matter, but P.L. McAll bluntly refused: "This time there is no time to discuss chemistry." Yu attempted to mediate this conflict of wills, "the Medico-Pharmaceutical Association draft [of anatomical terms] already has more than one thousand terms, so if the committee allots one minute to pass each term, then there will be enough time." Either Yu learned no math at St. John's University and Harvard, or he was being diplomatic and purposefully vague. Even at the hopelessly unrealistic speed of one term per minute, maintained at production line efficiency, it would take four hours to discuss 240 terms. Anyone familiar with the nature of meetings will recognize that this speed would require absolutely no expression of dissent, discussion or debate. On the other hand, the Joint Committee members had allotted two weeks to this discussion, so

<sup>&</sup>lt;sup>41</sup> Books like Chen Junjie's *Baihuawen wenfa gangyao* would be published by the Commerical Press teaching people the grammar and syntax of the newly standardized vernacular. This book was first published in 1920, I have the eighth edition from 1930.

<sup>&</sup>lt;sup>42</sup> Wang Hui 2006: 92, 95.

with four hours of discussion per day and ten days of discussion (40 hours, 2400 minutes) it is likely that Yu simply meant that the committee would be able to find time. At any rate, Chairman Yu dodged the awkward moment by getting the work of the Joint Terminology Committee underway, "Let's begin from the first term."

P.L. McAll wasted no time launching into an oratory on the importance of this term:

The first term is most critical. *Anatomia* speaks of the body's structure (*shenshangde gouzao* 身體的構造), has the meaning of skeleton (*guge* 骨骼), and it also has the meaning of dissection *jiepou*. If [we] only say [the term includes] *jiepou* but [the term] does not include *shenti* 身體 (body), it is like researching the body's structure, but without doing a postmortem examination (*jiepouzhe* 解剖者); or it is like, for example, if you take the living body and research it but you cannot dissect it (*huoti er yanjiu ji buke jiepou* 活體而研究即不可解剖). For this reason the word should not be fixed by using *jiepou* 解剖. So calling it *jiepou* then is not prudent.

McAll appears to be defending the use of missionary terms such as tixue 體學 or

shentigouzaoxue 身體構造學 which were in use in missionary textbooks. In fact, the CMMA publication committee had allowed a range of terms for Anatomy in Cousland's 1908 Medical Lexicon. In this text, of the various related terms, only anatomy was *jiepouxue*, while anatomist was first *tixueshi* 體學士, and only secondly *jiepoushi* 解剖士. Histological anatomy was [月+ 岡]<sup>43</sup>學 *gangxue*. Meanwhile, all other variations took *ti* 體 or *tixue* 體學 as their base, emphasizing the body as the object of cutting-analysis. Descriptive anatomy was *jietixue* 解體 學—literally, analyze-by-cutting/body/study. Morphological anatomy was *tixue* 體學, comparative anatomy was *jiaotixue* 較體學, general anatomy was *tixue*, human anatomy was *rentixue* 人體學, morbid pathological anatomy was *bingtixue* 病體學, regional anatomy was *fenchutixue* 分處體學.<sup>44</sup> But these examples were not mentioned at the committee table.

 $<sup>^{43}</sup>_{44}$  Gang appears to be a missionary-constructed term that was never taken up in other literature.

<sup>&</sup>lt;sup>44</sup> Cousland 1908.

McAll's analogy for including a wider range of semantic meaning in the term/s for anatomy was that one needs both verb and object of the verb. The term must include both the meaning of structure, and the meaning of the action of dissection. Institutionalized anatomy for medical education had only just become legal in China. If the body (*ti*) were to be taken out, then it would be just like turning back the clock to the dispensation the medical missionaries had lived under—studying the body without postmortem examination, or looking at a body without being able to dissect it.<sup>45</sup> *Jiepouxue* was a Japanese term with a semantic range that excluded fundamental aspects of meaning McAll wanted to include in the term for anatomy.

Li Ding of the Medico-Pharmaceutical Association replied that *jiepou* was simply not as limited as McAll was suggesting. Moreover, *tixue* itself was limited as a term:

*Tixue* (study of the body), these two words, cannot include other medical studies within this discipline. We could call it *tixuezhe* 體學者, moreover, those who study living bodies, also have anatomical changes (*jiepou de bianhua* 解剖的變化) so clearly we do not have to dissect bodies to start using the term *jiepou*.

Chairman Yu tried to summarize each point and move toward a conclusion and a vote:

Dr. McAll has said that although in English the word *jiepou* originally had the meaning of *jiepou* [dissection], today English language medical studies commonly use this term for the meaning of *tixue* (the structure of the body). All that Dr. Tang and Dr. Li have said also has a rational basis, perhaps it is suitable to put it to a vote?

But the Joint Terminology Committee was not ready for a vote. Wang Bichen of the National Medical Association weighed in, arguing that study of the body could be conducted without penetrating the tissues with a scalpel, so structure and dissection do not need to be identical, "Diagnostic studies (*zhenduanxue* 診斷學) also can be called *tixue* because observing from the outside, one can also know the structure of the body." Then Tang Erhe, doctor, educator and

<sup>&</sup>lt;sup>45</sup> as had Wang Qingren in the nineteenth century, see

politician, reframed the debate by focusing on the meaning of the two characters in *jiepou* as a method of reductive analysis—the basis of the power of Western science:

Although *Anatomia* is used to speak of the structure of the human body, it cannot describe the whole of the structure. But if we use a method of analyzing by breaking down (*fenjie* 分解) in order to see its structure in order to [see] all that which cannot be seen with the naked eye (*neiyan* 内眼), then we can analyze to the utmost detail; we already understand deeply by using *jiepou* these two words whose meaning is mutually reinforcing (*xianghe* 相合) but alone do not speak for themselves (*zibudaiyan* 自不待言). [So] the first reason [to maintain use of *jiepou* is that], all the curriculum set by the education ministry (*xuebu* 學部) has used *jiepouxue*, all the biology (*shenglixue* 生理學) books published by the publishing houses, and the textbook readers, all without exception call it *jiepouxue*. It has already become the commonly used term. The second reason is [for us] today to take the commonly used term and change its usage to a non-commonly used term, this is absolutely not a good method.

Tang presented his reasons as a *fait accompli*. No wonder he had wanted to move on to the terms for inorganic chemistry. It was not that Tang considered this term unimportant; for him, the matter was settled. Five months earlier, Zhang Yuanji, head of the Commercial Press, had already asked Tang to be chief medical editor for this prestigious and profitable imprint.<sup>46</sup> If we think back to Bruno Latour's concept of enrolling allies from chapter one, we see that Tang is able to assemble a long list of allies to support his position. As the representative of the education ministry, the major publishing houses, both Chinese medical associations, and president of the government medical school, Tang's opinion carries weight far beyond his colleagues in the Medico-Pharmaceutical Association, and more than the missionaries who, despite their years of labour and decades of precedence in teaching and translating medicine, would always be seen as outsiders to the Chinese language.

But the missionaries were not yet ready to roll over to the Japanese term for anatomy. The American, R. T. Shields muddied the water with a new term to describe macroscopic

<sup>&</sup>lt;sup>46</sup> On 18 March 1916. Zhang 1995, 29; confirmed by RF RG4 CMB, Box 10, Folder 136, "Greene to Buttrick," 25 August 1916, "Dr. Tang Er-ho tells me that he has entered the employ of the Commercial Press of Shanghai to look after their medical publication work."

anatomy: "[Let us] not use *jiepou* to describe the exterior view, let us fix *Anatomia* as *tixue*, if it is not appropriate, then call it morphology (*xingtaixue* 形態學)."<sup>47</sup>

Chairman Yu restated Shields objection to *jiepou*: that it could not include the full semantic range expressed:

Morphologists (*xingtaixuezhe* 形態學者), in professional language, are those who look at the outside [form]. When we then speak of the [interior] structure, it is not anatomical changes (*jiepouoshangzhibianhua* 解剖上之變化), but rather is morphological changes (*xingtaishangzhibianhua* 形態上之變化."

At this point someone (unidentified) pulled out one of the reference books on hand, the Encyclopedia Britannica, seeking to find authority for the English meaning of the term *Anatomia*. This person summarized the definition of *jiepou* as being specifically *xingtai gouzao* 形態構造 (morphology) in common usage. Tang Erhe immediately seized on this new evidence to exclude the old missionary term, "So, according to the Encyclopedia's meaning, this word cannot include the study of the body (*tixue*)," and Tang's Medico-Pharmaceutial Association colleague, Wang Zunmei, backed him up, arguing that the German term, "*Die morphologie anatome* has been translated as *xingtai*, *xingtaixue*." The debate seemed likely to continue indefinitely, and finally Shen Enfu, *juren*, Shanghai City Councilor, and secretary of the Jiangsu Educational Association attempted to give some context to the debate: "Today's dispute is about the point of the common term and the professional term not being the same." In other words, the committee members were arguing past each other. So Shen suggested that the commonly used term produced both the first term *jiepouxue*, and the fifth term *renti jiepouxue* 人體解剖學 (humanbody-dissection-study). But this intervention was not yet decisive. Missionary J. B. Neal was

<sup>&</sup>lt;sup>47</sup> Morphology, "more a method of work than a specific discipline," was a primary area of anatomobiological research in the nineteenth century associated with Ernst Haeckel's use of embryos in the search for ancestry, but in retrospect was losing this position by 1916 to physiological approaches to evolution, and later to the modern evolutionary synthesis of Darwinian natural selection and Mendelian genetics, Di Gregorio 2009: 221.

unwilling to let the missionary term go, saying that "the chairman calls it *rentixue* 人體學." But it is unclear if he was referring to the current chairman, Yu Rizhang (of whom there is no record of him calling it *rentixue*), or the noticeably absent chair of the Medical Missionary Association Publication Committee, Philip B. Cousland. To some degree, Cousland was a ghost haunting the discussion, having already devoted more time to the question of standardizing Chinese medical terminology than any of the men in the room, including other missionaries who were defending the positions staked out in his medical lexicon (1915, 2<sup>nd</sup> ed.). The missionaries wished to resolve what they considered to be problems of historical nomenclature for anatomy—if they had their way, they would take a place among the anatomists in Basle (1895) and later in Jena (1935) to reform the inconsistencies in the international system of Latin nomenclature so that vernacular translations could be properly rationalized. Instead, they had to settle for reforming these problems in the Chinese language.

But the missionaries were losing the battle over *Anatomia*, this "most critical of terms." In a series of sharp replies, three of the leading Chinese physicians advanced an unassailable case for eliminating *tixue* itself as a China-specific historical anomaly, and retaining *jiepouxue*. Tang Erhe reiterated that *jiepou* was a superior term because it covered both the activities of human dissection and the mundane procedure of accumulating biological knowledge—dissecting animals. He said, "In biology, it can also be called *rentixue jiepou* 人體學解剖, not only to indicate the human body, [but also] animals, plants—all these can be dissected by human tools and dissected." Then Wang Bichen directly addressed the implied missionary project of reforming all of global medical nomenclature with the Chinese medical lexicon: "*Jiepouxue*'s meaning is almost the same in use as in every [other] country's medical field. It seems too early in China's medical profession's development to wish to have a special revolution in inventing

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new categories of terms." Then, Yu Fengbin pointed out that *tixue* was a necessary term when dissection was illegal in China, but this was no longer the case:

Anatomy has already been translated as *tixue* in China for almost thirty and more years. In examples like [Benjamin Hobson's] *New Treatise on Anatomy (Renti xinlun* 人體新論) and *Anatomy Explained in Detail (Renti chanwei* 人體闡微) and other books, using the term *renti*, but the term *jiepou* is almost absent in them. The reason for this is that formerly the law forbade dissecting (*jiepou*) human cadavers. Therefore, for the reason of not daring to speak about dissection, then it used the word *ti* 體 for it. Today, China has already progressed somewhat, and in every periodical *Anatomy* is translated as the word *jiepou*. This word, although it is translated from English, but it must be known without the English [term]. Looking only at the Chinese [term], it must lead people to see and understand its meaning. Try using *tixue*, these two words, to tell [your meaning to] people, and they will, at least, be able to understand the meaning "*Anatomy*." But, if you use *jiepou*, these two words, upon reading they can understand it as being both dissecting the human body (*jiepou renti* 解剖人體) or dissecting animals (*jiepou dongwu* 解剖動物).

Clearly frustrated with what must have been close to an hour or more discussing a term he felt was already settled, Tang Erhe pushed the committee to a positive decision for *jiepouxue*, somehow including a confusing pun: "The whole body (*quanti* 全體) examined recently [corpus of literature? the whole group here?] already calls it *jiepouxue*, if we change it again, then we will never meet the day when we can have one [term]."

So chairman again Yu called a vote. Wu Heshi of the JPEA outlined the agreed-upon procedure to determine a term. The group must agree upon two substantive points. First, the chosen term must have a rational basis (*yougenju* 有根据),<sup>48</sup> and secondly it must go along with common usage (*xunxiguan* 順習慣). Thus a term should not be completely rational, but avoid common usage. Wu declared that the translation of *Anatomia* as *jiepouxue* was in accord with both of these principles, so "it is already up to the standard of unification." But *tixue*, on the other hand, although it had been in use for over thirty years, was not well-accepted

<sup>&</sup>lt;sup>48</sup> To make *genju* clear in this context, I find it necessary to translate it as "rational basis" rather than merely "basis," "grounds" or "foundation."

(shenbutongxing 甚不通行), was confined only to the medical field, and then only to the field of western medicine. Not only was *tixue* against common usage, but its rational basis was not justifiable. Ensuring that discussion would end, Wu declared, "with regard to other opinions, (they) do nothing but add (*congzeng* 從增) troubles so there is no need (to discuss them)." Chairman Yu asked for a show of hands for those who endorsed *jiepouxue*, and it was recorded that more than half supported this standardization, leading to acceptance of the term. Various compounds of *Anatomia* such as Applied Anatomy would thus become *yike jiepouxue* 醫科解剖 學. These various terms now passed with two-thirds approval.

Twenty-two more terms were debated and discussed and standardized, including *verticalus* and *alveolus* as described above in figures 22 and 23. But the discussion for *jiepou/jiepouxue* was not over.

# Jiepou/dissect

On 8 August 1916, the Joint Terminology Committee met again at eight o'clock a.m., short three members (Wang Zunmei, Liu Ruiheng, and Wang Licai), but with one addition, Fan Shaoluo 范紹洛, a Japanese-trained physician teaching at Suzhou's Provincial Medical School.<sup>49</sup> Apparently hoping to avoid wasting time and allow the missionaries to set the terms of the debate as they had done the day before, Tang Erhe set up his colleague from the Medico-Pharmaceutical Association by suggesting that other terms on the list be discussed later so that *dissection* could be covered first.

Newcomer Fan wasted no time: "Dissection and Anatomy are distinguished in Western languages." Fan claimed that the English word Dissection, in representing the work of jiepou (jiepouzhishi 解剖之事) is an empty/function word (xuzi 虛字), while Anatomy, representing the

<sup>&</sup>lt;sup>49</sup> http://www.dfzb.suzhou.gov.cn/zsbl/1701727.htm, accessed 1 April 2012.

systematic learning of *jiepou (jiepouzhixuewen* 解剖之學問) is a full/content word 實字. "Let me put it plainly," Fan said. *Jiepou*, speaking of work, acts as a verb, while *jiepouxue*, speaking of systematic learning, is a noun. For example, a student when studying *jiepou*, must engage in the work of *jiepou* if he wants to properly practice *jiepou*. For such a situation *jie* [and] *pou*—these two words—correspond with *Dissection*. But students, while merely practicing *jiepou* should not be called *jiepou* professionals (anatomists). *Jiepou* professionals must be engaged in a professional specialty, and those who *jiepou* (lit. dissectionists *jiepouzhe*) are merely engaged in *jiepou*. Therefore, *Dissection* is translated as *jiepou*, and *Anatomy* is translated as *jiepouxue*.

But Tang and Fan's apparent attempt to curb discussion was thwarted, not, this time by a missionary, but by Yu Fengbin, co-founder of the National Medical Association, graduate of University of Pennsylvania Medical School. Yu protested, "*Jiepouxue* and *jiepou*, these two words are too similar!" Instead Yu wished that for *Dissection* the committee might reverse the order of the Chinese characters as *poujie*, while *Anatomy* would retain the original order of the two characters as *jiepouxue*. Someone else [unidentified] suggested that *Dissect* be *poujie* and *Anatomy* be *poujieshu* (剖解術). But the Medico-Pharmaceutical Association was playing in tagteam formation to defeat the Japanese terms, and Li Ding dismissed these neologisms since *jiepou* and *jiepouxue* were already in common use. The committee will get nowhere, Li said, if they add neologisms for all the commonly used terms. Fan Shaoluo affirmed this sentiment, "there is no need to call it *poujie*, everyone acknowledges that *jiepou* is an excellent term."

With these words, the committee voted. With a total of seventeen members, eleven voted to keep *jie* in the front and *pou* to follow. This was approximately the two-thirds majority needed to accept the term. But McAll was not satisfied. He asked Shen Enfu, the resident philologist, to explain the meaning of the two terms. Shen insisted that there was no difference in the meaning,

and there was no problem setting the term in either order in Chinese. So Tang Erhe once again intervened on behalf of what he believes to be common sense—using *poujie* and *jiepou* would cause readers to become confused, so Tang argued the order of characters in both words must be the same.

The temperature in the room seemed to be rising, and no efforts appeared to be able to mediate between the two sides. Dr. Yu Fengbin then explained that the previous day's discussion had left him feeling that *Dissection* and *Anatomy* would be confused, and he hoped to find a way to distinguish them. Tang Erhe replies, "If you want to clearly distinguish them, you need to find a new word to translate *Dissection*. Simply using *poujie* all backwards is like not saying *Dissection* but saying "*ction disse*"—it is a bifurcation that leaves one's heart ill at ease." With this, the committee voted for *Dissection* with these results: *poujie* was rejected, *jiepou*, and *jiepoushu* were passed unanimously. Then Dr. Cormack wrote them on the board to make it clear: "Dissect, Dissection."

Finally these basic terms were settled. *Jiepouxue*, *jiepou* and so many others hard fought over, could now be confirmed, sent to all concerned scholars for feedback and then achieve *shending*/approval from the Ministry of Education. After approval, they could be used in all the lexicons, dictionaries and medical textbooks, medical journals and live conversations between teachers and students, and fellow professionals. Linguistic ambiguity could be narrowed, or almost eliminated, as it had so recently been for the Latin anatomical terms themselves.

#### Enrolling opinions from all China's professionals

But only five months later, between the tenth and the seventeenth of January, 1917, the Joint Terminology Committee met again in Shanghai at the Jiangsu Provincial Education

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Association to try to finish determining anatomical terminology and make a good beginning on chemical terminology. Apparently the representatives from the Publication Committee of the China Medical Missionary Association were not satisfied with losing their majority vote, and now came back with their chairman, Philip B. Cousland, clearly not satisfied with the terms of the previous year. Later that year Cousland would describe the situation in a letter to Wallace Buttrick of the Rockefeller Foundation, "[u]nfortunately the Committee is dominated by Chinese who studied in the smaller medical schools in Japan and who seem to aim at transplanting Japanese medical terms without much regards to their suitability for China." This challenge from Cousland became a test case against which to compare how controversies would be settled within the Joint Committee, and gives context to the challenge of Chen Fangzhi from outside of the committee.

On 10 January at two in the afternoon, the committee convened a preparatory meeting. Among other issues, Dr. McAll asked an ominous question, "Last time it was decided that the draft decisions (*jueding cao'an* 決定草案) must be distributed to professionals everywhere in order that they could research these matters—has this been accomplished?" Yu Fengbin replied briefly that, indeed, the distribution had been accomplished, and nothing more was said on the matter that day. For good or ill, Cousland was not present at the preparatory meeting. Chairman Yu Rizhang immediately concluded that meeting, setting the time and place for the terminology discussions to follow, and asked members not to make lunch plans until after one p.m., since the winter meeting would be four hours from nine to one (given the later sunrise). But what was McAll alluding to? Had his fellow colleagues failed to get a copy of the 1916 draft decisions?

At nine the next day, Chairman Yu Rizhang, who, we recall, had mediated the formation of the Joint Terminology Committee in the first place by connecting the medical missionaries with the JPEA networks of professionalizing educators, physicians and scientists, introduced the man who had missed the 1916 sessions: "Mr. Cousland has spent many years of effort on medical terminology, and last year he returned to his country and was unable to join the committee. This time he is here, and the committee cannot do enough to welcome him."<sup>50</sup> These were kind words from Yu, but Cousland's own first words at the meeting must have made other returning committee members' blood run cold. Cousland's first intervention was blunt: "Surely we cannot say that the draft decisions (*jueding cao'an*) of the first time are final!" Chairman Yu, caught between the Scylla of the man he had just praised as laying the groundwork for the committee, and the Charybdis of the Japanese-trained physicians, responded by retreating to the safety of the rulebook. Yu carefully replied that the list of terms the committee had discussed the previous session had been reproduced and printed into a booklet to be distributed to medical circles and among other famous people and scholars throughout China-to anyone with abundant knowledge on the subject. Of these scholars, the committee had asked them to peruse the list and respond by mail within three months so that the Ministry of Education could approve (shending) and then promulgate these corrections. But because of lack of time, the booklets had not reached scholars and physicians everywhere in China. This was the reason, Yu diplomatically explained to the returning Joint Committee members, Cousland was asking if there might be a chance to discuss the terms again. Dr. McAll was less diplomatic, "How could I possibly receive, peruse and reply to the booklet of terms within three months?" Yu seemed stunned by this logical, but impolite interjection, and threw the question back to the committee, while nonetheless recovering enough to skillfully limit the possibility of discussion to only those

<sup>&</sup>lt;sup>50</sup> Yu 1917: 62.

terms that had not been settled in the previous year's meeting: "So in the end," Yu asked, "how can we handle those terms which have not yet been settled (*jueding*)?" Now it was Tang Erhe's turn to be diplomatic: he immediately grasped Yu's maneuver that there should be no revisitation of words voted and decided upon. Indeed, Tang said, three months was merely a deadline for return mail. Perhaps it would be appropriate that decisions (*jueding*) could be handled in a different manner this time so that terms such as *ligamentum*, for example, currently translated as *rendai* 韧帶 could be discussed further if there was anyone who did not agree with this translation.

But when they started to discuss "the most important terms" Tang was less patient with new suggestions. Rendai 韧带 (ligamentum) was put on the table. McAll wanted to add the term guanjiexue 關節學 (lit., study of joints) for discussion, a term that had not been in the booklet. Tang Erhe interjected, "But I'm afraid that we cannot add terms today. If we start adding terms today to the booklet of terms that were decided in advance by majority decision, then we shouldn't start a *jiepouxue* association to settle them [in the first place]." Was Tang suggesting that there could actually be no changes to the term list at this point? This might favor the Japanese-based terms of his Medico-Pharmaceutical Association colleagues who had drafted the booklet in the first place, before the meeting in August of 1916. But Tang had a valid point how could the Joint Terminology Committee proceed at all if no terms could be settled by committee votes? Who among them would continue to attend if they felt that a new member, no matter his prestige and experience in translating and standardizing terminology, could demand that fixed terms be opened again for debate? And, more importantly, why should outsiders to the Joint Committee, like Chen Fangzhi and his Japan-based colleagues, accept the authority of the committee's standardized anatomical terms if the committee demonstrated itself to be so

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indecisive? If they were judged to be so indecisive as a group, might not their qualifications and knowledge also be called into question? With these questions in mind, we must return to look closely at the criticisms of Chen and his Japan-based colleagues.

# "Concerning the medical terms approved by the Ministry of Education"

Chen Fangzhi and his co-authors identify one hundred and eighty errors in the terminology list approved by the Ministry of Education which they categorized as follows:

- i. the entire body (*mingci tongti* 名詞通體) of a term is inappropriate, from Latin to approved term, six cases
- ii. errors in approved Chinese term (*jueding hanming* 決定漢名), fifty-three cases note: these so-called errors are where the original language (yuanwen 原文) is completely inconsistent, and actually completely unsuitable. As for the rest of the terms, although we do not find specific fault with them, we also do not acknowledge that they are the epitome of perfection.
- iii. falsely created German words (Deguo wenzi 德國文字), eighteen cases
- iv. fabricated German terms (Deguo mingci 德國名詞), nineteen cases
- v. improper use of German (Dewen 德文), forty cases

Before beginning their critique, the authors "solemnly declared" that the goal of their critique was not "to support our faction and attack those who do not" (*dangtong fayi* 黨同伐異), nor was it to attack other people's activities or nitpick their outstanding achievements. Their stated goal was purely scholarly—the Ministry-approved terminology list was improper, and so "it insults the dignity of our nation, impeding scholarly advance." As such, they felt they had no choice but to critique it. So the authors laid down a gauntlet:

Our hope is that the representatives of the Ministry of Education respond satisfactorily on an item by item basis, shedding light on each area where we see an obstacle, recovering the value of "[Ministry of Education] approval" if the representatives respond to our critique (*fanzhi* 反質), our group of colleagues will of course take up our responsibility [to reply], but we are in a foreign country, as our return address no doubt makes clear, so

we request those who will respond to our critique might publish in a scholarly journal, or in some other periodical, if the reply is late, than excuse me if I do not apologize.

Surely such bombast would be backed up by a long list of substantive errors. What we find, instead, is a series of what appear to be minor German mistakes and straw men, along with several constructive criticisms. A close reading, however, reveals that constructive criticism may not have been the goal of this review.

"First off, we would like to ask the Ministry of Education, why it has created so many German terms and German words, like Langsgra de; innerseite [zuoxingrongci 作形容詞 (used as adjective)] *bauchseitig*, etc."<sup>51</sup> What motivation could the Ministry have in creating terms, if it caused even a small number of foreigners to satirize, saying, "Your honorable nation and your honorable government is truly outstanding to unexpectedly help German people by creating so many German words." It is a rare thing, the authors say, when a foreigner can create a word in a foreign language. Such a rare man was Chen's teacher at Tokyo Imperial University Department of Pathology, Katsusaburo Yamagita (1863-1930) who, after studying in the laboratories of Robert Koch and Rudolph in Germany, had made major discoveries in the immunology and pathology of cancers, and in 1911 coined the term *hepatoma* (Chen appears to misspell it as *hepatom*).<sup>52</sup> Chen and his colleagues did not consider the "carelessly constructed" German terms of the Ministry of Education to be in the same category as Yamagita, or Inada who created the term "Spiroenetoris kiterohæmornhagica."<sup>53</sup> So Chen and his colleagues said, "Please listen up, everyone, if you want to create terms, first get busy creating some knowledge, or initiate

<sup>&</sup>lt;sup>51</sup> Latin: Longitudinalis; German: längsgrade; English: Longitudinal; All East Asian: *zong* 縱. The General Committee on Scientific Terminology 1919: 3. There is no evidence of the term *innerseite* being used as an adjective. Bauchseitig is used as one of two options for Ventralis/Ventral/fuze 腹側 (referring to the belly or the anterior part of a structure). <sup>52</sup> Anonymous 1977: 172-173.

<sup>&</sup>lt;sup>53</sup> I can neither discover which Inada they are referring to, nor any German medical term similar to this.

something of value; these types of careless creation attempts will not be welcomed by others."<sup>54</sup> The authors of the critique also accused the Ministry of misusing words. For example, "Termirology" (sic), instead of being translated as *mingci* 名詞, would be more appropriately called *shuyu* 術語 *yongyu* 用語.<sup>55</sup>

A third critique appears more substantial: Neither the Germans, English or Japanese ministries of education have produced standardized terminology lists like that of the Beijing Ministry of Education, so on what basis have the German, English and Japanese terms in the Terminology Lists been standardized in the Chinese Approved Term lists? Given that vernacular anatomy terms had decidedly not been standardized, the authors say, then full references to authors and books are in order. Rather, the Ministry is exaggerating its own accomplishments, and by passing off each other country as having already standardized their vernacular terminology, they inevitably deceive themselves and bully others.

This critique has some teeth, if only half a mouth of them. In a draft list this sin could be forgiven. The draft lists were drawn up to aid in choosing appropriate Chinese terms, listing one or more German, English and Japanese terms for the convenience of the committee. Complete references to sources of these lists would have been appropriate at each stage, for example, if they had chosen Lewellys Barker (1907) for English, or Buntarō Suzuki (1905) for Japanese. But missing references for an official publication like this should be considered a serious scholarly error. As observed above, there was no introduction, no preface, no explanation other than the list of organizations and committee members. With regard to the standardization of German,

<sup>&</sup>lt;sup>54</sup> "Zhugong qingtingzhi, yaozaozi, xianyao nulizaozhishi, chuangshishi, xiangzhezhong suisuibianbian de zaofa, bushitarensuohuanying 諸公請聽之,要造字,先要努力造智識,創事實,像這種隨隨便便的造法,不 是他人所歡迎。"

<sup>&</sup>lt;sup>55</sup> Both published versions of the critique have the same misspelling of "Terminology" and all other misspellings, making typesetting mistakes less likely than mistakes in the original. It seems only fair to point out these basic spelling errors given the nature of the attack on the Ministry of Education term lists.

English and Japanese terms, two things should be said. First, many of these had more than one term, so they were not technically standardized. Nonetheless, in the officially promulgated version, the choices of German, English or Japanese terms should be explained and unified to a single accepted reference work for each language. Score one for Chen, et al.

The fourth critique is that the BNA, although primarily in Latin, also has Greek and some Arabic terms: "Greek is Greek, you cannot call it Latin." The fifth critique of Chen et al. returns to the reference works. It appears that the Ministry has followed the 1905 work of Buntarō Suzuki quite closely, so it is unclear what the attitude of the Ministry representatives is toward the BNA of 1895. Is its attitude one of respect, or of arrogance to reform the BNA? Six: What are the Ministry representatives really trying to do with all of these German words? Seven: If the Ministry representatives really want people to use their list of terms, they must provide an argument to support each term.

Please listen up, everyone, in scholarly enterprise is it not the case that if one's actions are arbitrary, it can be compared to a judge making a judgment against the criminal based only on the accusation? This too is an appropriate argument. But this kind of autocratic activity without argument is like the blundering commands of a warlord. No wonder the Chinese Republic has become a world of soldiers.<sup>56</sup>

Now Chen and his colleagues show their hand. Critique eight builds on this direct attack on the authority of the Ministry of Education and its representatives. The preface of the Examination Copy (*shenchaben*) says, "Obey the majority, drop your personal opinion and accept the popular one,"<sup>57</sup> and then "obey the majority, venerate the self-evident truth."<sup>58</sup> But for Chen, the majority

<sup>&</sup>lt;sup>56</sup> Zhugongqingtingzhi, xueshushang shiye, duanwuruo cizhuanduan de xingwei, jishi caipan guan panjue zuifan de zuiming, yishi xiangdang de liyou. Xiang zhezhong meliyou de zhuanzhi xingwei, shi dengyu hunao junfa de mingling. Guaibude Zhonghuaminguo, yaobiancheng junren de shijie. 諸公請聽之,學術上事業,斷無若此專 斷的行為,就是裁判官判決罪犯的罪名,亦是相當的理由。像這種沒理由的專制行為,是等於胡鬧軍閥的 命令。怪不得中華民國,要變成軍人的世界。

<sup>&</sup>lt;sup>57</sup> Fucongduoshu, sheyicongren 服從多數, 舍己從人。

<sup>&</sup>lt;sup>58</sup> Fucongduoshu, zunchonggongli 服從多數, 尊崇公里。

is brutal—it is used among representatives in the parliament, not in the sacred space of scholarship. Scholarship values the scholar, it does not value the majority. The Ministry had been hasty, and the medical associations were utterly ignorant in investigating and approving medical terminology—qualities unheard of among anatomical associations investigating anatomical terminology. The Government of the Republic of China was made up of a suspect clique of selfish interests, and the Ministry of Education was superfluous to the government, merely an ornament with little power.

Scholarly enterprise in China, the authors say, is just passable (*chaqiang renyi* 差強人意), and could be said to just be beginning in China, and technical terminology had only just passed "into the esophagus." The meaning is clear: it was too early to force artificial standardization on Chinese technical terminology. For Chen, et al., what was needed was patience: patience from the Ministry of Education, patience from scholars and representatives and patience from those cheering on their country who think "My home is also doing its best among all the peoples of society." Yes, Chen said, it is great to be able to accomplish a herculean task, to "bring eternal peace to the world" by standardizing the world's languages, and maybe anatomists and pathologists would have a part in this, but this would not be successful if the Ministry of Education was impatient.

So Chen and his colleagues gave the Ministry an ultimatum: repent and address all of the critiques or cease all approval activitities and cancel the authority of the already published issue. If not, then the representatives of the Ministry of Education were defiling all scholars of the Republic of China, defiling the people of the Republic of China, and defiling the Republic itself.<sup>59</sup>

<sup>&</sup>lt;sup>59</sup> Chen, et al. 1925: 10-14.

### If China wants to have science, science must first speak Chinese

There is no direct evidence of the effect of Chen's critique on the committee. Publications in *Science* or the *National Medical Journal* did not address it directly. Nor is there any evidence of the Ministry of Education repenting for its so-called hastiness and sloppiness in approving the terminology lists. As indicated by the tenor of Chen's critique, politics in China, especially in Beijing was deteriorating to new lows. Many intellectuals had fled Beijing to Shanghai, Xiamen, Qingdao and Fuzhou.

Most of the critiques of Chen and his colleagues were based on flimsy evidence and reasoning. There is no evidence that the reference columns of German, English and Japanese terms in the published lists had upset any foreign scholars or governments. Chen indicates there was a complete list of his one hundred and eighty errors available elsewhere, but given the marginality of major errors that are included in this synopsis, one wonders how serious the minor errors were.

The most important thing to note about the critique is the critique itself. From 1916 to 1924 the Joint Terminology Committee grew steadily, accepting new subsidiary groups and thus steadily growing in its total number of attending members, as well as growing in its accomplishments. The critique comes in 1925, the first year that total numbers of attendees began to drop, and drop precipitously. While 1923 and 1924 had both seen peak numbers over sixty, 1925 had only thirty-four attending, and 1926 only twenty-seven members. The critique of Chen and his colleagues seems to have come at a particularly weak moment for the committee. The Nationalist-Communist propaganda machine was hammering away at the warlords and their government, including the Beijing Ministry of Education, but also the "education lords" of the JPEA that effectively oversaw the Joint Committee's work. Although the evidence is strong that Chen Fangzhi had a list of committee members on the approved term list he and his colleagues

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were attacking, there is not a single name in their five page denouncement—the committee itself is only mentioned at the beginning, later its members are merely the "representatives of the Ministry."

What the drop in attendance and the published critique represent is a general loss of faith in the work of the Committee. Seven years later, Luo Jialun would reflect back on this period that the translated terms that had already been approved and established were no longer widely used by scholars. Someone would pick up Book A, and examine Term X, only to realize that Book B was using Term Y for the same phenomenon. As this situation continued over and over again, even members of the Scientific Terminology Committee stopped using the established terms.<sup>60</sup> The decline of faith in the Beijing Government now made the imprimatur of the Ministry of Education a liability. The excitement of the New Culture era (1915-1925) had ended in disappointment, the enormous labor of the Committee now seemed to be irrevocably lost as a victim of political affairs (*zhengzhi xishengpin* 政治犧牲品).<sup>61</sup>

The degree to which the Approved Terminology list was accepted among scholars depended on a variety of factors. The constitution drawn up in early years (see chapter one) was aimed to facilitate factors that would encourage the greatest possible participation in the process of standardizing terms. Participation and fair play among the various parties would encourage members to return year after year or send others in their stead. Such participants would be excited about spending a week or more of their busy schedules as physicians or teaching scientists to work on this potentially mundane activity. They would prepare and distribute terminology lists they favored, forming voting blocks according to educational background and

<sup>&</sup>lt;sup>60</sup> Luo 1932, quoted in Zhang Jian 2007: 84.

<sup>&</sup>lt;sup>61</sup> Zhang Jian 2007: 84.

group affiliation. Even if, as Cousland had opined, a large number of Japanese terms were accepted as meaning-translations of wrong-headed Latin terms, the resulting standardization was greatly desired—unification for classroom teaching and for translating and publishing. The only truly negative outcome possible was to spend all of this time and labor, only to find no one using the standardized terms, including other committee members. If standardized terms can be compared to official currency, then doubts about the legitimacy of the government had caused the standardized terms to lose value.

The attack of Chen and his colleagues was two-fold. They attacked both the booklet of terms and the legitimacy of the authority by which it existed as an "authorized" reference. The network did not survive this attack. The committee folded. But was the work really all in vain? Was nothing that would last constructed from this experience? No, much was accomplished. Again, individuals would naturally feel like they had failed. A non-governmental network had been destroyed. But a new form of government had nonetheless been instantiated in China, a form of government that sought to rationalize and oversee the creation and unification of technical terminology as a means of social control. Would-be standardizers had hoped, with good reason, to complete their job and be done with it. They hoped that standardization of one term one year would obviate the need to revisit that term in the future. Sometimes this was true, even over the 1925-1932 period. But other terms, nonetheless, would be revisited several times over. New terms would need to be coined for new ideas. New paradigms of existing sciences may make large numbers of terms suddenly irrelevant, and require a host of new terms. The process of unifying terminology in a world that has tasted the power of reduction will never end. The very success of science at prying things open necessitates the creation of new terms.

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Microscopes, electron microscopes, and other new technology reveal new tissues, new surfaces, and new beings that had never before been imagined.

The earnestness with which Chinese in the early twentieth century attacked the problem of creating a vernacular technical nomenclature is remarkable. Euro-American anatomists were satisfied to standardize the terminology for Latin in 1895, while encouraging, but not requiring, a move toward unified vernacular terminology. The relative social importance of the participants who involved themselves in the process of standardizing terminology is likewise remarkable. That they could come together without a strong state and agree on anything at all is great evidence of their determination.

But, as this dissertation has been arguing all along, the process of building anatomopower (reductive power) that could be used in the construction of biopower (the power over populations through public health and statistics) did not rely on individual determination or effort. Whether it was the power of the scalpel over flesh, or the power of an individual term to name subcutaneous tissue (*pixia zuzhi* 皮下組織), this power soon escaped the hands of any one individual. And any individual's disappointment at sensing a personal loss of control over these new forms of power must be set in the context of the state power that was to come.

# Part II: Anatomy and power

I agree with you that there is something to be said in favour of the calling of a physical anthropologist as compared to that of a politician. At least it is a debatable question, though of course after all politics is but a branch of the science and art of anthropology!

Davidson Black, Chair of Anatomy Department, P.U.M.C. 1924

# 5 Dissecting bodies in Chinese: medical authority and the state in Beijing, 1912-1919

The Great Ministry [of Education], seeing that medical practice has wantonly declined, has now, in this Republic, initiated and promoted multifarious changes: resolutely and determinedly establishing schools, creating scholars, [providing] dissection course material. [But] first it must arrange laws to make a path for a new era of medical practitioners.

Tang Erhe 湯爾和, 1912<sup>1</sup>

...for twenty years, from morning to night, you have taken notes at patients' bedsides on affectations of the heart, the lungs, and the gastric viscera, and all is confusion for you ... open up a few corpses: you will dissipate at once the darkness that observation alone could not dissipate.

Xavier Bichat, 1801<sup>2</sup>

On November 24, 1912, Dr. Tang Erhe (湯爾和 1878/9-1940) wrote a petition to the Chinese Ministry of Education in Beijing requesting a new law allowing the dissection of human bodies, and a legal supply of corpses. In his official brief, he outlined a history of the practice and legality of anatomy in European countries—specifically Germany—and how the practice of this medical discipline formed the basis for medical advance there. According to Tang, medicine had steadily declined in China in recent centuries because there had only been minimal experimentation cutting open corpses. Explicit in his brief was the assumption that a medical regime rooted in proper anatomical knowledge was the basis of a strong state.

Tang had been trained in medical schools in Japan and Germany with human dissection as the foundation of his medical education, and he was determined to establish anatomy as the basis of his new government medical school established in Beijing in 1912. Tang was successful by 1914 in his advocacy for a legal supply of corpses. It was on this basis that Tang organized the returned Japanese-trained physicians medical association in 1915, the same year American

<sup>&</sup>lt;sup>1</sup> BMA 1912 J29-3-16-1.

<sup>&</sup>lt;sup>2</sup> Quoted in Foucault 1994 [1973]: 146.

and European-trained physicians organized their own professional association. In 1916, Tang was the representative of the Ministry of Education to the Joint Terminology Committee (Yixuemingci shenchahui 醫學名詞審查會) debating terms for anatomy with missionaries, educators, philologists and American-trained physicians. By 1920, anatomical investigation of the human body had become legal and routine in newly-built hospitals and medical schools in China, the basis of the recently institutionalized professions of medicine and physical anthropology. The corpses of the unclaimed prisoners and poor became commodified as "dissection material." Through public health measures physicians regularly engaged in racial medicine and the regulation of bodies as dual strategies to "save the nation" (jiuguo 救國). With the institutionalization of anatomy, traditional forms of body-knowledge were displaced, while a growing number of Chinese submitted themselves to a new array of authorities considered competent to speak of the reality of the human body, based on firsthand experience of cutting and observing opened cadavers. These authorities employed a discourse of anatomo-politicscomplete with a freshly standardized, precise terminology-to initiate novel tactics for intervening in bodies (dead or alive, individual or collective) in the name of that potent mixture of truth-power-ethics, modern medicine.

This shift becomes clear in China between 1910 and 1920 if we move our analysis from that of politics to the level of biopower. The birth of biopower in China (as in Europe) was based on the institutionalization of anatomical knowledge and practice. In this chapter and the next, this process is revealed as part of an *embodied* and local network that linked the textbooks and terminology of anatomical education with the cadavers and crania of anatomical and anthropological practice.

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This network is traced by reconstructing the life of politician/physician Tang Erhe during the first few tumultuous years of the early Republic of China. This chapter uses Tang's medicalpolitical activities as a vector to discover a key moment in the creation of a modern, capitalist state in China at a time when many accounts see only national defeat, disintegration and chaos, or alternatively, the ubiquitous growth of the rhetoric of nationalism.

In the introduction I argued that we need to refocus debates on state-building and statesociety relationships to the level of biopower. Biopower should be understood as something historically specific rather than metaphorical, something that does not necessarily support or emerge from the interests of a particular class or dominant group, and is not limited to the state level. As in better-known European accounts, the emerging Chinese medical profession was intimately involved in instituting the knowledge and technologies of biopower through what I will call anatomo-politics.<sup>3</sup>

The argument is straightforward—that legalization and routine practice of human dissection and the standardization of its technical language formed the basis for institutionalizing scientific medicine in the 1910s. This chapter will begin with a survey of the scope of the studies of anatomists in the 1910s that discovers a deep connection between anatomy and biology, between the study of dead things and the study of live things. Anatomy was (and is) still a "live" discipline, hardly limited to its most essential task of teaching body parts. After delimiting the "moment" of rupture and Tang Erhe's centrality in late Qing and Republican political and institutional life, this chapter will tease out the network of objects, processes, texts, terms, individuals and institutions revealed by following Tang in this period, and conclude by posing questions relating these findings to longstanding concerns about state-building and intellectual

<sup>&</sup>lt;sup>3</sup> Rabinow and Rose 2006; Foucault 2002. As such the analysis acknowledges both the instrumentality of Tang in initiating and accomplishing changes and the larger shift of which Tang is but a part.

transition in modern China. This chapter is paired with the next which explores the significance of anatomy in China by comparing the travel diaries of anatomists exploring the state of anatomy in Japan.

#### The study of dead things and the study of live things

This study has demonstrated that the formal institutionalization of "Western" science and biomedicine as Chinese pursuits began in the mid-1910s with language standardization work, beginning with terminology for anatomy. As seen with the example of Darwin's barnacles in the introduction, anatomy and dissection as a scientific discipline extended beyond basic human gross anatomy. They were an atomizing scientific method for taxonomy of all manner of living things. In China, the same people who standardized the terminology for anatomy in the 1910s, identified anatomy as both a basic medical science and an organizing umbrella for the sciences of man and life itself, what today we would primarily group under biology—the study of life. Zoology and comparative anatomy, botany, physiology, histology, cytology, embryology, physical anthropology, paleontology—all of these were practiced in China, Japan, the U.S. and European anatomy departments in the nineteenth and twentieth centuries.<sup>4</sup> Moreover, the method of dissection—whether of insectovorous plants, barnacles, or finches—places anatomy as the (hidden) basis of biology—the study of the secrets of life.

The lines, in fact, between anatomy and biology were not clear. America's greatest evolutionary biologist of this period, Harvard's Charles Sedgewick Minot, had spent his whole

<sup>&</sup>lt;sup>4</sup> The best place to begin to understand this history are the various chapters in Bowler and Pickstone, eds. 2009. Zoology is the study of animals, and comparative anatomy is a basic biological study of the relationship between the form and function of biological species; botany is the study of plant life; physiology the study of the relationship between living organisms and their parts, including physical and chemical processes; histology is the study of organic tissue; cytology is the study of life at the cellular level; embryology is the study of the formation, development, structure and function of embryos; the study of human evolution and racial similarities and differences through measurement, description and classification of bodily structure; paleontology is the study of fossilized life from former geologic periods.

career in anatomy departments and was claimed by American anatomists as the greatest of their number upon his death in 1915.<sup>5</sup> In the German universities where Minot had learned his trade, many biologists were ensconced in anatomy departments.<sup>6</sup> Henry H. Donaldson, president of the American Association of Anatomists, would, in 1916, give an address to his colleagues relating their work to biology acknowledging that the terminology of the divisions of biology were confusing: "Zoology is defined by its material; animals. Physiology, by a great domain; nature. Pathology, by a state; disease, and Anatomy, by a mode of procedure; dissection." Secondly, the narrower conception of anatomy as the "cutting up" of human bodies was far too limiting, having been "so carefully worked over and [being] so strictly descriptive" the human body was no longer the most advantageous material with which to work to solve biological problems. Rather, anatomists would now reach beyond "ancient barriers" and "annex the surrounding territory" by adding comparative anatomy, mammalian embryology and physical anthropology.<sup>7</sup> Donaldson goes on to lay claim for anatomists the research prerogative of all of animal biology, "everything between the germ cells and the senile animal ... all of the general biological problems." Anatomists were not to be limited just to the gross anatomy of humans and other animals, but also the study of cells, of physiology and constituent chemical and physical understandings of life, of ecology, of behavior, of heredity: there was no biological problem that could not be addressed by anatomists and their discipline.<sup>8</sup>

Not only was the field for anatomical studies wide open ("the investigator is a free man"), but anatomists, while nonetheless responsible to preserve and transmit the corpus of anatomical knowledge, "are at liberty to reject anything historically implied by that title which might prove

<sup>&</sup>lt;sup>5</sup> Lewis 1916: 133-164; on Minot's place in Biology, see his lectures in Minot 1913.

<sup>&</sup>lt;sup>6</sup> Nyhart 1995. <sup>7</sup> Donaldson 1917: 301-302.

<sup>&</sup>lt;sup>8</sup> Donaldson 1917: 305.

hampering to our present work."<sup>9</sup> In 1916, anatomy was not the limited field we think of today, it was expansive, and rejected any limits on its inquiries.

An exciting new realm into which anatomy thrust itself through the actions of its practitioners was physical anthropology since it encompassed the living and the dead.<sup>10</sup> Physical anthropology was another hybrid discipline, bringing together paleontology, anthropometry, anatomy, genetics, eugenics, racial hygiene, etc. According to E. V. Cowdry, head of anatomy at the Peking Union Medical College, China was "a veritable *terra incognita*" for (physical) anthropology, where "racial problems are uppermost."<sup>11</sup> Cowdry was convinced that anatomists were eminently suited for the job of collecting detailed information about the physical characteristics of Chinese, given their privileged position as dissectors. If all dissections in China were scrupulously recorded over a period of five years, certainly "a number of interesting facts are sure to be brought to light." Not least of which facts might become evident would be the trend of the Chinese type as progressive or regressive. From such knowledge of the "physical standards and potentialities of the Chinese race" could come the basis for the "adjustment which is bound to take place between the East and West." But such measurements were important to understanding this new object of study, the population of China, not only for racial evolution, but also for proper public health work. Cowdry was impressed with the ongoing work of the missionaries of the CMMA who, through a subsidiary research committee, "have made a special study of the height, weight and chest measurements of healthy Chinese, and further

<sup>&</sup>lt;sup>9</sup> Donaldson 1917: 308.

<sup>&</sup>lt;sup>10</sup> Rudolf Virchow was an early proponent of mixing anatomy and other medical disciplines with the full range of physical anthropology and political power. See Ackerknecht 1953.

<sup>&</sup>lt;sup>11</sup> Cowdry 1921: 58-59.

investigations along similar lines are contemplated."<sup>12</sup> Only with growing data sets of this type could the new public health be propagated.

Through studies in physical anthropology and its implications for racial hierarchies, scientific knowledge and practice were not academic knowledge divorced from issues of power. Canadian anatomist Davidson Black, head of the P.U.M.C. department of Anatomy after Cowdry's return to the U.S., was only half joking when he claimed politics was but a branch of anthropology.<sup>13</sup> Chinese scientists were certain that a new knowledge of man, animal and plant life was the basis of a new kind of power that could shape China, "the sick man of Asia," into a healthy, vigorous nation and society, able to shake off imperialist exploitation. Accurate knowledge of the internal structure of the human body was not only essential for medical knowledge and curing physical disease, but was also essential for political legitimacy. The new domain of physical anthropology expanded the range of the discipline from the individual to the race, population, and the history of the human species.

Ivory tower academics in Europe and America could protest that anatomy-biology was about pure knowledge and not about social power.<sup>14</sup> Yet social Darwinism clearly linked the sciences of biological life and the sciences of social life and national competition in the early twentieth century.<sup>15</sup> Anatomy was one of the "landing strips" of evolutionary theory and its close cousin at that time—eugenics, and its German-Japanese version, *Rassenhygiene* (Race Hygiene).<sup>16</sup> As Chinese physicians and scientists recognized, eugenics and racial hygiene were

<sup>&</sup>lt;sup>12</sup> Cowdry 1921: 58-59.

<sup>&</sup>lt;sup>13</sup> Black to Vincent, 21 August 1924, RFA, RG IV 2 B9 CMB, Inc. Box 11, Folder 71.

<sup>&</sup>lt;sup>14</sup> Donaldson frankly acknowledges that anatomy "began without technological affiliations—as *a pure science* so to speak—and only later became fundamental to surgery." What is pure science? "Pure science is the work of those who endeavor, as they go, to clear up the underlying problems brought to light by their special studies, rather than to press the immediate application of crude results." 1916: 300; 306.

<sup>&</sup>lt;sup>15</sup> See Schwartz 1964; Pusey 1983; 1998; Jones 2011.

<sup>&</sup>lt;sup>16</sup> Landing strips is Latour's term, see Latour 1987: 251; 2005: 238-239.

not fringe science.<sup>17</sup> Robert Proctor has demonstrated for Nazi use of racial hygiene science, "Racial science was 'normal science,' in the sense that [Thomas] Kuhn has given this expression," and so Nazi racial hygienists were "among the top professionals in their fields and saw themselves in the tradition of Virchow, Semmelweis, Koch, Lister, Pasteur, and Ehrlich."18 Charles B. Davenport, the American evolutionary biologist obsessed with eugenics, ran the Carnegie laboratories at Cold Spring Harbor and was in close contact with T. H. Morgan working on his genes in Columbia laboratories, who was, in turn, in touch with the German biologist Hans Dreisch (who lectured throughout China in 1922).<sup>19</sup> Perhaps it was already true that there were no more than six degrees of separation among academics.<sup>20</sup> However much post-Nuremberg Trial medicine and science might like to distance itself from these now discredited forms of inquiry (pseudo-science), they informed the vast fields of genetic biology and medicine, as well as physical and molecular anthropology, among other still existing fields.<sup>21</sup> The epistemological questions early twentieth-century actors raised about what constituted legitimate knowledge, and how such knowledge could be discovered, demonstrated and communicated, are still relevant.

Chinese physicians seeking to establish anatomically-based medicine (anatomomedicine)<sup>22</sup> understood unambiguously that this form of knowledge properly established would

<sup>&</sup>lt;sup>17</sup> See Chung 2002 and Dikötter 1998 on eugenics in China.

<sup>&</sup>lt;sup>18</sup> Proctor 1993: 346.

<sup>&</sup>lt;sup>19</sup> See, for example, Kohler 1994: 27. On Driesch in Nanjing at National Central University, see Haas 1996: 151.

<sup>&</sup>lt;sup>20</sup> This concept originated in studies among mathemeticians who had collaborated with the exceedingly prolific Paul Erdős. Mathemeticians now compute their "Erdős number" according to the degrees of connection through co-authorship with Erdős—the lower the number, the closer the relationship to Erdős. See <a href="http://www.oakland.edu/enp/readme/">http://www.oakland.edu/enp/readme/</a> (accessed 13 May 2012).

<sup>&</sup>lt;sup>21</sup> On the difficult post-war German relationship with *rassenhygiene*, see Hoggle 1999; on American genetics and medicine in the age of Davenport's eugenics programs, see Rushton 1994.

<sup>&</sup>lt;sup>22</sup> In this dissertation I use the term "anatomo-medicine" to refer to what is usually called "Western Medicine" in China, and more recently "biomedicine" by scholars. Such a differentiation with Chinese medicine may be disputed by some, like Yi-li Wu 2010, who has identified a group of Chinese physicians in the nineteenth century who found new anatomical knowledge a useful supplement to their work. There is also evidence that

unlock the power of life itself, first at the individual level (what I am calling anatomo-power), and then at the level of the social body, nation, or population (what I am calling biopower). Chinese medical students studying in Japan, Europe and America in the early twentieth century saw clearly that anatomy was a source of power. Anatomical practice required power of the state and profession to intervene in the bodies of citizens and subjects. Such access provided knowledge of the cause of death, and instruction practice for living surgery. Once established as the basis of medicine, anatomical knowledge played a part in producing a bourgeois social identity, the middle classes lecturing and learning about the mysteries of the body to refashion themselves by dissecting the bodies of the poor.<sup>23</sup>

The power of dissection as a metaphor for a distinctly modern form of analysis of the natural and social world was evident in Euro-America in the increase of the use of the Latin and Greek forms of this word as in " the anatomy of *x* phenomenon" or " a dissection of *y* phenomena." So in China, the use of *jiepou* (dissect) and *jiepouxue* (anatomy) became increasingly common in modern publications to represent an analysis of economic, political, social and cultural situations, whether domestic or foreign. Communist Party publications would "dissect" anarchism in 1921, and a Nationalist Party purged of the Communist Party would "dissect" communism in 1928, or "dissect" the Japanese government. Li Da would dissect China's modern society, and others would even apply this term and method to dissect the thought

anatomical knowledge formed the basis of some Chinese medical concepts. However, what I am identifying here is something radically different. Others might point to missionary medicine as a precursor, but it was deficient in being unable to teach through dissection. The form of medicine established in the medical system coming out of the 1910s was founded on the legalization and routinization of professional access to corpses for instruction and research.

<sup>&</sup>lt;sup>23</sup> Sappol 2002.

of Confucius.<sup>24</sup> Dissection was a form of analysis where the analyst would pry apart the apparent oneness of a phenomenon and reveal its parts. Phenomena so divided could then be controlled.

But before anatomo-medicine could be established in China, it must first be grafted onto existing forms of power, both state and non-state. Below, a shifting pattern reveals itself of overlapping elite networks of power. These networks extended within the state as a wide variety of educators, physicians and scientists moved in and out of the government organizations from their positions in non-governmental educational or professional associations and the committee to standardize medical and scientific terminology.

To properly establish Chinese anatomical knowledge, practical anatomy had to be institutionalized in professional groups, in medical schools and universities, in laws overturning centuries of "backward" laws and customs prohibiting routinized dissection.

## Why a proper understanding of the body is essential to proper rule

So Tang Erhe proposed an anatomy law for China in 1912. Tang's narrative posited a long stagnancy in Chinese medical knowledge that needed to be alleviated through the privileged view of carefully sliced cadavers. To understand what was driving Tang's urgency to establish institutionalized anatomo-medicine in the very first year of the Republic when there were so many other pressing tasks with which he had recently been involved and could easily have taken up (railroad development, provincial [Zhejiang] or national politics), we must query the nexus between knowledge of anatomy and political legitimacy. There is no better place to begin than

<sup>&</sup>lt;sup>24</sup> Jiang Chun, "Wuzhengfu zhuyi zhi jiepou," 江春,无政府主义之解剖," Communist Party 共产党 1921,(4),14-23; Pu Fang 晋芳, "Gongchan zhuyi zhi yige jiepou," 共产主义之一个解剖," 中央半月刊 1927,1(1),65-67; 洪康, "Xiandai Riben zhengfu zhi jiepou" (现代日本政治之解剖) Eastern Miscellany 东方杂志 1928,25(3),17-29; Li Da 李达,"Xiandai Zhonguo shehui zhi jiepou" (现代中国社会之解剖)," 现代中国 1928, 2(4), 1-13; Shi Shenling 施申龄 "Yanjiu: Kongzi sixiang zhi jiepou," 研究:孔子思想之解剖," Minlixue qikan 民立 学期刊 1928, (1), 58-64.

with the passionately spoken words of Tan Sitong, martyr of the Hundred Days Reform of 1898, which were (and still are) widely read by China's intellectual elites.

Only fourteen years previous, in the twenty-fourth year of the Qing Emperor Guangxu (23 April 1898), the *Hunan Journal* published a speech Tan Sitong 譚嗣同 (1865-1898) had recently given entitled "Discourse on the study of the whole body."<sup>25</sup> Tan lamented that China's scholars, knowing little about heaven or earth, knew even less about the internal structures of their own bodies.<sup>26</sup> Many of the ancients and their commentators had expressed, in one way or another, that the relationship between the cosmos/heaven/nature [*tian* 天], the earth [*di* 地] and humans [*ren* 人] was linked by the person of the ruler [*wang* 王]. A proper understanding of each was essential to achieve the balance of an ordered realm. Dong Zhongshu (c. 195-105 B.C.E) expressed the formula most explicitly:

In ancient times those who created writing took three horizontal lines and connected them through the center to designate the king. The three horizontal lines represent Heaven, Earth, and humankind while the vertical line that connects them through the center represents comprehending the Way.<sup>27</sup>

Tan Sitong, son of a high official and thus an entitled elite, asked, "If one lives between heaven and earth and knows neither heaven or earth, this is already a disgrace; if one also is ignorant of one's own body, is this not even more ridiculous?" Knowledge of oneself in the form of detailed knowledge of the internal organs was a basis for legitimate knowledge, along with knowledge of nature. Lack of such knowledge, for Tan, represented a lack of political legitimacy. In his remarkably detailed description of the position and use of human internal organs, Tan Sitong acknowledges that "Chinese medical books discuss these in great detail but they are

<sup>&</sup>lt;sup>25</sup> "Lun quantixue." 論全體學. Xiang bao 湘報: 42.

<sup>&</sup>lt;sup>26</sup> Tan 1981, 403

<sup>&</sup>lt;sup>27</sup> De Bary 1999: 300, compare also, "The Yellow Emperor inquired of Bogao, "I would like to hear how the limbs and joints of the body correspond to the sky and earth." From *The Divine Pivot* 霸樞, one half of the *Inner Cannon of the Yellow Emperor*.

absolutely not as accurate or trustworthy as those of Western countries since these are based on the skill of dissection." The empirical practice of opening up the body for autopsy allowed Western medicine to regularly refine its knowledge of bodies and the course of diseases. After several pages of exploring the heart, lungs, liver, spleen, gallbladder, stomach and small intestine, Tan Sitong suddenly began speculating on the origins of the "elaborate machine of the whole body," followed by a lament of the current state of China's internal disorder and its solution. His solution was the creation of a new form or militia "defense forces" [保衛局] with military drill. The great lower Yangzi academies [*shuyuan* 書院] must become schools [*xuetang* 學堂] to properly cultivate talent and combine the power of officials high and low to unify and thus eliminate the internal problems of the country. Only then could "the *whole body* of each and everyone be put at ease." We can either interpret this tirade on current events as tangential to Tan's erstwhile topic of proper anatomical knowledge or interpret it as a clear declaration that political legitimacy and good government are innately connected to accurate knowledge of human internal organs taken from dissection.<sup>28</sup>

If we step back a further fourteen years, to 1884, we see that first-hand knowledge about the human body was used not to challenge the political status quo, but to redirect it to verify antiquity. With all the challenges to the Qing political economy since the 1830s, and all the solutions proffered by foreigners and reform-minded Chinese intellectuals, the fundamental legitimacy of the ruler was maintained, even through the long years of the Taiping and Nian Rebellions. Self-strengtheners of the Taiping and post-Taiping period (1860~) proposed eager study of Western learning within Zhang Zhidong's (1837-1909) *ti-yong* 體用 formula of Western

<sup>&</sup>lt;sup>28</sup> Andrews 1996.

forms governed by Chinese system (*zhongxueweiti, xixueweiyong* 中學為體, 西學為用).<sup>29</sup> So in 1884, during the height of the self-strengthening movement, Tang Zhonghai<sup>30</sup> included Western anatomical illustrations as evidence to attack contemporary Chinese medicine and return to ancient texts:

The organ charts of the Western people adopted here do not only correspond to the teachings of the Western people; in fact, they prove that there is not the slightest difference between the morphology outlined by the Inner Canon [and that of Western medicine]. To use these charts in order to explicate the meaning of the classics will have the effect that the doctrine of Qihua [outlined in these classics] will appear even more as a matter of fact.<sup>31</sup>

For Tang Zhonghai, clearly influenced by the *jinwen* movement of the late Qing of which Tan Sitong was also a part, anatomical knowledge recovered from cold corpses allowed only an examination of the basic configuration, not the *Qihua* (Qi transformation) present in live patients.<sup>32</sup> Most Chinese elites would have gone no further than Tang's tepid acceptance of Western anatomical knowledge as a tool to reform Chinese medicine back to its ancient glory. Yet after China's embarrassing loss to Japan in 1895, the mood among many elites shifted rapidly. The *ti-yong* formulation of Chinese learning as the essence and Western learning for practical use employed in the self-strengthening reforms of leading Qing statesmen Zhang Zhidong or Li Hongzhang (and echoed in Tang Zhonghai's words) now seemed far too conservative.

<sup>&</sup>lt;sup>29</sup> Joseph Levenson (1958) uses *tiyong* as the thread to understanding the transition from "traditional" to "modern" Chinese thought in the previous century to his own time.

<sup>&</sup>lt;sup>30</sup> No relation to Tang Erhe.

<sup>&</sup>lt;sup>31</sup> Lei 1999, 165; originally from Unschuld 1992, 48. In the part 2 of the Introduction I compare this use of Anatomical knowledge to boost the study of ancient learning in Europe—the so-called "anatomical renaissance" (Cunningham 1997).

<sup>&</sup>lt;sup>32</sup> Compare to Wang Qingren's controversial 1830 book on anatomy, *Correcting the Errors of Physicians* 醫林改錯, which claimed, "on the basis of first hand information, that the anatomical contents of the ancient medical classics were all wrong." (trans. in Andrews 1996: 36). Although Wang's critique is stronger than Tang Zhonghai's, and preceded it by some fifty years, it remained a controversial, if a seminal work in preparing the ground for acceptance of Western anatomy.

When Tan Sitong wrote his lecture in the late nineteenth century, dissection of the human body was considered socially and legally abhorrent in China. Translators of anatomy textbooks used euphemisms that indicated wholeness (i.e. whole body *quanti* 全體), rather than reduction under the scalpel (dissect [to separate and cut]*jiepou* 解剖 or *poujie* 剖解). With negligible exceptions, this situation held through the 1911 Revolution, just before which, missionary translator Dr. Philip B. Cousland wrote that "there is yet no opportunity in China to teach Anatomy by the dissection of the human body."<sup>33</sup> Yet Dr. Wu Liande had already received special permission from the Qing court in 1910-11 to do autopsies on hundreds of plague victims in an emergency situation in order to maintain Qing sovereignty in the northeast region where Russian and Japanese interests were strong.<sup>34</sup>

Then, in November 1912, Tang Erhe founded his medical school in Beijing and petitioned the Ministry of Education for a law allowing regular dissection of the unclaimed bodies of criminals and the poor for medical education. By 1913 legal dissections were occurring regularly at several approved medical schools in Beijing supplied primarily by new model prisons, as well as at several medical schools throughout China. And this brings us back to 1915—a hallmark year for medicine in China. In that year, Tang Erhe founded an association of Japanese-trained physicians (the Medico-Pharmaceutical Association), and in the same year Wu Liande, Yan Fuqing and Yu Fengbin founded a professional association of Euro-American trained physicians—both groups founded during that year's China Medical Missionary Association (CMMA) meeting. Tang and Wu were registered as members in both new organizations. And as we have seen, also in 1915 recent president the CMMA missionary, Philip Cousland, asked David Yui (Yu Rizhang) to use his contacts at the Provincial Education

<sup>&</sup>lt;sup>33</sup> Cochrane and Hsieh 1911.

<sup>&</sup>lt;sup>34</sup> Nathan 1967; Flohr 1996.

Association to call together publishers, philologists, scientists, and physicians to form a committee to standardize medical terminology. By the summer of 1916 they had begun the arduous work of unifying the terminology for anatomy in annual meetings; Tang Erhe was the representative of the Board of Education, while also selected as editor of the Commercial Press series of medical books. In 1917 Tang went on a tour of Japanese medical schools carefully observing the relationship between anatomical material, laboratory facilities, terminology and practitioners.<sup>35</sup> By 1919 the Chinese terminology committee and the Ministry of Education had adopted a unified list of anatomical terms in Chinese. In 1920, Tang joined 52 scientists based in China, Korea and Japan to form the Anatomical and Anthropological Association of China, a loose affiliation of dissectors, head-measurers, paleoanthropologists and eugenicists. Through their calls for "material," the corpses of the unclaimed prisoners and poor became commodified as dissection material (see appendix 3). Through public health measures physicians regularly engaged in racial medicine and the regulation of bodies as dual strategies to save the nation. With the institutionalization of anatomy, traditional forms of body-knowledge were displaced, while a growing number of Chinese submitted themselves to a new array of authorities considered competent to speak of the reality of the human body (based on their firsthand experience of cutting and observing bodies). These authorities employed a discourse of anatomopolitics—complete with a freshly standardized, precise terminology—to initiate novel tactics for intervening in bodies (dead or alive, individual or collective) in the name of the potent mixture of truth-power-ethics known in China as xiyi [西醫 Western medicine]. Anatomy had gone from a euphemistic, disembodied rhetoric to an institutionalized practice connecting standardized textbooks, medical students, scalpels, and corpses as the basis of medical education and physicial

<sup>&</sup>lt;sup>35</sup> See chapter six.

anthropology. Traditional views of the body were singled out to be mocked and erased through a process of rationalization and professionalization. Traditional views of the body were singled out to be mocked and erased through a process of rationalization and professionalization.<sup>36</sup> Simultaneously we see in the early career of Tang the imbrication of professional medical power over bodies *and* the growth of modern state power. The connection between physicians, corpses and state power had taken centuries of uneven contingencies to coagulate in Germany, France and England. The new Republic of China, by contrast, proved itself a quick study under conditions of semi-colonialism.

### Tang Erhe and the birth of modern China (-ese biopolitics)

A physician is suddenly Minister of Education, then Minister of Interior, then Minister of Public Finance—such a man truly has ability, his skill is truly great. Moreover, one can see that the goal of one who plays the game of politics is to be an official, and not just to do their job.<sup>37</sup>

Early Republican China is known for warlord politics, the expansion of Japanese and other imperialist interests, and state involution at both the local and national level. What held China together when the central government was so weak? Two avenues of inquiry will be explored below—the ongoing importance of personal networks, and a biopolitical turning point in China's history—both evident in the activities of Tang Erhe.

Like his close colleague Zhou Zuoren,<sup>38</sup> Tang early on expressed an alternative vision of modernity as a kind of pan-Asianism.<sup>39</sup> Tang's anti-Manchu revolutionary activities between Japan and Shanghai among colleagues like Zhou and Zhang Taiyan and close friends like Cai Yuanpei and Ma Xulun, and his involvement in Zhejiang Provincial political hijinks over

<sup>&</sup>lt;sup>36</sup> See chapter seven.

<sup>&</sup>lt;sup>37</sup> Anonymous, N2, RG 34:811. Although anonymous, this archival file was clearly written by a Guomindang official soon after it became known that Tang had become a *hanjian* 漢奸 (traitor to the Chinese race).

<sup>&</sup>lt;sup>38</sup> Daruvala 2000.

<sup>&</sup>lt;sup>39</sup> Karl 2002: 105-110.

nationalization of the railways can be reconstructed through more diffuse sources.<sup>40</sup> That these revolutionary credentials put Tang in place to ride the train from Shanghai to Nanjing on January 1, 1912 with Sun Yat-sen in order to present the certificate of office inaugurating Sun's short-lived presidency is an interesting incident, but rarely noted by historians focused on Sun. Tang, in fact, was one of four Zhejiang representatives sent to Wuchang to form a provisional government and was chosen as chairman of the election committee, becoming the man responsible to make Sun president. Sun's establishment of a Leninist party-state may be considered his historical moment for China; Tang's historical moment was linking medicine to power.

Tang Erhe subsequently retreated temporarily from official politics to start the Beijing Professional Medical School, and the Republic of China Medical and Pharmaceutical Association (ROCMPA) from 1912-1915. These institutional activities, I argue, should not be seen as simply *doing one's job* as opposed to *being an official* as the anonymous biographer of Tang cynically stated in the epigraph to this section. The flesh-and-blood material practice of dissection was directly tied to wielding political power for Tang, and so his medical activities must be juxtaposed with the background networking activities that put him at the center of Republican Beijing in the May Fourth period, directly linking Beijing University and the rapidly shifting cabinets of Beiyang governments to the growth of medical power.

In 1917 Tang Erhe was ensconced enough in the politics of education of the capital to suggest his revolutionary colleague Cai Yuanpei to become the reforming President of Beijing University. He also suggested and supported the selection of his friend Chen Duxiu as Dean of Humanities, bringing the as yet little-known journal, *New Youth*, with him to foment the New

<sup>&</sup>lt;sup>40</sup> See Boorman 1970: 228-229; Rankin 1986: 380, n. 158; Yeh 1996: 131.

Culture and May Fourth movements.<sup>41</sup> Tang resigned his position along with Cai in protest of the government treatment of the May Fourth protesters. But when rumors of Chen Duxiu's rough treatment of a prostitute in the infamous *bada hutong* surfaced, threatening the moral position of Beijing University in the New Culture movement vis-à-vis their conservative opponents, Tang argued to make Chen's position redundant to quietly force him leave the university. A midnight meeting was held at Tang's house with fierce disagreements. Tang, possibly following Shen Yinmo, won the day despite the dissenting opinions of Cai Yuanpei, among others. Hu Shi later criticized Tang Erhe for his part in convincing Chancellor Cai, and blamed the result of this meeting for dissipating the unity and energy of the New Youth-associated liberals, driving Chen Duxiu left, toward radical politics, and founding the Chinese Communist Party.<sup>42</sup>

Tang Erhe again entered into public office as minister of education under Wang Chonghui's "cabinet of able men" and resigned together with them to protest the illegal arrest of Lo Weng'an.<sup>43</sup> Tang became minister of the interior under the cabinet of V. K. Wellington Koo (Gu Weijun) in 1926, and minister of finance until June of 1927 when he became an official in Zhang Zuolin's Beijing administration. From there Tang went on to play roles in Japanesedominated regions of China while translating Japanese economic and social surveys about Manchuria. Tang's interest in these texts of colonial governmentality, of managing populations and resources profitably should be seen in tandem with Tang's anatomo-political project. At that time, Tang had a close relationship with the eugenicist Nagai Hisomu, translating his text Igaku to tetsugaku [Medicine and philosophy].<sup>44</sup> Tang then earned the epithet "traitor/hanjian" by reading the declarations of the provisional government in Beijing established by the Japanese in

 <sup>&</sup>lt;sup>41</sup> See discussion in chapter 7 below.
<sup>42</sup> Hu 1979: 281-283; Wang 2007: 21-33; Weston 2004: 173-175. There seems to have been little concern for the truth of these rumors.

<sup>&</sup>lt;sup>43</sup> Nathan 1976.

<sup>&</sup>lt;sup>44</sup> Nagai 1922; Tang Erhe trans. 1926.

December 1937, echoing his role in the founding of the Republic of China in 1912. He died in November 1940 after holding various high positions under each formation of the collaborationist government, his colleague Nagai Hisomu having taken charge of the medical college Tang founded during the Japanese occupation.

Tang's history traces a disturbing line through received understandings of twentiethcentury Chinese history. He was a leader among Chinese students in Japan and was able to mediate between Chinese gentry and revolutionaries in 1911-1912. He took a leading role in bringing Zhejiang intellectuals to Beijing (thus engendering the New Culture and May Fourth movements). Tang occupied both official and unofficial political power in Beijing and Manchuria through his personal networks and anatomo-medical power, mixing as much with Chinese national heroes as with Japanese eugenicists and their visions of pan-Asian elite rule. The nation-centered history of post-war Republic of China on Taiwan, PRC, and even Englishlanguage scholarship has had little place for such an individual. Nor has Tang been central to the preoccupations of May Fourth scholarship that focuses only on the polemicists and literary lights who moved in the same circles with Tang.<sup>45</sup> Indeed it is perhaps only in the current foment of historiography (partially) "rescued from the nation," when the black-and-white, nation-based picture of resistance vs. collaboration is complicated by careful studies of Manchukuo and East China under Japanese rule that someone like Tang Erhe can begin to come into focus as a builder of biopower as global capital enveloped China.<sup>46</sup>

<sup>&</sup>lt;sup>45</sup> Lu Xun (Zhou Shuren) borrowed Tang's books; Hu Shi relied on Tang's now missing diary to recreate memories of the May Fourth period.

<sup>&</sup>lt;sup>46</sup> Mitter 2000; Duara 2003; Brook 2005. The story of China's incorporation into the system of global capitalism in the nineteenth century under opium trading and gunboat diplomacy is hardly contentious. I follow much recent scholarship that emphasizes the resiliency of the Qing imperial system to absorb massive shocks of military interventions and subsequent internal defeats until 1895. The loss of the Sino-Japanese war led to rapid loss of faith in the imperial system among elites. Even one as highly placed as Tang Erhe's friend, Cai Yuanpei, who had achieved the highest rank on the Confucian civil service exams, turned to western learning and revolutionary politics after 1895.

Unlike the Penang-born Wu Liande, Tang Erhe received a classical education in China. Tang Erhe received a belated education at age 23 *sui* at the Cultivating Uprightness Academy (Yangzheng shuyuan) in Hangzhou, and was given an education that included Huang Zongxi's (1610-1695) popular anti-Manchu political philosophy in equal parts with translations of Montesquieu's De l'esprit des lois, Rousseau's Contrat Social, and Huxley's Evolution and Ethics.<sup>47</sup> In 1900, Chinese beliefs that the body must remain physically integrated were governed by Confucian precepts ingrained in the late imperial political economy, by Buddhist teachings, by prohibitions of sorcery by "extracting vitality by dismembering living persons" (caisheng *zhige*) and the horror over the legal penalty of "the death by a thousand cuts" (*lingchi chuse*):<sup>48</sup> "In all cases of extracting vitality by dismembering living persons, the offenders shall be sentenced to death by slicing."49

For different reasons, Confucian and Buddhist teachings held that the body must remain intact at death, and the ultimate punishment in late imperial China-"Lingchi, disembowelment, dismemberment, chopping of the body into small pieces"-was seen as horrible not because of the pain inflicted, but because it was an affront to culturally shared ideas of somatic integrity.<sup>50</sup> Huang Zongxi himself had compared the living-dissection penal practice of *lingchi* to a local practice in the Ming Dynasty (1368-1644) of reburying the corpses of relatives for a more preferable geomantic location: "To be dismembered alive is awful (can), as everyone knows. Once the corpse has been buried, the coffin rots and the bones scatter. To collect them together and place them in a little coffin is just as awful (*can*) as being dismembered alive".<sup>51</sup>

<sup>&</sup>lt;sup>47</sup> Xu 1991: 1188; Boorman 1967-71: 228; de Bary 1992; Hummel 1970: 354; Schwartz 1964; Weston 2004: 25-26.

 <sup>&</sup>lt;sup>48</sup> Brook, et al. 2008; Yang 2007: 27-37.
<sup>49</sup> Jiang 2005: 172.
<sup>50</sup> Brook et al. 2008: 13-15.

<sup>&</sup>lt;sup>51</sup> Brook et al. 2008: 92.

Montesquieu's Jesuit interlocutors in Qing (1644-1911) China led him to write that the practice of *lingchi* demonstrated the despotic nature of the Chinese political economy.<sup>52</sup>

As a young, increasingly anti-Manchu, revolutionary Chinese medical student in Japan, who witnessed the power of both its military and biomedical prowess it is most likely that he agreed with Montesquieu's critical judgment that Qing legal views of the body needed to be reformed by an enlightened, rational perspective.<sup>53</sup> There can be little doubt that Tang Erhe was influenced by Tan Sitong's widely circulated indictment of Chinese anatomical knowledge.

Despite its abolition of *lingchi* and other major reforms after 1905, the Qing monarchy was considered an anachronistic despotism for radicalized Chinese elites like Tang. Tang's generation increasingly looked to Japan for models of how to achieve wealth and power for China, most significantly after the humiliating defeat of the Qing by the Japanese navy in 1895. This event set off a wave of thousands of China's best students to Japan for scientific and military training,<sup>54</sup> among whom Tang Erhe was a natural leader.<sup>55</sup>

Unlike his more famous contemporary Lu Xun (1881-1936), who gave up his anatomomedical studies in Japan in 1906 to become a writer to cure the apathy of his fellow nationals,<sup>56</sup> Tang saw the future in the practice of science; its foundation a proper understanding of anatomy, whether visible by microscope or the naked eye. Based on his writings and activities upon returning to China, it is clear that Tang experienced a personal and professional awakening to an anatamo-political worldview while studying medicine in Japan (1902-1908), and Berlin (1909). This should come as no surprise, since dissection in Japan had been the basis of Western science

<sup>&</sup>lt;sup>52</sup> Brook et. al. 2008: 163-165.

<sup>&</sup>lt;sup>53</sup> In 1902 Tang attended Seika Gakkō, a military preparatory school; In 1905 Japan beat the Russians in a war for influence over Chinese territory and Tang was elected by his classmates to persuade Yuan Shikai to fight the Russians, but was not granted an audience. <sup>54</sup> Reynolds 1993.

<sup>&</sup>lt;sup>55</sup> Weston 2004: 61; Harrell 1992: 135.

<sup>&</sup>lt;sup>56</sup> Lu 1922; Sakai 2007.

(*Rangaku*) since the publication of *Kaitai Shinsho (A New Book of Anatomy*) in 1774.<sup>57</sup> From 1868 to 1920, the study of Western science in Japan continued to be led by developments in medical science, and anatomical investigations continued as the basis of medicine.<sup>58</sup> Research in this period, though, now followed the movements in German anatomy laboratories to the dissection of tissues under the microscope in the subdisciplines of cellular pathology and histology.<sup>59</sup>

Tang temporarily left the governmental arena of politics to establish modern biopower in China at a fulcrum point—Beijing. He had already established a modern medical school in his native Hangzhou in 1911, but in 1912 he established the Beijing Professional Medical School—the first in China to emphasize the study of anatomy and practical dissection classes. Tang's first petition to the new government, dated later that year, was his request for anatomical material so that China could catch up with Western countries: "Human anatomy has been a basis second to none in making clear the medical arts for more than 700 years in all the nations—only a few places have not discussed it—China being one of them." Tang conceded that Wang Mang at the end of the Western Han "was rather interested in dissection" having "ordered that an executed man be dissected by the grand physician (*taiyi*) in order to examine his viscera and arteries and find cures for illness."<sup>60</sup> Yet Tang did not mention widely circulated magistrates handbooks like Huang Liuhong's seventeenth century *A Complete Book Concerning Happiness and Benevolence* which had detailed instructions on examinations of corpses and autopsies when the cause of death was in question, and which was in turn based on the "first book on forensic medicine in

<sup>&</sup>lt;sup>57</sup> Sugita 1969: x; Sugimoto & Swain 1978: 316-331.

<sup>&</sup>lt;sup>58</sup> Bartholemew 1989: 4.

<sup>&</sup>lt;sup>59</sup> Tang Erhe's own contribution to global anatomical research was histological, on Purkinje fibers of the bird. He examined fibers of the mammalian and avian heart that conduct electrical stimulus enabling contraction with the following standard method: (1) use the normal histological chemical fixation methods; (2) stain the samples; (3) perform the histopathology under the microscope, Tang 1922.

<sup>&</sup>lt;sup>60</sup> BMA J29-3-16-1.

any civilization," Song Ci's The Washing Away of Wrongs, originally completed in 1247.61 But neither Huang nor Song's careful directions to examine wounds and discover the causes of death involved cutting or dismembering, or otherwise disturbing the somatic integrity of the corpse. The otherwise fascinating "Manchu Anatomy," meanwhile, never circulated beyond the Qing court.62

Chinese medicine, in its diversity, did have some experience with cutting and puncturing the body-most notably eye surgery and war operations (not to mention acupuncture). Yet it was only with the slow introduction of a rapidly evolving Euro-American medicine by cautious missionary physicians in the nineteenth century, first without anti-septic-type carbolic acid solutions (before the Pasteur-Lister-Koch germ theory revolution of the 1870s-1880s) and later with its benefits, that surgery based on Western anatomical knowledge began to be practiced with any regularity in China.<sup>63</sup> Before the 1910s, most missionary physicians took on only minor surgeries, particularly eye surgeries where their skills surpassed those of unlettered surgeonbarbers.<sup>64</sup> Most missionaries dared not break the law or risk riots by making a regular practice of cutting dead bodies for the purposes of education.

Western commentators in nineteenth-century China often observed how it was impossible to practice dissection, except in special circumstances-and then only with the bodies of a foreigner, a dog, and of Chinese children who did not seem to fall into the same categories of somatic integrity as adults.<sup>65</sup> These minor transgressions were only prosecuted in foreigncontrolled Hong Kong and the international settlements of Shanghai. Neo-Confucian orthodoxy, a system that had ensured relative social stability for almost a millennium by regulating

 <sup>&</sup>lt;sup>61</sup> Huang and Chu 1984; Ci and McKnight 1981.
<sup>62</sup> Asen 2009: 34.

<sup>&</sup>lt;sup>63</sup> Andrews 1997: 114-157.

<sup>&</sup>lt;sup>64</sup> Andrews 1996.

<sup>&</sup>lt;sup>65</sup> Wong and Wu 1936.

hierachical ritual behavior (*li*), was born out in what nineteenth-century missionary physicians like John Kerr considered "the superstitious regard of the Chinese for the dead."<sup>66</sup> American and English (bourgeois) anatomists also applied the label of superstition to (lower class) opponents of anatomy laws well into the twentieth century.<sup>67</sup>

Yet what was in the nineteenth century still impossible to do was not impossible to discuss—but one must be careful in selecting terms. Better to euphemize the activity to create open minds among potential readers. Rather than using the ancient term *jiepou* with two components that clearly indicated slaughter, *jie*, and cutting or analyzing, *pou*, mid-nineteenth century missionaries wishing to spread the gospel of anatomy in Chinese selected titles for their writings which emphasized the unity of the body rather than reductionist analysis through bladework. And so we see titles like A new treatise on the whole body (Quanti xinlun, Benjamin Hobson, 1851), or A full examination of the whole body (Quanti tongkao, John Dudgeon, 1886) where, quanti, what Matthews' translates as "whole body," appears to be the term of choice for these late Qing translators of Western medicine, even if it is less than precise. Yet a book's contents could exceed the limits of its title, for at least in Dudgeon's work, the entry for *jiepou* was identical with contemporary usage of the term.<sup>68</sup> Wang Qingren, the Chinese physician who wrote Correcting the errors of medicine (1830) was praised by Dudgeon as a "modern Chinese anatomist" and conducted careful examinations of the bodies of plague victims, but did not cut bodies himself, nor use the term *jiepou*.<sup>69</sup>

<sup>&</sup>lt;sup>66</sup> Wong and Wu 1936: 392.

<sup>&</sup>lt;sup>67</sup> Richardson 2000; Sappol 2002.

<sup>&</sup>lt;sup>68</sup> Gao 2009: 88-92. Yet these texts and their content would go on to influence Lu Xun, among others. See Heinrich 2008, esp. 113-136.

<sup>&</sup>lt;sup>69</sup> Dudgeon 1893; Andrews 1996.

#### To anatomize a corpse is to see with new eyes

By 1908 the power of the central imperial state to oppose the wishes of provincial modernizing elites was waning. Missionary translations no longer euphemized their titles. 1905 had seen the end of the Confucian examination system and with it died some of the power of the Neo-Confucian social mores to govern proper behavior. And so when the China Medical Missionary Association published Thomas Cochrane's translation of *Heath's Practical Anatomy* (1911), the title on the spine articulated the words for what was still technically an illegal procedure.<sup>70</sup> Both Heath's original and the translation clearly emphasized the difference between, and superiority of, practicing dissection over simply describing anatomy in a book. For it was only when a student's hand and mind worked in union to anatomize a human corpse could the anatamo-clinical method be fully transmitted.

To understand the human body as it can be seen with the naked eye after one has cut it open with a scalpel, its various *arterius* and *vena*, *periostium* and *corpusculum* visible,<sup>71</sup> is to understand the human body with the gaze of the modern professionalized physician: "The study of practical anatomy [human dissection], is to take a corpse, cut and see it, analyze it in detail, as opposed to descriptive anatomy, which uses discourse, charts, and various specimens."<sup>72</sup> Yet this was not a natural understanding of the human body, "anatomy has the peculiarity that as a discipline and enterprise it is defined by the odd assumption (*anatomia* = cutting up) that the functioning whole body which comes into existence as a whole and can only persist in existence as a whole, can nevertheless only properly be understood by cutting it up artificially into its

<sup>&</sup>lt;sup>70</sup> Yet Gao 2009 claims that *jiepou* was already widely used in the late nineteenth century.

<sup>&</sup>lt;sup>71</sup> All terms mentioned in the first day's deliberations of the Joint Committee in 1916, see Yu 1917.

<sup>&</sup>lt;sup>72</sup> Cochrane 1911: 1.

supposed parts."<sup>73</sup> Shigehisa Kuriyama has argued eloquently that the anatomical preoccupations of the Greeks were culturally bound to religious and aesthetic commitments.<sup>74</sup>

As explored in the introduction, anatomy in the early twentieth century was being pulled in multiple directions. Gross anatomy was maintained for surgical training, while new research was focused in histology and microscopic anatomy. Yet others were drawn towards physical anthropology, racial science and paleontology. It was at this historical moment that this potent combination of anatomical- based medicine grafted itself onto the Chinese state through new laws that connected new model prisons to new modern medical schools by exchanging their morbid cargo.

## Supplying corpses and the birth of practical anatomy in China

Tang Erhe contacted the Ministry of Education directly on 24 November 1912, submitting a petition "requesting to draft a law allowing dissection."<sup>75</sup> Tang got right to his point: human dissection had been taboo in China for thousands of years, and so perceptions of the human body had grown "insane." But now that the Ministry of Education could see that medical practice had declined, it could initiate needed reforms, establish schools, create scholars and provide dissection course material so that regulations could be set to replace the old style physicians with new medical practitioners. To establish a proper anatomico-medical gaze, it was necessary to establish new schools that could connect students with anatomical material (corpses). Yet the legality of this new network—corpse/medical student/anatomico-medical gaze—was troublesome and might be obstructed from outside of the ministry. Fortunately for China, "the context for anatomy in Western countries had already evolved to the point that various methods of collecting corpses have accumulated among which to choose." Tang's

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<sup>&</sup>lt;sup>73</sup> Cunningham 1997: xi. <sup>74</sup> Kuriyama 1999.

<sup>&</sup>lt;sup>75</sup> BMA 1912 J29-3-16-1.

account is one of medical advance impeded by religious law and superstition. But once laws for human dissection allowed scholars to gather in universities and allowed experiment, dissection emerged as the key to the door of medical progress and Germany became the model for Tang's anatomy law proposal.<sup>76</sup>

It is well established that German unification and promulgation of the Civil Law code of 1900 had a massive influence on the development of legal codes in Meiji Japan, and later, Republican China.<sup>77</sup> Germany was also the primary global centre of experimental medical science from the mid- nineteenth century until World War One. Tang's experience in Tokyo and Berlin only confirms the pattern of Germany's influence on China through Japanese mediation:

As to the method of acquiring corpses, there are discrepancies in each country, but among those best equipped, there is none like Germany. Its method of collection of corpses is truly cherished in the regulations of administrative law and the stipulations of civil law (BCA 1912).

Germany's highly evolved anatomy laws facilitated the collection of bodies from several sources: (1) corpses of executed prisoners; (2) prisoners who die in prison; (3) suicides; (4) unidentified fatalities; (5) fatalities in a hospital or pauper's facility; and (6) the truly poor who have no money to manage a burial. Tang explained each of these in some detail, indicating only (3) as culturally inappropriate for China, since there was no church law prohibiting the burial of suicides. According to Tang (2), those prisoners who had died of cold, hunger or cruelty in a German prison, or those who had "no burial fee" were all prime candidates for the anatomy table, as were the poor who were unidentified (4), or whose family could not pay hospital (5) or burial fees (6). While he identified the bodies of executed criminals as constituting "without doubt the majority," he later indicated that fatalities in a hospital or pauper's facility, "make up the largest portion of dissection material in Western countries." In such cases,

<sup>&</sup>lt;sup>76</sup> BMA 1912 J29-3-16-1.

<sup>&</sup>lt;sup>77</sup> Bourgon 2004; Kirby 1984; Mülhahn 2009.

Dissections must not be forced with the exception of those cases where the family of the deceased or other related people are unwilling to pay the fees for medicine, food and drink, or burial, the rest are turned over for dissection.<sup>78</sup>

In nineteenth century England the gap between supply of capital criminal corpses and demand of private anatomy schools had led to the widespread commodification of corpses (through gangs of "resurrectionists" that dug up freshly buried bodies in the night). After a horrifying spate of murders to supply anatomists with fresh cadavers in Edinburgh, Parliament passed the 1832 Anatomy Act which effectively criminalized poverty by providing a steady supply of corpses from poor house dead. For an unprotected class of people, modern medicine thus inspired dread and was seen not as a boon but a betrayal.<sup>79</sup> Imperial Vienna was remarkable in its lack of protest until the turn of the twentieth century,<sup>80</sup> while in revolutionary Germany, wax modelers argued that the bodies of the poor could be spared the indignities of the dissection table through the use of anatomical models, but to little avail.<sup>81</sup> Tang's frank account of the German state and medical profession accumulating the rights to the bodies of those too poor to pay hospital or burial fees reveals a parallel development as China was incorporated into global capitalism.

Yet in contrast to the German provisions, Tang Erhe's proposals for China appear more respectful of the bodies of the poor. Tang's initial proposals allowed for the collection of corpses from the following sources: (1) corpses of executed prisoners; (2) prisoners who die in prison with neither means nor family or acquaintances to bury them; (3) those who have died whose surname and name are unclear and have neither the means nor the acquaintances to help bury them (4) those who have died while being treated in National hospitals; (5) poor people; (6) donations for scholarly research.

<sup>&</sup>lt;sup>78</sup> BMA 1912 J29-3-16-1.

<sup>&</sup>lt;sup>79</sup> Richardson 2000.

<sup>&</sup>lt;sup>80</sup> Buklijas 2008.

<sup>&</sup>lt;sup>81</sup> Hopwood 2007.

These proposals raise several issues that connect the bodies of the poor to the medical profession through the state: details about life, sickness and death in prison; the potential for commodification of cadavers; and the regulation of professional respect for the dead. Tang Erhe's goal was to simultaneously build state and professional power through crediting unwanted corpses to the practical medical knowledge of aspiring Chinese physicians at governmentapproved medical schools. The late Qing New Policies (xinzheng) initiated steps toward establishing model prisons throughout China, but few were constructed until Yuan Shikai became president (1912-1915/6) and attempted to abolish extraterritoriality by establishing European-style laws and a criminal code.<sup>82</sup> These laws fell heavily on those at the margins of urban society. At least 75 percent of the prison population in Republican China were poor or destitute. Most people with means could pay fines to avoid prison (average of 1 dollar per day). Death rates in these institutions were high in the early Republic, and diseases stemming from crowded conditions like dysentery, gastroenteritis, and tuberculosis did not differentiate between those imprisoned merely as suspects and those already convicted of crimes. Death rates could be anywhere from 5 percent to 20 percent of the population in a given year, although concerted efforts brought this below 3 percent in some of the model prisons by the 1930s.<sup>83</sup> Clearly a onein-twenty or one-in-five chance of dying, even in the new model prisons, meant that the longer one spent in prison, the closer one was to a death sentence, even if one's crime had been only petty theft or drug use—crimes of poverty. On paper the 1913 penal code for the new model prisons required a high level of careful management of hygienic conditions, but the natural and man-made disasters of the period, including flooding and extreme humidity meant that outbreaks

<sup>&</sup>lt;sup>82</sup> Dikötter 2002: 57.

<sup>&</sup>lt;sup>83</sup> Dikötter 2002: 89-90; 276-280.

of disease were difficult to control.<sup>84</sup> More to the point, in life or death the prison reforms aimed to increase the control of the state over bodies of the incarcerated.

One of the major issues connecting Victorian London to Republican Beijing was the commodification of human tissue. Could bodies become commodities exchanged for money in Republican China as had been the case in nineteenth century Britain and America? Tang indeed indicated that such an arrangement should be considered if it were regulated:

The above situation depends on the clan/family truly having no power to bury [the body] and also no related people taking responsibility to bear the responsibility to bury them. Moreover, before the dissection, the family/clan of the dead person must present a written petition to the school; after the dissection, the school will give a "gift for the dead" to the family of the deceased in the range of ten to twenty *yuan.*<sup>85</sup>

Tang claimed to be of the opinion that an agreement between an anatomy school and the bereaved to exchange a corpse for money was "clearly not a good custom, and such agreements are, of course, not valid."<sup>86</sup> While one might assume that there was no shortage of unclaimed corpses in the prisons, regular requests did have to be made. Legally, the bodies of friendless paupers found on the streets were fair game for dissection if they came through the police.<sup>87</sup> Yet even the Peking Union Medical College had to specifically request "that unclaimed bodies of paupers dying in the streets be turned over to the college."<sup>88</sup> Yet the promulgated version of the anatomy law from November 1913 did not include any provision for the exchange of "gift money" for corpses. It appears that Chinese law and custom offered a greater barrier to commodification of human tissue than imported Western law.

This respect for the human body is most remarkable in the requirement for medical schools to conduct a fitting memorial service once each year to inter the bodies of those who had

<sup>&</sup>lt;sup>84</sup> Dikötter 2002: 380-391.

<sup>&</sup>lt;sup>85</sup> BMA 1912 J29-3-16-1.

<sup>&</sup>lt;sup>86</sup> BMA 1912 J29-3-16-1.

<sup>&</sup>lt;sup>87</sup> i.e. BMA J181-018-02080.

<sup>&</sup>lt;sup>88</sup> RFA, RG4, 2B9, Dunlop to Black, 1925.

been dissected at the medical school. On 22 April 1916, Tang's Medical School sent an announcement to the *Beijing Daily Newspaper* and the *Capital Repository Times* announcing the second annual dissection memorial service to be held 30 April. All members of Tang's Beijing Professional Medical School were to be present at eleven o'clock in the morning at Vegetable Family Tent Village Graveyard outside the Gate of Broad Peace. This is remarkable, given that UK- and US-based medical schools only began this habit in the 1960s and 1970s and many medical schools only offering a memorial service for medical students.<sup>89</sup>

The year before an announcement had gone out listing the names of twenty-two corpses that had already been dissected. The same names are listed for 1916, with seven more added, and then seven more in 1917.<sup>90</sup> Another document contains a chart showing the sex and month when corpses arrived at Tang's medical school. None were received in 1913, twelve men in 1914, fifteen men and one woman in 1915, three men in 1916, five men and two women in 1917, and eleven men and four women in 1918.<sup>91</sup>

The numbers were not yet great, but the link had been established. It was no longer illegal, no longer an exception to cut open human bodies in China. It is possible that these 37 corpses provided all of the dissection material for Tang's government medical school. Yet after the promulgation of China's anatomy law, J.G. Cormack, principal of the missionary Union Medical School, requested bodies from the Ministry of the Interior and soon found himself overloaded as prison authorities were only too willing to pass off responsibility to bury these corpses.<sup>92</sup> However, once the well-funded China Medical Board of the Rockefeller Foundation took over the Peking Union Medical College in the 1920s, setting up anatomical laboratories as showcases,

<sup>&</sup>lt;sup>89</sup> Warner 2006: 411. A Google search indicates that annual donor family ceremonies are increasingly offered in American Medical Schools (April 2010).

<sup>&</sup>lt;sup>90</sup> BMA J29-3-16-2.

<sup>&</sup>lt;sup>91</sup> Beijing Medical Professional School 1922.

<sup>&</sup>lt;sup>92</sup> Wong and Wu 1936: 598.

the demand for bodies exceeded the supply. In 1925 PUMC officials found it necessary to write specific requests to the police commissioner to ask for the unclaimed bodies of paupers dying in the streets to be turned over to the college.<sup>93</sup>

Tang Erhe was able to propose an anatomy law (1912) and have it accepted (1913) with minor variations, some of which he later petitioned for (1914) from outside of officialdom (although his medical school was directly under the Ministry of Education). Through this period we see Tang becoming more prominent politically. By November 1926 as the Minister of Interior Tang was sending orders regarding dissection practices to the school he had established fourteen years earlier.<sup>94</sup> Through Tang's involvement with the material acquisition and cutting of corspes we can see the imbrication of profession-building and state-building. The final link of the network is textual and linguistic—books and words about anatomy.

### Anatomizing words: textbooks and standardized terminology

As explored above, Tang Erhe was deeply involved in the Joint Committee for Medical Terminology (Yixue mingci shenchahui). He served as representative of the Board of Education from its first official conference in August of 1916, through the May Fourth movement and its aftermath until at least 1921. At a 1915 preparatory meeting, twenty-eight of Shanghai's leading publishing and educational leaders joined a few medical missionaries and western-trained physicians to hash out the provisions for the standardization committee. Present were Fan Yuanlian, the head editor at China Book Company (sometime Minister of Education in Beijing) and Ding Fubao, a medical translator/publisher who recorded the meeting.<sup>95</sup> Also present were

 <sup>&</sup>lt;sup>93</sup> RFA, RG IV 11:71, Dunlop to Black 1925.
<sup>94</sup> BMA J181-018-19692.

<sup>&</sup>lt;sup>95</sup> Ding 1915: 3-6.
the heads of the two largest and most profitable publishers in China, Zhang Yuanji (Commercial Press) and Lu Feikui (China Book Company).

These presses had significantly increased their output after the 1911 Revolution. The new political situation and technological advances allowed the new professional groups that made up the Joint Committee access to cheap publishing to disseminate their activities.<sup>96</sup> Tang's Japanese-trained medical association journal, which began publishing in 1917, published short, official pieces on the committee work, such as reprints of the reports Tang submitted to the Ministry of Education,<sup>97</sup> while the National Medical Association used their journal to publish numerous reports and even word-by-word transcripts of many of the Joint Committee meetings well into the 1920s.<sup>98</sup>

As explored fully in chapter six, Anatomia as *jiepouxue* proved to be one of the longest discussions in the transcripts. Tang Erhe made the most convincing arguments in that heated discussion, the committee also settled on the Japanese terms he felt were most appropriate-*jiepou* as the translation for "dissect," and *jiepoushu* for "dissection."<sup>99</sup> It is significant that Tang got his way, for in addition to his official role on the Joint Committee, he played a prominent role in the publishing world. In the first year of the technical meetings of the committee, Tang was recruited by Zhang Yuanji to edit the medical series of the Commercial Press, which included a large number of books on anatomy and surgery: Introduction to Surgery, Practical Surgical Operations, Outline of Anatomy, Pathological Anatomy, Introduction to Pathology and *Modern Microbiology and immunology*.<sup>100</sup> After the terminology committee meetings in August 1916, Tang happened to ride in the same train from Shanghai to Beijing as Roger Greene of the

 <sup>&</sup>lt;sup>96</sup> Zhu 2004: 1591-1600
 <sup>97</sup> Tang 1917a

<sup>&</sup>lt;sup>98</sup> See especially Yu 1917.
<sup>99</sup> Yu 1917: 30-32; 37-38.

<sup>&</sup>lt;sup>100</sup> Zhang 2001: 43; Only the latter book is available in the Shanghai Library, Tang 1928.

Rockefeller Foundation. Greene noted the significance of Tang's connections to both organizations in a letter to his colleague: "Dr. Tang Er-ho tells me that he has entered the employ of the Commercial Press of Shanghai. This means that the joint committee will probably have also the support of that very influential Chinese publishing house."<sup>101</sup>

Yet there was more at stake than control and profit from textbooks. Just as we have seen that the practice of dissection of a human body would allow a medical student to experience medical enlightenment, so would a scientific classification and unification of terminology make previous organizations of knowledge seem laughable. As these standardized terms and terminologies spread, a new scientific worldview displaced the old one. Through their technologizing of the Chinese language the work of the Joint Committee influenced the shape of modern vernacular Chinese.<sup>102</sup> With an increasingly standardized language came an increasingly bureaucratic culture and society.

## Biopolitics—profession—state—historian

Learned people of my country: are there any of you who are getting ready to write our history? Don't let white children, laughing behind our backs and clapping their hands with glee, take up their pens and paper [to write our history for us].<sup>103</sup>

Would Tang appreciate the foregoing account? The anthropological methods of science studies with which I would like to identify my work demand that I, the researcher approach my research subjects with humility and a recognition of the part I play in extending, translating or otherwise disturbing the networks established by my actors.<sup>104</sup> This account is aimed to disturb nationalist and modernizing narratives, but that is because Tang himself does so. It is often asked if Lu Xun

<sup>&</sup>lt;sup>101</sup> RFA RG4, 1:1, Greene to Buttrick 1916.

<sup>&</sup>lt;sup>102</sup> Li and Li 1998; Zhang 1996.

<sup>&</sup>lt;sup>103</sup> Tang Tiading (Erhe), 1902 (quoted in Karl 2002: 109).

<sup>&</sup>lt;sup>104</sup> Latour 2007.

would have been happy with his canonization in the interests of Chinese communism and the nation-state after his death, and the answer is usually negative. Tang Erhe, possibly more important in the actual power-plays behind the scenes than many of the literary figures of the May Fourth and New Culture movement, has not been (even partially) rehabilitated in recent times like his collaborationist acolyte, Zhou Zuoren.<sup>105</sup>

Tang was deliberately interested in extending the power of a new medical profession, using both state and extra-state mechanisms, to use the most powerful knowledge about the anatomy of individual bodies and the corporate body, in a way similar to physician-politicians like Rudolf Virchow (1821-1902) in Germany or Nagayo Sensai (1838-1902) in Japan. When he became minister of education in 1921-22, Tang acknowledged that, "there are many things that should claim my attention[,] but the needs of medical education [are] among the most urgent."<sup>106</sup>

Tang Erhe is such a fascinating actor to study because, for him, the state is a multi-valent entity interested primarily in accumulating biopower. A given party, cabinet or nation-state was less important for Tang than the establishment of institutional networks that linked unwanted corpses to the medical profession. When the Qing was seen to be impotent, it was rejected in favor of a republic. When the "Nationalists" proved themselves impotent and factionalized, slighting investments in medicine for military expenditures in the interests of their own survival in 1927-38, Tang was attracted to the Japanese model in Manchuria. Tang was like so many of his peers who "looked to the Japanese occupation as a harbinger of a long-awaited modernity"<sup>107</sup>After 1931 Tang became actively involved in collaborating with the Japanese. His

<sup>&</sup>lt;sup>105</sup> Zhou Zuoren was the brother of Zhou Xuren (Lu Xun).

<sup>&</sup>lt;sup>106</sup> RFA RG 4, 85:1969, 15 Nov. 1922.

<sup>&</sup>lt;sup>107</sup> Rogaski 2004: 274. Tang was married to a Japanese woman, a fact later used by Nationalists to partly explain (but not excuse) his collaboration with the Japanese.

preface to a book by Nagai Hisomu demonstrates how much he longed to increase the connection between medicine and power to resolve the chaos he saw around him:

So in saying this, medicine does not only owe its cause to philosophy, it also has roots in its relationship to politics. In speaking of medicine in China today, there is no difference with ancient Europe. With the filth of politics, numerous wars arising, morality and justice on the decline, the people's livelihood tired and worn out, [China] has perhaps already exceeded all of medieval Europe. And yet in such [deplorable circumstances] we seek the strong sprouts of scholarship. Alas, how can this be? How can this be? And so it is certain that we must not only pay heed to medicine and philosophy.<sup>108</sup>

Tang was one of the top ranking members of the early wartime collaborationist government as head of Beijing University and head of the East Asia Cultural Association, among other positions. Upon Tang's death in 1940, Zhou Zuoren accompanied Tang's body in great ceremony to Japan where Tang was honored with many words of admiration. Tang's frustrated legacy of attempting to establish a comprehensive biopolitical regime is best summed up with Zhou Zuoren's eulogy: "Today in China medical affairs have only a small foundation, but one could say that they have all been built by Mr. Tang.<sup>109</sup>" Tang Erhe and those around him built this foundation through a biopolitical network that connected physicians, professional associations, corpses, legal reforms, textbooks and linguistic standardization.

During the lifetime of Dr. Tang Erhe this network of medical biopower was so weak as to be compared to a little boy medicine fighting the monster disease. Yet from this weak foundation, a biopolitical leviathan has arisen, beyond the control of central state or profession. With a more complete rupture from the logic of traditional or socialist protections, this biopolitical regime has provided the roots for a post-Mao Chinese modernity. This modernity is best analyzed beginning with its anatamo-political roots.

<sup>&</sup>lt;sup>108</sup> Tang 1924.

<sup>&</sup>lt;sup>109</sup> Jiang 1995: 42.

Chapter six examines the contours of anatomo-medicine by following scientists in action. In this case it is Tang and E. V. Cowdry who each toured Japanese medical schools, focusing on the details of how anatomy was taught and researched. Chapter seven will then look at how anatomo-medicine challenged the primary existing form of medicine in China.

# 6 Anatomical Tours: Japan, China, Europe and America

On April 12, 1917, at half past eight in the evening, Tang Erhe [湯爾和, 1878-1940], China's most prominent Japanese-trained physician, set out by train from Beijing.<sup>1</sup> Tang was returning to Japan, the land of his professional education, via the Southern Manchurian Railroad hub of Fengtian to the northeast. From there his route would make a sharp turn southeast down the Korean peninsula to Seoul, then to the port of Pusan where he would catch a steamer to Shimonoseki, and then by train again to Tokyo, Kyoto, Osaka, and Fukuoka. Although there is no hint of his purpose in the title, nor any analytical introduction or explanation of his journey, we can discover Tang's purpose by following his actions as described in his diary entries. Why a journey to Japan? Tang Erhe stopped in at more than half a dozen Japanese medical schools to discuss and witness the state-of-the-art of anatomo-medical modernity in East Asia.<sup>2</sup>

This chapter uses Tang's candid travel account to observe more closely the phenomenon we began to examine in chapters one and two: the significance of anatomy as an umbrella discipline for modernizing elites in East Asia. Today we might assume that anatomy refers primarily to the gross anatomy of humans as the basis for surgical and therapeutic interventions. It will be demonstrated that for Tang Erhe and his Japanese, German and American colleagues anatomy was an expansive discipline that incorporated the overlapping (and sometimes conflicting) life science fields of zoology, morphology, paleobiology, physical anthropology, anthropometry, forensic medicine, comparative anatomy, histology, cytology (cell biology), racial science and eugenics, in addition to basic knowledge for medicine. Anatomy was a practice not only of knowledge of the "objective reality" of human bodies, but of "pure" research

<sup>&</sup>lt;sup>1</sup> Tang 1917a.

<sup>&</sup>lt;sup>2</sup> I explain my reasons to coin this term below. Its purpose is to emphasize the goal of Tang Erhe and his contemporaries in establishing the full range of anatomically-based projects in China.

and, at the same time, of instrumental power over individual bodies and larger populations. The diary allows us to follow Tang to see what he thought was important about Japanese science even if it scrambles the comfortable categories of political history, history of elites, history of medicine, and history of science.

In chapter five we saw that Tang Erhe was cut out for exercising political power. Yet since 1912 Tang Erhe had been based in Beijing, quietly establishing the Peking Government Medical School (1912), a medical association (1915), and using his personal relationships with government officials to petition for laws aiding the establishment of anatomo-medicine in China (1912-13).<sup>3</sup> We also explored how despite being a major actor in the establishment of anatomomedicine and certain forms of modern state structures in Republican China, the significance of Tang and the institutions he established have been overshadowed by nationalist historiography's repugnance for his role as a prominent Japanese collaborator between 1937 until his death in 1940.<sup>4</sup> Scattered references to Tang emphasize his prominent political roles between 1905 and 1940 with some mention of his medical work as a sideline. However, a careful examination of Tang's actions, completely ignored in the secondary literature, yet well preserved in numerous published and archival sources, reveal that political power and medicine were part of one process for Tang. From early days as a student in Japan, Tang sought to remake China along modern, Japanese lines. If Tang's acquantaince, Zhou Shuren (Lu Xun), gave up the study of anatomically-based medicine in Japan to become a writer to save China's soul,<sup>5</sup> Tang's prescription for China involved anatomo-medicine at its core. Tang Erhe's published diary

<sup>&</sup>lt;sup>3</sup> The school was known in English as the Peking Government Medical School, in Chinese as *Beijing zhuanmen yixuexiao* 北京專門醫學學校; the medical association was the Republic of China Medico-Pharmaceutical Association *Zhonghua minguo yiyao xuehui* 中華民國醫葯學會, their journal the *huibao* 會報 of the same name; the laws can be found in the Beijing Municipal Archives 1912 (J29-3-16-1); fully translated in Cowdry 1920: 45-47 and partially translated in Wong and Wu 1936: 598. Further laws establishing standards for anatomo-medicine will be discussed in more detail below.

<sup>&</sup>lt;sup>4</sup> See Karl 2002: 105-110 for a first attempt to rethink Tang outside the teleology of nationalism.

<sup>&</sup>lt;sup>5</sup> Lu 2009 [1922]; Henrichs 2008: 134-147

allows us to follow him on his educational mission seeking for improved methods to institutionalize Japanese anatomo-medicine as it existed in 1917. Most importantly, a close reading of Tang's diary tells us exactly what it was about Japanese medical science that was important to him. We then will compare Tang's reading of Japanese anatomo-medicine against that of the Canadian-American Anatomist E. V. Cowdry who founded the anatomy department of the Peking Union Medical School and made published reports of anatomy in Japan and China at this time.

#### Tang Erhe's diary compared to contemporary accounts of anatomy in the Japanese empire

Tang's diary as published is literally that—a day-by-day account of happenings, feelings, reactions and conversations, sometimes in great details, and sometimes only in sketch. Tang had already been to Japan and Europe, yet his diary of this journey displays the wonder of a first time-traveller on the twenty-three hour train to South Manchurian Rail Station in Fengtian, the eight-and-a-half-hour trip thence to the Korean border town of Andong, on eleven more hours to Seoul, and the last ten-hour leg to Pusan. It appears Tang had not travelled this way before.<sup>6</sup> But Tang's wonder at the desolation of the mountains of the Great Wall or the contrasting lushness near Andong on the Korean border were only a warm up for his long interviews with Japanese medical educators in Fengtian, Seoul, and especially at Japan's Imperial University Medical Schools. It was in these candid interviews that the nature of East Asian anatamo-medicine, as its architects saw it, is revealed.

Dr. Tang Erhe's diary of this one month trip was published in two versions. The first version appeared in 1917 in the first annual journal of the Medico-Pharmaceutical Association of

<sup>&</sup>lt;sup>6</sup> On earlier journeys, Tang likely travelled directly by steamer between Shanghai and Japan, as did Akutagawa Ryūnosuke 1997.

the Republic of China, a professional association of Japanese-trained physicians established in 1915 by Tang himself.<sup>7</sup> The Shanghai Library copy of the journal has been transferred to microfilm for ordinary viewers like myself, but clearly handwritten before the title of this piece are the following words: "Erhe hand delivered and formally presented [this] to me, Renzhi, on the first day of the eleventh month of 1917." Erhe refers to Dr. Tang, and Renzhi to Huang Yanpei [黃炎培; Renzhi 任之, 1878-1965], vice-president of the Jiangsu Provincial Education Association, one of the most influential semi-official organizations of the late Qing-Yuan Shikai-warlord period (1905-1927).<sup>8</sup> It is worth dwelling on the significance of Huang and this association for a moment to decifer the connection between the first and second published versions of Tang's "Diary".

As we shall see in more detail in chapter four, by 1917 the Jiangsu Provincial Educational Association (JPEA) was arguably the Shanghai networking hub for New Culture elites—a role played by Peking University in the capital. Tang was a dominant personality at Beida, but also among Japanese-trained physicians in Suzhou, Hangzhou and Shanghai,<sup>9</sup> while Huang was the dominant personality at the Shanghai-based JPEA which gave birth to numerous southern universities and hundreds of schools. Most importantly for this account, the JPEA provided a networking umbrella for China's new professional groups, including scientists and physicians.<sup>10</sup> The JPEA was also a networking place for publishers of the highly profitable textbook industry,

<sup>&</sup>lt;sup>7</sup> This organization cooperated with the other two primary associations of Western medicine in China at this time, at first primarily to standardize medical terminology. The other two associations were the Medical Missionary Association (est. 1886) and the National Medical Association (est. 1915): *Zhonghua minguo yiyao xuehui* 中華民國醫葯學會, *Boyihui* 博醫會, *Zhonghua yixuehui* 中華醫學會, respectively. The three associations merged completely in 1932.

<sup>&</sup>lt;sup>8</sup> Jiangsu sheng jiaoyuhui 江蘇省教育會.

<sup>&</sup>lt;sup>9</sup> On Tang's role in securing Cai Yuanpei for president of Beida and Chen Duxiu as Dean of Humanities, and the controversial desicion to get rid of Chen, see Hu 1979: 281-283; Wang 2007: 21-33; Weston 2004: 173-175.

<sup>&</sup>lt;sup>10</sup> On the JPEA see Bastid 1988; Schwintzer 1992; Xiao-Planes 2001. Huang Yanpei established the influential Chinese Vocational Education Association from his JPEA base in 1917—professional and vocational education were deemed essential for a modernizing China. Yeh 2007: 38.

like the chief editors of the Commercial and China Presses. Head of the Commercial Press, Zhang Yuanji, had only in 1916 asked Tang Erhe to be chief medical editor<sup>11</sup> the same time that the JPEA became the staging place for a Joint Committee to standardize terminology for medicine and its allied sciences. Huang Yanpei chaired preliminary meetings and Tang Erhe represented the Ministry of Education to this Committee from 1916-1919, while the committeed debated and standardized the terminology for anatomy. The project of standardizing anatomical terminology was a major point of connection between Tang and his Japanese interlocutors, as discussed below.

These vibrant personal connections between Tang, Huang and Zhang help us to understand how an abridged version of Tang Erhe's diary of his journey to Japan was published in the Commercial Press flagship journal, *Eastern Miscellany*, only two months after Huang Yanpei recieved the unabridged version now held by the Shanghai Library.<sup>12</sup>

We can assume that the journal of the Medico-Pharmaceutical Association would have had limited circulation among returned Japanese-trained physicians who were members of the that group, although perhaps it also reached some other physicians trained in anatomo-medicine. There are two-hundred-nineteen members listed in the 1917 volume. In contrast, the *Eastern Miscellany* (1904-1948) had the largest circulation of any journal in China in 1910 at 15,000 copies.<sup>13</sup> Everything we know about periodicals at this time is that each published copy would pass through many hands through informal networks and formal lending libraries.<sup>14</sup>

<sup>&</sup>lt;sup>11</sup> On 18 March 1916. Zhang 1995, 29; confirmed by RF RG4 CMB, Box 10, Folder 136, "Greene to Buttrick," 25 August 1916, "Dr. Tang Er-ho tells me that he has entered the employ of the Commercial Press of Shanghai to look after their medical publication work." This is also the first time Tang met Roger S. Greene of the Rockefeller Foundation's work in China, a relationship he would later use to request financial and other help, while the RF would cultivate this relationship to improve their relationship with the Chinese government and Japanese-trained physicians.

<sup>&</sup>lt;sup>12</sup> I have no direct evidence that Huang Yanpei passed his copy to the editors of the *Eastern Miscellany*.

<sup>&</sup>lt;sup>13</sup> Reed 2004, 215.

<sup>&</sup>lt;sup>14</sup> Harrison 2000.

The original "Diary" was forty-eight pages while the Eastern Miscellany version was serialized and considerably truncated into five sections of about four pages each, running between February and June of 1918.<sup>15</sup> Most of Tang's candid views that were published in his professional journal were excluded in the Eastern Miscellany version. These included deprecatory comments about Chinese filthiness and Japanese cleanliness in Fengtian, and a description of massive skull collections in a Seoul dissection instruction room gathered from mass graves of Koreans. In fact, much can be learned by comparing the two versions. Serendipitously, Tang's account of the state of anatomo-medicine in Japan can also be compared to the English-language account "Anatomy in Japan," by E. V. Cowdry. Cowdry toured Japanese medical institutions only two years after Tang (1919) and published his account in 1920 in America's pre-eminent journal of anatomy, Anatomical Record. Tang's account is an episodic diary proceeding day by day, interview by interview, dissection by dissection, while Cowdry's is analytical, complete with charts and graphs. Tang's diary also includes his responses to his Japanese interlocutors regarding conditions for basic and advanced, gross and microscopic anatomical work in China, and these can be compared to a second report by Cowdry for conditions for anatomy in China.<sup>16</sup> Appendix 7 can be used for reference while reading the rest of this chapter to compare a larger set of interests between Tang and Cowdry related to establishing anatomically-based medicine.

Yet all of these accounts demonstrate a single prime directive—establishing anatomomedical modernity. I use the unfamiliar term anatomo-medical modernity specifically to defamiliarize the structure and content of this real-ideal formation from contemporary biopolitical medical regimes that now focus primarily on the micro-level of the gene and the

<sup>&</sup>lt;sup>15</sup> Tang 1918a; 1918 b; 1918 c; 1918d; 1918e.

<sup>&</sup>lt;sup>16</sup> Cowdry 1920b.

macro-level of the population. My goal is not to reify a new category, but to defamiliarize us with contemporary categories that subsume anatomy as a descriptive and taxonomical discipline long overshadowed by other life sciences. If anatomy was dead as a scientific research discipline, why was it almost equal to all of modern medicine for Cowdry and Tang? Why was advanced research happening in the anatomy department of the best funded scientific institution in Asia, Cowdry's own Peking Union Medical College, but only pre-medical instruction in the biology department?<sup>17</sup>

Anatomo-medical modernity as it evolved in East Asia the first half of the twentieth century contains anatomical elements so familiar to us as to be banal, elements of racial medicine and physical anthropology now repugnant and discredited (yet maintaining secret afterlives in new disciplines), and also excessively technical details now long buried in undergraduate textbooks of evolutionary biology or histology. Anatomy, the queen of the sciences in the mid-nineteenth century, might, in hindsight, be said to have been fragmented and waning in 1917, yet it still held together fragmented disciplines researching the life, death and variations of earth's inhabitants. The fragmentation and sublimation of anatomy and its close kin, zoology, beneath evolutionary biology and genetics had begun but not yet been completed. Anatomy was the basis for surgery and medicine more generally, yes, but it was also the basis for the study of mankind, in particular, the "racial problem." The rise of regimes of "hygienic modernity" in East Asia has been explored extensively in other scholarship examining the growth of public health and other biopolitical controls, but to my knowledge, there has been almost no comment on the

<sup>&</sup>lt;sup>17</sup> Rockefeller Foundation, "Peking Union Medical College Department of Anatomy" 1924. RFA RG IV 2 B9 CMB, Inc. Box. 11, Folder 68.

significance of anatomy as a basic and umbrella discipline in East Asia, or in global science more generally.<sup>18</sup>

Tang Erhe and his Japanese colleagues in 1917 (and Cowdry in 1920) were primarily interested in the ongoing institutionalization of anatomo-medicine with an extensive set of practical and research questions: How exactly are anatomy classrooms and laboratories to be set up? What are the latest developments in standardizing anatomical terminology in Chinese and Japanese? How can a nascent profession use the state to regulate the practice of medicine, especially practitioners based in classical tradition of East Asian medicine (zhongyi 中醫 in China; hanya/kanpo 漢醫 in Korea and Japan)? What laws and procedures can be established connecting the modern police force, prisons, paupers and a steady supply of corpses for anatomy laboratories? Are there any shortcuts to acquiring anatomical material? Can a large collection of cranial specimens of Korean peasant women demonstrate an evolutionary change in response to the custom of carrying heavy loads on their head during life? What is the latest technology and apparatus needed for effective anatomical instruction, and in particular, what might the role of roentgen ray (X-ray) and slide projector technology be in research and teaching? Such questions reveal that anatomical-medical modernity was established not with the arguments of intellectuals or the activities of states, but through a multitude of mundane negotiations between transnational actors who, in specific spaces, mixed theories, experiments, technologies, with social and racial hierarchies and prejudices. Anatomical knowledge and practices are now so naturalized in numerous scientific disciplines that historians of science take this for granted, yet this should not let us ignore the singular importance with which historical actors imbued it, whether in the East Asian or American context.

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<sup>&</sup>lt;sup>18</sup> Benedict 1996; Frühstük 2003; Janetta 1987, 1997; Leung 2009; Liu 2009; Rogaski 2004.

As explored in the introduction, in the first half of the nineteenth century gross anatomy and its relation to pathology on the model of the Paris hospital was at the centre of Western medical science.<sup>19</sup> This was replaced in the second half of that century by a German university model that brought the search for disease to the microscopic level and saw the birth of bacteriology and histology, but also morphology, embryology, physical anthropology and the other sciences of biology and evolution. Experimental scientists in these fields continued to be housed in anatomy or zoology departments. This was the model transferred to Japan in the late nineteenth century as German educators were brought to Tokyo Medical School and elite physicians spent years in the laboratories of Germany. Americans, meanwhile, transfered the German model to Johns Hopkins, and through the carrot and stick methods of the Carnegie and Rockefeller Foundations, forced change and consolidation throughout medical education in North America and Europe, and after 1914, to China itself. E. V. Cowdry, a product of the North American reformed system and chair of the Anatomy department in the Rockefeller-funded Peking Union Medical College, brought that same standardizing impulse in his surveys of Japanese and Chinese anatomical education two years after Tang Erhe's trip to Japan. From 1868 to 1920, the study of Western science in Japan continued to be led by developments in medical science, and anatomical investigations continued as the basis of medicine.<sup>20</sup>

At the level of the increasingly standardized medical education all around the world, in fact, "dissection brought students as close as most would ever come to the forefront of medical science" and practical anatomy, or group dissection work was *the* core professionalizing activity for physicians.<sup>21</sup> In China, Korea and Japan, deficiencies in the anatomical understandings of the body constituted a core criticism of pre-existing forms of medicine (*Zhongyi, Hanya, Kanpo*)

<sup>&</sup>lt;sup>19</sup> Warner and Rizzolo 2006: 403.

<sup>&</sup>lt;sup>20</sup> Bartholemew 1989: 4

<sup>&</sup>lt;sup>21</sup> For the U.S. situation, see Warner and Rizzolo 2006: 403.

which were to be regulated or even abolished. But medical training in pathological and gross anatomy for surgery was only the beginning of the significance of anatomy in the late nineteenth and early twentieth century. Anatomy departments from Berlin to Philadelphia to Beijing to Tokyo were the birthplace of what we know call biology. Many prominent biologists, like Charles Sedgewick Minot at Harvard, were housed in anatomy departments and were able to prosecute their specialized research in those departments, whether in embryology, zoology (and comparative anatomy), histology, physical anthropology and other disciplines which are now less associated with anatomy than evolutionary biology.<sup>22</sup> Studies of evolution and genes, embryology and comparative anatomy occupied the research hours of most research anatomists. Eugenics in various forms also occupied some of the physicians, biologists and physical anthropologists who made up anatomy departments.<sup>23</sup> In the twenty-first century anatomy seems an obvious and basic subject for students of medicine and biology, yet unpromising territory for researchers who seek unknown and controversial knowledge of nature.<sup>24</sup> Yet one hundred years ago, for Chinese like Tang Erhe, anatomy and its still-related offshoots seemed the basis of the construction of a revitalized human race, governed by an enlightened meritocracy of hygienic reformers who would save China from its own recent chaos and from Euro-American imperialism.

<sup>&</sup>lt;sup>22</sup> See especially Nyhart 1995.

<sup>&</sup>lt;sup>23</sup> Jennifer Robertson 2002.

<sup>&</sup>lt;sup>24</sup> "Zoology, the study of the animal kingdom, is no longer seen as a coherent branch of science." We might say the same of anatomy as understood by Tang Erhe and his contemporaries. Quote from Di Gregorio 2009: 205. As marvelously helpful as the new Volume Six of the Cambridge History of Science is for my project, the meanings of anatomy circa 1917 must be extracted not only from a rather truncated account in the chapter on "Anatomy, Histology, and Cytology," but from the chapters on Paleontology, Zoology, Botany, Evolutions, Embryology, Physiology, and Pathology—altogether almost half of the book.

# Tang Erhe enters the heart of hygiene

When one arrives in Hong Kong or Shanghai from the interior, one's horizon suddenly changes: the interior suddenly seems rustic, vulgar and of little account. When one reaches Japan, one's perspective changes again: it is Hong Kong and Shanghai that seem backward and commonplace.<sup>25</sup>

Tang Erhe's "Diary of an Eastern Journey" might be read against other travel narratives of the high colonial era.<sup>26</sup> It might be productive to contrast Tang's Travel Diary, for a moment, to *Heart of Darkness*.<sup>27</sup> Joseph Conrad's fictional protagonist entered the jungles of the Congo on a small steamer and felt himself moving ever further toward the heart of savage darkness that threatened to overtake European civilization.<sup>28</sup> Tang's autobiographical journey from China to the heart of Japanese hygienic modernity reads like a mirror opposite. As he travels along the winding railroads and steamers the North China Tang leaves behind is a desolate wasteland, Manchuria is punctuated by Chinese deficiency and Japanese cleanliness, while Korea blooms under Japanese colonial modernity only slightly less impressive than the imperial eastern capital itself (i.e. Tokyo 東京).<sup>29</sup>

Like Conrad's fictionalized journey, Tang's narrative unfolds chronologically. For the most part, Tang gives his reader a day by day, at times even hour by hour account, sometimes recording minutae, at other times recording only ports of call. The first lines of Tang's account decribe his journey on the Japanese-controlled Southern Manchuria Railroad from the Chinese

<sup>&</sup>lt;sup>25</sup> Liang Qichao, "A brief account of travels in the new world," quoted in Grieder 1981: 145.

<sup>&</sup>lt;sup>26</sup> There is no space here to engage with the massive scholarship on travel literature of the nineteenth and early twentieth centuries, even if we limited discussion only to East Asia. I have so far found little on scientific fact-finding travels in Asia, although published Chinese accounts like Tang's are numerous, including those of his friend, Huang Yanpei. Excellent context of Japanese intellectuals touring China can be found in the scholarship and translations of Joshua Fogel, most relevant here are Itō [trans. Fogel] 1988, and Fogel 1996, especially 151-190. Fogel's interests are primarily in Japanese sinologists and there is little here about physicians or scientists.

<sup>&</sup>lt;sup>27</sup> "Going up that river was like traveling back to the earliest beginnings of the world ...[t]he long stretches of the waterway ran on, deserted, into the gloom of overshadowed distances." Joseph Conrad, *Heart of Darkness*, 1902.

<sup>&</sup>lt;sup>28</sup> Of course Conrad's narrator sees the darkness already present in European civilization from the time he leaves England, and his text is ultimately subversive of the "White Man's Burden" thesis.

<sup>&</sup>lt;sup>29</sup> These railways through Manchuria have even been compared to waterways as "rivers of steel." Bruce A. Elleman 2010: 195-207.

capital to the heart of Japan's unofficial empire in Fengtian (奉天, known in English as Mukden, now called Shenvang).<sup>30</sup> His account of that twenty-three hour trip describes the environs of Beijing, the Great Wall and the Shanhaiguan pass as desolate. After travelling all night for 262.43 English miles, Tang's train arrives at the traditional boundary between Manchuria and China proper, *Shanhaiguan* almost twelve hours later at eight in the morning:<sup>31</sup> "Coming through the pass, the climate was the same as the national capital [Beijing], a boundless wasteland, there was still withered grass in the high places. There was not even one withered willow, it lacked any sense of vitality."<sup>32</sup> When he describes his free time in Fengtian, Tang goes into the Chinese city and is singularly unimpressed. Bookstands sell only late imperial trashy novels, none of the New Culture publications from Shanghai which Tang and his colleagues in Beijing and Shanghai wrote and translated.<sup>33</sup> His description of a visit to a Chinese Garden, contrasted with his retreat to Japanese hygienic modernity immediately after is telling: "Dust was flying upward and the road was extremely filthy. Chinese people have no self-esteem." Tang went immediately to a Japanese restaurant for lunch to "luxuriantly allay" his hunger, and lingered for a while to use the washroom, noting that "the toilet was just as clean as in Japan itself."<sup>34</sup> By the time Tang's train approaches the Manchuria-Korea border region, he is overwhelmed by forested mountains that remind him of his southern home in Jiangnan, "the mountains had an elegant and graceful atmosphere." The border town of Andong demonstrates "flourishing signs of habitation as

<sup>&</sup>lt;sup>30</sup> For details on Japanese influence in Manchuria between 1914 and 1918, see Matsusaka 2001: 186-226.

<sup>&</sup>lt;sup>31</sup> Tang's time descriptions of departures and arrivals are each within five minutes of those listed in the 1921 National Train Guide, Tang's train would have left Beijing's *Zhengyang* Gate station at 8.35pm (Tang: 8:30pm), arriving at Tianjin's Central Station at 11.45pm, leaving Tianjin's East Station at 12.15am, then would have travelled on without stop until arriving at *Shanhaiguan* at 8.10am. Xu 1921.

<sup>&</sup>lt;sup>32</sup> This may be due to the time of year, but Tang's sense of desolation is not interested in the seasonal change, but rather in the vibrancy of human activities in making a place bloom and grow.

<sup>&</sup>lt;sup>33</sup> "They displayed *Jinpingmei* [The Golden Lotus 金瓶梅], Tang dynasty books, books on the five [sacred] mountains [of China], this type. No one looked at the new books being published out of Shanghai." Tang 1917a: 2

<sup>&</sup>lt;sup>34</sup> Tang 1917a: 2-3

*nothing I'd seen coming through the pass.*<sup>35</sup> When six days later, Tang arrives in the Tokyo main station after a more than ten year hiatus from Japan, he is exuberant about the constant improvements to infrastructure—bridges, the train station itself and the five colour lights burning late into the night.<sup>36</sup> Many of the above comments did not appear in the widely-circulating *Eastern Miscellany* version of Tang's travel diary; a growing sense of anti-Japanese nationalism among Chinese urbanites of various classes had been growing since Japan's Twenty-One Demands of 1915. Japanese expansionists had attempted to take advantage of the vacuum of European imperialist interests in China during the war. However Tang may have felt about the Japanese demands or actions, he and his Japanese-trained brethern seemed to share an understanding that Japanese modernity—witnessed in its infrastructure, hygienic cleanliness and in its anatomical medical training and research—represented the path forward for East Asia.

Table 20 Comparing Tang's "Diary of an Eastern Journey" (1917), and Cowdry's "Anatomy	' in
Japan" (1920).	

	Tang 1917a (implicit to travelogue and	Cowdry 1920 (explicitly itemized
	identified by present author)	subheadings of article in "quotations")
Ranking and complete	No ranking. Chronological description of	"List of all medical schools and anatomical
list of medical schools	medical schools visited and faculty	laboratory staff" with schools visited
	actually met.	marked by asterisk (*).
Physical plant and	Descriptions of grounds, architecture, lab	"Buildings and equipment," systematic
equipment, including	space as Tang is taken on tour. Much	general comparison
cadaver supply	discussion of X-Ray equipment,	
Staff	Interactions with staff are recounted	"Staff" ratios to students, division of
	without comment	labour
Teaching	What should come after anatomy in	"Teaching," analyzes statistics of students
	curriculum? Role of medical history and	and curriculum (too much lecture, not
	research in teaching.	enough lab)
Language	Much discussion of the terminology for	Cowdry wishes Japanese would publish
	anatomy	research major European languages
Research	Much discussion of specific research	"Research," includes translated list of
	projects. Tang becomes involved in the	journal titles where research is published
	projects rather than maintaining observer	and list of papers given at the new
	status	Japanese Association of Anatomists (1919)

<sup>&</sup>lt;sup>35</sup> Tang 1917a: 3 (emphasis mine). Compare to Akutagawa Ryūnosuke in Shanghai in 1921 who enjoyed the better tasting Chinese food despite hygienic transgressions: "I asked the waiter where the toilet was, and I was told to use the sink in the kitchen. In fact, before me over there was a greasy-looking cook providing a example of how to do so. That was, to say the least, disgusting. *You pay a price, but the food does taste better than in Japan*," Akutagawa 1997: 30-31 (emphasis mine)

<sup>&</sup>lt;sup>36</sup> Tang 1917a: 13.

## Anatomy in Japan

After one day in Fengtian and five days in Seoul, Tang proceeded by steamer to Japan where he spent the bulk of his time abroad, including no less than ten days in Tokyo, three days in Kyoto, and four days in Osaka, and two days in Fukuoka. Each stay was primarily occupied by spending time with the leading anatomists of the Imperial University Medical Colleges there (Osaka being the exception having not yet been upgraded to Imperial University Medical School level).<sup>37</sup> So, what were the components of Japanese anatomical modernity in the late 1910s, and how does this compare with anatomical modernity, real and ideal, in China and the U.S. in the same period? We can best approach this through a comparison between Tang Erhe's 1917 account and E. V. Cowdry's 1920 account (he travelled in 1919) along with reference to the components of anatomical medicine revealed in Tang and Cowdry's other writings in these few years (chart 1). What do they both discuss, what do they take for granted? What is the actual existing condition of anatomy in Japan, and what is the ideal against which they compare it?

Cowdry's article, "Anatomy in Japan," begins with a list of medical schools ranked according to category, along with a list of full-time anatomical staff. He lists five Imperial University Medical Colleges, each with two to four full professors, zero to two assistant professors, and one or more assistants (unnamed). There are five of these insitutions, two War Department medical colleges "for medical graduates only", five government special medical schools, including Tang's alma mater Kanazawa, two government medical schools of "lower standard" (in Korea and Taiwan), three municipal medical schools, and eight private medical schools, including the South Manchuria Railway Medical School in Mukden already discussed

<sup>&</sup>lt;sup>37</sup> Tang did not visit Tohoku Imperial University Medical Colleges in Sendai, the only other Imperial University Medical College at that time, although the Japanese government had an ambitious program of upgrading medical schools. Tokyo Imperial University Medical College was the pre-eminent medical-scientific training centre in the system.

(see chart 1).<sup>38</sup> As suggested by the title of his article, in each case anatomy departments are the focus of attention. Cowdry compares the buildings and equipment of the schools, utilizing high quality photographs of the anatomical laboratories. Tang's account include no images, charts, or graphs. In fact, his much longer, chronological account is unpunctuated, and largely without paragraph breaks of any kind, markedly different from new Chinese journals like *Science (Kexue* 科學) which pioneered left-to-right, top-to-bottom publishing in Chinese.<sup>39</sup> At each laboratory or instruction room, Tang's comparisons are with his own institution, while Cowdry attempts to give a comparative sense of the range of Japanese facilities and experience, but also comparison to American schools of similar quality.

The content of anatomo-medical modernity as expressed by the interests of Tang Erhe and E. V. Cowdry in the late 1910s and early 1920s can be discovered by comparing their accounts. Cowdry's preoccupations are explicit in well-marked categories (chart 1). Tang Erhe's interests are only implicitly noted and must be drawn by inference from his account. These interests can be expressed in four somewhat arbitrary and overlapping categories: (1) material concerns, (2) teaching concerns, (3) research concerns, and (4) concerns of power. Material concerns include those of the physical plant of medical schools and anatomy laboratories, equipment, finances, and anatomical material (cadavers and properly prepared microscopic specimens). Teaching concerns might include issues of standardizing terminology and production of textbooks, staffing questions, and division of curriculum between lecture and laboratory work. Research concerns involve laboratory space, equipment, material and library resources, as well as the production of periodicals and organization of professional associations for scholarly communication. Concerns of power include the disciplines of anthropology,

<sup>&</sup>lt;sup>38</sup> Cowdry 1920a: 67-70.

<sup>&</sup>lt;sup>39</sup> Wang 2006.

eugenics, racial science and the regulation of medical practice in the empire. The remainder of this chapter will explore these in turn.

## *Materializing anatomy*

Anatomy in the late 1910s was both a laboratory science and basic teaching discipline and, as such, required extensive financial investment for buildings, laboratories, dissecting rooms, lecture theatres and expensive equipment. It also required a steady supply of anatomical "material" in the form of corpses. An earlier generation of historians of science uninterested in anatomy in the twentieth century would also be unconcerned about the materiality of laboratory science. Many accounts of science in China and Japan have, until very recently, shared the same prejudice in favour of theoretical, intellectual, or at least institutional explanations, while completely ignoring the very "stuff" of science. Such accounts have passed over the plentiful evidence that professional scientists in the twentieth century have spent much of their time seeking funding from government and private sources to fund the capital intensive projects of laboratory research, and most of the rest of their working time producing scientific knowledge in these laboratories with expensive equipment. Tracing ideas disconnected from material reality will simply not do. Both Tang and Cowdry's accounts clearly demonstrate that Chinese, Japanese and American anatomists were largely preoccupied with practical and material aspects of their science, and this is backed up by other sources.

No research or teaching could be done without securing suitable buildings and regular funding for staff. At each of his stops Tang Erhe was taken on a tour of the medical school and in Mukden, Seoul, Tokyo and Osaka he entered into discussions of finances. Cowdry only seems concerned only with financial issues of underpaid assistants who take an undue proportion of the

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teaching responsibilities and with the Japanese Government scholarships for overseas study,<sup>40</sup> yet he pays great attention to the physically existing structures and their advantages and disadvantages, including four well-reproduced photographs, one of the Tokyo Imperial University Anatomy Laboratory "one of the most elaborate of all the institutions visited," with a "semi-fireproof two story brick structure" and "separate annexes for histology and gross anatomy." Yet all the Japanese buildings to Cowdry were "adapted for use rather than for ornament."41 Kyoto ranked second and set a pattern of standardized wooden construction for the smaller medical schools which appeared to Cowdry to show "a simplicity which is not devoid of charm." Tang Erhe's perceptions were governed primarily by his own financially-limited facility in Beijing; after being taken on a tour of Tokyo dissection rooms, Tang commented that "each department was larger than the whole (Bei)jing school."<sup>42</sup>

As to budgets, Tokyo Imperial University had a budget of 1.3 million Japanese yen, twofifths of which went to the Medical University (520,000) with more than 40,000 going to the hospital and 80,000 to each department for salary alone.<sup>43</sup> Tang's visit to Osaka Medical School include detailed discussions of Japanese government investment in new buildings after a fire destroyed most of the old buildings. Over four years two million would be spent on construction costs alone for large three floor building of steel construction.<sup>44</sup> Several years later, as Minister of Education, in 1922, Tang planned to construct new buildings in Beijing for his medical school "after the model of some of the latest constructions of its kind in Europe" at the rough cost of

 <sup>&</sup>lt;sup>40</sup> Cowdry 1920a: 77, 94
 <sup>41</sup> Cowdry 1920a: 70.

<sup>&</sup>lt;sup>42</sup> Tang 1917a: 14.

<sup>&</sup>lt;sup>43</sup> Tang 1917a: 16.

<sup>&</sup>lt;sup>44</sup> Tang 1917a: 30-31.

\$1,500,000 Chinese currency and \$500,000 for equipment, and another \$500,000 for a biological laboratory.<sup>45</sup>

Japan had many advantages over China at this time, being largely industrialized, fiscally independent, and politically unified, and thus able to reliably extract substantial taxes and redistribute this money as the government saw fit.<sup>46</sup> Medicine and science had been high on the agenda for Japanese policy-makers since the time of Meiji physician-politician Nagayo Sensei, who travelled to Germany to witness the health and research reforms there identified with Germany's own physician-politician, Rudolf Virchow.<sup>47</sup> Tang Erhe likely modeled himself after these medical reformers, so when comparisons between Japanese and Chinese investments in medicine became explicit, Tang became defensive. For example, when Tang was told that the Seoul hospital and medical school annual budget was 330,000 *yuan*, he was forced to admit that his own Beijing Government Medical School had a budget of less than 100,000 *yuan*. His Japanese colleague then suggested that the Chinese government was not doing its duty:

Sato said, "Your distinguished country's government is quite stingy in medical affairs to not grant sufficient funding." I responded, "Our finances are not enough, nor can we obtain more. Sato said, "If finances are not sufficient, these affairs absolutely cannot be planned carefully." I said, "The matter is not exhausted considering only the state/public." Sato saw from my composure that I was displeased, and ceased discussing the matter.

This discussion was not included in the *Eastern Miscellany* where it surely would have become embarassing to Tang and the government. Funding was a significant problem for all government educational and scientific enterprises in China in these years of national disunity. Information on Tang's medical school is scarce, but we know that the budget of the National

<sup>&</sup>lt;sup>45</sup> RFA, RG4 (CMB) Series I, Subseries II, Box 85, File 1969, Tang to Cowdry, 15 November 1922; "...no prospect of securing money for extensive improvements in the medical school at present..." Greene to Cowdry 15 December 1922.

<sup>&</sup>lt;sup>46</sup> See Crawcour 1988.

<sup>&</sup>lt;sup>47</sup> Rogaski 2004: 136-147.

Medical School in 1921 was \$140,000 Mexican.<sup>48</sup> In 1917 Tang's Medico-Pharmaceutical Association was funded to the tune of one thousand *yuan* from each of four government ministries,<sup>49</sup> but by the time Tang was Minister of Education, the Peking government was unable to secure new loans on any terms. The Rockefeller Foundation granted \$12,000 Mexican to Tang's Government Medical School in 1921 just to help purchase new property, with the possibility of further help if the Chinese political situation were to stabilize (it did not).<sup>50</sup> Cowdry, whose own Rockefeller institution in Beijing dwarfed any medical or scientific facility existing in Asia at this time, was skeptical that the Chinese government would support significant investments in medicine in China when with "a depleted treasury the Chinese may prove reluctant to make large expenditures to accomplish something which the foreigners will do for them gratis."<sup>51</sup> Archival sources tell us that Tang had an ongoing positive relationship with the Rockefeller Foundation administrators such as Roger S. Greene, and asked for money from them to support his Government medical school under tight budget restrictions in 1921, and asked for help procuring an X-Ray machine in 1922.<sup>52</sup>

Funding also paid for lighting, equipment and even furniture, as quotidian as those may now seem. Cowdry thought the electricity in Japanese anatomical facilities to be "rather defective," although skylights and the ingenious use of raised platforms for a second row in

<sup>&</sup>lt;sup>48</sup> According to RFA, RG4 (CMB) Series I, Subseries II, Box 65, File 1608, "Greene to Vincent," Mex. \$12,000 was approximately \$5000 gold in 1921, so Mex.\$140,000 would be converted at a rate of about 2.4:1, so \$58,333 Gold.

<sup>&</sup>lt;sup>49</sup> In 1917 Ministry of the Interior, Ministry of Finance, Ministry of Army each subsidized 1000 *yuan*, while the Ministry of Education had given subsidies totalling 1,300 *yuan*, Republic of China Medico-Pharmaceutical Association 1917. These were not insignificant amounts, but paled in comparison to those discussed by Tang and his Japanese colleagues.

<sup>&</sup>lt;sup>50</sup> RFA, RG4 (CMB) I, II, Box 65, File 1608, "Greene to Vincent," 7 March 1921; "Pearce to Vincent," 18 March 1921.

<sup>&</sup>lt;sup>51</sup> Cowdry 1920a: 37-38

<sup>&</sup>lt;sup>52</sup> RFA, RG4 (CMB) Series I, Subseries II, Box 65, File 1608 "Peking National Medical School, 1921-1922," and Box 63, File 1542 "National Medical College, 1922-1923."

student histology laboratories might obviate the necessity of artificial light.<sup>53</sup> Cowdry praises the high quality and up-to-date equipment in all Japanese institutions, with the exception of the Women's Medical College: "German microscopes predominate, and Japanese firms are now making excellent imitations of Jung sliding microtomes and other important pieces of apparatus."<sup>54</sup> Tang Erhe was also interested in Japanese microscopes, and we shall see below that he used the opportunity to actually do research in the laboratories in Tokyo and Kyoto. But Tang was also interested in the new technology of slide projectors, since these allowed for tissue and cell preparations to be displayed for instructional purposes, as he found in Tokyo with Dr. Nagaoki (長興博士):

Then he led me to the dissection room, briefly describing the layout, and then leading me on. The doctor/professor said, "Upstairs are the classrooms, downstairs has electricity where during lectures [one] can use slide projectors to instruct the students." When I teach histology, I frequently feel regret that I cannot show the actual object. On this trip I intend to purchase a slide projector to take back to China.<sup>55</sup>

Tang was also keenly interested in X-Ray technology, which seemed to hold infinite promise for anatomists and physicians seeking to see inside live bodies. In Mukden, as the Southern Manchurian Medical School, the hospital was fitted with an X-Ray room. At that time X-Rays were a revolutionary technology with usefulness for diagnosis and for anatomical research. Tang inquired about its provenance and discovered it was from Germany. From other sources, we know that over the next few years Tang made singular efforts to obtain the substantial funding necessary for an X-Ray machine for the National Medical School he had founded in Beijing.<sup>56</sup>

<sup>&</sup>lt;sup>53</sup> Cowdry 1920a: 72, 74.

<sup>&</sup>lt;sup>54</sup> Cowdry 1920a: 74.

<sup>&</sup>lt;sup>55</sup> Tang 1917a: 13.

<sup>&</sup>lt;sup>56</sup> RFA, RG 4 (CMB) Series I, Subseries II, Box 63, File 1542, National Medical College, 1922-1923.

Tang Erhe was also particularly impressed with the specimen room at Tokyo. Cowdry describes the Japanese anatomical and anthropological museums as "most creditable," with particular strengths in Ainu skeletons (Tokyo). He praises the models of embryos and dissections. What impresses Tang most in the Tokyo Imperial University Anatomy specimen room is the sheer comprehensiveness of the collection and its organization, "each organ system in its own cabinet, each cabinet divided into three areas, altogether ten cabinets. No item inside was the same as any other."<sup>57</sup>

Tang clearly desired to provide in China all the best buildings and equipment he saw on this trip in Japan, and later in Germany also, but due to a variety of financial limitations on the Chinese government, was unable to.<sup>58</sup>

As with funding and facilities, Japan was also able to accumulate massive numbers of cadavers for anatomical instruction and advanced research. In Tokyo, Tang Erhe was taken under the wing of Dr. Nagaoki, anatomist and professor of pathology at Japan's pre-eminent medical college. Tang described his discussions with the Professor as free and wide-ranging. With Nagayo, Tang assumed the role of junior colleague: the pecking order is established immediately by reference to dissection capacity:

The Professor asked how many cadavers did my school have. I haltingly replied "it can not compare with your school." The Professor then said, "The imperial university each year has six hundred corpses."<sup>59</sup>

Two days later, Tang was in the dissection room and asked about the cadaver room in his own school, forcing him to admit that they use the basement since they do not have many cadavers.<sup>60</sup>

<sup>&</sup>lt;sup>57</sup> Tang 1917a: 14.

<sup>&</sup>lt;sup>58</sup> China was massively indebted to Euro-America by the 1910s, primarily due to the Boxer indemnity of 450 million taels, plus interest. Republican leaders accepted their legal obligation to this debt to secure foreign approval and further loans which primarily went to armaments by the 1920s in the battle of regional warlords and warlord factions to unify and control China.

<sup>&</sup>lt;sup>59</sup> Tang 1917a: 13.

We know from other sources that the numbers of cadavers in Tang's Peking Government Medical College were relatively small: twelve in 1914; sixteen in 1915; three in 1916; seven in 1917; and fifteen in 1918.<sup>61</sup> Cowdry reports, four years later, that in eighteen months time the Rockefeller-funded PUMC acquired only four bodies and lost all of their servants when the first corpse entered the building.<sup>62</sup> The best supply of anatomical "material" in China were at the British University of Hong Kong and the Japanese Medical School at Mukden which had "a sufficient and regular supply." In Japan, by contrast, "bodies may be obtained more easily than perhaps anywhere else in the world." <sup>63</sup> Kyoto Imperial University Medical School, as a second example, dissected 433 bodies in 1913, under a government-controlled supply from prisons, work houses, old people's homes, the University Hospital and beyond.<sup>64</sup> The significance of the paucity of "anatomical material" in China compared with Japan is significant. Despite numerous wars, epidemics, homelessness and other forms of poverty, and Tang Erhe's successful attempt to pass an anatomy law in 1912-13, the anatomo-medical profession in the 1910s and 1920s was unable to gain access to large numbers of cadavers.<sup>65</sup>

It is clear from the preceeding discussion that the materiality of anatomy was important for to Tang Erhe, E. V. Cowdry and their Japanese, Chinese and Euro-American colleagues in the late 1910s and early 1920s. Modern buildings with suitable lighting, ventilation and drainage were needed for teaching classrooms and for student and faculty laboratories. Finances to construct, maintain and equip these buildings, and pay salaries for faculty and assistants, were

<sup>&</sup>lt;sup>60</sup> Tang 1917a: 17.

<sup>&</sup>lt;sup>61</sup> Beijing Professional Medical School 1922.

<sup>&</sup>lt;sup>62</sup> Cowdry 1920b: 45.

<sup>&</sup>lt;sup>63</sup> Cowdry 1920b: 45.

<sup>&</sup>lt;sup>64</sup> Cowdry 1920a: 72.

<sup>&</sup>lt;sup>65</sup> This is not the place to explore the possible reasons for this difference, but my current working hypothesis is that Chinese law and custom continued to respect the wishes of the powerless to maintain somatic integrity of their loved ones after death, whereas such wishes and desires had long been overrun by the desires of the medical profession for a cheap supply in Europe, North America, and Japan.

substantial and needed a steady source to avoid the danger of being shut-down, as Tang Erhe's own school faced in 1921 while politics soured in Beijing and he toured German anatomical laboratories. And crucial to imparting the anatomical view of the body to students was a steady supply of dead bodies for their scalpel practice. Specimen collections, whether of embryos, microscopic slides, or of the skulls and bones of adults were needed for research into the problems of human origins and the relationship between, and evolution of the races, as well as explorations of the cellular basis of disease or other pressing questions in the science of the period. In short, materiality mattered to teaching anatomy, research in anatomy, and the relationship between anatomy and power.

## *Teaching anatomy*

Teaching included access to cadavers, but it also involved staff-to-student ratios, the ratios of time spent in lecture versus laboratory, the standardization of the language of anatomy (and other medical fields), and the translation or writing of textbooks. Cowdry presented his data visually, along with his analysis, while Tang adopted a realist methodology, describing classrooms, teachers, and discussions about terminology or textbooks as he experienced them day by day.

For example, Cowdry visually and analytically compares information on "Anatomical Staff" of seven Japanese Medical Schools with seven elite American medical schools. Tang does not process information for his reader, and the importance of teaching details are explored when he sits in on a gross anatomy lecture for ten minutes in Seoul where students demonstrated difficulty remembering basic osteological terms (of the bones), or asks questions about medical curriculum in Osaka. Cowdry tells us that while the total number of full professors and even assistant professors was similar, or greater, for Japanese institutions, most American institutions,

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with the exception of North-Western and Columbia, had much lower ratios of teachers to students once associate professors, associates, instructors, assistants and teaching fellows were included (Japanese institutions listed had no associate professors). Japanese ratios of total teaching staff to students ranged from 1:10 at Kyoto and the South Manchurian Railway Medical School, to 1:31 at Tang Erhe's *alma mater*, Kanazawa Special Medical School. In the U.S. Chicago ranked first with a 1:5 ratio, followed closely by Yale and Harvard, with Columbia's bloated student body of 213 bringing its ratio to 1:19. Cowdry calculated the Japanese average at 1:18, compared to "American institutions of similar grade" of 1:9. This problem was compounded by small buildings and classrooms which forced Japanese instructors to double teaching hours and teach twice. The lack of assistants seems to have been due to poor pay, or even no pay for those lowest in rank. Cowdry quotes a 1916 report from the Japanese Ministry of Education that "unpaid assistants are appointed in the institutes, laboratories, workshops, and hospitals ... and under certain circumstances allowances may be specially paid to them." Full professors, at the rank of chokunin, on the other hand, were well paid and were "appointed either by His Majesty the Emperor in person or by His order."<sup>66</sup>

Tang's concerns with the Japanese curriculum are clearly those of someone seeking a model, while Cowdry's tend to evaluate, especially in comparison with "the better" American institutions, derives explicitly from the Carnegie Foundation's Flexner reports on medical education in North America and Europe (1910, 1912), and the Rockefeller's China Medical Commission Report of 1914. Cowdry was concerned with the disadvantage to both students and faculty at Japanese institutions where lectures and rote memorization could were relied upon long before students had access to their own explorations in the dissection room. In Japan the total number of hours devoted to anatomy, according to a government order of 1916, was set at

<sup>&</sup>lt;sup>66</sup> Cowdry 1920a: 74-77.

fifteen percent of the total medical curriculum, while the Association of American Medical Colleges suggested eighteen percent. In Japan, however, "fully half the student's time is occupied by listening to lectures," a proportion far too high for Cowdry, who felt that this was a "deplorable state of affairs" since the PUMC and the best American schools allocated only ten percent to instruction by lecture, and a full ninety percent to laboratory instruction.<sup>67</sup> Tang takes a very different approach, exploring pathology and dissection laboratories, examining equipment and methods, and asking Japanese faculty about the role of histology, embryology, medical history and research in the curriculum. We can see this while Tang toured the Osaka Medical School for four days in early May of 1917.

While touring the Japanese medical schools, specific questions of terminology came up often for Tang, the most significant conversation occuring in Osaka. Director of the Osaka medical school, Professor Buntarō Suzuki (鈴木文太郎), had made the first attempts to standardize Japanese terminology for anatomy. He based his work 1905 *Kaibōgaku Meishū* (解 剖學名彙) on the 1895 first attempt of European anatomists to unify Latin terminology, the Basle Nomina Anatomica (B.N.A.).<sup>68</sup> Suzuki's *Kaibōgaku Meishū* was the standard anatomical terminology compilation in Japanese until German anatomists revised the B.N.A. in 1935.<sup>69</sup> Suzuki, a histologist, asked Tang about his own histological research (discussed below), but Tang quickly moved the discussion to the work of standardizing anatomical terminology which so occupied Chinese anatomists at that time. Tang informed Suzuki that the terms used by Tang's Republic of China Medico-Pharmaceutical Association in the Joint Terminology Committee were modeled after Suzuki's *Kaibōgaku Meishū*. Suzuki was very pleased to hear

<sup>&</sup>lt;sup>67</sup> Cowdry 1920a: 83; 1920b: 48.

<sup>&</sup>lt;sup>68</sup> American anatomists were debating the acceptance of the B.N.A. well into the twentieth century.

<sup>&</sup>lt;sup>69</sup> Shimada 2008: 130-131. Suzuki's lexicon went through no less than 17 editions by 1932, Kimura 2008:

about the work of the Joint Terminology Committee's work in China, then made a gift to Tang of a reference book, Terminology Index (Mingci suoyin 名詞索引). Although most terms were settled, Suzuki felt that in particular areas where scientific scholarship was advancing, terms were inadequate, and so for thirty years he had been slowly ruminating and editing.<sup>70</sup> The reality, Suzuki acknowledged, was that one could never quite keep up with global trends and so one could never fully graduate from this work.<sup>71</sup> This prompted an impassioned response from Tang Erhe about the significance of the terminology standardization work within his life's work:

This matter is very important, and I am aware that my own limited knowledge is insufficient. Today my country has only begun planting the seeds of medical science. [If we] lose this opportunity through lack of foresight, the future will be increasingly confused and unifying and correcting will be difficult. I fear a doubling or even five-fold increase [of terms] from today. For this reason I will not conjecture ignorantly [but rather] gather the [book] introductions of colleagues as examples, hoping to provide future generations something to revise. For this reason, at present, we can only translate the original Latin into hanzi/kanji [漢字]. In cases where the original Latin meaning is in error, then tentatively we must remain unrushed, adding and amending in order to avoid confusion.<sup>72</sup>

Suzuki, who had himself pioneered the Japanese terminology work, then replied to Tang that such a project was extremely important, yet beyond the ability of any single person. Tang responded that he was aware of his limitations, but sought to lay a foundation on which others could build after his death.<sup>73</sup>

Language is almost absent from Cowdry's account, while in Tang Erhe's diary, questions

of language arise at each anatomical institution. Cowdry, knowing only European languages,

showed concern merely that Japanese journals consolidate and publish some or all of their

<sup>&</sup>lt;sup>70</sup> Tang acknowledges that Suzuki is sixty years old, so we can assume that Suzuki began to work on the problem of terminology in the 1880s, fifteen years before his 1905 Kaibōgaku Meishū. It is interesting to note that this was the same time that the China Medical Missionary Association first attempted to begin to standardize their terminology (1890). <sup>71</sup> Tang 1917a: 36. <sup>72</sup> Tang 1917a: 36.

<sup>&</sup>lt;sup>73</sup> Tang 1917a: 36.

original research in English, French or German so that it might be able to be shared properly abroad; the policy of the Peking Union Medical School at that time was to use only English given the large number of textbooks and scholarly literature available in that language.<sup>74</sup> Tang Erhe, with a classical Chinese education, and a Japanese scientific education, also knew German and English well enough to correspond and publish.<sup>75</sup> Language reform and terminological standardization were foundational issues for physicians and educators like Tang Erhe and his allies in the Jiangsu Provincial Educational Association or Commercial Press. Students and the Chinese reading public, in the early Republic, were barraged with new terms for new ideas. Christopher Reed tells us that many publishers sunk or swam based on their line of medical books alone, and many of these books were translations from Japanese, complete with a ready made vocabulary in *kanji*.<sup>76</sup> Frederico Masini, Lydia Liu and many other scholars who study the changes in the Chinese lexicon of the late Qing period have charted and theorized the influx of individual terms and whole vocabularies.<sup>77</sup> Almost no work has been done in English on the great standardization project which began in 1916 with the terminology for anatomy.<sup>78</sup> Tang Erhe was a dominant figure at the meetings as representative of the Ministry of Education between 1916 and 1919 when the vast majority of anatomical terminology was unified.

If the concerns of Tang, Cowdry and the Japanese in the teaching of anatomy were somewhat divergent, they all agreed that anatomy was the foundation of medical instruction.

<sup>&</sup>lt;sup>74</sup> Cowdry 1920a: 91; On PUMC English language policy, see Bullock 1980: 40-41. This changed in the 1930s when the Nationalist Ministry of Education required Chinese to be adopted as the main language of administration and teaching by Chinese professors, Bullock 1980: 99-101.

<sup>&</sup>lt;sup>75</sup> Tang published with German colleagues (1922) and corresponded and held discussions with Roger S. Greene of the Rockefeller on many occassions. Several letters written in beautiful penmanship in the same hand as his signature, over a one year period are to be found in RF, RG4, CMB, I, II, Box 85, Folder 1969.

<sup>&</sup>lt;sup>76</sup> On medical publishing see Reed 2004: 121-122; on Japanese books translated into Chinese, see Sanetō 1980 and Reynolds 1993.

<sup>&</sup>lt;sup>77</sup> Masini 1993; Liu 1995; Lackner, et. al. 2001; Lackner and Vittinghoff 2004; Wright 2000.

<sup>&</sup>lt;sup>78</sup> There is a large historiography of uneven quality in Chinese, the best accounts are Zhang Jian 2007; Zhang Daqing 1996; 2001.

Osaka's Buntarō Suzuki understood that anatomy was the first set of terms to be unified, and then asked which medical discipline should come next, was it physiology? Tang responded that it was the subfields of anatomy—histology and embryology.<sup>79</sup> Although terminological work was laborious and thankless, textbook production and classroom teaching were absolutely dependent upon it. Cowdry focused on increasing the opportunities for medical students to experience dissection as soon as possible, and for as many hours as possible: "The whole medical curriculum rests on the science of anatomy and it is essential that the students should have a very practical first hand knowledge of the structure of the human body, as well as thorough training in the art of dissection, if they are to become good physicians and surgeons."<sup>80</sup> Tang himself had proposed China's first anatomy law,<sup>81</sup> but the practical reality was that access to cadavers in China remained limited, so that teachers [like Tang] had "give[n] up their efforts to obtain bodies for dissection ... for it takes a lot of time and energy to cultivate the authorities."<sup>82</sup>

## Research in anatomy

The German model of anatomy and the related sciences of morphology, zoology, embryology, physiology, neurology, was built around highly competitive research programs with one or more professor leading advanced students in a particular research problem. This model was carried back to the U.S. by William Welch and other founders of Johns Hopkins University, and was transfered to Harvard and Chicago soon after. The Meiji Government imported German professors, especially to Tokyo University to build it up as the primary producer of medical

<sup>&</sup>lt;sup>79</sup> Tang 1917a: 36.

<sup>&</sup>lt;sup>80</sup> Cowdry 1920a: 83.

<sup>&</sup>lt;sup>81</sup> Tang's pioneering work in this and other fields of establishing anatomo-medicine in China went completely unnoticed in Cowdry's account of anatomy in China, which includes a complete translation of the anatomy law, Cowdry 1920b: 45-47.

<sup>&</sup>lt;sup>82</sup> Cowdry 1920b: 47.

professors. Tokyo thus became the center of anatomical research in Japan.<sup>83</sup> In comparing the accounts of Japanese anatomical research by Tang and Cowdry, we can see the Japanese transmutation of German laboratory science meet the American version which, with Germany's defeat, was now becoming ascendant.

We might best begin with Tang Erhe's research interests. In Osaka, Tang Erhe was asked by Buntarō Suzuki if his professional research specialization was in histology. Tang replied, "Specialization-I dare not put it that way. But before I returned to China from Japan I spent all my time researching the heart. This research is of great interest."<sup>84</sup> We know that at his earliest opportunity, in 1921, Tang did continue to pursue this research in German histological laboratories, focusing on the Purkinje fibers that control electric impulses of the heart. This research was published as a co-authored article in a German anatomical journal.<sup>85</sup> Tang's interest in research, however, was limited by facilities at his medical school, and his political, cultural, and administrative duties. I risk derailing the discussion of Tang's tour to Japan by taking a detour to examine his accomplishment in anatomical research, and its evaluation by none other than E. V. Cowdry, in the winter of 1921-22. The Rockefeller Foundation in New York cabled Tang Erhe on 12 November 1921 to be a guest to visit American medical schools. Tang was unable to go, as he was returning to Beijing to return to politics, but he sent ten copies of this publication and wrote in English: "During this short stay in Europe I have done a research work, whose result I have published ... I dare send [it to] you ... and should be very much obliged to you, if you would be so kind as to keep one copy for yourself and to distribute the rest to the specialists of the different medical colleges."86 E. V. Cowdry, having given up his position in

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 <sup>&</sup>lt;sup>83</sup> Sakai 2008.
 <sup>84</sup> Tang 1917a: 36.
 <sup>85</sup> Tang 1922.

<sup>&</sup>lt;sup>86</sup> RFA, RG4 CMB, I, II, Box 85, Folder 1969, "Tang to Director of CMB, New York," 6 Dec. 1921.

Beijing and returned to the Rockefeller Institute by January 1922, was, along with another anatomist at Johns Hopkins, asked to evaluate Tang's research in this paper.<sup>87</sup> Cowdry's response is caustic:

I'd like to say that I have looked through it carefully. In a paper of this kind, done in a German laboratory, it is sometimes difficult to estimate how original is the author's contribution. Mr. Greene also mentioned this ... We both feel, of course, that Doctor Tang is an elderly man who has shown his ability as an administrator rather than as an investigator. The paper is, however, very interesting, and I think a definite contribution to our knowledge of Purkinje fibers. I am returning it to you herewith...<sup>88</sup>

Greene replied to Cowdry the same day that the Hopkins anatomist evaluated it similarly, but "[t]he paper is at least significant of Dr. Tang's interest in research and would indicate that his visit to Germany gave him a chance to see how German investigators work." Such experience was deemed to be of use in helping Tang to reorganize his own school.<sup>89</sup> The Rockefeller Foundation and administrators at the PUMC in Beijing continued to woo Tang with offers of a fully paid tour of American medical schools, and then, with open-ended offers to make use of the superior laboratory facilities at the PUMC, as well as scholarships for the best students of Tang's government school to do advanced research at PUMC.<sup>90</sup>

Tang's experience in Japan was similar. Professor Nagaoki in Tokyo provided Tang with a pathological specimen and full access to use several of the laboratories there. Tang then took this specimen with him to Kyoto and Osaka where he continued to examine it. Tang was also asked to aid in an autospy of a child at the forensic laboratory in Tokyo.<sup>91</sup> Cowdry toured Japanese research institutions as an inspector, rather than participant. With a Flexnerian impulse, Cowdry's account can damn with faint praise: "A great many more creditable original

 <sup>&</sup>lt;sup>87</sup> "Cowdry returned to New York in late 1921. The immediate reason was the illness of his wife, but he may also have been disturbed by the limited opportunities in Peking in his chosen field, cytology." Bowers 1972: 95.
 <sup>88</sup> RFA, RG4 CMB, I, II, Box 85, Folder 1969, "Cowdry to Eggleston," 25 Jan. 1922.

<sup>&</sup>lt;sup>89</sup> RFA, RG4 CMB, I, II, Box 85, Folder 1969, "Greene to Cowdry," 25 Jan. 1922.

<sup>&</sup>lt;sup>90</sup> RFA, RG4 CMB, I, II, Box 85, Folder 1969, multiple letters.

<sup>&</sup>lt;sup>91</sup> Tang 1917a: 15.

investigations are being carried on in anatomy, under these rather unfavorable conditions, than one can see at first sight."<sup>92</sup> His account encourages consolidation and specialization of research journals by the government, maintainence of close relationship between anatomy and anthropology, expansion of original investigation beyond morphology, neurology, comparative anatomy and embryology to research in tissue culture and micro-dissection (histology).<sup>93</sup> One suspects that with more research Cowdry would have found extensive publications by Japanese investigators, like Buntarō Suzuki, in these fields in German journals.<sup>94</sup>

# Anatomy and power

Anatomical research and knowledge as understood by Tang, Cowdry, and the Japanese they interacted with in the late 1910s was not assumed to be pure research unrelated to questions of power. Physical anthropology, racial anatomy and eugenics all promised to resolve questions about racial and class origins and hierarchies. As Cowdry put it in his article on anatomy in China, "In the Orient, racial problems are uppermost." Cowdry was explicit in arguing that anatomists, taking carefully recorded measurements of their dissections, could contribute significantly to understanding the "potentialities of the Chinese race" and determine whether the "Chinese are a progressive or regressive type," thus indicating "what evolutionary tendencies they exhibit along certain lines."95 Nor should anthropology be considered separately from anatomy, "no effort should be spared to bind anthropology closely to the parent science of anatomy."

<sup>&</sup>lt;sup>92</sup> Cowdry 1920a: 88.
<sup>93</sup> Cowdry 1920a: 93-94.

<sup>&</sup>lt;sup>94</sup> I also need to do more research!

<sup>95</sup> Cowdry 1920b: 58-59.
Anthropologists and physicians in the Japanese empire were, as much as Euro-American anthropologists in their respective empires and spheres of influence, dutiful servants of state and economic power.<sup>96</sup> By 1917, aside from earlier "internal" colonization of the home islands, Japan had acquired two primary colonies: Taiwan (1895) and Korea (1905-1910).<sup>97</sup> Japanese health and hygienic policing and medical institutions developed in the home islands and Taiwan in the Meiji period were transfered and adapted to Korea, then to Manchuria, and after 1937, throughout the "Greater East Asia Co-Prosperity Sphere."<sup>98</sup>

Based on his inquiries at the Southern Manchuria Medical School in Fengtian and in Keijo Medical School in Seoul, Tang's primary interest in these medical schools was anatomical institutionalization. If we consider the transcripts of his conversations with the head of the hygiene division of the Japanese colonial police, we can also see that Tang was keenly interested in Japanese methods to abolish, or at least regulate and diminish, existing forms of East Asian medicine (*zhongyi* in China, *hanya* in Korea, *kanpo* in Japan). The shared interest of Tang Erhe and his interlocutors at these colonial institutions was to increase opportunities for teaching and researching anatomical medicine and for anthropometric concerns of physical anthropology. These opportunities were particularly great in Korea under the conditions of a colonial military police state after the violent anti-Japanese uprisings of 1907 to 1911.<sup>99</sup> According to Cowdry, military discipline prevailed in *all* Japanese medical schools, but this effect was highlighted when Cowdry visited Keijo Medical School in Seoul during the height of the March First

<sup>&</sup>lt;sup>96</sup> The literature on anthropology and medicine in service of empire is vast, but see especially Cohn 1996 on anthropology.

<sup>&</sup>lt;sup>97</sup> Japan also established formal colonies in Karafuto in southern Sakhalin (after Russo-Japanese War in 1905) and the Nan'yō islands of Micronesia. See Myers and Peattie, eds. (1984), esp. Peattie, 172-210

<sup>&</sup>lt;sup>98</sup> Liu 2009; Lo 2002; Rogaski 2004; For the cultural context of Japanese imperialism, see Matsusaka 2001; Myers and Peattie 1984, especially Chen; Ching 2001; for internal colonization of Japan see Frühstük 2003; Tanaka 2004.

<sup>&</sup>lt;sup>99</sup> According to one Japanese source, the Japanese military police tranformed "the entire Korean peninsula into a military camp," quoted in Chen 1984: 221-222.

Independence Movement of 1919, when some of the medical buildings were themselves occupied by Japanese troops.<sup>100</sup>

Unlike Cowdry, Tang Erhe gives us very little explicit analysis of his travels, but it seems clear that in Manchuria, only partially under Japanese influence, Tang, as Chinese, was treated with less respect than he was in Korea or Japan. Most East Asians tacitly accepted a global racial hierarchy which saw caucasians at the apex, followed by Japanese, then Chinese and Koreans, then the "darker" races of Asia and Africa.<sup>101</sup> Although Japan preached an evolving doctrine of an East Asian Cultural Co-Prosperity Sphere, non-Japanese were expected to fall in line behind Japanese elites. Cowdry noticed that Chinese students studying medicine in Japan were treated "unfairly," and Koreans studying in Keijo Medical School in Seoul were segregated into a "woefully inadequate" "general course" with only thirty-six hours devoted to dissection. The "special course" restricted to Japanese in Seoul, had over 144 hours for dissection and 54 hours devoted to histology laboratory.

Yet each national "race" also had hierarchies based on social class. Elites like Tang used wealth, personal introductions and his knowledge of Japanese, but also German and English to gain respect. Tang's account includes a detailed description of these inter-Asian hierarchies when he struggled to purchase a train ticket to cross the border into Korea.<sup>102</sup> The Asian hierarchy, however seemed clearest for Tang in Manchuria. His tour of the medical school was not conducted by the Prof. Satoshi, but by the professor of surgery, Prof. Yamai, and seems to have been abuptly ended when two hours after the appointed time, "Satoshi arrived, rather late, and thereupon bid us farewell." There is no further comment, but Tang was clearly expecting a warmer welcome.

 <sup>&</sup>lt;sup>100</sup> Cowdry 1920a: 76, 80.
<sup>101</sup> Chung 2002; Dikotter 1992; 1997; Frühstük 2003.

<sup>&</sup>lt;sup>102</sup> Tang 1917a: 2-3.

In the Korean capital Tang Erhe was treated rather better after obtaining a letter of introduction from the Chinese Consul General, a former acquaintance of Tang. The director and former director of the medical school, Drs. Kubo and Sato respectively, took Tang on a long tour of the medical school and facilities. They held a wide-ranging discussion, much of which did not make it into the *Eastern Miscellany* version of his published diary. Most notable in the longer account is a description of the dissection instruction room which had an enormous collection for anthropological study.

Kubo and Tang had both studied medicine at Kanazawa medical school [金澤專門醫學 校], an obvious point of connection. Sato, Kubo and an assistant led Tang to see a major research project of Kubo—the physical variations of Korean skeletons. Tang was impressed with the skeleton repository: "Only including skulls, this already included more than ten cases, each case being one meter tall." Tang slowly inquired about provenance, methods and variation. The physicians had observed women in the north, in Sinuiju [義州], carrying heavy earthen jars on their heads to draw water. They began with the research hypothesis that the skulls of the women must have changed. Tang asked if the crown of their heads had changed to become more fleshy or not, and whether Korean brains had any abnormalities as a result of this custom, but Kubo's research was as yet indeterminate. Tang suggested that the muscle on the back of the neck must also develop differently, which they were able to confirm. But where would the Japanese physicians acquire such a large collection of local specimens? Sato answered, "We broke open some mass graves and got them." Sinuiju is a border town and many anti-Japanese fighters, the so-called "righteous armies," fought the Imperial army between 1907 and 1911 from bases in the north and across the border in Manchuria. These fighters and the villagers who protected them were the most likely victims uncovered in the mass graves.<sup>103</sup>

Tang Erhe was also interested in the power of the colonial military police to elminate non-anatomically-based forms of medicine, so his second day in Seoul was primarily occupied in an interview with the head of the Hygiene Bureau of the Police Affairs, Yoshio Bando [板東義 雄]. Tang felt that Korean-Han medicine [朝鮮漢譯] was no longer suitable for present and future society and wished to "hurriedly exterminate it," asking Bando for the details and sequence of the Japanese method to do so. Bando's method demonstrated a more cautious approach beginning with regulation based on reputation and examination based on the propositions of hanya 漢醫 itself by Koreans within the police establishment itself. Tang was doubtful that such a method held any value, but Bando claimed even this first stage of abolishing Korean-Chinese medicine had made it difficult to practice legally. The second stage was to hold biannual workshops of about ten days teaching anatomy and physiology and contagious diseases to the old-style registered practitioners [yisheng 醫生]. There was no experimental work involved, but the financial arrangements were quite ingenious: the local formally trained physicians [vishi 醫師] volunteered to instruct, and the old-style registered practitioners paid their own costs for food and lodging. Those unwilling to attend could have their licence to practice revoked. Bando summarized the Japanese approach:

This matter is truly a question of the limitations of the masses. In speaking about today's situation, Korean people truly must have a place for *Hanya* [*Han medicine* 漢醫]. In a word, the guiding principle of administration is to gradually reduce it, selecting outstanding practitioners, and adding to their knowledge, and on the other hand cultivate orthodox physicians [*yishi* 醫師]. This is the basic outline today.<sup>104</sup>

<sup>&</sup>lt;sup>103</sup> Lee 1984: 317; Chen 1984: 221.

<sup>&</sup>lt;sup>104</sup> Tang 1917a: 6.

This appears to have been the approach adopted by Tang Erhe: to regulate, rather than attempt to abolish, Chinese medicine. Tang's memorial to the Ministry of Education appeared in the 1917 and 1918 volumes of his association's medical journal and seems to follow the Japanese colonial prescriptions quite closely.<sup>105</sup> In case there was any confusion about the source of Tang's proposals, the 1918 volume included three short pieces describing the Japanese system for regulating physicians in Korea.<sup>106</sup> Tang's adopted gradualist approach in the late 1910s to limiting Chinese medicine can be compared with that of his Japanese-trained colleague, Yu Yunxiu who, one decade later, made the complete and immediate abolition of Chinese medicine a personal vendetta.<sup>107</sup> On one level both attempts ultimately failed, for practitioners of Chinese medicine organized themselves and lobbied close friends in government positions *higher* than those of the modernizers.<sup>108</sup> In another respect, however, Tang's approach succeeded. It succeeded in forcing practitioners of Chinese medicine to organize themselves increasingly according to standardized patterns coherent with centralized state and economic power, just as Tang and the modernizers were doing. And most importantly, Chinese medicine during the twentieth century shifted to incorporate training in detailed knowledge of anatomo-medicine (currently mandated in PRC), even if its practitioners continue to prefer to explain their diagnoses and therapies in significantly different terms of *qi* transformation and other notions of the human body which were considered "peculiar" by the early representatives of the Rockefeller Foundation, and "insane" by Tang Erhe.<sup>109</sup>

<sup>&</sup>lt;sup>105</sup> Tang 1917c; 1918f.

<sup>&</sup>lt;sup>106</sup> Zhonghua minguo yiyao xuehui huibao 1918a; 1918b; 1918c.

 <sup>&</sup>lt;sup>107</sup> On Yu Yunxiu's efforts to abolish Chinese medicine, see Zhao 1989; Andrews 1996; Lei 1999; Scheid
2007.

<sup>&</sup>lt;sup>108</sup> Lei 1999; Andrews 1996.

<sup>&</sup>lt;sup>109</sup> See Farquhar (1994), Scheid (2007), and Zhan (2009) for more on TCM training in the reform era. On the desparaging comments on Chinese anatomical knowledge, see China Medical Commission 1914; Tang Erhe, Beijing City Archives J29-3-16-1 "Beijing Medical Professional School, Request to raise a proposed law allowing dissection."

## Conclusion

This chapter has argued that by following the activities and interests of Tang Erhe in 1917, along with his fellow Japanese and American anatomists in East Asia, we see anatomy, and indeed, all of colonial biomedicine and science, in a new light. Anatomy and dissection were more than a basic science; more than a metaphor for scientific analysis. They provided an organizing system based in material culture, pedagogy, and research which resulted in very real power to intervene in social life. There is no room here to develop this thesis beyond what has already been stated, so I will here merely leave the next question open for further research: What might we learn about global biomedicine in the early twentieth century by viewing it as an unstable formation conveniently called anatomo-medical modernity? If many elements seem familiar to us, others seem unthinkable (knowing that they resulted in the live physiological human experiements of Nazi and Japanese doctors during World War Two). What kind of research programs did this project engender? Which of these succeeded, and which did not? Such an approach may contribute in a small way to the project of making East Asian Science/Technology/Medicine "matter" to American- and Euro-centric narratives of science.

# 7 Lacking political power, scientific medicine is not able to become popular in China<sup>1</sup>

The thriving development of scientific medicine in Japan since the Restoration was completely based on political power. Lacking this political power, scientific medicine is not able to become popular in China. Politics and medicine are closely connected. Yu Yunxiu 余雲岫 1935<sup>2</sup>

## Introduction: the body of Yuan Shikai

On June 6 of 1916 at ten o'clock in the morning, President Yuan Shikai died in Beijing. Attending were his two western-style physicians, Drs. Wong Wen-tso and J. A. Bussiere, but also present were the Chinese-style physicians of his many wives, concubines, children, and servants.<sup>3</sup> The editorial of the National Medical Journal took the occasion to bemoan the state of affairs in China where western-style physicians did not have complete control in the household of the head of state despite offering evidence of his having a "stronger leaning towards western than eastern medicine."<sup>4</sup> For the physicians of the National Medical Association, China was an anomaly in world affairs for countenancing the interference of what they called "blind quacks" in the diagnosis and recovery of a head of state: "In every country but China the serious illness of such an important person as the President would at once have been left to his trusted medical advisors, who would prescribe medicines, engage nurses and generally manage affairs for the comfort of the sick."<sup>5</sup> Yuan's leaning toward western medicine was evidenced in his establishment of the Army Medical College in Tianjin while he was viceroy of Zhili in the waning years of the Qing and his maintenance of Dr. Wong as his personal physician during his

<sup>&</sup>lt;sup>1</sup> This chapter is dependent on ideas borrowed from the writings of, and conversations with, Sean Hsianglin Lei of Academia Sinica, Taiwan.

<sup>&</sup>lt;sup>2</sup> Translated in Lei 1999: 85.

<sup>&</sup>lt;sup>3</sup> Jerome Chen claims there were three French doctors in attendance, but agrees that their orders were often ignored. Chen 1972: 192. <sup>4</sup> "Editorial." *NMJ* 2:3 (1916): 1-5. <sup>5</sup> "Editorial" *NMJ* 1916: 2.

retirement from 1908 to 1916. Dr. Bussiere had been present as the family physician of Yuan's oldest son, Yuan Keding.

But despite this apparent preference for Western medicine, the body of the ailing president had been a battleground for the prescriptions of competing physicians, and the advice of Drs. Wong and Bussiere was not strictly followed. Instead, "countless relatives, friends, hangers on, and even servants stepped in, each ready with his so-called physician, theory, ideas, and quick restorer." Rather than allowing one round of medicine to work its course, "[a]ll sorts of concoctions-hot-cold and intermediate-were poured into the poor man's stomach in quick succession." For example, one of the Chinese physicians identified the sickness as 'cold' and administered a large dose of the 'hot' medicine cinnamon bark decoction to counteract it. Unlike the agreement of the two Western-trained physicians, however, another Chinese physician was certain that the sickness of Yuan Shikai was 'hot' and thus required several ounces of Calcium Sulphate decoction due to this substance's cooling facility. A third man, meanwhile, found that neither heating nor cooling medicines appeared to halt the progress of the disease diagnosed it as 'hot-cold' and ordered large doses of clam-shell decoction be given to the patient.<sup>6</sup> According to Wong and Bussiere's proxy in the editorial office, Yuan's life ended with all physicians in a joint consultation—one can only imagine the absurd and dramatic scene of multiple physicians arguing over Yuan's ailing body "until coma and then death set in."<sup>7</sup>

Most Chinese were greatly relieved at Yuan's death, and given the President's run-down physical condition, it is unlikely that any medical treatment, whether from Chinese or Western-

<sup>&</sup>lt;sup>6</sup> On cold damage disorders and the warm disease tradition in late imperial China, see especially Hanson 2011; also Scheid 2007: 157, 169. Scheid describes Yi Jinghe as a physician who mixed drugs such as Ephedrae Herba (*ma huang*) or Cinnamomi Ramulus (*gui zhi*), the same drug mentioned in the account of Yuan Shikai, and both common drugs of northern medicine associated with cold-damage therapeutics with drugs of Southern medicine and warm pathogen disorder tradition.

<sup>&</sup>lt;sup>7</sup> Editorial *NMJ* 1916: 2.

trained physicians, would have saved him.<sup>8</sup> Multiple consultations were, in fact, not an uncommon occurrence among those patients wealthy enough to confer with more than one physician, who were in fierce competition with each other for the social capital of treating famous persons.<sup>9</sup>

But practitioners of biomedicine sought exclusive authority over the bodies of individuals, populations and environment. Biomedicine meant science and standardization, and would brook no epistemological challenge from older medical practices. The editorial of the previous issue of the *National Medical Journal*, for June 1916, had been ecstatic about the lengthy presidential order of 1915, which had finally given official status to the new medicine in three categories, medicine, pharmacy, and veterinary science.<sup>10</sup> Notably missing in this official order was any reference to Chinese medicine, or as they termed it, "China's old, completely corrupt medical practices" (*zhongguo jiuri zhongzhongfubai yidao* 中國舊日種種腐敗醫道). The editors interpreted this as the desire of the government to no longer tolerate old medicine. But Yuan Shikai's death in June, also meant the death of most of his policies, tied as they were to his aborted attempt to restore the monarchy.<sup>11</sup> The question of how the medical market would be regulated, or if it would be regulated at all, were thus left open for the time being. The accusation against China's "old" medicine was that it was blind.

This chapter demonstrates how language, anatomy and power were connected by examining the importance of the project of unifying Chinese medical terminology to the goal of

<sup>&</sup>lt;sup>8</sup> Yuan over ate and "burnt the candle at both ends" with the result that his renal and circulatory systems were giving way. Editorial *NMJ* 1916: 3

<sup>&</sup>lt;sup>9</sup> Scheid 2007: 184.

<sup>&</sup>lt;sup>10</sup> This law was introduced by Tang Erhe. See chapters five and six above.

<sup>&</sup>lt;sup>11</sup> For an evaluation of Yuan's policies and his legacy, see Chen 1972: 179-215; Young 1977: 177-254. See also Cohen 1988 and Kuhn 1988.

Western-trained physicians to displace Chinese medicine from the healthcare field between 1915 and 1930. Anti-Chinese medicine diatribes were common in this period, and very often these critiques were based in the perceived absence of proper anatomical knowledge. To see anatomically was to see truly; to see without proper anatomical knowledge was to be blind. In an unsigned article concluding the first issue of *The National Medical Journal of China*, the newstyle physicians pitted themselves against the old style with images demonstrating that the inaccurate Chinese view of the body beside the accurate Western view of the body (figure 29). The anatomical gaze was the only authentic one.<sup>12</sup>

The principal cause of the backwardness of Chinese as compared with Western medicine lies in the wrong foundation upon which the former is built. Take for instance the structure of the human body. In Chinese books, the drawings and descriptions are mostly inaccurate, as can be ascertained by dissection. Our modern native physicians continue to rely upon this deceptive knowledge for the treatment of their patients, and do infinite harm to our people. Every branch of knowledge must nowadays be exact, and medicine is one of the most important. We cannot afford to play with it or with the future of our race. In order to show the fallacy of these old ideas, I have taken a photo of a Chinese medical engraving placed side by side with an accurate picture of the human body. The difference is obvious.<sup>13</sup>

But such misshapen images were hardly more convincing in 1915 than they are to our jaded eyes

today. And articles and images published in the *National Medical Journal* of China were merely preaching to the converted, they would convert no one. This was not a battle that could be won with propaganda alone: real governmental power to establish the anatomical view of the body would be needed. But with an increasingly weak central government in the post-Yuan Shikai era, where would such power reside?

<sup>&</sup>lt;sup>12</sup> Never mind the "accuracy" of the "Accurate (Western)" second image(!). Lorraine Daston and Peter Galison discuss the changing modes of truth-to-nature in scientific representation, from idealized images of the eighteenth century to the apparently more objective lithographed, and then photographed images of the nineteenth and twentieth century. Daston and Galison 2007.

<sup>&</sup>lt;sup>13</sup> *NMJ* 1:1 (1915): 51-52.



Figure 5 "The human body: inaccurate (Chinese); accurate (Western)" Source: *National Medical Journal* 1:1 (1915): 51-52. Public domain.

In 1935, looking back on the battles with Chinese-style physicians in the late 1920s, Yu Yunxiu would reflect that the anatomically-based medicine had not become popular in Japan without the backing of political power, and neither would it become popular in China without legislative and police powers.<sup>14</sup> Likewise, Tang Erhe also argued for a close relationship between medicine and politics. It is easy to interpret such comments about political power and medicine as an attempt of physicians to nakedly seize the reins of government to build medicine—and this was also the case for both—if one looks deeper at the results of their broader activities, one can

<sup>&</sup>lt;sup>14</sup> Yu 1978 [1935], translated in Lei 1999: 85.

see the insinuation of a new logic governmentalizing medicine so that if Tang's political faction were to fall out of favour, or Yu's political machinations were rebuffed, then the incremental, bureaucratic accomplishments of a new form of medicine would not be turned back. The (un)intended result of their attempts to use coercion to eliminate Chinese medicine was the governmentalizing of Chinese medicine itself. In this chapter I argue that the coercion, reclassification of knowledge, and (self)-governmentalization of Chinese medicine resulted in its transformation as a new form of standardized medicine which must take into account the anatomo-medical view of the body.

The key to this argument is tying the work of the Joint Terminology Committee to attempts to restrict and abolish Chinese medicine (zhongyi 中醫). As we have seen in earlier chapters, the project of the Joint Committee served to standardize the reproduction of physicians through medical textbooks and lectures in medical schools while also allowing for the unambiguous communication of original scientific research. Successful unification of nomenclature aimed to produce a one-to-one correspondence and allow medical findings in China or another part of the globe to be rapidly and definitively translated and disseminated to all other nodes of the network of global medicine. These were recognized by physician-politicians like Yu and Tang as necessary steps to establish a bulwark for Western medicine. Yet at another level, this process of rationalizing terminology was a crucial part of governmentalizing medicine in China. The instrumental goal of proponents of the "new medicine" was to establish it according to internationally recognized standards and then to regulate, subsume, and (for the most extreme) abolish, the "old medicine." In fact, they were almost in lockstep with a small group of elite American physicians and educators funded by the Rockefeller and Carnegie Foundations who were making decisions to standardize medical education through various

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carrot-and-stick methods in the U.S., Canada, Europe, and also in China.<sup>15</sup> Homeopathy, irregular medicine, independent midwives (and other female medical practitioners), and medical schools judged "second-rate" created ambiguity in the Euro-American medical market, and great efforts were made to eliminate them.<sup>16</sup> This drive toward medical standardization was also echoed in China by Japanese-trained physicians like Yu and Tang.

How, then, should advocates of anatomo-medicine displace advocates of Chinese medicine? Short of effective measures of regulation (attempted by Tang Erhe in 1916) or complete abolishment (attempted by Yu Yunxiu in 1927-1929)<sup>17</sup> the complete rationalization, standardization and institutionalization of the new medical tradition *in translation* was necessary. Institutionalization included the formation of professional associations and standards, legal reforms allowing regularized anatomical investigations. These goals would be accomplished by imbricating the new medicine with state power wherever possible.

Yet no aspect was more important to the formation of an indigenous, self-replicating profession than the standardization of translated terminology. It should then, be no surprise that Yu Yunxiu and Tang Erhe, two of the most powerful opponents of Chinese medicine, involved themselves in the business of the Joint Terminology Committee, or that Yu Fengbin, a co-founder of the National Medical Association, and longstanding member of the Terminology Committee, also had strong opinions about sublimating Chinese medicine.<sup>18</sup> Chapters five and six introduced Tang as representative of the Chinese Ministry of Education to the committee from 1916 to 1920, the same period when he attempted to regulate Chinese medicine according

<sup>&</sup>lt;sup>15</sup> See the Flexner reports (1910; 1912) and China Medical Commission of the Rockefeller Foundation (1914). Significantly, the CMC believed that English was the preferred medium to transmit their standardized version of medicine to China.

<sup>&</sup>lt;sup>16</sup> Starr 1982. See the essays in Gevitz 1988 for unorthodox medicine in the U.S.

<sup>&</sup>lt;sup>17</sup> See discussion below on both of these episodes.

<sup>&</sup>lt;sup>18</sup> The work was first taken under the University Council 大學院 directed by Cai Yuanpei, then was reorganized under Academia Sinica 中央研究院 when it was formed in 1929.

to Meiji Japanese regulations of *Kanpō Seiyaku* 漢方製薬 (shortened as *Kanpō* 漢方) medicine. Yu was delegate to the committee during the years 1922-1927, in the years when his "spittlefights" (*koushuizhan* 口水戰) with practitioners of Chinese medicine accelerated into a life-anddeath struggle as Yu partnered with Nationalist Minister of Health Liu Ruiheng 劉瑞恆 to abolish Chinese medicine at the turn of the decade.<sup>19</sup>

Before proceeding to examine the standardization work as one part of the larger project of reclassification of traditional knowledge, I will examine a seminal article written by Yu Fengbin in the *National Medical Journal* about whether Chinese medicine was worth saving. I will then recount the attempts of Tang Erhe and Yu Yunxiu to regulate and abolish Chinese medicine. The chapter will then conclude with reflection on the (self)-governmentalization of Chinese medicine in the wake of these attempts by anatomo-medical practitioners to abolish it.

## Sublimation and preservation: Chinese Medicine as national essence

The National Medical Association, formed in 1915 by primaries Wu Liande, Yu Fengbin and Yan Fuqing, all educated in England or the United States, tended to promote a conservative view of the medical revolution than those trained in Japan. Rather than abolition, for which Tang Erhe and Yu Yunxiu aimed, the Anglo-Americans adopted a more liberal approach that promoted the new medicine, while sublimating, but preserving, the old. If continental European and Japanese preferences were for a large government and top-down regulation of the medical field, the Anglo-American tradition preferred less government regulation and more market selfregulation, following the dictums of Adam Smith and other political economists. I have argued

<sup>&</sup>lt;sup>19</sup> Liu Ruiheng was a member of the terminology standardization committee at its inception in 1916-1917, until he went to study public health at Johns Hopkins University under the auspices of the Rockefeller Foundation. He returned to take up various positions at the Rockefeller-funded Peking Union Medical College (including director) until he was selected minister of health under the Nationalist Government in Nanjing after 1928.

elsewhere for such an approach to understanding the instrumental role of the English language *History of Chinese Medicine* by Wu Liande and fellow NMA member, Wang Jimin. That book, along with Wang Jimin's carefully preserved museum collection of manuscripts and artifacts, aimed to preserve pre-twentieth century Chinese medicine to demonstrate the national heritage (*guocui*).<sup>20</sup>

There are important debates about this issue in the Chinese pages of the National Medical Journal, including a seminal one by Yu Fengbin. Yu Fengbin was a key member of the Joint Terminology Committee from its inception and author of many of the sixty-six items about the Committee published in the *National Medical Journal*. As explored in chapter two, he also became an important executive member of the Jiangsu Provincial Education Association, and thus ranks as one of the super-networkers (see appendix four). In a substantial article, "A Discussion of the Preservation of Ancient Medicine," published in 1916, Yu argued that ancient medicine had long been stagnant, but nonetheless contained elements that were valuable and must be preserved. Quoting from The Doctrine of the Mean (Zhongyong) and The Great *Learning (Daxue)* that learning must renew itself constantly, Yu argued that Chinese medicine had no innovations since Shennong (Mystical figure attached to Han Dynasty Materia Medica), and had simply followed old ways.<sup>21</sup> Yu argued that Western and Chinese medicine were radically divergent, with Western medicine having science as its basis (by which he appears to mean a constant search for truth), while Chinese medicine claims to be nearly complete. In other words, for Yu, Western medicine's strength was its constant search for new knowledge, while the weakness of Chinese medicine was its satisfaction with ancient knowledge.

<sup>&</sup>lt;sup>20</sup> Luesink 2009. Wang's collection became the basis for the impressive collection now housed at the Shanghai University of TCM's Museum.

<sup>&</sup>lt;sup>21</sup> *NMJ* 2:1 (1916): 4-6. This has been widely demonstrated to be an inaccurate representation of medicine in China. See especially Nappi 2009, Scheid 2007, Hanson 2011. I argue in Luesink 2009 that even Wong and Wu 1932/1936 speaks with two voices about whether Chinese medicine had been stagnant or not.

Yet Yu differentiates his position from that of the physicians trained in Japan who aimed to copy the Meiji Restoration policies that completely reformed medicine. In China, Yu Fengbin argued, this approach had led to a polarization of medical politics, so that those arguing for the new medicine could no longer speak to supporters of Chinese medicine. The former argued that Chinese medicine was corrupt and must be abolished, while the latter, without investigating the new medicine, argued that their medicine was only good and had supernatural powers. Yu's position fell somewhere in between: Chinese medicine's weakness was its lack of significant change over thousands of years. But its corresponding strength was the accumulation of thousands of years of significant experience and service to humanity. Given this recognized contribution, it would be a pity if Chinese medicine were completely lost. As to the argument that China should follow Japan in legally eliminating its old medicine, Yu argued for a substantial differentiation between the two countries. Japan had merely imported its old medicine from China, so it had no substantial sense of national essence attached to it. Yet even there, the old medicine maintained the trust of the people because of long experience. How much more so, Yu argued, did Chinese medicine exhibit the national essence of China? On the other hand, Western medicine had only begun to experiment and advance in the nineteenth century, so it was equally false to say Western medicine was all good and Chinese medicine was all false. The solution Yu proposed was to cleanse the ancient medicine of China of its dross and unwanted residues of the past, while retaining its best features. The best features he explored were primarily its pharmacopaeia, which he charged his colleagues to rigorously test chemically and physiologically, eliminating those that were dangerous and retaining those that were active and useful. Rather than eliminate Chinese medicine completely, Yu argued that the best of each

medical tradition, western science, and ancient Chinese medical experience, should be combined so that Chinese medicine would push ahead vigorously.<sup>22</sup>

Yu's approach is what would now be called integrationist, a popular position in the contemporary PRC. As we shall see below, all of TCM (Traditional Chinese Medicine) is integrationist to some degree—it has been transformed by its encounter with anatomo-medicine. The question, however, was (and is): who sets the terms for integration? Generally, anatomo-medicine has been able to set the terms, insisting on anatomical, chemical and biological explanations for all forms of acceptable TCM practice, even more so in adopting TCM drugs and therapies outside of China. But this result was as yet unknown during this first, extended encounter, between 1916 and 1930 when China attempted to adopt German and Japanese models using new police forces to regulate the medical field in favor of biomedicine.

#### Coercion: The Japanese medical police method

In the late nineteenth century, Japan adapted the German model of Staatmedizin pioneered by anatomist-politician Rudolph Virchow. By 1893 the Japanese had transferred public health to the police department, and in 1895 Japan officially prohibited the practice of traditional Chinese medicine there.<sup>23</sup> When Tang Erhe (1900s) and Yu Yunxiu (1910s) followed the high-tide of over ten thousand elite Chinese students to study in Japan in the first two decades of the twentieth century,<sup>24</sup> Japan had already largely eliminated most of its physicians of *kanpo* (Chinese) medicine, and had begun initiating restrictions on practitioners in its colonies of

<sup>&</sup>lt;sup>22</sup> *NMJ* 2:1 (1916): 4-6. See also Wang Songyuan, "Zhongguo gudai yixue shifou you baocun zhi jiazhi," *NMJ* 8:3 (1922): 152-153, which responds to Yu Fengbin's article directly and argues China's ancient medicine has only historical reference value, and no preservation value.

<sup>&</sup>lt;sup>23</sup> See Leung and Furth 2010: 280.

<sup>&</sup>lt;sup>24</sup> See figure 3. Besides medicine, these students studied in military academies and various technical schools. The increase in numbers in this period is striking between 1898 and 1901, and then doubling or tripling each year until 1905, and a peak of 12000 in 1906 (See Chart 1). Sanetō Keishū 實籐惠秀. 1980. *Zhongguo yi Riben shu zonghe mulu* 中國譯日本書綜合目錄. Hong Kong: Chinese University Press. 47.

Taiwan (1895) and Korea (1905). Both Tang and Yu were inspired by the success of Japan's medical elites to displace Chinese medicine through regulation. In earlier chapters we have established that Tang Erhe was the key physician in establishing anatomo-medicine in China in the 1910s and 1920s. While Wu Liande, Yan Fuqing and other Anglo-American-trained physicians have received much attention,<sup>25</sup> Tang has been deliberately excluded from these largely celebratory accounts because he became a collaborator during the Sino-Japanese War.<sup>26</sup> Yu Yunxiu has received much attention for his flamboyant attempts to abolish Chinese medicine, but his context as a highly-networked member of Tang Erhe's Republic of China Medico-Pharmaceutical Association and the nationally-important Jiangsu Provincial Educational Association has not been addressed.<sup>27</sup> These men were at the center of the transfer of Japanese medical knowledge and institutions to China during this crucial phase.

In chapter five we were introduced to Tang Erhe, who established the government medical school in Beijing on the Japanese model and applied to the Ministry of Education for permission to legalize and institutionalize dissection as the basis of medical education. In 1916, while Ministry of Education representative to the Joint Committee for Medical Terminology, he submitted a proposal to the Ministry of Education to regulate all Chinese medical practitioners along the lines of the Meiji regulations.<sup>28</sup> Historian of the conflict between the two medicines, Zhao Hongjun, writes, "Around 1916, [Tang Erhe] submitted a request to the Ministry of Education to implement Japanese Meiji-era health measures, and this had a significant influence

<sup>&</sup>lt;sup>25</sup> Qian and Yan 2007; Wang 2007.

<sup>&</sup>lt;sup>26</sup> Historian of Chinese medicine Zhao Hongjun says that Tang has become laughingstock in medical circles for taking money from the enemy "终至晚节不保, 食禄异族, 遗迹于医林." 1989: 102.

<sup>&</sup>lt;sup>27</sup> On Yu's efforts to abolish Chinese medicine, see Zhao 1989; Andrews 1996; Lei 1999; Scheid 2007.

<sup>&</sup>lt;sup>28</sup> He followed up this deep connection between anatomo-medicine and the regulation of Chinese medicine in his fact-finding mission to Japanese Manchuria, Korea and Japan in 1917 which he published in his associations journal and in shortened form in the leading journal of the time, the *Eastern Miscelleny*. Tang 1917b; 1918.

on the Beiyang government."<sup>29</sup> The first issue of the ROCMPA Journal in 1917 includes Tang's reports submitted to the Ministry of Education regarding the first three meetings of the Joint Terminology Committee in 1916 and 1917, followed his "Memorial Submitted to the Ministry of Education Requesting Rectification of the Procedure for Physicians Preparing to Practice," the source of Zhao's comments.

According to Tang Erhe's memorial, his request for national standardization of medicine was preceded by a request by the former Imperial Physician Zhang Zhiting and Zhao Cunren<sup>30</sup> who asked for a national examination to regulate physicians. The Republican government did not accept this request, and instead turned to Tang and his professional association for a second opinion. Tang suggested adopting Korean colonial measures to regulate medicine, stricter than those implemented in Japan in the early Meiji period, and perhaps even stricter than those actually implemented in Korea. In his memorial, Tang mocked Zhang and Zhao's suggestion of an examination system with essays as a system to produce scholars. It was impractical since the level of scientific knowledge in Chinese society was so low and there were few organizations to improve this situation. In fact, if one was to "gather those who spread [the doctrine] of the five phases and the six winds and ask them about principles of dissection and embryology, they would stare wide-eyed and dumbfounded as if a zebra were to walk out in front of them."<sup>31</sup> However, because the roots of science had only begun to take hold in China, and qualified personnel were few, Tang suggested that practitioners of Chinese medicine should be utilized and regulated rather than abolished, although abolition might be desirable in the future.

<sup>&</sup>lt;sup>29</sup> Compare Zhao Hongjun, 1989: 102.

<sup>&</sup>lt;sup>30</sup> Zhao (1989: 103) says this was approximately in 1915, although Tang's original memorial is not clear (Tang 1917).

<sup>&</sup>lt;sup>31</sup> Tang 1917a.

Tang's memorial, like his previous one institutionalizing regularized dissection as the basis of the medical profession (1912), was accepted by the Beiyang government. The first stage was to implement a census investigation of all medical practitioners in China, but because of the lack of national unity after Yuan Shikai's attempt to make himself emperor (1915) followed quickly by his death (1916), most provinces did not pay attention to the census, and so it failed. So despite Tang's success in influencing the Beiyang government, there was no way to implement supervision of physicians.<sup>32</sup>

It was immediately after this that Tang went on his educational fact-finding mission to Japanese areas of Manchuria, Japanese-occupied Korea, and Japan, spending much of his time investigating the relationship between the colonial police who were the front line in implementing public health measures (including regulating practitioners of Chinese medicine), anatomy in medical education (including various means of acquiring sufficient corpses for student learning and advanced research), and the ongoing standardization of Japanese terminology for medicine, particularly that of anatomy.<sup>33</sup>

### The diary of a madman and critique of the triple burner

Tang Erhe's critique of Chinese medical ideas became explicit and public when his friend Chen Duxiu published a private letter in the pages of *New Youth* (Xin Qingnian). As it happened, this was the same issue of the radical journal where Lu Xun published his first short story "Diary of a Madman," Cai Yuanpei published his plan for university reform, and Qian Xuantong, Li Dazhou, Zhou Zuoren, Hu Shi and Liu Bannong weighed in on issues of abolishing the old

<sup>&</sup>lt;sup>32</sup> Zhao 1989: 103.

<sup>&</sup>lt;sup>33</sup> See chapter six.

language and establishing the new culture. These men, mostly from Zhejiang and running Peking University and other institutions of higher learning, had been students and revolutionaries in Japan, centered around the house of Zhang Taiyan (Zhang Binglin). Chen Duxiu would call Tang "Erhe, my schoolmate" in this exchange.

The thrust of *New Youth* as a journal was a rejection of traditional Chinese culture.<sup>34</sup> Lu Xun (Zhou Shuren) was not yet prominent, and his story of a madman seeing only cannibalism written between the lines of four thousand years of Chinese culture that preached the virtures of "benevolence, righteousness, and morality" had to be interpreted in a later issue.<sup>35</sup> Tang Erhe had been a prominent leader among these men, passionately organizing hundreds of Chinese students in Japan willing to fight Russian aggression in Manchuria in 1903.<sup>36</sup> Tang's 1918 letter "Triple Burner! Cinnabar Field!" was apparently a response to a question posed privately by Chen Duxiu. In two short sentences Tang gave the approximate anatomical location for the triple burner as the cavity housing the internal organs. But for Tang, those who came up with the concept in the Jin and Yuan dynasties were blind. The Cinnabar field Tang found to be an even more preposterous concept than the triple burner—this was the area around the navel where life was fed into the baby in the womb through the umbilical cord, through the mucous membrane.<sup>37</sup> Tang's terse response describing these concepts of Chinese medicine in anatomical terms demonstrate that he had less patience for this heritage than Yu Fengbin's intervention two years earlier.

Chen Duxiu would then publish his response, bewailing that the scholarly thought of China was still in the period of religion and superstition, and so they were forced to look to Western science for knowledge that could be verified. Chinese medicine, like the orthodoxy of

<sup>&</sup>lt;sup>34</sup> Chow 1960: 41-48 is still an excellent summary.

<sup>&</sup>lt;sup>35</sup> Chow 1960: 308.

<sup>&</sup>lt;sup>36</sup> See Weston 2004: 61; Harrell 1992: 135.

<sup>&</sup>lt;sup>37</sup> Tang Erhe, "Sanjiao! Dantian!." Xin Qingnian 4:5 (1918): 483.

the Confucian cannon, Chinese natural studies, history, and *belles lettres* must, according to *New Youth*, be discarded. Lu Xun's madman searched for any youth who were not yet cannibals: "There may be some children who haven't yet become cannibals? Save the children..."<sup>38</sup> Chen Duxiu published these private exchanges "to lead the youth off the wrong path and onto the right path."<sup>39</sup>

Tang Erhe and Chen Duxiu believed deeply that they were correct in discrediting the concepts of Chinese medicine. Yu Yunxiu took this project much further.

# The medical revolution and the Joint Terminology Committee

By the 1920s, Yu Yunxiu (Yu Yan, 1879-1954) had become a lightning rod for those who opposed the old medicine. He published an endless series of articles exploring, and then denouncing, the teachings and practice of Chinese medicine. Then, when he saw an opportunity, he attempted to use the new Ministry of Health of the Nanjing Nationalist Government to abolish the old medicine completely along the lines of the Meiji Government in Japan several decades earlier. Yu Yunxiu's attempts to abolish Chinese medicine have been explored in detail elsewhere in English and Chinese, so here I will quickly summarize these accounts and draw some previously overlooked connections.<sup>40</sup> Yu Yunxiu who studied in Japan only a few years after Tang, famously pushed the idea of a Chinese "Medical Revolution," which was memorialized in his various publications after 1928 that included this term.<sup>41</sup> His antipathy toward Chinese medicine elicited much heat and light from his intellectual adversaries, especially Yun Tieqiao, in the 1920s,<sup>42</sup> but it was not until his attempt to completely abolish

<sup>&</sup>lt;sup>38</sup> Translated in Chow 1960: 308.

<sup>&</sup>lt;sup>39</sup> Chen Duxiu "Sanjiao! Dantian!." Xin Qingnian 4:5 (1918): 484.

<sup>&</sup>lt;sup>40</sup> Crozier 1968; Zhao 1989; Andrews 1996; Lei 1999; Xu 2001; Scheid 2007.

<sup>&</sup>lt;sup>41</sup> Yu 1976.

<sup>&</sup>lt;sup>42</sup> These other authors like Qin Danwei 秦但未, Zuo Zhihen 鄒趾痕, Li Weinong 李慰農, and Yun Tieqiao 惲鐵樵 himself appeared in journals of Chinese medicine like the 三三醫報 [1923-1929, published in Hangzhou,

Chinese medicine within four years (i.e. by 1931) through the power of the newly unified Nationalist state that his full purpose became clear: "To abolish the old-style practice in order to remove the obstacles to medicine and public health."<sup>43</sup>

Yu's reasons for abolition included the accusation that the theories of Chinese medicine had "not a grain of truth" and were "absurd" and "may be classified in the same category as astrology."<sup>44</sup> Moreover, since their diagnosis was fundamentally flawed, they were "completely useless for the purposes of administration/government."<sup>45</sup> Finally, the "reactionary thoughts" of the old-style physicians were "a hindrance to Scientization [of people's medical beliefs]."<sup>46</sup> If the first two reasons aimed to *reclassify* Chinese medical knowledge (see below) then the second two reasons pointed toward a governmentalization of the field of health, a movement from a particular individual's disease and cure to the management of whole populations subsumed under the sign of the nation.<sup>47</sup>

To see the practical connection between the work of the Joint Terminology Committee and Yu's attempts to abolish Chinese medicine in 1929, we must go back to 1925. That year practitioners of Chinese medicine and their allies met at the Society for the Advancement of Education to propose that the newly established schools of Chinese medicine be recognized by the Ministry of Education. This was adopted by the Society and presented to the Ministry for consideration. In 1926 the National Educational Conference was held at Hankou and the provincial educational association of Zhejiang and Hubei presented similar proposals, which were passed by that assembly. It so happened, that the Scientific Terminology Committee, the

Shanghai Library (2004): 22], whereas Yu Yunxiu tended to published his refutations of Yun Tieqiao in either the German-focused medical journal 民國醫學雜誌 (1923-1932) or the Women's literary supplement of 心聲: 婦女文苑.

<sup>&</sup>lt;sup>43</sup> Wong and Wu 1936: 162.

<sup>&</sup>lt;sup>44</sup> Wong and Wu 162.

<sup>&</sup>lt;sup>45</sup> Chen 1937: 267.

<sup>&</sup>lt;sup>46</sup> translation, Lei 1999: 83.

<sup>&</sup>lt;sup>47</sup> See Lei 1999; Rogaski 2004.

successor to the Joint Committee for Medical Terminology, was having a meeting at the same time in Shanghai—two key members, Yu Yunxiu and Yu Fengbin (俞鳳濱) "moved that a telegraphic circular be sent to all Provincial Educational Associations exhorting them to make a stand for scientific medicine instead of obstructing the march of progress by going back to herb therapy. The National Medical Association, the Chinese Medical and Pharmaceutical Association and the Shanghai Medical Association joined their voices in protest. The result was that the resolution passed by the Hankow Conference [National Educational Conference 1926] was pigeon-holed by the Ministry."<sup>48</sup> The link between the terminological work and Yu's attempts to abolish Chinese medicine can be seen in his extensive involvement in that committee in which Tang had played such an important part in the late 1910s and Yu Fengbin continued to be a key participant. In the five years (1921-1926) leading up to this first, tentative political clash, Yu Yunxiu was a regular delegate at the Scientific Terminology Committee, representing both the ROCMPA (established by Tang, but now largely run by others) and the Jiangsu Provincial Educational Association and sitting on the executive sub-committee, and various technical committees on physiology, pathology, parasitology, and internal medicine.<sup>49</sup> Of the seventeen signatories on Yu Yunxiu's petition to abolish Chinese medicine-the members of the National Board of Health (Zhongyang weisheng weiyuanhui 中央衛生委員會), five of them had been active members of the Joint Terminology Committee between 1916 and 1926, in addition to the chairman of the committee and vice-Minister of Health Liu Ruiheng. This, I argue, is more than mere coincidence. The logic of standardizing terminology was the same logic that led to the elimination of ambiguity in the medical field.

<sup>&</sup>lt;sup>48</sup> Wong and Wu 1936: 161. It is worth noting that Tang Erhe was now a regular cabinet level minister in Beijing, Minister of Education (1922); Minister of the Interior (1926) and Minister of Finance (1927), and so his influence may have had an effect on the Ministry of Education's refusal to carry through on the 1926 proposal of the federation of Chinese medical practitioners (see Xu 1991: 1188)

<sup>&</sup>lt;sup>49</sup> See Appendix 5.

The attempts of Yu and his colleagues in the Ministry of Health to abolish Chinese medicine in 1929 failed. The federation of native practitioners was able to establish a supervisory board, the Central Bureau of Native Medicine, that was not directly under the antagonistic Ministry of Health. However, we should look beyond the personalities and politics of this period to see themes we have pursued in this study. The key theme is the governmentalizing of Western medicine in China, both in times of a strong state (1927-1937) and the earlier weaker state period (1916-1926). The logic of governmentality led men like Tang and Yu to eliminate ambiguity in the medical field by establishing a clear standard for medical education, based on anatomical interventions and a standardized terminology. Chinese medicine as it existed stood in their way.

#### Reclassifying

"Since fundamentally they (old-style physicians) do not know diagnosis, it is impossible for them to certify the causes of deaths, classify diseases, combat epidemics, not to mention eugenics and racial improvement, which are completely beyond their reach." Yu Yunxiu, 1929.

Historians of imperial science since George Basalla (1967) have recognized that each colonial context had something to offer universal science—raw data.<sup>50</sup> This data, primarily in the form of disease and plant knowledge, was extracted from its "non-scientific" form, then classified and organized around the current dominant classification system of the national culture of the European explorer/collector (pre-1880s), then later standardized by international committees and conventions that became ubiquitous in diverse fields of science after the 1880s, which we saw in the case of German anatomists and the BNA. Yet, as Londa Schiebinger has described, particular knowledge about the medicinal uses of a particular plant was not accepted if

<sup>&</sup>lt;sup>50</sup> For Basalla each "colony" (his colonies include the whole world, except Western Europe) was a *tabula rasa* of data and samples to be gathered by the denizen of Western science, there is no specific mention of cribbing or culling from existing knowledge as was the case.

it did not fit the cultural priorities and gendered power relations of Europe as in the notable case of abortificants from the slave islands of the West Indies). Schiebinger has termed reclassifying as a process under the neologism of "agnotology."<sup>51</sup> In the context of imperialism, agnotology is a description of willful or unintended renetworking of natural knowledge of non-Europeans by Europeans.

In the case of Chinese herbal knowledge, nothing was accepted unless it could be chemically isolated for mass production in the just-then burgeoning global pharmaceutical industry. There were professional and even financial rewards to be wrought from being the first globally-networked scientist to "discover" particular qualities of this or that herb.<sup>52</sup> And so, among Western- and Japanese-trained scientists in China, there was no shortage of attempts to do so, as signaled in Yu Fengbin's article described above. Both before and after Yu Yunxiu's failed 1929 attempt to have Chinese medicine abolished, he pursued the governmentalizing task of studying "old medical works for the purposes of pharmacological research."<sup>53</sup> Yet this knowledge first had to be isolated from its context in Chinese herbal manuals, translated, classified and made equivalent to the prevailing Latin terminology.

Reclassification here refers to the extraction of knowledge from one form of classification and renaming it and reclassifying it in order to insert it into another. We have already seen the scornful comments of Tang and Yu toward Chinese medical knowledge demonstrating their overt political attempts to abolish Chinese medicine. However, one might argue, given their political failure, that the more significant work was the more mundane one that of standardizing terminology.

<sup>&</sup>lt;sup>51</sup> Schiebinger 2004; Proctor and Shiebinger 2008.

<sup>&</sup>lt;sup>52</sup> a member of Basalla's "Invisible Colleges," 1967: 156.

<sup>&</sup>lt;sup>53</sup> Scheid 2007: 213, only indicates that Yu pursued this after his failed attempts, but Yu also published on this topic as early as 1923, in the middle of his terminology committee involvement. See Yu 1923a; 1923b.

When Japanese-, European-, and American-trained Chinese physicians began collaborating with medical missionaries, publishers and educators to standardize medical terminology in Shanghai in 1916, they largely ignored the categories and classifications of existing Chinese medical thought. The anatomo- medicine institutionalized in China in the 1910s *de*territorialized spaces of health in order to *re*territorialize it with its own alternate authority and knowledge.<sup>54</sup> Health, disease and the natural world had been studied in East Asia before contact with Western Europe, but "this native endeavour was soon to be dominated by Europeans, with their superior classificatory systems."<sup>55</sup> Yet this superiority was not demonstrated by logic or inherent verity, as Basalla's misremembered account would have it.<sup>56</sup> Yu Yunxiu and Tang Erhe recognized that the "superiority" of scientific medicine was not self-evident in China's medical market place; it must be politically instituted and allied to the state. This required displacing the diverse existing classification systems, practices, language and institutions of medicine and natural knowledge.

Missionaries and foreign-educated Chinese might claim that all their translations and dictionaries were doing was giving "new terms for new ideas"<sup>57</sup> but they were far more than that. In the late nineteenth century in China (and in Japan before that), translated Western anatomical texts were greeted by a few as part of a renaissance of classical medical learning—a return of Chinese medicine to its golden age of the *Inner Canon* 黄帝内經.<sup>58</sup> In 1884, Tang Zhonghai included Western anatomical illustrations to attack contemporary Chinese medicine:

<sup>&</sup>lt;sup>54</sup> Hevia 2003; Deleuze and Guatarri 1983.

<sup>&</sup>lt;sup>55</sup> Basalla 1967: 156.

<sup>&</sup>lt;sup>56</sup> For the nineteenth century encounter between British naturalists and Chinese counterparts see Fan 2004.

<sup>&</sup>lt;sup>57</sup> This phrase comes from the titles of two books about lexical change in China in the late nineteenth and early twentieth centuries, Mateer 1913 and Lackner, Amelung, and Kurtz 2001.

<sup>&</sup>lt;sup>58</sup> This renaissance of classical learning has been called "revolutionary archaism" in the Chinese context. The larger move toward a revival of the ancients in the nineteenth century is associated with Han learning. See Elman 1984; 1990.

The organ charts of the Western people adopted here do not only correspond to the teachings of the Western people; in fact, they prove that there is not the slightest difference between the morphology outlined by the *Inner Canon* [and that of Western medicine]. To use these charts in order to explicate the meaning of the classics will have the effect that the doctrine of *Qihua* [outlined in these classics] will appear even more as a matter of fact.<sup>59</sup>

Yet for Tang Zhonghai, anatomical knowledge recovered from cold corpses allowed only an examination of the basic configuration, not the *Qihua* (Qi transformation) present in live

patients.<sup>60</sup> Most Chinese elites would have gone no further than Tang's tepid acceptance of

Western anatomical knowledge as a tool to reform Chinese medicine back to its ancient glory.

Yet after China's embarrassing loss to Japan in 1895, the mood among many elites shifted

rapidly. The ti-yong formulation of Chinese learning as the essence and Western learning for

practical use employed in the self-strengthening reforms of leading Qing statesmen Zhang

Zhidong or Li Hongzhang, (and echoed in Tang Zhonghai's words) now seemed far too

conservative.

Influenced strongly by the 1895 loss to Japan and by the failure of the 1898 hundred days

reforms with which he was intimately involved, Tan Sitong saw the lack of anatomical

knowledge in China as a symbol of its backwardness:

What I want to talk about today is even more important: anatomy. Residing between heaven and earth and not knowing about them is already shameful enough; but also *not to know about one's own body—it that not even more ridiculous*?<sup>61</sup>

Tan Sitong became a martyr to the failed reforms of 1898 and his writings spread like wildfire. Elite Chinese students like Tang Erhe and Yu Yunxiu began to choose to study in Japan

<sup>&</sup>lt;sup>59</sup> Lei 1999: 165. Originally from Unschuld 1992: 48. Compare this use of Anatomical knowledge to boost the study of ancient learning in Europe—the so-called "anatomical renaissance" (Cunningham 1997).

<sup>&</sup>lt;sup>60</sup> Compare to Wang Qingren's controversial 1830 book on anatomy, *Correcting the Errors of Physicians* 醫林改錯, which claimed, "on the basis of first hand information, that the anatomical contents of the ancient medical classics were all wrong." (trans. in Andrews 1996: 36). Although Wang's critique is stronger than Tang Zhonghai's, and preceeded it by some fifty years, it remained controversial, if a seminal work in gradually opening minds to Western anatomy.

<sup>&</sup>lt;sup>61</sup> Tan Sitong 1898 trans. In Andrews, 1996, emphasis mine.

rather than prepare for the civil service examinations. In one generation of elite opinion anatomo-medicine went from being a possible source of *renewing* the classics of Chinese medicine to being the obvious, exclusive truth about man's relation to reality. Yet it was not only the apparent truth about "one's own body" that mattered for Tang and Yu. As Yu earnestly put it:

Is there any other reason that I have shouted out to promote medical revolution and appealed to my people in tears? What deeply agonized me were the following: the Old-style Medicine did not obey science, the medical administration was not unified, public health constructions stagnated in many respects, and the shameful name of the "The Sick People of the East" was not deleted.<sup>62</sup>

Proper scientific knowledge of anatomy for Tang and Yu in the 1910s and beyond was the basis for a new governmentality that included racial medicine, eugenics and public health, a governmentality that sought to manage a national "population"—a concept that had only recently been invented.<sup>63</sup> It is no coincidence, then, that the first set of terms to reclassify and standardize were the terms for the human body, terms from anatomy.

Tang Erhe's 1916 Report to the Ministry of Education made these points explicit.<sup>64</sup> The formation of the Joint Committee for Terminology described by Tang Erhe signaled a shift toward reclassifying knowledge about the body. This shift was from missionaries trying to make the new knowledge conform to Chinese patterns of thought, to the modernizing elites of the Committee who were confident in both their knowledge of classical terminology and the novelty of modern concepts and thus were not afraid to coin new terms. Protestant missionary writers and translators in the nineteenth and twentieth century were at pains to use pre-existing terms, even obscure or obsolete ones, to represent their knowledge in Chinese. Since they first arrived

<sup>&</sup>lt;sup>62</sup> Yu 1928, 1-2, translated in Lei 1999: 80.

<sup>&</sup>lt;sup>63</sup> See Lei (1999: 86-87)'s discussion of the significance of Yu Yunxiu's connection of the abolition of Chinese medicine and national affairs, i.e. the governmental practices of collecting "national vital statistics" like "certifying the causes of death", "classifying diseases" etc. See Thompson (forthcoming) for an extended exploration of the significance of vital statistics, and the creation of the concept that China had a "population." For more on eugenics in Republican China, see Dikotter, Chung.

in the Qing dynasty, they turned to the dictionary compiled under the Kangxi emperor as their standard authority (*Kangxi zidian* 康熙字典). Some of their constructions were awkward and unwieldy, and difficult to remember. Some key terms, like the terms for *anatomia* or *dissectio* were euphemisms to avoid using the terms that clearly indicated in their form the cutting of the body with the "dao 刀" radical. So instead of the Japanese terms *jiepou* for dissection and *jiepouxue* for anatomy, many missionaries had used terms like "the study of the whole body" *quantixue*, "the study of the body" *tixue*, or "the study of the structures of the body" *shenti gouzaoxue*.<sup>65</sup>

Tang's report euphemistically refers to the disagreements over terms as each group having their own scholarly habits.<sup>66</sup> In the heat of debate over important terms like those for *Arterius* (dongmai 動脈) and *Vena* (*jingmai* 靜脈)<sup>67</sup> the shift became clear. Classically-trained philologist/educational reformer Shen Enfu (most prominent delegate of the Jiangsu Provincial Educational Association) disparaged the Kangxi Dictionary as "a late-appearing book" which lacked proper explanations and was not a suitable sourcebook for creating new terms. If one wanted old terms, as the missionaries seemed wont to do, one should look to the *Shuowen jiezi* 說文解字,<sup>68</sup> the Han-dynasty wordbook popular with late Qing philologists. Yet in the modern

<sup>&</sup>lt;sup>65</sup> For a discussion of *quanti*, and *quantixue*, their origin in the works of Benjamin Hobson, later deployment by Liang Qichao and Tan Sitong, see Masini 1993: 192-193. The other terms are taken from Scientific Terminology Committee (1919: 1) list of osteological terms, including pre-existing terms and the final terms approved by the Ministry of Education. Actually, *jiepou* has been accepted by many Chinese scholars as a Japanese neologism, yet it first appeared in the *lingshujing* 靈樞經, a Tang Dynasty medical textbook, was later forgotten in China and reintroduced from Japan in the last decade of the nineteenth century (Masini 1993: 181). For further discussion of missionary use of this term and its alternates, see Gao 2009.

<sup>&</sup>lt;sup>66</sup> Tang 1917c: 2.

<sup>&</sup>lt;sup>67</sup> Other alternatives included the missionary term *mai* 脈 and *maiguan* 脈管 for artery/*arterius*, and *huang* 衁, *huangguan* 衁管 or *huiguan* 迴管 for vein/*vena* (Scientific Terminology Committee 1919: 5, 16; compare Yu 1917: 34-35)

<sup>&</sup>lt;sup>68</sup> Literally, "talking about the *wen* 'matrograms', and analyzing (or dissecting) the *tzu* 'teknograms'." The *wen*, because they are monosomatic and not combinations of two or more graphic elements, cannot be "analyzed"

era, Shen said, "objects in the civilized world proliferate daily and we should not be afraid to create new terms."<sup>69</sup>

At this point, Tang Erhe took up the exposition expressing great gratitude for the painstaking labors of the missionaries over the past three decades who had translated many medical books:

Yet [Chinese] society has not been able to accept the books published by the missionaries. Why is this so? It is not because Chinese people do not like the techniques [expounded in] Western medical books. One of the biggest reasons they are not accepted is the use of unfamiliar terms (*yongzi shengpi* 用字生僻) which are unpalatable when read (*duzhiwuwei* 讀之無味). Early on, many friends were in high spirits when they purchased books of the Medical Missionary Association, then later dejectedly bound them together and placed them on a high shelf. This situation has been repeated many times, the reason being simply that there were many unfamiliar terms within. Starting today we must change our guiding principles. Then, the books of the Medical Missionary Association will be an extravagant waste no more. Rather, the painstaking efforts of the Medical Missionary Association will become something that all Chinese people can be exposed to.<sup>70</sup>

In the end, the committee opted to accept the term *dongmai*,<sup>71</sup> actually an old term that

had also been standardized in Japan, and jingmai, a term coined in Japan. Missionaries sought to

distinguish the flow of blood from the Chinese medical conception of mai/pulse by adding to it

the word guan/tube, while the elite Chinese felt that the mai concept could be usefully

redeployed along the lines that the Japanese anatomists had standardized it in 1905. While this

debate can profitably be analyzed from the perspective of the attempts of Chinese elite doctors to

<sup>(</sup>*chieh* 解 'to cut apart, undo, analyze'), they can only be "talked about" (*shuo* 說 'to discuss, talk about'). Boltz 1994: 142-143.

<sup>&</sup>lt;sup>69</sup> Yu 1917: 35.

<sup>&</sup>lt;sup>70</sup> Yu 1917: 35.

<sup>&</sup>lt;sup>71</sup> Wiseman (2006: 447) translated *dongmai* in Chinese medicine as "stirred pulse; pulsating vessel," clearly a radically different classification than the post-Harvey Western conception of the artery as the flow of the blood away from the heart, and veins as flowing in the opposite direction, as Tang describes in Yu 1917: 34. The concept of blood circulation this way did not exist in Chinese medicine, and so there was no term for the *jingmai*, or "tranquil" vessels until Japanese coined it.

both sublimate and enrol missionaries within their state-centered projects,<sup>72</sup> it can also be seen in terms of the mundane reclassifying of knowledge.

At this point, we can review the results of the early terminology decisions discussed in chapter four above. There were three possible existing sources for anatomical terms in 1916: old Chinese terms, old translated terms, and Japanese terms. These are terms decided upon from 1916 to 1919 with Tang Erhe as the representative of the Ministry of Education. The existing (old) Chinese terms represent eighteen percent of the final decided upon terms. The main selection criteria was everyday common usage, primarily for visible or well-known body parts. These would not necessarily have been selected from Chinese medical classics, they were usually an embedded part of the vernacular, although regional variations and dialects would likely confuse this situation. Nonetheless, we know that members of the Joint Terminology Committee often arrived at the meetings with large libraries of Chinese medical texts in tow.

Any terms that could be extracted and re-routed from Chinese medicine to describe anatomical structures were acceptable, while those terms, like *sanjiao*, or *dantian* which described a function which could not be easily mapped onto the anatomical body were derided and ignored.

The project of Tang Erhe, Yu Yunxiu and their many colleagues to reclassify knowledge from previously existing forms (i.e. Chinese medicine) to the anatomo-medical form was a mundane form of governmentality every bit as powerful in constraining and redirecting Chinese medicine as were the overt (and failed) political attempts of Tang and Yu to abolish Chinese medicine. The statistics explored in chapter six (figure 24) demonstrate that most of the

<sup>&</sup>lt;sup>72</sup> For more on this project, and its connection with the attempt of Western medical practitioners like Wu Liande to make Chinese medicine a glorious, but superseded historical artifact, see Luesink 2009.

terminology for anatomy accepted by the Joint Terminology Committee were new terms coined by missionaries, Japanese, or the Joint Committee for Medical Terminology itself in those three short years. New committee-approved terms were the majority of these, while Japanese terminology provided one quarter of the adopted terms and models for the compound terms the committee tinkered with for the fifty-percent majority of terms.

Wang Hui claims that the activities of these scientists shifted not only the Chinese language, but the whole conceptualization of the cosmos. The old worldview was dislodged in the circulation of new terms, and a new, "more technocratic" worldview came to govern the Chinese thought world in all fields from the sciences to the humanities. Wang argues that, "[a] large portion of the vocabulary of modern Chinese was created by conscious, linear design; these words were the products not of a natural process but of a technical one." This was prosecuted most clearly in the work of the Joint Terminology Committee. This instrumental creation of vast numbers of terms would shape the way Chinese would now look at the world. Language precipitated a Copernican revolution whereby throughout the twentieth century the majority of educated Chinese would find it increasingly impossible to understand Chinese medicine apart from the terminology of biomedicine and the anatomo-medical view of the body. For Wang, "[t]he technical design of language satisfied the needs of both the scientific community and of a modernizing society and technocratic structure."<sup>73</sup>

While Wang Hui's focus is exclusively on the scientists, as I have demonstrated, the process was well underway with the activities of missionaries, philologists like Shen Enfu, and physicians like Tang Erhe and Yu Fengbin before the Association of Chinese Scientists joined the expanded committee to standardize scientific terminology in 1919. Wang captures the larger significance of this mundane work of word by word deterritorializing the "cosmic order" of the

<sup>&</sup>lt;sup>73</sup> Wang Hui 2006: 91-92.

late imperial period and replacing it with a more technocratic one, what I have here called a logic of governmentality.

#### (Self)-governmentalizing of Chinese medicine

The attempts of anatomo-medical practitioners and terminology standardizers like Yu Yunxiu, Tang Erhe, Yu Fengbin and Liu Ruiheng to constrain or eliminate Chinese medicine may have been a significant factor in its survival. C. C. Chen, the PUMC-trained rural health expert, no great supporter of Chinese medicine, would write in his memoirs that these "modern physicians [of the 1920s]... inadvertently delayed the diffusion of scientific medicine probably by many decades through their demands for the abolition of traditional medicine."<sup>74</sup>

But with what result exactly? I would like to offer a reading of several important recent texts on Traditional Chinese Medicine and attempt to draw the connection between the governmentalizing logic that Tang and Yu tapped into in their attempts to coerce and reclassify Chinese medicine and the ongoing attempts to standardize terminology, knowledge, practice, and *materia medica* in what has come to be known as Traditional Chinese Medicine.

Scientizers like Tang and Yu attempted to establish and institutionalize scientific medicine and practice by diminishing, reforming, and eliminating existing knowledge and networks. Yet Chinese medicine (among other forms of pre-existing knowledges) did not disappear, even if it was radically transformed through its encounter with the institutionalizing power of science-modernity-capitalism.

Historians of Chinese medicine have often placed the attempts of Chinese medical practitioners to "scientize" and (re)organize their practice under the state to the 1929 abolition

<sup>&</sup>lt;sup>74</sup> Chen 1989: 3. After decades of forced accommodation with Chinese medicine, Chen still had "no question in my mind of the superiority of modern medicine to our own traditional system." *Ibid*.

proposal, or to the earlier attempt to get state recognition in 1925 described above. Yet as we have seen, as early as 1915, previous to Tang's first attempt to regulate medical practitioners in China through a census and strict regulations, some physicians had tried to initiate institutionalization of Chinese medicine.<sup>75</sup> Following medical anthropologists Judith Farquhar (1994), Volker Scheid (2002; 2007) and Mei Zhan (2009) in particular, I see at least two themes in this period which continue in a dialectic from the 1910s, past the attempt at abolition (Lei 1999), the early Maoist period (Taylor 2005), and have accelerated in the reform era of the past thirty years. The first is the survival of Chinese medicine as an effective cure for diseases that baffle Western medicine. The second is the subordination of Chinese medicine to a scientific worldview.

The first theme, subordination, is evident as early as 1921. In the preface to the Chinese Dictionary of Medicine published that year,<sup>76</sup> general editor, Xie Guan from Wu Jin<sup>77</sup> admitted what is in the twenty-first century a familiar rationale for Chinese medicine—despite the rise of Western medicine and Chinese medicine becoming "an object of public denunciation," there are diseases that it cannot heal and that Chinese medicine can.<sup>78</sup> This relegation of Chinese medicine as the (scientific) medicine of exceptions is confirmed in Mei Zhan's recent ethnography where she explores the role of clinical miracles as both the proof for the effectiveness of Chinese medicine, and at the same time a mechanism for keeping it marginal and an *alternative* to Western medicine, rather than becoming a fully universal on its own.

<sup>&</sup>lt;sup>75</sup> For more on this see Scheid 2007: 189-222.

<sup>&</sup>lt;sup>76</sup> In the wake of its success with a new *term* dictionary, the *Ciyuan*, the Commercial Press of Shanghai published medical texts of both the "new" and "old" medicine, including a brand new form of text, the medical dictionary. Robert Culp is currently working on the history of the *Ciyuan* and the parallel *Cihai* of the China Press.

<sup>&</sup>lt;sup>77</sup> See Scheid 2007: 357-387 for more on Xie Guan, Wu Jin and *Menghe* current of Chinese medicine.

<sup>&</sup>lt;sup>78</sup> Xie 1921. The clinical miracle as rationale for TCM in contemporary Shanghai and San Francisco is explored in Mei Zhan 2009, Chapter 3.

The second theme, the ongoing attempts at scientizing and standardizing Chinese medicine, is more cogent to the argument of this chapter regarding the logic of governmentality. Farquhar tells us that "[a]mong those members of Chinese medicine's next generation of leaders who have glimpsed the world of cosmopolitan science ..., there seems to be little nostalgia for a 'pure' Chinese medicine of practical clinical work. Science is the weapon of their generation in a struggle to ensure a future for themselves and their students."<sup>79</sup> These was the same approach that Tang Erhe and Yu Yunxiu and their colleagues took to bring Western medicine up to their conception of a scientific standard in the 1910s and 1920s. There is a straight line of attempts by men in laboratories to isolate effective chemical ingredients of Chinese herbs so that substitutes and new drugs can be formed into standardizable pills for the mass market from the rudimentary investigations of medical missionaries in the nineteenth century, through Yu Yunxiu's lifelong investigations, and into the present day.<sup>80</sup> Since the 1910s (some) practitioners of Chinese medicine have attempted attempted to establish state-sponsored medical schools and a unified medical curriculum, and this process accelerated after 1929, 1949, and continues in the post-Mao period. As Chinese medicine continues to attract patients and non-Chinese speaking practitioners, there is a new attempt to standardize translations of medicine, only now the source language is Chinese and the target language is English (or German or French). The problems that would-be language standardizers like Nigel Wiseman or Shuai Xiezhong and his colleagues in Changsha face are not equal to those faced by translators and standardizers gathered in Shanghai in 1916, but the principles run parallel.<sup>81</sup>

<sup>&</sup>lt;sup>79</sup> Farquhar 1994: 19.

<sup>&</sup>lt;sup>80</sup> Zhan 2009.

<sup>&</sup>lt;sup>81</sup> Wiseman 1995; Shuai, ed. 2006. See especially the lengthy bilingual introduction given by Wiseman (1-105) which parallels the comments of Philip Cousland in his English-Chinese Medical Lexicons (1908; 1915; etc.) and Yu Fengbin's lengthy comments in his regular columns on language standardization in the National Medical Journal from 1916-1927.
I would argue that all of these standardizations represent the logic of governmentality working its way through TCM. If other scholars have called this process the "worlding" of Chinese medicine,<sup>82</sup> or a product of its "globalization," I would not disagree, but would only emphasize the major point that *both* Western medicine and Chinese medicine have been subject to these processes:

Within China [such globalization] refers to attempts to infiltrate territory that was once the sole domain of biomedical power and technology. It refers to the standardization of teaching, practice, and bureaucratic control necessary for such a process to succeed.<sup>83</sup>

So, if political power was the conscious goal of the scientizers, whether those of Western medicine or indigenous medicine, then the governmentalizing of medicine in China, both Western and Chinese, was the long-term result that we can see in the 100 year arc from 1910 to 2010. It is perhaps beyond the scope of this chapter to argue that, in China, both Western and Chinese medicine became caught up in the logic of governmentality at approximately the same time in the 1910s. In a period when the state became very weak, the practitioners of both medical traditions began taking up a new logic of organizing themselves and their knowledge. Anglo-American-trained physicians organized the National Medical Association 中華醫學會 in 1915, Japanese-trained physicians organized the Republic of China Medical and Pharmaceutical Association 中華民國醫药學會 in the same year, entering into China's already rapidly modernizing medical field centered on the Beijing-Shanghai dvad (Shanghai already being the medical center of the greater Jiangnan region). Also in the 1910s, physicians of Chinese medicine began organizing beyond lineage and teacher-student relations into powerful federations, from individual clinics into hospitals, and from informal instruction usually reserved only for sons and favored students, to larger educational institutions.

<sup>&</sup>lt;sup>82</sup> Zhan 2009.

<sup>&</sup>lt;sup>83</sup> Scheid 2002: 269.

This chapter has argued for the significance of the mundane activity of linguistic standardization to the overt political goals of medical activists and the bureaucratization and governmentalization of the medical field in China. It has attempted to push the argument further to say that the logic of governmentality inherent in the activity of language standardization and related processes was more than the result of the instrumental activities of a few politicianphysicians like Tang Erhe and Yu Yunxiu, but was rather operating on a logic all its own. This logic of governmentality has now absorbed much of the visible structure of Chinese medicine, although, we hear many hopeful accounts that plurality continues to exist and even proliferate: "Plurality, as I have labored to show, is the essential factor in the origin not merely of nature but also of society. Repression of such plurality—even or especially where it is carried out in the name of science—is only ever driven by two forces: ignorance and the desire for power."<sup>84</sup> The question we are left with regarding the logic of governmentality that arises from the creative destruction of two full centuries of global capitalism as it lurches from crisis to crisis is, "What ultimately, is gained from restraining Chinese medicine by means of a rationality blind to its own irrational constitution, and gained for whom? What would be lost by embracing its different aesthetics of practice?"<sup>85</sup> George Basalla mockingly included a quote from an early nineteenth century "Chinese dignitary" which points to the myopia of a science that looks only for details:

With a microscope you see the surface of things. It magnifies them but does not show you reality. It makes things seem higher or wider, but do not suppose you are seeing the things in themselves.<sup>86</sup>

<sup>&</sup>lt;sup>84</sup> Scheid 2002: 272.

<sup>&</sup>lt;sup>85</sup> Scheid 2002: 273. Scheid is referring to Bruno Latour's discussion of the modern constitution that insists on purifying the connections between nature and culture (reductionism and increasing disciplinarization) even while such acts of purification actually create a proliferation of *hybrids* of nature and culture which the constitution does not allow us to see. Latour 1993.

<sup>&</sup>lt;sup>86</sup> quoted in Basalla 1967: 617.

The microscope and the anatomical scalpel reveal much, described in exquisite detail with a precise technical terminology, but at what cost?

## **Conclusion: The Devil is in the details**

In the September 10, 1916 issue of the *Eastern Miscellany* (*Dongfang zazhi* 東方雜誌), the regular picture montage proceeded with a peculiar series of photographs of current events.<sup>1</sup> In this issue, there are seven pages of images, some full page, some in sequences of two or three on a theme. In order, they are: a shot of a group of twenty-seven Chinese and foreign men in summer clothes gathered in front of a two-floor modern building, the *yixue mingci shenchahui* 醫學名詞審查會; heart-wrenching photographs of the bomb-shattered urban landscape of Hankou after the July 30<sup>th</sup> insurrection; a photo of the rather impressive Kailan Mining Bureau near Tianjin, the largest coal mining operation in China; two images of idyllic Mt. Luofo scenic area in Guangdong; a portrait of some nineteen confident looking Central Powers military officers in Germany on January 23; a photo of Paul König and his U-boat, the *Deutschland*, in Baltimore harbor on July 10 on its last civilian voyage to the U.S.; a photo of 125,000 American civilian men and women mustering on New York's Fifth Avenue to support national defense on May 13; and an intimate portrait of an elite American family (Republican presidential candidate Charles Evans Hughes).<sup>2</sup>

Perhaps these images should best be considered separately, as merely unconnected photographs introducing a normal fortnight's worth of news. Indeed, like any cross-section of a single issue of a news and opinion magazine, we should be careful about assigning meaning to the aggregate. Yet, for some reason, among a multitude of possible photos to include in the 10 September issue, among eleven photographs on seven pages, the first full page was given to the

<sup>&</sup>lt;sup>1</sup> The *Eastern Miscellany* was Republican China's most prominent journal, and in 1916 it was in its heyday.

<sup>&</sup>lt;sup>2</sup> On the short-lived popular Hankou uprising, see McCord 1993: 238; on the significance of the Kailan consortium, see Wright 1980; the context of Central Powers officer photo was likely after a successful campaign in Montenegro, which surrendered to Austria-Hungary on January 23, 1916, see Sondhaus 2011: 160-161; on König's voyage, see his book-length account in Koenig 1916; on the New York "Citizens' Preparedness Parade," the greatest civilian march in the history of the world to that point, see *New York Times*, 14-16 May 1916.

Joint Terminology Committee (figure 30). And while other prominent periodicals of the period had multiple articles and announcements of the Committee, this was the only reference in the *Eastern Miscellany* in twelve years of the Joint Committee's existence.<sup>3</sup> Given the uniqueness of such a prominent journal posting a picture of the Committee, there is a second reason to attempt to interpret this set of images together. On the face of it we see the apparent source of power in the modern world in most of these photographs—a modern two story building behind the committee (engineering, architecture, chemistry, industrially produced building materials), bombs and soldiers patrolling Hankou, the infrastructure of coal extraction and distribution to fuel an industrial economy, army officers, submarines, the skyscrapers of New York's Fifth Avenue and the mobilizational capacity of non-governmental groups, and the bourgeois family. There are significant resonances with the priorities of the networks based at the Jiangsu Provincial Education Association explored above in chapter two—military-like mobilization of citizens, industry, leisure, technology, the bourgeois family, standardizing technical terminology. I will come back to this sequence in a moment.

Missing in this sequence is Yuan Shikai whose attempt to make himself emperor incited the anti-monarchical war and its bloody aftermath in Hankou. Yuan had also died during the six-month sequence of events portrayed in the photographs in the *Eastern Miscellany*. In fact, there are no references to the government seat at Beijing at all—the Tangshan-based coal-mines are the closest geographically. Why exclude Yuan Shikai and Beijing? There are many possible reasons: previous coverage, a quiet news cycle in the capital, self-censorship, etc. These could all be true, and yet I submit that the most important reason is that the Chinese civilian elites who produced and consumed this journal had moved on. Moved on to what? Yuan's reliance on military force alone had weakened his presidency and provoked the military build-up and

<sup>&</sup>lt;sup>3</sup> For exact numbers and journal titles, see figures 4 and 5 above.



Figure 6 Picture of committee members of the Joint Terminology Committee

#### Eastern Miscellany September 10, 1916, n.p. Public domain.

Liu Ruiheng is first from the left, Yu Fengbin second, P.L. McAll fifth, Shen Enfu is eighth, Huang Yanpei tenth, David Yu Rizhang twelfth, Tang Erhe fourteenth, while J.B. Neal is third from the right, and R. T. Shields seventh. militant responses of the following decade of the warlords.<sup>4</sup> This was an unfortunate turn of events, marked by Chinese elites like Shen Enfu, writing of Yuan's monarchy, "A Republican Monarchy—so bizarre! ... Sunset of the dynasty, a dayfly from birth to death, Alack! Now awaken from the great delusion."<sup>5</sup>

To what would they awaken? On the political front it might have been horror if they

could see ahead to the worst moments of the next thirty-three years of civil war and Japanese

occupation. But this study has argued at length that there are less obvious forms of power that

<sup>&</sup>lt;sup>4</sup> McCord 1993: 205-206.

<sup>&</sup>lt;sup>5</sup> 共和帝制太離奇...朝幕蜉蝣自生死,哀哉大夢乍醒時. Shen Wenji 1951.

civilian elites worked to expand during the warlord era. Many of these new forms of power might be summarized by the term biopower. Biopower is managing people, nations, international trade and nature on the level of the population. Populations are constructed by statistics, like those used for public health and insurance. Listen to the words of George T. Wilson of the Equitable Insurance company, organizer of the New York march featured in the *Eastern* Miscellany photo montage, "I don't know what the Parade Committee will do, but we insurance men have made plans to keep our organization and to work for preparedness... the Insurance Club has come to stay, and will do something definite and lasting for the defense of America."<sup>6</sup> The organization headed by two hundred elites had recorded "the sentiments of every man in about seventy-two callings" over a multi-state area. The data collected meant that this nongovernmental group could "check up not only the name of every man who marched," but also the name of every man who did not march, and his reasons for not doing so: "This is vital information."7 Here was governmental power enough to make Facebook blush. This was not obvious from the photograph taken from fifteen or twenty floors above Fifth Avenue, but columns of civilians lined up block upon block were clear in the image. Only three years later, the Jiangsu Provincial Educational Association would also take the lead in organizing marches of up to 10,000 people, in this case to protest against the Treaty of Versailles in what would become known as the May Fourth Movement.<sup>8</sup>

But it was unlikely the JPEA had such information on the ten thousand participants in the May Fourth movement. This was where scientists and social scientists would come in, led by physicians equally focused on establishing anatomy, medical terminology and population level measures of public health. In 1916 the *National Medical Journal* would publish, in the same

<sup>&</sup>lt;sup>6</sup> "Big Defense Plans Grow from Parade," New York Times May 15, 1916.

<sup>&</sup>lt;sup>7</sup> *NYT*, May 15, 1916.

<sup>&</sup>lt;sup>8</sup> See Chen 1971: 78-9.

issue, a transcript of a speech by Tang Erhe article on "Methods of Protecting Children," based on a speech he had given on 5 March of that year at the JPEA in Shanghai where his introduction was a lament on the lack of statistics in China. How could China take care of her young without statistics from early pregnancy through adulthood?<sup>9</sup>

The devil was truly in the details. Or, as the original German phrase put it, God was in the details, while those who ignored the mundane features of the modern world were fated to be defeated time and again by the monster "Disease," an enemy not even properly conceived or identified by Chinese medicine, according to the modernizers. Mundane, "detail" power is not inherently good or bad; it brings both astonishing benefits and new forms of coercion. There were endless details to manage in the attempt to establish mundane power. There were laws that must be established, professional associations that must have constitutions, and medical schools that must have buildings, dorms, laboratories and cadavers. There were regulations to govern who could practice medicine and how. There were textbooks that must be translated and written, but that required tens of thousands of new terms to be unified. There were no shortcuts. Once these details had been taken care of, they would immediately be *taken for granted* as the groundwork upon which medical and scientific power would be built. On such a foundation, institutions could be built—great medical schools and hospitals, government clinics and trial sites, port authority quarantine measures that would make the British look sloppy. Police in cities like Beijing and Nanjing could then become frontline managers of public health, counting and removing the dead bodies of the poor. The era of population management could begin. Heads could be measured to support theories about whether Chinese were a progressive or regressive race, and their place in the hieracrchy of nations. Statistics of all kinds could be gathered, allowing for vast archives of information that would allow for governing at a distance in a few

<sup>&</sup>lt;sup>9</sup> Tang 1916: 23.

centers of calculation in Shanghai, Beijing, Tokyo, or New York. China would be transformed through the mundane power of details.

So what is the meaning of the photograph of the twenty-seven men in Shanghai? Why should we pay attention to their debates over terminology and activities establishing anatomomedicine outside that annual meeting? Moreover, if they were not completely successful according to their own accounts during the period under study (1915-1927), how can we say they accomplished anything at all? These are the questions that have driven this study. The answers provided here are more suggestive than definitive. I have argued that attention to the activities of physicians and scientists will begin to trace specific networks that reveal connections between people, sustained by a variety of technologies and tools that are more visible in a period of political disruption like the warlord era in China.

The archives they produced have not been exhausted by this study. The networks retraced between competing groups of elites have been necessarily constrained. Of the more than three hundred men (I have yet to identify a woman) involved in the Joint Terminology Committee between the years of 1915 and 1927 (appendix 5), dozens of networks could be spun from the narratives of intertwining lives. I have dozens of short biographies of these men that could not be included here. Yet most of them would fall within the patterns laid out here. Those patterns are focused in Shanghai around institutions like the JPEA and the major presses that published translated and original works by many of them. Outside of Shanghai, these networks branch out to Nanjing's Southeastern University, Beijing University and a growing number of government institutions of higher learning in East China in the 1930s, and by the 1940s in Western regions.

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Chinese accounts of the Joint Terminology Committee have focused on the details of the scientific terminology work, in particular, that of chemistry. I have a bibliography of hundreds of items given to me by Chang Hao of Taiwan's Fortune University, all of them focused only on the terminology for chemistry.<sup>10</sup> Other directions for future research include a closer examination of the networks that produced the terminology for botany and zoology. Yet even here, comparative anatomy (between animals and humans, or between plants and animals) would ensure the relevance of the patterns laid out above.

The challenge of Chen Fangzhi and his colleagues in 1925 may appear devastating to the work of the Joint Terminology Committee. Little seems to have been accomplished in the subsequent two years as CCP and GMD propagandists prepared the students of East China for the Northern Expedition to reunify China under one party. In 1927 the Committee folded, its great network at the JPEA's West Gate headquarters largely destroyed and replaced with Nanjing-centered networks owing allegiance to the GMD and the new bureaucracy it established there. Members of the committee continued on in some capacity after 1928 as the work of standardizing all of medical and scientific terminology continued. My most recent predecessor as historian of this committee, Wen Changbin (Ph.D. Jiaotong University 2005) graduated to become a member of the successor committee that is still in charge of standardizing the terminology for techno-science in Beijing. The work of details continues.

My interpretation is that the Joint Terminology Committee of the warlord era was not a failure in any important sense of the term. Failure to finally standardize all terminology in a given period of time is normal, given the task. Language that is able to tolerate a certain amount of ambiguity is successful, while an instrumental attempt to standardize language (or anything

<sup>&</sup>lt;sup>10</sup> To list these would easily double my bibliography. See David Wright for English items on Chemical terminology in China.

else) courts failure as its necessary result. It is worth quoting Zygmunt Bauman on this point, who begins his book on *Modernity and Ambivalence* with a discussion of the problem of ambiguity and language. Bauman argues that "ambivalence is not the product of the pathology of language or speech." Rather, It is "a normal aspect of linguistic practice."<sup>11</sup> Bauman goes on,

Classifying consists in the acts of inclusion and exclusion. Each act of naming splits the world into two: entities that answer to the name; all the rest that do not... Invariably, such operation of inclusion/exclusion is an act of violence perpetrated upon the world, and requires the support of a certain amount of coercion. It can hold as long as the volume of coercion remains adequate to the task of outbalancing the extent of created discrepancy. Insufficiency of coercion shows itself in the manifest reluctance of entities postulated by the act of classification to fit into assigned classes.<sup>12</sup>

Each attempt of the German anatomists to unify the Latin terminology for anatomy, or the JTC in China, was an act of violence in the effort to eliminate ambiguity and ambivalence. Li Shizhen, in the Ming Dynasty, would take stories of dragon sightings seriously (but equally so the words of critics), categorizing all manner of items in his own attempt to classify the universe.<sup>13</sup> Chinese medicine sought dragon bones in the hills near Beijing when responding to the call for all manner of bone specimens by the Anatomical and Anthropological Association of China, but PUMC-based anatomist Davidson Black would see the ancient ancestor of the human race, Peking Man.<sup>14</sup> Foucault would laugh aloud upon reading of Jorge Luis Borges' fictional account of a "certain Chinese encyclopedia" that classified things in a way that "shattered, as I read the passage, all the familiar landmarks of my thought."<sup>15</sup>

How much consternation do we see in the words of Yu Fengbin in his many interventions crying for a standardized medical terminology for Chinese, in the words of Philip Cousland frustrated with being forced to adopt what he considered mediocre Japanese terms, or

<sup>&</sup>lt;sup>11</sup> Bauman 1991: 1

<sup>&</sup>lt;sup>12</sup> Bauman 1991: 2-3

<sup>&</sup>lt;sup>13</sup> Nappi 2008: 50-68.

<sup>&</sup>lt;sup>14</sup> Schmalzer 2008.

<sup>&</sup>lt;sup>15</sup> Foucault 1970: xv.

in the words of those who continued to publish such calls for standardizing and unifying Chinese terminologies after 1927 as if the task had not even begun?

This is where the terminology standardization and dissection converge almost completely. They both arise from a very powerful way of looking at the world—reductionism. Reduce to eliminate ambivalence. The goal of self-conscious modernizers is to control all of society and nature in such a way that ambivalence is abolished. So did Yu Yunxiu sought to abolish Chinese medicine. But such power can be a two-edged sword. In response to these attempts to wipe it out, Chinese medicine transformed itself and exists today as a living and learning tradition of many currents.<sup>16</sup>

No one can deny the exquisite power of the reductive approach to improve human technologies about the world. We infinitely increase out knowledge of what the stuff of "us" is like through dissection, microscopic analysis, and now DNA testing. But each new successful discovery, based on anatomizing, creates a new division between what is known and what is unknown. Each new examination reveals that cells or atoms are not the smallest bit of stuff in us or in the universe. As Bauman says, "[a]mbivalence is a side-product of the labour of classification; and it calls for yet more classifying effort."<sup>17</sup> Ambivalence creates the urge to classify and name, and yet the precision achieved produces more ambivalence which can only be counteracted with even greater vigilance in naming, seeing and dividing. The stuggle against ambivalence, Bauman argues, is thus "both self-destructive and self-propelling." Like the creative destruction identified with the heaving cycles of capitalism, the urge to eliminate

<sup>&</sup>lt;sup>16</sup> The metaphor of currents as a way of understanding the "tradition" of Chinese medicine is central to Scheid 2007. Homeopathy and other pre-twentieth century forms of medicine have also survived the modern attempt to abolish them.

<sup>&</sup>lt;sup>17</sup> Bauman 1991: 3.

ambiguity, to fence in all the ambiguous common lands, to reveal the secrets of life itself, all comes at a price.

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# Appendices

Appendix 1: Complete list of fields of science covered by the Joint Terminology Committee, 1916-1925

Terms Alrea	ady Examined	Period Examined	Approved or not	Published or	
Anatomy	Osteology 骨骼	1916.8	Approved	Approved ed.	
解剖學	ligament 韧带、muscles 肌肉、internal organs 内臟	1917.1	Examined Approved	already published in	
	Internal organs、sensory organs 感覺器、 skin 皮膚	1917.8		collected volume	
	Blood vessels 血管、nerves 神經	1918.7	_		
Medical hist Microscopy	ology 醫學組織學、Embryology 胎生學、 顯微鏡術語	1919.7			
Bacteriology	, general 細菌學縱論、immunology 免疫	1918.7-1920.7	-		
學、bacteric	logical terms 細菌名稱、bacteriological				
classification	n細菌分類				
Pathology	General 縦論	1921.7			
病理學	Special 個論	1922.7	Sent to	Examined ed.	
	General addendum 總論補遺	1923.7	Ministry of	published	
Parasitology	寄生物学寄生蟲學	1923.7	Education		
Pharmacolog	gy, partial 藥理學一部分	1924.7-1925.7	Awaiting	Exam ed.	
Physiologica	l Chemistry, partial 生理化學一部分	1924.7	collection of	awaiting	
Surgery 外利	學	1924.7	opinions	printing	
Physiology,	breathing, metabolics 生理學呼吸·新陳代謝	1924.7			
Chemistry	Element designations 原質名稱(元素)	1917.1	Approved	Approved ed.	
化學	Specialized terms 術語	1917.8		already	
	Inorganic Chemistry 無機化合物	1918.7		published in	
	Apparatus 儀器	1919.7		collected	
	Organic chemistry basic terms 有機化學普通名詞	1920.7		volume	
	Organic chemistry specialized terms 有機化學系統名詞	1920.7-1921.7			
Physics 物理學	Mechanics 力學、Properties of matter 物 性學	1919.7		Approved ed. awaiting	
	Study of heat 熱學	1920.7	]	printing	
	Magnetism 磁學、Electricity 電學	1921.7	Awaiting	Exam ed.	
	Acoustics 聲學、Optics 光學	1922.7	collection of opinions	awaiting printing	
Zoology 動物學	Taxonomy 分類、Anatomy 解剖學、 Embryology 胚胎學	1921.7-1923.7	Approved	Approved ed. awaiting printing	
	Genetics 遺傳學、Evolutionary terms 進 化論術語、Taxonomy addendum 分類補 遺、branch terminology 分科名詞	1924.7	Awaiting delivery to Ministry of Education	Exam ed. published	
	Mammalian species 哺乳類、Bird species 鳥類種名	1925.7	Awaiting collection of opinions	Exam ed. awaiting printing	

Terms Alread	ly Examined	Period	Approved	Published or	
		Examined	or not	not	
Botany 植物学	Specialized terms 術語、分類科目	1922.7-1923.7	Approved	Approved ed. published	
	Species names 種名	1923.7		Approved ed. awaiting printing	
	Spermatophyte (Seed-bearing) plants 種子植物属	1924.7	Awaiting delivery to Ministry of Education	Exam ed. published	
	Sporophyte (reproduce by spore) plants 胞 子植物属	1925.7	Awaiting collection of opinions	Exam ed. awaiting printing	
Mathematics 算学	arithmetic 数學、algebra 代数學、 algebraic analysis 代数解析學、calculus 微積分、function theory 函數論	1923.7	Approved	Approved ed. awaiting printing	
	Basic geometry 初等幾何學、Planes, spheres, triangles 平面球面三角、 Analytic geometry 解析几何、quadratic curve, curved surfaces 二次曲線曲面、 projective geometry 投影幾何學、straight line geometry 直線幾何學	1924.7	Awaiting collection of opinions	Exam ed. awaiting printing	
	Geometric calculus 微積幾何學、 transcendent curve surfaces 超越曲線曲 面、high level analytics 高等解析學	1925.7			

Source: "Kexuemingci shenchahui zhakai yubeihuiji《科学名词审查会昨开预备会纪》[Joint Scientific Terminology Committee yesterday opened the preparatory meeting], Shenbao《申报》 [Shanghai News] 5 July 1926. Appendix 2: Map of Shanghai and networks centered on the JPEA.

(over page)

Sources: the base of the map is Chen 1971; locations of presses are from Reed 2004: Appendix; other references have been Virtual Shanghai's maps

(http://www.virtualshanghai.net/GIS\_Overview.php, accessed September 8, 2011); Xiong, Yuezhi, *Shanghai: Famous People, Famous Events, Famous Things* [in Chinese], 2007; Zhonghua yixuehui, *A Brief History of the Chinese Medical Association*, [in Chinese], 2010: 7.



## Based on Items published in American J. of Physical Anthropology Volume 4, 1921

#### (The following is the exact wording and capitalization of the original. Public domain.)

Note: These items demonstrate the direct connection between anatomy and physical anthropology as they were institutionalized in China in the late 1910s and 1920s, and the shift from the body of the individual to the social body of the population. This is the shift from anatomo-clinical medicine, to anatomo-politics, to biopolitics. First, a library of anatomical samples is collected in a central location where they can be consulted and compared by all qualified investigators. Appeals are made for an unending supply of such material in the form of preserved embryos, crania and hair specimens. Records of monstrosities and abnormalities are requested in the form of photographs and careful measurements. The results of such collections are then made clear in summaries of several German research articles that claim to demonstrate the differences (and inferiority) of Chinese morphology versus white morphology. The most accurate statistics of the total population of each province of China are reprinted from a daily newspaper.

# "The Anatomical and Anthropological Association of China" American Journal of Physical Anthropology 4:1 (1921): 74-77

During the Peking Conference of the China Medical Missionary Association and the National Medical Association of China there was organized as already mentioned in the Journal ('20, 281) "The Anatomical and Anthropological Association of China."

One of the foremost objects of the new Association is to establish in the Union Medical College at Peking, the most ample collections of anatomical, anthropological and other scientific material, to serve as study and reference collections available to medical and scientific men who may wish to make use of them. In addition to this everything possible is being done to build up at the Union Medical College an ample reference library in Medicine, Anthropology and allied sciences, where bibliographic service and information may be obtained. Laboratory facilities will also be afforded by the College which will be a centre where medical, anthropological and other scientific investigators will be welcome, and where they may find the greatest possible facilities for their work. No such centre exists as yet anywhere in the Far East, and no place offers at present such opportunities for establishing one as does the capital of the Chinese Republic.

For the beginning the Society meets at least once a month, and the last four meetings were devoted to the following subjects:

Friday, November 26, 1920—The Transplantation of Limbs in Amphibia. S. R. Detweiler. P.U.M.C.

Friday, December 31, 1920—On the Native Tribes of Yunan. V. K. Ting. Geological Survey, Peking.

Friday January 28, 1921—A Comparative Survey of the Parasites of N. China. E. C. Faust, P.U.M.C.

Friday, February 25, 1921—Physiology of Northern China (With Reference to Man). J. G. Anderson, Peking.

The following circular, prepared with the help of Dr. Hrdlicka, has been printed for distribution to the members and to the different English-speaking medical men and missionaries in China.

#### CIRCULAR

## APPEAL FOR DATA AND MATERIAL OF THE ANATOMICAL AND ANTHROPOLOGICAL INTEREST

#### **INFORMATION:**

Your are earnestly requested to cooperate with and help the Anatomical and Anthropological Association of China by sending in whenever possible information of the following nature:

1. Reliable information, supplemented as far as possible by photographs, is needed: on multiple births, native observances during gestation, childbirth, infancy; binding of feet, deformation (intentional or unintentional) of head, mutilations of any part of the body (practice of emasculation, etc.); on puberty, menstruation, menopause; on marriage customs (from medical standpoint), promptness of conception, contraceptive and abortive practices, native methods of delivery and of meeting its accidents; on restablishment of menses, length of nursing, commencement of feeding, nature of food, different treatment in any respect of boys and girls; on total number of conceptions (exclusive of miscarriages), and number of latter; on proportion of sexes, at birth and in population (much care should be taken here to avoid hasty generalization); on appearance and nature of signs of senility (in reference to age and class as well as sex, and separating pathological cases).

2. Information (and photographs) is needed bearing on all sorts of monstrosities and congenital defects (cleft palate, hare-lip, ear and other facial defects, syndactylism, polydactylism and other abnormalities of fingers and toes, polymastis, hermaphroditism, pseudohermaphroditism, and other genital abnormalities and defects, etc.). In these cases all possible information should be given as to heredity; also the views of natives as to these conditions.

3. Information of a reliable nature is needed on: infanticide; prostitution; abnormal sexual practices; suicides; murders and other forms of criminality.

4. Reliable information is needed on: occurrence and proportion of idiocy, cretinism, acromegaly, simple gigantism or dwarfism (with stature if possible), insanity (and its forms); on local diseases of every kind (with observations on character and prevalence).

5. Carefully made observations are needed on the prevalence and variation in the epicanthus (mongolic fold), on its changes with age; on the variations of the bridge of the nose (low, medium, high), and the root of the nose (nearly flat, low, medium, fairly high—as in Europeans, high. Also: narrow, medium, broad); on the variation of the lips (thin, medium, thick); and on the color of the skin (on body—near white, yellowish, dusky yellow, brownish yellow, and light, medium or dark brown); all observations to be taken in reference to age, for they differ with different periods of life, and with remarks, in connection with the skin, as to its character on the exposed parts of the body.

6. Statistics are needed of actual censuses of small communities and whole villages where possible, as to families, sex and age.

All correspondence with reference to the information solicited in the above list (subjects 1 to 6 inclusive) should be addressed to: Dr. Davidson Black, Department of Anatomy, Peking Union Medical College, Peking.

#### MATERIAL:

You are earnestly requested to cooperate with, and help the Anatomical and Anthropological Association of China by sending in whenever possible, material of the following nature:

7. EMBRYOLOGICAL SPECIMENS: All embryos and fetuses that can be collected, together with such data as can be obtained (place, date, province, nature of parents, their age and race, cause of abortion, what child in numerical order, etc.) The specimens are best preserved in 10% formalin (4% formaldehyde) but, where this cannot be obtained, alcohol may be used. All charges for preservation and transportation will be defrayed by the College. Special mailing cases for the shipment of material will be furnished on application. All correspondence and specimens should be addressed to: Dr E. V. Cowdry, Department of Anatomy, Peking Union Medical College, Peking.

8. PHARMACOLOGICAL SPECIMENS, ETC.: Samples of all herbs and other objects used for medicines and charms together with notes as to their application, prevalence of use, etc. Transportation charges will be defrayed by the College and all specimens and correspondence should be addressed to: Dr. Ralph G. Mills, Department of Pathology, Peking Union Medical College, Peking.

9. OSTEOLOGICAL SPECIMENS (HUMAN): All crania and other skeletal remains that can be collected without offense to the natives. The most desirable remains of this nature are those that can be dated, at least approximately (e.g., recent, modern burial, ancient burial, etc.). In all cases as much of the skeleton should be secured as possible, for the pelvis, long bones, spine, etc., are of considerable medical as well as anthropological interest. Fragile or soft bones are benefitted by a free exposure of several days to the air. Pack in sawdust, shavings, dry grass, or any other suitable dry material including crumpled up paper; pack fairly tight, keep remains of different bodies apart; introduce into each skull a slip of paper containing the most necessary information (locality, age, nature of deposits, depth, etc.). To reduce the weight and lessen risk of breakage, earth should be carefully removed from both the outside and inside skull. If skull is broken, collect all fragments—it can often be reconstructed. It is most important to save all teeth. There is no limit to the amount of this class of material that is needed. All charges for transportation will be defrayed by the College.

10. PRIMITIVE IMPLEMENTS: Collect also, alone and with the helpf of your students and patients, peasants and others, all stones of early historic or prehistoric times that may show evidence of human workmanship—and the same applies to bone implements and fragments of ancient pottery. Specimens should be accompanied by as full data as possible (date of find, detailed description of place and locality of find, etc.). All charges of transportation will be defrayed by the College.

11. VERTEBRATE FOSSILS AND OSTEOLOGICAL SPECIMENS: Collect all fossil bones and teech of animals, particularly such as may be found in association with or in the vicinity of human bones. Also skeletal remains of recent mammals especially skulls and teeth. In the case of fossil remains, more particularly fossil skulls, it is advisable to preserve sufficient of the hard surrounding matrix to prevent dissociation of fragments. Specimens should be accompanied by as full data as possible (date of find, detailed description of locality and place of find, etc.). Localities in which fossils are found should be carefully investigated and reported (with detailed information as to location). Send in all fragments (except in the case of huge animals), and especially all teeth. All transportation charges will be defrayed by the College.

12. SPECIMENS OF HUMAN HAIR: Samples of hair are needed from subjects of both sexes and all ages. The specimens should be obtained from the back or side of the head and should include the middle third of the hair shaft (i.e., should not be restricted merely to the end or underneath part of hair). Specimens should be accompanied by a statement as to the race, sex, age and occupation of the individual from which each was obtained. Each specimen should be carefully wrapped, together with data relating thereto, in separate paper or envelope. Package of such specimens are best transmitted by letter post. Postage will be defrayed by the College.

All correspondence with reference to the specimens asked for under subject headings Nos. 9, 10, 11, and 12, and all such material, should be addressed to: Dr. Davidson Black, Department of Anatomy, Peking Union Medical College.

# Literature Summaries, p. 95:

DER UNTERKIEFER DES CHINESEN. By Kurz.—Arch. J. Anat. & Physio., anat. Abt., 1919, Jahrg. 1918, 173.

Based on a great number of measurements and on the weights of only a few Chinese mandibles. The author finds 30 points of distinction between the Chinese and whites. He considers the following as primitive signs of the Chinese mandible: the great weight of the mandible; the great height of the corpus mandibulae; the broad and low ramus, and the little development of the protuberantia mentalis.

A. H. S.

UNTERSUCHUNG DES STERNUM UND DER RIPPEN EINER 25 JÄHRIGEN CHINESIN. By Kurz—*Arch. f. Anat. & Physio.*, anat. Abt., 1919, Jahrg. 1918, 210.

A detailed description of the sternum of one Chinese woman measuring, without the xyphoid process, only 115 mm. in length.

A. H. S.

UNTERSUCHUNGEN ÜBER GROSSEN-UND FORMVERHÄLTNISSE DES ZUNGENBEINES UND DES KEHLKOPFSKELETTES EINER 25 JÄHRIGEN CHINESIN. By Kurz—*Arch. f. Anat. & Physio.,* anat. Abt., 1919, Jahrg. 1918, 216.

A short study of the hyoid and of the larynx—especially of its cartilages—of a Chinese woman. There are a number of slight differences in these structures when compared with the corresponding parts of whites.

Appendix 4: Thirty-two super-networkers of the Joint Terminology Committee.

# Key:

AS – Agricultural Society 農學會 Nongxuehui Chin-West. MA – Chinese-Western Medical Association 中西醫會 Zhongxiyihui Com. Press – Commercial Press 商務印書館 Shangwuyinshuguan CMMA – China Medical Missionary Association 博醫會 Boyihui CP – China Press 中華書局 Zhonghuashuju JPEA – Jiangsu Provincial Education Association 江蘇省教育會 Jiangsushengjiaoyuhui Nanjing Teacher's Col. – Nanjing Teacher's College 南京高等師範學校 Nanjinggaodengshifanxuexiao NMA – National Medical Association 中華醫學會 Zhonghuayixuehui NSA – Natural Science Association 博物學會 Bowuxuehui MoE – Ministry of Education 教育部 Jiaoyubu ROCMPA – Republic of China Medico-Pharmaceutical Association 中華民國醫藥學會 Zhonghuaminguoyiyaoxuehui SSC – Science Society of China 中國科學社 Zhongguokexueshe

SPRA – Science Professors Research Association 理科教授研究會 likejiaoshouyanjiuhui

病 bing	Pathology	病理學 binglixue
蟲 chong	Parasitology	寄生蟲學 jishengchongxue
動 dong	Zoology	動物學 dongwuxue
化 hua	Chemistry	化學 huaxue
記 <i>ji</i>	Secretary	書記 shuji
解 jie	Anatomy	解剖學 jiepouxue
聯 lian	Joint Meeting	聯合會 lianhehui
生 sheng	Physiology	生理學 shenglixue
數 shu	Mathematics	數學 shuxue
算 suan	Mathematics	算學 suanxue
紿 xi	Bacteriology	細菌學 xijunxue
醫 yi	Medicine	醫學 yixue
音譯 yinyi	Transliterations	
有 you	Organic chemistry	有機化學 youjihuaxue
預 yu	Preparatory meeting	預備會 yubeihui
致 zhi	Executive committee	執行部 zhixingbu
植 zhi	Botany	植物學 zhiwuxue

Name in Pinyin		alt. name	民間團體 (NGOs)	1916	1917a	1917b	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Bing Nongsan	秉農三		JPEA, SSC									動	草動	*		
Cao Huiqun	曹惠群	曹梁賓	SSC, SPRA, MoE, NMA		化	化	預	化		化				譯音		聯
Cao Liangxia	曹梁夏		JPEA, SSC			*	?	化儀有				生病蟲	執有	譯音		執
Chen Fangji	陳方濟	陳禹成	Agri. Assoc., ROCMPA							化		預生病蟲	草生化有	*	聯	聯
Chen Mutang	陳慕唐	陳慶堯	JPEA, SPRA		化	醫化	?	預化儀有		化			有			
Du Jiutian	杜就田		NSA, SPRA								動	動	草動			
Duan Yuhua	段育華	段撫辟	JPEA, SSC, Com. Press									數	算			
Gu Shaoyi	顧紹亦	紹扆;顧型	NSA, JPEA		化	化	預	預化醫儀有		執	執		1			
Hu Gangfu	胡剛復		JPEA, SSC, MoE							物	物					
Hu Mingfu	胡明復		SSC, JPEA						物	執		預數	算	*	算聯	
Huang Songlin	黃頌林		JPEA, SPRA								動	預動	動	算	動	
Jiang Jingru	江鏡如		CMMA, NMA									生病蟲	生化		聯	
Pang Bin	龐斌	龐敦敏	AS, NSA					預	細	病	病	生病蟲	有			
Peng Minbo	彭敏伯	彭斌	ROCMPA, NSA, AS		化	化	預	預化儀有			病					
Qian Zongshu	錢宗澍	錢雨農	AS, SSC					預		動	植	植	植		植聯	
Sun Hongfen	孫洪芬		SSC, MoE							化						
Tang Erhe	湯爾和		MoE, ROCMPA	解	化	解	?	預	細					譯音		
Tang Nai'an	唐乃安	Abel Tang	NMA, CMMA	解	解	解	?				病					
Wang Cai'nan	王采南		AS, SPRA								動植	植	礦			
Wang Wanbai	王完白		NMA, Chin-West. MA					預細	書細		*	預生病蟲	藥	*		
Wu Heshi	吳和士	冰心;家煦	SPRA, CP, NSA, JPEA, MoE		化譯音	化	預	預化儀有	化物	執化	植執	記植	動植礦	植(主)	植聯	聯
Wu Jishi; Guyi	吳濟詩	吳谷宜	ROCMPA, SSC, JPEA, MoE		解	解	?			病	病	預生病蟲	生化有	外(主)	内聯	
Wu Xian	吳憲		NMA, ROCMPA, PUMC									預生病蟲	原蟲草生			聯
Wu Yuanzi	吳元滋	吳子修	NSA, SSC, AS, SPRA							動	植	動植	草動植	算	聯	
Xu Songming	徐誦明	徐斌游	ROCMPA, NMA							病		生病蟲				
Xue Liangshu	薛良叔	薛德烠	JPEA, NSA								動	預動	草動	動(主)		
Ye Hancheng	葉漢丞		JPEA, SPRA										葯			
		Voonping														
Yu Fengbin	俞鳳賓	Yui	NMA, JPEA	解	化譯音	化	?	預細	細	執病	病執	預生病蟲	執生		内生聯	執聯
Yu Rizhang	余日章	David Yui	JPEA, YMCA	解	譯音	解	預									
			JPEA, Nanjing Teacher's							/1						
Zhàng Zhun	張準 一	子局;						化醫儀有		化						<u> </u>
Zhou Zhongqi	周仲奇 " — — — —	周仲祁	RUCMPA, SSC					預			1	預生病蟲 	有	1-6		<u> </u>
Zhu Fengmei	朱鳳美		SPRA, JPEA, AS								植	預植	植	植	植聯	

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Bao Fude	寶福德				bacteriology	1919-20
Bao Weilian	寶維廉				medicine	1919-20; 1923
Bi Dehui*	畢德輝	W.W.Peter	1882- 1959	Chicago	public health	1915
Bing Zhi**	秉志	秉農山	1886- 1965	Cornell '18	zoo/biology	1921; 1923-25
Cai Banghua	蔡邦華		1902- 1983	Kagoshima '23	entomology	1925
Cai Wuji	蔡無忌		1898- 1980	Alfort '19	agri engineer	1926
Cai Yuanpei	蔡元培		1868- 1940	古越藏书楼	General; transliterations	1917a (transliterations)
Cai Zhangru	蔡章儒				zoology	1926
Cao Huiqun	曹惠群	曹梁賓			mathematics	1917-19; 1921, 1925, 1927
Cao Huiqun Cao Liangxia	曹惠群 曹梁夏	曹梁賓			mathematics chemistry; physiology; parasitology	1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927
Cao Huiqun Cao Liangxia Cao Jingcheng	曹惠群 曹梁夏 曹鏡澄	曹梁寘 曹仲謀			mathematics chemistry; physiology; parasitology naval engineer	1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927 1922
Cao Huiqun Cao Liangxia Cao Jingcheng Cao Nongtao	曹惠群       曹梁夏       曹鏡澄       曹農濤	曹梁寘 曹仲謀			mathematics chemistry; physiology; parasitology naval engineer medicine	1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927 1922 1925
Cao Huiqun Cao Liangxia Cao Jingcheng Cao Nongtao Chen Duxiu	曹惠群       曹梁夏       曹鏡濃       曹農       陳獨秀	曹梁寘 曹仲謀	1879- 1942	Waseda	mathematics chemistry; physiology; parasitology naval engineer medicine general	1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927 1922 1925 1917a (transliterations)
Cao Huiqun Cao Liangxia Cao Jingcheng Cao Nongtao Chen Duxiu Chen Fangji	曹   曹     曹   夏     遼   農     南   慶     万   濟	曹梁寘 曹仲謀 陳禹成;禹 臣(same?)	1879- 1942	Waseda	mathematics chemistry; physiology; parasitology naval engineer medicine general agriculture science	1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927 1922 1925 1917a (transliterations) 1921; 1923-27
Cao Huiqun Cao Liangxia Cao Jingcheng Cao Nongtao Chen Duxiu Chen Fangji Chen Gucen	曹     曹       曹     二       曹     二       曹     二       唐     二       B     二       B     二       B     二       B     二       B     二       B </td <td>曹梁寘 曹仲謀 陳禹成;禹 臣(same?)</td> <td>1879- 1942</td> <td>Waseda</td> <td>mathematics chemistry; physiology; parasitology naval engineer medicine general agriculture science botany</td> <td>1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927 1922 1925 1917a (transliterations) 1921; 1923-27 1923</td>	曹梁寘 曹仲謀 陳禹成;禹 臣(same?)	1879- 1942	Waseda	mathematics chemistry; physiology; parasitology naval engineer medicine general agriculture science botany	1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927 1922 1925 1917a (transliterations) 1921; 1923-27 1923
Cao Huiqun Cao Liangxia Cao Jingcheng Cao Nongtao Chen Duxiu Chen Fangji Chen Gucen Chen Huang	曹    曹    曹      曹    曹    曹      梁    鏡    農      爾    陳    万      京    湾    秀      陳    陳    陳	曹梁寘 曹仲謀 陳禹成;禹 臣(same?)	1879- 1942 1886- 1962	Waseda M.S. MIT '15	mathematics chemistry; physiology; parasitology naval engineer medicine general agriculture science botany chemistry	1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927 1922 1925 1917a (transliterations) 1921; 1923-27 1923 1921
Cao Huiqun Cao Liangxia Cao Jingcheng Cao Nongtao Chen Duxiu Chen Fangji Chen Gucen Chen Huang Chen Jingru	曹     曹     曹       曹     曹     曹       陳     陳     陳       陳     陳     陳       陳     陳     陳       陳     陳     陳       陳     陳     陳       陳     陳     陳	曹梁寘 曹仲謀 陳禹成;禹 臣(same?) 陳宗南	1879- 1942 1886- 1962	Waseda M.S. MIT '15	mathematics chemistry; physiology; parasitology naval engineer medicine general agriculture science botany chemistry zoology	1917-19; 1921, 1925, 1927 1917b-19; 1923- 25; 1927 1922 1925 1917a (transliterations) 1921; 1923-27 1923 1921 1922

# Appendix 5, Joint Terminology Committee participants, 1915-1927

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Chen Kehui	陳克恢	K. K. Chen	1898- 1988	PhD Wisc'sin'23; MD JHU'27	physiology	1924
Chen Kun	陳(火 昆)				chemistry	1920
Chen Mutang	陳慕唐	陳慶堯			medicine; chemistry	1917-1919; 1921; 1924
Chen Naxun	陳納遜			MSc U Penn '28	zoology	1922
Chen Pincheng	陳聘丞				chemistry	1921
Chen Qianshan	陳兼善		1898- 1988	北京師範'21	zoology	1922
Chen Qingyao	陳慶堯			S.M. Columbia '15	chemistry	1920
Chen Shizhang	陳世璋				chemistry	1920
Chen Xisan	陳席三	陳席山(?)			zoology	1924
Chen Yangcai	陳養材				botany	1923
Chen Yinghuang	陳映璜	陳仲顧;仲 驤; 陳映璜	1887-?	Japan	general; philosophy; anthropology	1921-1922
Chen Zhanxi	諶湛溪		1882- 1958	PhD Columbia '09	mineralogy	1924
Chen Zhen	陳楨		1894- 1957	Columbia '21	zoology	1923
Chen Zixiu	陳子修	Yinghuang?	1887-?		zoology	1922
Chen Zongxian	陳宗賢		1892- 1979	Columbia '18	bacteriology	1920
Chen Zongnan	陳宗南	伯熙; 宗一	1886- 1962	Illinois ?	pharmacy	1924; 1926
Cheng Hanzhang	程瀚章				zoology	1925
Cheng Huangxi	程寰西	程瀛章			biology	1926-27

Name in Pinvin	Chinese Name	alt, name	Years	Highest Educ.	Discipline	Joint Committee Participation
				8		
Songwen	成頌文				physiology	1924
Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Cheng Tingqing	程廷慶				chemistry	1920
Dai Fangrun	戴芳潤				botany	1924; 1926
Dai Zhizhong	戴智種				bacteriology	1920
Diao Xinde	刁信德		1878- 1958	U Penn '15	phys/path/para	1923
Ding Fubao	丁福保		1874- 1952	Japan study	medicine	1915
Ding Xuxian	丁緒賢				chemistry	1920
Du Jiutian	杜就田				zoology	1922-24
Du Ruo X(?)	杜若?				mineralogy	1924
Duan Yuhua	段育華	段撫辟(?10)			mathematics	1923-24
Duan Yuhua Duan Zixie	段育華 段子燮	段撫辟(?10)			mathematics mathematics	1923-24 1925
Duan Yuhua Duan Zixie Duan Tiaoyuan	<ul><li>段育華</li><li>段子燮</li><li>段調元</li></ul>	段撫辟(?10)		est.重慶大學 數理學院	mathematics mathematics mathematics	1923-24 1925 1925-26
Duan Yuhua Duan Zixie Duan Tiaoyuan Fan Shaoluo	<ul> <li>段育華</li> <li>段子燮</li> <li>段調元</li> <li>范紹洛</li> </ul>	段撫辟(?10)		est.重慶大學 數理學院	mathematics         mathematics         mathematics         anatomy	1923-24         1925         1925-26         1916
Duan YuhuaDuan ZixieDuanTiaoyuanFan ShaoluoFan Yuanlian	段育華         段子燮         段調元         范紹洛         范源廉	段撫辟(?10)	1877- 1928	est.重慶大學 數理學院 Tokyo	mathematics         mathematics         mathematics         anatomy         general	1923-24         1925         1925-26         1916         1915
Duan YuhuaDuan ZixieDuan TiaoyuanFan ShaoluoFan YuanlianFang Di	段育華         段子燮         段調元         范紹洛         范源廉         方祶	段撫辟(?10)	1877- 1928	est.重慶大學 數理學院 Tokyo	mathematics         mathematics         mathematics         anatomy         general	1923-24         1925         1925-26         1916         1915         1925
Duan YuhuaDuan ZixieDuanTiaoyuanFan ShaoluoFan YuanlianFang DiFei Hongnian	段育華         段子/>         段調元         范紹案         范線廉         方祶         費鴻年	段撫辟(?10)	1877- 1928 1900- 1993	est.重慶大學 數理學院 Tokyo	mathematics         mathematics         mathematics         anatomy         general         zoology	1923-24         1925         1925-26         1916         1915         1925         1924
Duan YuhuaDuan ZixieDuanTiaoyuanFan ShaoluoFan YuanlianFang DiFei HongnianFei Xueli	段育華         段子/>         段調元         范紹落         范線廉         方祶         費學禮	段撫辟(?10)	1877- 1928 1900- 1993	est.重慶大學 數理學院 Tokyo	mathematicsmathematicsmathematicsanatomygeneralzoologybacteriology	1923-24         1925         1925-26         1916         1915         1925         1924         1920
Duan YuhuaDuan ZixieDuanTiaoyuanFan ShaoluoFan YuanlianFang DiFei HongnianFei XueliFeng Qiangshi	段育華         段子         段茄         范縮廉         方涕         費學         馮強士	段撫辟(?10)	1877- 1928 1900- 1993 ? -1943	est.重慶大學 數理學院 Tokyo	mathematicsmathematicsmathematicsanatomygeneralzoologybacteriologymedicine	1923-24         1925         1925-26         1916         1915         1925         1925         1924         1920         1918
Duan YuhuaDuan ZixieDuanTiaoyuanFan ShaoluoFan YuanlianFang DiFei HongnianFei XueliFeng QiangshiFu Weide	段育華         段元         范范         范         方         費         香         費         費         香         費         資         資         売         資	段撫辟(?10)	1877- 1928 1900- 1993 ? -1943	est.重慶大學 數理學院 Tokyo Japan	mathematics         mathematics         mathematics         anatomy         general         zoology         bacteriology         medicine	1923-24         1925         1925-26         1916         1915         1925         1924         1920         1918         1925

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Gao Jinglang	高鏡朗		1892- 1983	Xiangya, Yale '21	chem/pharm	1924; 1926-27
Gao Silan	高似蘭	P. Cousland	-1930	Edinburgh '8X	medicine	1915; 1917b; 1922-23
Gao Yikui	高一簣					1925
Gao Zhongkui	郜重魁			National Sun Yatsen (princ.)	botany	1925-26
Ge Zhushu	葛竹書	葛成勳			bacteriology	1919-20
Gu Shanchen	顧珊臣			Tsinghua Univ.	mathematics	1923
Gu Shaoyi	顧紹衣	紹扆;紹宜; 紹亦;顧型		I	chemistry; medicine	1917a-1919; 1921-22
Gu Xinbo	顧欣伯				chemistry	1924
Guan Guqing	管(顧?) 卿				physics	1920
Guo Bingwen	郭秉文	P. W. Kuo	1880- 1969	Columbia '14	general	1915
Guo Bingzhi	郭秉志				general	1925
Guo Shiwan	郭世綰			Peking Univ.	chemistry	1920
Guo Tanxian	過探先		1886- 1929	MSc Cornell '15	zoology/agri	1921
Han Qingquan	韓清泉				general	1915
He Jiliang	何積烺	何志薑			pathology; mathematics	1921; 1925
He Lu	何魯	何奎垣	1894- 1973	Lyon '19	mathematics	1923-24
He Yu(bu)	何育 (不?)				physics	1920
Hu Gangfu	胡剛復		1892- 1966	PhD Harvard '18	physics	1921-22
Hu Jingfu	胡經甫	胡烈	1896- 1972	Cornell '22	physics; botany; chem	1920; 1922; 1924

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Hu Mingfu	胡明復	胡達	1891- 1927	Harvard '17	physics; math	1920-21; 1923- 1925
Hu Minghui	胡明輝				general	1922
Hu Shuwei	胡樹威				general	1919
Hu Wei	胡霨	胡選之			engineering	1927
Hu Wenyao	胡文耀		1885- 1966	PhD Leuven '13	phys/math	1922; 1925
Hu Xiansu	胡先驌	胡步曾	1894- 1968	PhD Harvard '25	動植物	1923-24; 1926
Hu Xuanming	胡宣明		1891?-	MD Hopkins '15 PhD Hopkins PH '16	anatomy; osteology	1917b-1919
Hu Yigu	胡貽穀				general	1915
Hua Hong	華鴻				?	1917b-1918
Hua Changji/Shan gji	華裳吉				chemistry	1917a-1918
Huang Chongshu	黃崇澍				?	1919
Huang Minglong	黃鳴龍		1898- 1979	Zurich; PhD Berlin '24	pharmacology	1926
Huang Shengbai	黃勝白	原名鸣鹊	1889- 1982	St. Johns	pharmacology; pathology	1924-25
Huang Songlin	黃頌林				zoology; mathematics	1922-26
Huang Xinyan	黃新彥				chemistry	1919-21
Huang Yanpei	黃炎培	黄任之	1878- 1965	Nanyang	general	1915-16
Huang Ziyan	黄子彦	黄以仁			botany	1922
Ji Lisheng	紀立生	Gillison			chem/pharma	1917a-1919; 1921; 1924
Jiang Bingheng	江秉衡	江秉甫			pharmacology	1924

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Jiang Dong	蔣棟	蔣楝?			general	1918
Jiang Jingru	江鏡如		I		medicine	1923-24; 1926
Jiang Lifu	姜立夫		1890- 1978	PhD Harvard '19	mathematics	1924-25
Jiang Menglin	蔣夢麟		1886- 1964	PhD/EdD Columbia. '17	general	1917a (transliterations)
Jiang Qing	江清	Peter Kiang			pathology	1925
Jiang Qian	江謙		1876- 1942		general	1915
Jiang Weiqiao	蔣維喬		1873- 1958		general	1915
Jiang Yisheng	蔣乙生				med/path/para	1919; 1923
Jiao Qiyuan	焦啓源				botany	1926
Jin Luqin	金侶琴				general	1926
Jin Zhongzhi	金仲直				biochemistry	1924
Kong Meige	孔美格; 孔美德	Cormack			medicine; anatomy	1915-16
Lai Huili	來會理	David Willard Lyon	1870- 1943		general	1917a (transliterations)
Li Chuanshu	李傳書				general	1926
Li Chunqi	李純其				general	1917b
Li Ding	李定	字慎微	1885- 1939	Chiba '13	anatomy	1916-17a
Li Guangguan	李光綸				bacteriology	1920
Li Guangxun	李廣勳				chemistry	1924
Li Guochang	黎國昌				physiol/zoo	1926
Li Huanbin	李焕彬				?	1922
Li Jintang	李厪堂				chemistry	1919

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Li Junxing	李君惺				path/physio/parasitolo gy	1922-23
Li Minfu	李敏孚	Alexander Ying Lee			chemistry	1917b
Li Qingmao	李清茂				medicine	1919
Li Shenwei	李慎微			Tokyo	medicine	1919
Li, T. H.	T.H.李				anatomy	1917b
Li Wan	李完				general	1919
Li Xuzu	李續組				general	1919
Li Yongzhang	李泳章				botany	1923-25
Li Yuying	李煜瀛	李石曾	1881- 1973	France, (?)	general	1917
Liang Boqiang	梁伯強		1899- 1968	PhD Munich '24	pathology	1926
Liang Xi	梁希	叔五			general	1927
Ling Wenzhi	凌文之				chemistry	1917a-1917b
Liu Ruqiang/jian g	劉汝強				pharmacology	1925-26
Liu Ruiheng	劉瑞恆	J. Heng Liu	1890- 1961	MD Harvard '15	anat/chemistry	1916-1917b
Liu Shuqi	劉樹杞		1890- 1935	PhD Columbia '19	chem. Engin.	1921
Liu Wushu	劉悟淑				medicine	1918-19
Liu Yueru	劉月如				chemistry	1917a; 1920
Liu Zhan'en	劉湛恩		1895- 1938	PhD Columbia '22	general	1927
			1801	MD汉口大同		1917a-19; 1921- 23;
Lu Dexin	魯德馨	魯進修	1974	医学院'16	anat/path/physio/para	1925-27

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Lu Feikui	陸費達		1886- 1941		general	1915; 1925
Lu Feizhi	陸費執				general	1925
Luyise	路義思	Lewis?			general	1917a (transliterations)
Mabee, Fred C., Prof.					chemistry	1917b
Meng Heli	孟合理	P.L. McAll			anat/bact/path	1916-17a; 1918; 1920-22; 1927
Meng Xinru	孟心如				pharmacology	1926
Ni Zhangqi	倪章棋				physiology	1926
Nie Huidong	聶會東	J.B. Neal			anat/chemistry	1915-18
Ouyang Pucun	歐陽溥 存				general	1915
Pan Runmin	潘潤民	Z. M. Pan			chemistry	1917b; 1920
Pan Zanhua	潘贊化				agri/physio/path/parasi tology	1923
Pan Shenwen	潘慎文				general	1917a (transliterations)
Pan Xulun	潘序倫				mathematics	1926
Pan Yizhi	潘以治				zoology	1926
Pang Bin	龐斌	龐敦敏			bact/path/physio/para/ chem	1919-24
Peng Minbo	彭敏伯	彭斌			chem/patholog	1917a-1919; 1922
Peng Shuzi	彭樹滋				chemistry	1917b; 1920
Qi Zhengcheng	戚正成				general	1927
Qin Fen	秦汾				physics	1920
Qian Chongrun	錢崇潤				anatomy	1917a-1918

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Qian Chongshu	錢崇澍	錢雨農			zoo/botany	1919; 1921-26
Qian Hanren	錢漢人				?	1917b-1918
Qian Tianhe	錢天鶴	安(*)			zoology	1921-22
Qian Xuantong	錢玄同				general	1917a (transliterations)
Qin Jingyang	秦景陽				mathematics	1924
Qin Yaoting	秦耀庭				zoology	1923-24
Qiu Chongman	裘沖曼		1890- 1942	?	mathematics	1924-26
Quan Shaoqing	全紹清				osteology	1919
Sha Shijie	沙士桀				anatomy	1916
Shen Kuibo	沈奎伯				general	1918
Shen Liande	沈(戀?) 德				chemistry	1920
Shen Suming	沈溯明			A.B. Cornell '15	chemistry	1920; 1925
Shen Xinqing; Enfu	沈信卿	沈恩孚			general; medicine	1915-19; 1921- 24; 1926-27
Sheng Peicong	盛佩蔥				pharmacology	1924
Sheng Zaiheng	盛在珩				anatomy	1916
Shi Erde	施爾德	R.T. Shields			anat;physio;path;para; zoo	1915-19; 1923-24
Shi Fule	施甫樂				physics	1920
Song Gubin	宋谷賓				physio;path;parasitolo gy	1923
Song Wenzheng	宋文政				pharmacology	1925
Song Yusheng	宋梧生				general	1927

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Sun Congzhou	孫從周				?	1925
Sun Duochou?	孫多籌 (?)				mineralogy	1924
Sun Hongfen	孫洪芬				chemistry	1921
Tang Erhe	湯爾和				anat;chem;bacteriolog y	1916-1920
Tang Nai'an	唐乃安	Abel Tang			anat;pathology	1916-18; 1922
Tang Zhaofeng	湯兆豐				?	1925
Wan Jun	萬鈞				medicine	1915
Wang Bichen	王弼臣				anatomy	1916
Wang Cai'nan	王采南				zoo; botany; mineralogy	1922-24
Wang Chengjun	王承鈞	王沚川			path/physio/para/chem	1921-24
Wang Fengsheng	王鳳生	王鳳笙;王 鳳蓀			zoology	1922-24
Wang Gangsen	王剛森				mathematics	1924
Wang Jiliang	王季梁	王季 (點?1920)			chemistry	1919-21
Wang Jianshan	王兼善				chemistry	1920
Wang Jingru	汪鏡如				physiology	1926
Wang Licai	王立才				anatomy	1915-19
Wang Lianzhong	王連中				physics	1920
Wang Pengfu; Huixian	王彭孚	王會憲			pathology	1922
Wang Qicheng	王啟承				chemistry	1921

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Wang Qihua	王企華				general	1921-23
Wang Qizhang	汪企張				general	1917; 1923
Wang Ruoyan	王若儼				anatomy	1916
Wang Wanbai	王完白				bac/physio/path/para/p harma	1919-20; 1922-25
Wang Xichen	王曦晨				mathematics	1926
Wang Yijing	王以敬				physiology	1925-26
Wang Yizhi	汪怡之				zoology	1924
Wang Youdu	王幼度				chemistry	1917a
Wang Yugang	王于剛	王鳴(?)岡		大阪医科大学	anat/physio/path/para/ pharma	1915; 1917a, b; 1923-24; 1926
Wang Yunlin	王運麟				chemistry	1920
Wang Zhaoqi	王兆棋				physio/path/parasitolo gy	1923
Wang Zunmei	汪尊美				anatomy	1916
Wei Shizhen	魏時珍				mathematics	1926
Wu Bochou	吳伯俦				chemistry	1917a, b
Wu Bofu	吳博紱	吳綰章			chem/physics	1921-22
Wu Cuilun	吳粹倫				chemistry	1924
Wu Dongtou	吳東斗				chemistry	1924
Wu Guanghan	吳廣涵				mathematics	1923-24
Wu Heshi	吳和士	吴冰心;吴 家煦			chem/physics/zoo/bota ny/mineralogy	1915; 1917a- 1927
Wu Jiagao	吳家高	億琴		M.S. Illinois ?	physics	1921
Wu Jishi	吳濟詩	吳谷宜			anat/path/physio/para	1917a-1919; 1921-26
Wu Juenong	吳覺農				agriculture	1927

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Wu Mingqi	吳鳴岐	祥鳳			pathology	1922; 1924
Wu Xian	吳憲				physio/path/parasitolo gy	1923-24; 1927
Wu Yuanzi	吳元滋	吳子修			zoology; botany; math	1921-26
Wu Zai(run?)	吳在 (潤?)				mathematics	1926
Wu Zhihui	吳稚輝	吴稚晖	1865- 1953		general	1917a (transliterations)
Wu Zongshi	吳宗式				chemisty	1920
Xi Zhaohong	郤兆鴻	(郤=隙)			chemistry	1919
Xia Shenchu	夏慎初			大阪医科大学 '?	physio/path/para/bioch em	1923-24
Xian Ding	缐定				pharmacology	1926
Xie Enzeng	謝恩增				bacteriology	1915; 1919-20
Xie Songfan	謝崧薄	謝松凡			pathology	1922
Xiong Dizhi	熊迪之				mathematics	1926
Xiong Yusheng	熊雨生				?	1922
Xiong Zhengli	熊正理				zoology	1922
Xiong Qinglai	熊慶來				?	1925
Mr. Xu (?)	徐君				biochemistry	1924
Xu Fengshi	徐鳳石				chemistry	1918-20
Xu Kuanfu	徐寬甫				mineralogy	1924
Xu Peihuang	徐佩璜	徐君陶		B.S. MIT '14	Chem. Eng.	1927
Xu Songming	徐誦明	徐斌游		ц 	physio/path/parasitolo gy	1921; 1923
Xu Zhaonan	許肇南	字先甲,号 石枬	1886- 1960	Harvard '	physics	1921
Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
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Xue Liangshu	薛良叔	薛德烠			zoology	1922-25
Yang Chunsheng	陽春生	茂(?)九			pathology	1921
Yang Jinsen	楊錦森				general	1915
Yang Guangbi	楊光弼				chemistry	1920
Yang Yunzhong	楊孝述	尤中;允中			physics	1921-22
Yang Ziheng	楊自珩				general	1919
Yang Ziyi	楊自沂				bacteriology	1920
Ye Hancheng	葉漢丞		L		pharmacology	1924
Yi Bo'en	伊博恩				med/chemistry	1919-21
Ying Hengli	盈亨利				chemistry	1915; 1917a
Ying Tingli	盈亭利				medicine	1917a
Ying Yuanyue	應元岳				medicine	1926
You Zhefu	尤哲夫				?	1922
Yu Dawang	於達望				general	1926
Yu Desun	余德蓀				physio/path/parasitolo gy	1923-26
Yu Fengbin	俞鳯賓	Voonping Yui			chem/bact/path/physio /para	1916-24; 1926-27
Yu Rizhang	余日章	David Yui			general	1915-18
Yu Yunxiu	余雲岫		1879- 1954	Osaka '16	physio/path/parasitolo gy	1921-24; 1927
Yu Jimin	余繼敏				?	1925
Yu Tongkui	俞同奎				chemistry	1920
Yun Jiying	惲季英	惲福森 揮季英			chemistry; medicine	1917a-1919; 1922

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Zeng Xielian	曾屑(?) 聯				mineralogy	1924
Zhan Dachun	張大椿				physics	1920
Zhang Haiqiu	張海秋				mathematics	1924
Zhang Jihua	張濟華				mathematics	1926
Zhang Jianqiu	張劍秋				chem/physics	1920
Zhang Jingcheng	張鏡澄				botany	1922-23
Zhang Jinshu	張近樞				anat/bact	1917b-1919
Zhang Liuru	張柳如				botany	1922
Zhang Shengwu	張省吾				chemistry; medicine	1919
Zhang Xiumin	張修敏				chem/pharma	1919-20; 1922; 1926
Zhang Yinhai	張銀海				chemistry	1920
Zhang Yuanji	張元濟				general	1915; 1917a (transliterations)
Zhang Zhun	張準	張子高; 長 子高		S.B. MIT '15	chemistry; medicine	1919; 1921
Zhang Zhun Zhao Niugao	張準 趙牛稿	張子高; 長 子高 趙于槁;午 槁		S.B. MIT '15	chemistry; medicine botany	1919; 1921 1922
Zhang Zhun Zhao Niugao Zhao Qixun	<b>張準</b> 趙牛稿 趙齊巽	張子高; 長 子高 趙于槁;午 槁		S.B. MIT '15	chemistry; medicine botany ?	1919; 1921 1922 1917
Zhang Zhun Zhao Niugao Zhao Qixun Zhao Shifa	張準   趙牛稿   趙雪玉   趙士法	張子高;長 子高 趙于稿;午 稿 趙仲則		S.B. MIT '15	chemistry; medicine botany ? pathology	1919; 1921     1922     1917     1921
Zhang Zhun Zhao Niugao Zhao Qixun Zhao Shifa Zhao Shijin	張準 趙 趙 趙 趙 遺 遺 遺 遺 遺 遺 遺 遺 遺 遺 遺 遺 遺 遺 遺 遺 遺 辺 音 辺 二<	張子高; 長 子高 趙于稿;午 稿 趙仲則		S.B. MIT '15	chemistry; medicine botany ? pathology chemistry	1919; 1921     1922     1917     1921     1920
Zhang Zhun Zhao Niugao Zhao Qixun Zhao Shifa Zhao Shijin Zhao Xiuhong	張準 趙 趙 趙   趙 趙 趙 世   道 趙 世 修	張子高;長子高     趙于稿;午稿     趙中則		S.B. MIT '15	chemistry; medicinebotany?pathologychemistryphysics; mathematics	1919; 1921     1922     1917     1921     1920     1921-23
Zhang Zhun Zhao Niugao Zhao Qixun Zhao Shifa Zhao Shijin Zhao Xiuhong Zhao Yaoyi	張 趙 趙 趙   進 趙 趙 趙   単 裔 巽 法   音 鴻 衣	張子高;長子高     趙于槁;午 槁     趙仲則		S.B. MIT '15	chemistry; medicinebotany?pathologychemistryphysics; mathematics?	1919; 1921 1922 1917 1921 1920 1921-23 1917a
Zhang Zhun Zhao Niugao Zhao Qixun Zhao Shifa Zhao Shijin Zhao Shijin Zhao Yaoyi Zhao Yaoyi Zhao Yuhuang	張 趙 趙 趙 趙 趙 趙 趙	張子高;長子高     趙于槁;午     槁     道仲則     趙藥農		S.B. MIT '15	chemistry; medicinebotany?pathologychemistryphysics; mathematics?chemistry	1919; 1921 1922 1917 1921 1920 1921-23 1917a 1917a; 1921

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Zheng Zhangcheng	鄭章成	鄭成章			bacteriology; zoology	1920-21; 1924
Zheng Zhenwen	鄭貞文				chemistry	1920-21
Zhong Dasheng	中褡生				chemistry	1924
Zhong Guangao	種觀誥				general	1918
Zhong Hengcheng	種衡成				mineralogy	1924
Zhong Xinxuan	種心煊				botany	1923-24
Zhong Zhendong	種振東				physics	1920
Zhou Jianhu	周劍虎				mathematics	1923
Zhou Junsheng	周軍聲				chem/physics	1917b; 1920
Zhou Runsheng	周潤生				medicine	1919
Zhou Songsheng	周頌聲				medicine	1924
Zhou Wei	周威				medicine	1915
Zhou Zhongheng	周仲衡				anat/osteo	1916-19
Zhou Zhongqi	周仲奇	周仲祁			physio/path/para/chem	1919; 1923-24
Zhu Fengmei	朱鳳美				botany	1922-26
Zhu Hengbi	朱恆璧				chem/pharma	1921; 1926
Zhu Jinqing	朱縉卿				anatomy	1917a, b; 1919
Zhu Shaobing	朱少屏				general	1915
Zhu Wonong	朱我農				anatomy	1917a-1918
Zhu Yanzhi	朱炎之	朱炎			chemistry; medicine	1919-20; 1926

Name in Pinyin	Chinese Name	alt. name	Years	Highest Educ.	Discipline	Joint Committee Participation
Zhu Youyun	朱有昀	朱我農?			anatomy	1917b-1918
Zhuang Yu	莊俞				general	1915
Zou Binwen	鄒秉文				bacteriology	1920

\* Those highlighted in grey indicate participants present at the 1915 meeting discussed in chapter one.

## \*\* Those highlighted in black with white text represent the super networkers discussed in chapter two, who represented multiple organizations to the Joint Terminology Committee. See Appendix 4 above.

? denotes participants name was listed as attending, but subcommittee subject or other interest was not made explicit.

Sources:

- *National Medical Journal (Zhonghua yixue zazhi)* 1916-1927. There are 64 total published articles, comments and transcripts from which the names of participants were drawn. It appears that many of the alternate names were actually misspellings due either to (a) the transcriber mistaking one character for another, or (b) the printers mistaking characters. I suspect most cases were due to the former.
- Boorman, Howard L. ed. 1967-1971. *Biographical Dictionary of Republican China*. New York: Columbia University Press.
- Wong, Chi-min and Wu Lien-teh. 1936. History of Chinese Medicine. Shanghai: National Quarrantine Service.
- Xu, Youchun. 1991. *Minguo renwu dacidian* [Republican Biographical Dictionary]. Shijiazhuang: Hebei renmin chubanshe;
- Xu, Weimin. 1993. *Zhongguo jinxiandai renwu bieming cidian* [Modern and Contemporary Chinese Dictionary of Alternate Personal Names]. Shenyang: Shenyang chubanshe.
- Baidu Baike Renwu [Chinese Wiki-Encyclopedia, Biographies] (http://baike.baidu.com/class/1408.html)

Location	Name	Founded	First Graduat- ing Class	Union	Ratio of Instructors to students to graduates	Language of instruction
Moukden (Fengtian) in Manchuria	Moukden Medical College	1908; 1912	1917 (5 year course)	United Free Church of Scotland, Irish Presbyterians, Danish Lutherans; Teaching began only in 1912	7:80:~	Chinese (with English)
Beijing (Peking)	Union Medical College (soon to be of Peking University, later called Yen- ching University)	1906; 1915	1911	LMS, Am. Presbyterians (North), ABCFM, Am. Methodist Episcopal, London Medical Missionary Association, Church of England Mission; Rockefeller est. 1915 as pre- med, 1921 full medical school.	14 : 95 : 38	Chinese
Jinan, Shandong	Union Medical College (of Shantung Christian University)	1909; 1917; 1924		Am. Presbyterian, English Baptist, Church of England Missions. 1917 Union with Hankou, Nanjing, and parts of PUMC; 1924 North China Union Medical College for Women.	5:46:7	Chinese
Chengdu, Sichuan	College of Medicine and Dentistry of the West China Union University	1914	~	Canadian Presbyterian, Methodists.		Chinese
Hankou, Hubei	Union Medical College			LMS and Wesleyan Mission (with some help from ABCFM and China Mission of the Reformed Church of U.S.)	3:24:20	Chinese
Changsha, Hunan	Hsiang-Ya / Yale-in- China School of Medicine	1914	~	Proposed mission of Yale in China. Not specifically missionary.	~	English with Chinese explanations
Nanjing, Jiangsu	Nanking Medical School (of University of Nanking)	1910; 1913	1914	Methodist Episcopal Church, Foreign Missions of Presbyterian Church in the U.S.A.; 1910 as East China Union Medical School; 1913 as medical Department of University	8 : 25 : 10	Chinese
Shanghai, Jiangsu	Medical Department of St. John's University	1896; 1906		Christian Association of University of Pennsylvania combined in 1909(?) Gave M.D. from 1906.		English
Shanghai, Jiangsu	Harvard Medical School	1912; 1913	~	1912 Opened in conjunction with St. John's; 1913 cooperation with Red Cross. Not specifically missionary.	10 : 20 : 5	English
Fuzhou, Fujian	Union Medical College	1911: 1914	~	Church Missionary Society, ABCFM, Methodist Episcopal; Union in 1914	5:18:~	English
Guangzhou Guangdong	University Medical School (Canton Christian College)	1904		Christian Association of University of Pennsylvania, moved to St. John's Shanghai after teaching one course (5 years?).		
Guangzhou Guangdong	Kung Yee Medical School	1909		Chinese Directors	24 : 120 men, 37 women	Chinese
Guangzhou Guangdong	Canton Hospital,	1836	?	In transition. Although early start, never firmly established.	~	Chinese
Guangzhou Guangdong	Hackett Medical College for Women	1899 or 1901	? 4 years	Am. Presbyterian Board	68 grads	Chinese (Cantonese)

Appendix 6: Union missionary medical schools in China as of 1914

	Year	<b>By Tang Erhe</b> (with one exception) Abreviated Title (Translated)		Year	Articles by E.V. Cowdry and his successor, Davidson Black, and Physical Anthropologist Hrdlicka
1	1912	Request for a law allowing dissection (unpublished)	a	1917	Cowdry, Mitochondrial constituents of protoplasm (embryology)
2	1917/8	Journey to the East (anatomical medicine)	b	918	Cowdry, Cytology of Myxomyoetes (cell anatomy)
3	1917	Licence requirements for physicans	c	1919	Cowdry, An appeal for human embryos
4	1917/8	Report on Joint Terminology Committee to Ministry of Education, 1, 2, 3, 4 (1916-1918)	d	1919	Cowdry, Plea for the formation of an Anatomical Association in China
5	1918	Histology of scorpion toxin secreting glands	e	1920	Anatomy in Japan
6	1918	Correspondence to Ministry of Education regarding professionalization of physicians	f	1920	Black, Motor nuclei of cerebral nerves in phylogeny (neurology, evolutionary biology)
7	1918	Korean Regulations of Physicians	g	1920	Black, Concerning anthropometry and observations on healthy subjects (physical anthropology/anatomy)
8	1918	Extracts of Journey to the East	h	1920	Hrdlicka, The Anthropology of Asiatic peoples
9	1918	Draft for plan for Medical Universities and pre-med education	i	1920	Proceedings of the Anatomical and Anthropological Association of China, Peking Meeting, 1920
10	1919	Recent state of Japanese medical schools and anatomy laboratories	j	1920	Studies on endocranial anatomy
11	1919	Study on ethnology (race) of the Chinese people (from the anatomy laboratory of Government Medical School, Beijing) by 中野铸太郎	k	1920	Circular asking for material for Anatomical and Anthropological Collections
			1	1920	Cowdry, Reticular Material in Developing Blood Cells
			m	1920	Cowdry, The Renaissance of Medicine in China
			n	1920	Cowdry, Anatomy in China

Appendix 7: Contextual items by Tang Erhe and E. V. Cowdry (and others) demonstrating the range of activities associated with Anatomy in the 1910s

n1920Cowdry, Anatomy in ChinaNotes: These items demonstrate a singular coherence when examined alongside the activities and<br/>preoccupations of Tang and Cowdry while travelling in Japan. I included item one (1) from archival<br/>sources to give context, and, along with other items (3, 4, 6, 7, 9, 10, d, e, i, m, n) Tang and Cowdry's drive<br/>to institutionalize anatomo-medical modernity legally and professionally in conjunction with the state<br/>becomes evident. Items demonstrating the wide range of research on anatomy in China include comparative<br/>histology, embryology, cytology, neurology, physical anthropology, ethnology/race studies (5, 11, a, b, f, g,<br/>h, j, l) could be supplemented by dozens more from the annual journal of Tang's professional association.

The second column of articles, published widely in overseas and China-based academic journals were collected under the title, "Contributions from the Peking Union Medical College, Department of Anatomy, 1918-1920." I have not included two articles on laboratory animals, although these should perhaps be considered since Tang Erhe's journal included much discussion of rabbits as laboratory animals. In fact, laboratory animal testing for disease and drug testing is one area where anatomy's hidden omnipresence continues today: after the experiment animals are dissected by biologists to identify changes.