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COMING TO TERMS WITH LOGIC:
THE NATURALIZATION OF AN OCCIDENTAL
NOTION IN CHINA

Modern Chinese discourses, no matter whether on social or ideological questions or on China's intellectual and cultural heritage, are articulated to a large extent in terms that were coined and normalized as translations of Western or Western-derived notions. Yet far from serving as simple equivalents of imported ways of understanding, many terms of foreign origin have unfolded a life very much of their own in modern Chinese contexts. More often than not they have acquired new meanings that creatively alter, extend or even undermine established European conceptions. In order to comprehend the resulting semantic and conceptual differences, and not merely register them as deviations from the 'original' Western meanings, historians of thought must pay close attention to the multilayered process of translation and appropriation from which these terms have emerged. In this paper, I will try to illustrate this demand by presenting one particular case in some detail: the introduction and naturalization of the occidental notion of 'logic' in modern Chinese texts and contexts.

1. WHEN THE TWAIN MET

Twentieth-century scholarship has securely established the fact that explicit logical reflection can be traced back in China at least to the fifth century BC.[1] The disputes of the 'Hundred Schools' of classical Chinese philosophy incited a successive increase in argumentative rigour and eventually led to a growing interest in problems similar to those discussed in traditional European logic. The most famous attestations of this interest are preserved in the "Dialectical Chapters" of the *Mozi* 墨子 (the so-called *Mobian* 墨辯, late fourth to third century BC), the sophisms of the *Gongsun Longzi* 公孫龍子 (third century BC), the paradoxes of infinity ascribed to Hui Shi 惠施 (c. 370–310 BC), and Xunzi's 荀子 (third century BC) treatise on the "Rectification of

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[1] Cf. Li Kuangwu 李匡武 (ed.). 1989. *Zhongguo luojishi* 中國邏輯史 (A history of Chinese logic). 5 vols. Lanzhou: Gansu renmin chubanshe, vol. 4, pp. 126–81.

names" (*zhengming pian* 正名篇).[2] Most of these deliberations are devoted to the analysis of 'names' (*ming* 名) and their relation to the objects at which they point. And although we find no systematic discussion of deductive forms of reasoning in the *Mobian* or the writings attributed to the 'School of Names' (*mingjia* 名家), there are interesting discourses on the significance of the position of individual names within larger units of speech or text and the properties of various types of analogies.

The early interest in logical reflection was revived during the third and fourth centuries AD by the mysticist *xuanxue* 玄學 or 'School of Dark Learning'. Inspired by the rediscovery of the *Mobian*, *Xuanxue*-scholars considerably refined the previous understanding of the relationship between 'names' and 'actualities' (*shi* 實) or the 'pattern (of things)' (*li* 理) and expounded rules of successful argumentation.[3] In the seventh and eighth centuries, logical thought in China was further enriched through the appropriation of sophisticated forms of Buddhist reasoning originating from India. In the translations of Xuanzang 玄奘 (600–664) and his followers, the treatises of the Indian *hetu-vidyā* doctrine were reformulated into the ingenious system of *yinming* 因明 (knowledge of reasons) which offered Chinese monks and literati for the first time formalized schemes to demonstrate the validity of their arguments and, more importantly, refute those of their opponents.[4]

Despite these diverse traditions that survived on the margins of the classical canons, European logic was perceived as an entirely foreign area of intellectual inquiry when it initially became known in China during the seventeenth and, after an extended period of renewed indifference, once again towards the end of the nineteenth century.[5] At the

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[2] Cf. e.g. Christoph Harbsmeier. 1998. *Language and Logic in Traditional China*, in: Joseph Needham (ed.). *Science and Civilisation in China*. *Vol*. *VII*. *Pt*. *1*. Cambridge: Cambridge University Press, pp. 286–348.

[3] Cf. e.g. Zhou Wenying 周文英 . 1979. *Zhongguo luoji sixiang shigao* 中國邏輯思想史搞 (A draft history of logical thought in China). Beijing: Renmin chubanshe, pp. 89–109; Wen Gongyi 溫公頤 . 1989. *Zhongguo zhonggu luoji shi* 中國中古邏輯史 (A history of logic in the Chinese Middle Ages). Shanghai: Shanghai renmin chubanshe, pp. 247–70.

[4] Cf. Uwe Frankenhauser. 1996. *Die Einführung der buddhistischen Logik in China*. Wiesbaden: Harrassowitz. See also Harbsmeier 1998, pp. 358–407.

[5] Cf. Li Kuangwu 1989, vol. 4, pp. 126–81; Sakade Yoshinobu 坂出祥伸 . 1965. "Shimmatsu ni okeru seiō ronrigaku no juyō ni tsuite" 清末に於ける西欧論理学の受容 について (The reception of European logic in late Qing China), *Nippon Chūgoku gakkaihō* 12, pp. 155–63.

turn of the century, Chinese bibliographers still felt at a loss when forced to address the subject: Liang Qichao 梁啟超 (1873–1929), for instance, called the only work on logic available in Chinese at the time a book "resisting any attempt at classification" (*bu ke gui lei* 不可歸 類), and Huang Qingcheng 黃慶澄 (1863–1904) placed the same text in the category of works on 'dialects', i.e. foreign languages (*fangyan* 方言).[6] Merely two decades later, however, logic had not only become a well-established subject of Chinese university education but was also frequently cited in public debates. Moreover, there was now a rapidly growing number of works on the hitherto unknown academic field of 'Chinese logic', drawing already more or less confidently on a carefully defined textual canon and an extensive terminological repertoire.[7] Some authors had even begun to embark on com-parative studies into the nature and origins of "the three great logical traditions", as they came to be known, of Europe, India and China.[8]

The following lexicographical sketch is intended as a first step in reconstructing the process of translation which made this strikingly rapid naturalization of the alien notion of logic in Chinese discourses possible. By tracing the different linguistic representations that were introduced, contested, adopted or, more often, rejected in China as possible equivalents of 'logic' from the seventeenth century onwards, I am not pretending to present an analysis of all the discursive layers that would need to be considered in a comprehensive history of logical discourse in modern China. Rather, my more modest aim is to

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[6] Liang Qichao 梁啟超 (ed.). 1896. *Xixue shumu biao* 西學書目表 (Bibliography of Western knowledge). Shanghai: Shiwu baoguan, 3.20a; Huang Qingcheng 黃慶澄 . 1898. *Zhong-Xi putong shumu biao* 中西普通書目表 (General Chinese and Western bibliography). n.p., p. 7a.

[7] Bibliographical information is available in *Zhongguo luojishi ziliaoxuan* 中國邏 輯 史資料 選 (Selected materials on the history of Chinese logic). 1991. Edited by Zhongguo luojishi yanjiuhui ziliao bianxuanzu 中 國邏輯 史研究 會資料 編選組 . 6 vols. Lanzhou: Gansu renmin chubanshe, vol. 5.1, pp. 503–43. See also Peng Yilian 彭漪漣 . 1991. *Zhongguo jindai luoji sixiang shilun* 中國近代邏輯思想史論 (Essays in the history of logical thought in Modern China). Shanghai: Shanghai renmin chubanshe; and Zhao Zongkuan 趙總寬 (ed.). 1999. *Luojixue bainian* 邏輯學百年(A century of studies in logic). Beijing: Beijing chubanshe, pp. 5–131.

[8] Cf. Zeng Xiangyun 曾祥云 . 1992. *Zhongguo jindai bijiao luoji sixiang yanjiu* 中 國近代比較邏輯思想研究 (A study of comparative logical thought in modern China). Harbin: Heilongjiang jiaoyu chubanshe; Yang Baishun 楊百順 . 1989. *Bijiao luoji shi* 比較邏輯史 (Comparative history of logic). Chengdu: Sichuan renmin chubanshe, pp. 355–73.

show that sinking a diachronic shaft through the stratified deposits of modern Chinese discursive history can, in some cases at least, provide a guideline along which more ambitious inquiries may proceed.[9]

2. WORDS OUT OF CONTEXT

Before looking at the various Chinese renderings of the term 'logic' it may be useful to recall that the science was known under many different designations in the course of its history in the West. To cite only the more prominent examples, 'logic' was referred to by names as diverse as 'dialectic', 'organon', 'canonic', 'medicina mentis', 'ars disputationis', 'philosophia rationalis', 'scientia scientiarum' or 'l'art de penser'.[10] While each of these terms has its unique history, all were intended to highlight a particular quality of the discipline which the other names seemed to conceal, and this is precisely the point that was to fuel the debates about the most appropriate translation of the word in Chinese. Somewhat paradoxically, however, the semiotically most productive period in China was the long phase of almost complete indifference towards occidental logic extending from the seventeenth through the late nineteenth centuries.

1. Jesuit 'logica' and the 'patterns of names'

The Jesuit missionaries who first presented Western logic to a Chinese readership in the early seventeenth century used the Latin terms *logica* and *dialectica* more or less interchangeably, despite the vivid

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[9] Among the many authors that have recently touched upon aspects of my topic, see in particular Dong Zhitie 董志鐵 . 1986. "Guanyu 'luoji' yiming de yanbian ji lunzhan" 關於 ' 邏輯 ' 譯名的演變及論戰 (The evolution of and debates about Chinese translations of 'logic'), *Tianjin shida xuebao* 1, pp. 25–8; Huang Heqing 黃河清 . 1994. "'Luoji' yiming yuanliu kao" ' 邏輯 ' 譯名源流考 (Historical sketch of Chinese translations of 'logic'), *Ciku jianshe tongxun* 5, pp. 11–5; Zhou Yunzhi 周云之 . 1995. "'Mingbianxue' zhi ming de youlai ji qi yueding sucheng guocheng" ' 名辯學 ' 之名的由來及其約定俗成過程 (The origin of the term 'Chinese logic' and the process of its popularization), in: *Li you guran: jinian Jin Yuelin xiansheng bainian dansheng* 理有固然・紀念金岳霖先生百年誕生 (Pattern is certain: Commemorating the 100th birthday of Mr. Jin Yuelin). Edited by Zhongguo shehui kexueyuan zhexuesuo luojishi 中國社會科學院哲學所邏輯室 . Beijing: Shehui kexue wenxian chubanshe, pp. 140–57. For earlier discussions see below, ch. 4.

[10] Cf. Wilhelm Risse. 1980. "Logik", in: Joachim Ritter and Karlfried Gründer (eds.). *Historisches Wörterbuch der Philosophie. Band 5*. Darmstadt: Wissenschaftliche Buchgesellschaft, pp. 357–62.

debates about the proper meanings of both terms in contemporary Europe.[11] Yet, following the Jesuit *Ratio studiorum*, they employed *logica* as the primary name for the discipline.[12] In 1623, Giulio Aleni (Ai Rulüe 艾儒略, 1582–1649) introduced the science under this name as one of the subjects taught in the preparatory year at European universities in his *Xixue fan* 西學凡 (General outline of Western learning) and the more widely read *Zhifang waiji* 職方外記 (Record of the places outside the jurisdiction of the Office of Geography).[13] Lacking an established Chinese equivalent, Aleni chose to render the term in both texts by the phonetic replica *luorijia* 落日加 (in the Jiangnan dialect of the time probably pronounced *luoriga*), to which he added the explanatory 'translations' (*yiyan* 譯言), or rather definitions, *bian shifei zhi fa* 辯是非之法 (the method of discerning right/true from wrong/false) and *mingbian zhi dao* 明辯之道 (the way of lucid discernment).[14]

The first substantial introduction to European logic was published in 1631 by the Portuguese Jesuit Francisco Furtado (Fu Fanji 傅汎際, 1587–1653).[15] The *Mingli tan* 名理探 (*Logica*, lit. 'The exploration of the patterns of names') was a partial translation of the *Commentarii Collegii Conimbricences e Societate Iesu: In Universam Dialecticam Aristotelis Stagiritæ*, a voluminous textbook in Latin based on Aristotle's *Categories* and Porphyry's *Eisagogue*.[16] Apart from the phonetic loan *luorijia* 絡日伽, a homophone of Aleni's transliteration, Furtado

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[11] Cf. Pierre Michaud-Quantin. 1969. "L'emploi des termes *logica* et *dialectica* au moyen âge", *Arts libéraux et philosophie au moyen âge. Actes du quatrième congrès international de philosophie médiévale*. Montréal, Paris: J. Vrin, pp. 855–62.

[12] Cf. Ladislaus Lukács S. J. (ed.). 1986. *Ratio Atque Institutio Studiorum Societas Iesu (1586 1591 1599)*. Rome: Institutum Historicum Societatis Iesu, pp. 401–4.

[13] Giulio Aleni (Ai Rulüe 艾儒略). 1623a. *Xixue fan* 西學凡 (General outline of Western learning). Hangzhou. Reprinted in: *Tianxue chuhan* 天學初函 (First collection of heavenly studies).1965 [1628]. Edited by Li Zhizao 李之藻. 6 vols. Taibei: Taiwan xuesheng shuju, vol. 1, pp. 1–60; id. 1623b. *Zhifang waiji* 職方外記 (Record of the places outside the jurisdiction of the Office of Geography). Hangzhou. Reprinted in: *Tianxue chuhan*, vol. 3, pp. 1269–1496.

[14] Aleni 1623b, pp. 1360–1; id. 1623a, pp. 31–2. Cf. also Federico Masini. 1997. "Aleni's Contribution to the Chinese Language", in: Tiziana Lippiello and Roman Malek (eds.). *"Scholar from the West". Giulio Aleni S. J. (1582–1649) and the Dialogue between Christianity and China*. Nettetal: Steyler, pp. 539–54.

[15] Francisco Furtado (Fu Fanji 傅汎際) and Li Zhizao 李之藻. 1965 [1631]. *Mingli tan* 名理探 (*Logica*). 2 vols. Taibei: Taiwan Shangwu yinshuguan.

[16] The text was written at the University of Coïmbra and first printed in Cologne in 1607. The Chinese translation was based on the second edition, Cologne 1611. Cf. Xu Zongze 徐宗澤. 1965. "*Mingli tan* ba" 名理探跋 (Postface to the *Mingli tan*), in: Furtado and Li 1965, vol. 2, pp. 579–87; 581.

and his co-translator Li Zhizao 李之藻 (1565–1630)—who invented most of the terms employed in the *Mingli tan*, but died shortly before the joint effort was completed—offered a trope of related semantic renderings for *logica* which were allusive of *xuanxue* deliberations by referring to 'names' and their relation to the 'pattern of things'. The most general of these renderings was *mingli* 名理 , literally meaning 'name and pattern' or 'eminent patterns', but here clearly intended to denote 'the patterns of names'. Terms derived from this compound included *mingli tan* 名理探 (the exploration of the patterns of names), *mingli zhi lun* 名理之論 (the theory of the patterns of names) and *mingli (zhi) xue* 名理（之）學 (the science of the patterns of names).[17] In addition, their work introduced several paraphrastic translations that were freely employed as synonyms for *logica* throughout the book: *tuilun zhi zongyi* 推論之總藝 (the general art of inference), *tuilun zhi fa* 推論之法 (the methods of inference), *mingbian zhi xue* 明辨之學 (the science of lucid disputation) and a number of variations on these themes.[18] Finally, Li and Furtado coined the term *bianyi* 辨藝 as a loan translation of the Latin *ars disputationis* and offered *diyaledijia* 第亞勒第加 as a transliteration of *dialectica*.[19]

Since neither Li Zhizao nor Furtado left any explanation of their renditions of 'logic' or their view of the discipline's relation to traditional Chinese thought, it is impossible to determine whether they actually intended to imply a tacit affinity between European studies on the 'patterns of names' and Chinese *xuanxue*, or simply adhered to the general Jesuit strategy to accommodate European notions through the reinterpretation, or occupation, of distinguished Chinese terms. In any case, their translation of the *Mingli tan* as a whole—and hence of the various terms for *logica* as well—was apparently so far removed from contemporary Chinese interest that it was almost immediately forgotten, at least outside the Christian community.[20] Although an extended version of the text was included in the *Qionglixue* 窮理學 (*Philosophia*), a work compiled in 1683 by Ferdinand Verbiest (Nan

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[17] Furtado and Li 1965, pp. 2, 6–7, 13–38.

[18] Ibid., pp. 36, 13, 19, and *passim*.

[19] Ibid., pp. 6, 13 and 16–7.

[20] Cf. Cao Jiesheng 曹杰生 . 1982. "Lüelun *Mingli tan* de fanyi ji qi yingxiang" 略論 《名利探》的翻譯及其影響 (A brief discussion of the translation and influence of the *Mingli tan*), in: *Zhongguo luojishi yanjiu* 中國邏輯史研究 (Studies in the history of Chinese logic). Beijing: Zhongguo shehui kexue chubanshe, pp. 285–302; 294.

Huairen 南懷仁 , 1623–1688) as a *summa* of theologically acceptable science and philosophy[21], neither the subject matter nor any of the terms used to render the Jesuit *logica* seem to have resurfaced in non-Christian writings of the seventeenth and eighteenth centuries. Thus, while the *Mingli tan* may be taken, as Robert Wardy has argued, as proof that there are no obstacles inherent in the Chinese language that would obstruct the rendition and integration of theoretical notions developed in the West[22], the work clearly failed to enlarge the terminological and conceptual repertoire of late Ming and Qing scholars. An ultimately esoteric notion like late medieval 'logic' could not possibly hope to be adopted in a foreign intellectual environment without faint interest on the part of the intended audience, no matter how well-disguised in traditional garments it was presented. And why would any Chinese without prior Christian inclinations go through the trial of studying the hundreds of forbiddingly technical terms introduced in the *Mingli tan* when already the first pages made it clear that the ultimate aim of the work was to lead the reader back "on the path of the one Truth" of a foreign God?[23]

2. *'Logic' in Protestant writings and nineteenth-century dictionaries*

The second phase in the Chinese encounter with European logic was off to a slow start, not least because the Protestant missionaries that began to arrive in China shortly after the beginning of the nineteenth century attributed not nearly as much importance to the subject as their Jesuit precursors. Logic played only a minor role in Protestant doctrine and the missionary strategy of the Protestant societies active in China was not primarily aimed at the scholarly elite. Nevertheless, there is scattered evidence that logic was taught in some Christian colleges open to Chinese students in the course of the nineteenth century. Logic classes were included, for example, in the curriculum of the Anglo-Chinese College in Malacca, established by Robert Morrison (1782–1834) in 1818, but the language of instruction there was Eng-

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[21] Cf. Ad Dudink and Nicolas Standaert. 1999. "Ferdinand Verbiest's *Qionglixue* 窮理學 (1683)", in: Noël Golvers (ed.). *The Christian Mission in China in the Verbiest Era: Some Aspects of the Missionary Approach*. Leuven: Leuven University Press, pp. 11–31.

[22] Robert Wardy. 2000. *Aristotle in China. Language, Categories and Translation*. Cambridge: Cambridge University Press.

[23] Furtado and Li 1965, p. 2.

lish and we have no trace of any Chinese terms related to logic emanating from that school.[24] Courses in logic were reputedly also offered at St. John's College in Shanghai from 1880 onwards. In an announcement in the daily *Shenbao*, these courses were advertised in Chinese as lessons in *bianshixue* 辯實學 (the science of discerning what is true/real) but once again the subject was to be taught in English.[25]

References to logic remain similarly scarce throughout the century in Protestant writings introducing 'Western knowledge' (*xixue* 西學) and the European educational system. One early exception is Ernst Faber's (Hua Zhian 花之安 , 1839–1899) *Xiguo xuexiao* 西國學校 (Schools in the West) of 1873.[26] In this often reprinted treatise, Faber presents logic as one of the disciplines taught in the faculties of 'philosophy' (*zhixue* 智學 , the science of knowledge) of European universities. According to his outline, 'logic', transliterated as *luxi* 路隙 ,

> … discusses how the soul expresses intentions and thoughts and distinguishes several kinds among them. It also explains why something is right/true or wrong/false. In addition, [logic] analyzes how perceptions, which enter [our consciousness] via the five sense organs and are then taken up by the intellect, are synthesized and outlines the reasons why things are understood clearly.[27]

Faber thus introduces logic as a philosophical science exploring how humans actually think. This psychologistic view, reminiscent of much of the Neo-Kantian philosophy to which he may have been exposed during his studies in Germany, is reflected in the peculiar term he suggests as a tentative Chinese equivalent of 'logic': *yifa* 意法 or 'the

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[24] Cf. Lindsay Ride. 1957. *Robert Morrison: The Scholar and the Man*. Hong Kong: Hong Kong University Press, p. 22.

[25] *Shenbao*, February 3, 1880, p. 6. The term *bianshixue* 辯實學 reappeared as a translation of logic some years later in a work by Yan Yongjing 顏永京 , a Western-educated instructor at St. John's. Cf. id. (tr.). 1889. *Xinlingxue* 心靈學 (Psychology). Shanghai: Educational Association of China. *Xinlingxue* is a partial translation of Joseph Haven.1857. *Mental Philosophy: Including the Intellect, Sensibilities and Will*. New York: Sheldon, Blakeman & Co. In Yan's rendition, *bianshixue* is presented as one branch of the European science of 'metaphysics' (*gewuhouxue* 格物後 學 , the science of what lies beyond the investigation of things). See ibid., pp. 1a–b.

[26] Faber, Ernst. 1873. *Xiguo xuexiao* 西國學校 (Schools in the West). Guangzhou. Alternative editions of this book were printed under the more adequate title *(Da) Deguo xuexiao lunlüe* (大) 德國學校論略 (Brief Account of Schools in Germany).

[27] Faber 1873, reprinted in: *Xizheng tongdian* 西政通典 (Comprehensive anthology of Western government). 1902 [1897]. Edited by Yuan Zonglian 袁宗濂 and Yan Zhiqing 晏志清 . Shanghai: Cuixin shuju 萃新書局 , 19.7a

methods of intentional thinking'—a branch of knowledge, he hastens to add, for which no terminology exists in China and which is thus difficult to translate.[28]

In a very general manner, a number of Protestant books on natural theology and philosophy written during the second half of the nineteenth century touch upon principles of inductive reasoning and hence central aspects of Western logic.[29] But even in these texts direct references to logic as a scientific discipline in its own right and merit are exceedingly rare. One of the few authors who mentions logic at all is William Muirhead (Mu Weilian 慕維廉, 1822–1900). In his *Gezhi xinji* 格致新機 (lit. 'A new tool for the investigation of things'), a translation of Book I of Francis Bacon's *Novum Organon*, Muirhead uses the expressions *bianlun zhi dao* 辯論之道 'the way of reasoning' and *bianlun* 辯論 (or 辨論) 'reasoning' to render the term 'logic'.[30] While this choice may seem acceptable *per se*, it was hardly suited to establish logic as a discipline on par with other sciences such as 'chemistry' (*huaxue* 化學), 'mathematics' (*shuxue* 數學), the physical sciences of 'light' (*guangxue* 光學), 'sound' (*shengxue* 聲學), 'weights' (*zhongxue* 重學), 'heat' (*rexue* 熱學) and 'electricity' (*dianxue* 電學) or for that matter 'philosophy' itself (*zhixue* 智學, *lixue* 理學, *xingxue* 性學 etc) whose status as independent fields of inquiry was indicated within their contemporary Chinese names by the suffix -*xue* 學 '(area of) knowledge/science'. Moreover, and perhaps worse, Muirhead stretched the extension of *bianlun* and *bianlun zhi dao* beyond any recognizable limits by applying them in his text not only to render 'logic' but also to translate terms as diverse as 'dialectic', 'syllogism', 'argumentation'/'to argue', 'reasoning', 'demonstration'/'to demonstrate' and 'dialectical invention'.[31]

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[28] Cf. ibid.

[29] Cf. Yuan Weishi. 1995. "A Few Problems Related to Nineteenth-Century Chinese and Western Philosophies and their Cultural Interaction", *Journal of Chinese Philosophy* 22, pp. 153–92; 163–71. I am indebted to Lauren Pfister for drawing my attention to this article.

[30] William Muirhead (Mu Weilian 慕維廉). 1888. *Gezhi xinji* 格致新機 (The New Organon). Shanghai: Tongwen shuhui, pp. 1b (§ 11), 2a (§ 12), 20a (§ 80) and 40a (§ 127). An earlier version of this translation was first serialized in the missionary journal *Yizhi xinlu* (*Monthly Educator*) in 1878/79.

[31] For *bianlun zhi dao* or *bianlun* as 'dialectic', cf. ibid., pp. 3a (§ 20), 4a (§ 29), 11a (§ 63) and 14b (§ 69); 'syllogism', pp. 2a (§ 13) and 2b (§ 14); 'argumentation', p. 3b (§ 24); 'to argue', p. 6a (§ 43); 'reasoning', p. 4b (§ 33); 'demonstration' and 'to demonstrate', pp. 14a–b (§ 69); 'dialectical invention', p. 21a (§ 82).

The reluctance of Protestant missionaries to propagate the study of logic with the same care and urgency paid to other sciences certainly contributed to the persisting Chinese indifference towards the field. Until the very end of the nineteenth century, hardly any Chinese author refers to logic in his writings on the 'new knowledge' (*xinxue* 新學) streaming in from the West. Even in the popular discourses on the presumed "Chinese origin of Western knowledge" (*Xixue Zhongyuan* 西學中源), logic—like grammar—remains prominently absent.[32]

The most striking illustration of the enduring disregard for logic in our context, however, is the inability of nineteenth-century lexicographers to provide an accepted—or at least potentially acceptable—equivalent for the term. Apparently unaware of existing translations, the compilers of the Western-Chinese dictionaries that were published in the course of the nineteenth century either skipped the term 'logic' altogether (e.g., Robert Morrison, Walter H. Medhurst and Samuel Wells Williams) or felt compelled to propose a number of alternative renderings, none of which seems to have originated from or migrated into the actual Chinese lexicon. To cite only a few examples, Wilhelm Lobscheid offers in his *English and Chinese Dictionary* (1866–1869) no less than five alternatives: *mingli* 明理 (elucidating pattern) or *mingli zhi xue* 明理之學 (the science of elucidating pattern), *lilun zhi xue* 理論之學 (the science of organizing arguments), *si zhi fa* 思之法 (the methods of thinking) and, finally, *lixue* 理學 (the science of pattern), a term originally referring, of course, to the canonized synthesis of Neo-Confucian thought that had been employed as a translation for European 'philosophy' since the seventeenth century and was also listed as such in Lobscheid's *Dictionary* itself.[33] In a similar manner, Paul H. Perny presents the venerable Confucian term *gewu* 格物 (the

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[32] Cf. Quan Hansheng 全漢昇. 1935. "Qingmo de Xixue yuanchu Zhongguo shuo" 清末的西學源出中國說 (The late Qing theory of the Chinese origin of Western knowledge), *Lingnan xuebao* 4.2, pp. 57–102. The only exceptions I found are in the writings of Tan Sitong 譚嗣同 who traces the 'seeds' of modern logic back to Hui Shi and the *Gongsun Longzi* in his famous *Renxue* (A study on *ren*, 1898) and in a short essay entitled "Lun jinri Xixue yu Zhongguo guxue" 論今日西學與中國古學 (On contemporary Western and ancient Chinese knowledge), first published in *Xiangbao* 7 (March 1898). Cf. id. 1981. *Tan Sitong quanji* 譚嗣同全集 (The complete works of Tan Sitong). Edited by Cai Shangsi 蔡尚思 and Fang Xing 方行 . 2 vols. Beijing: Zhonghua shuju, pp. 317 and 399.

[33] Wilhelm Lobscheid (Luo Cunde 羅存德). 1866–1869. *Ying-Hua zidian* 英華字 典 . *English and Chinese Dictionary with Punti and Mandarin Pronounciation*. 4 vols. Hong Kong: Daily Press Office, p. 1124.

investigation of things) in his *Dictionnaire Français-Latin-Chinois* of 1869 not only as a translation of 'logic' but also of 'philosophy'.[34] Slightly later, Justus Doolittle revives the term *tuilun zhi fa* 推論之法 (the methods of inference), that had already been used in the *Mingli tan,* and adds the supplementary rendering *minglun zhi fa* 明論之法 (the methods of elucidating arguments).[35] Further suggestions include Séraphim Couvreur's *bianlifa* 辨理法 (the methods of disputation)[36] , Gustave Schlegel's *dao* 道 (the 'way', *logos*, reason, etc.) and *si zhi li* 思之理 (the patterns of thinking)[37] , and last but not least Kwong Ki-chiu's (Kuang Qizhao 鄺其照) clumsy paraphrase *xuekuo xinsi zhi fa* 學擴心思之法 (the methods of learning to extend one's thoughts)[38] , which all rightfully joined the growing pile of decontextualized and consequently almost inevitably indigestible renderings of a still thoroughly foreign notion.

3. TERMS IN COMPETITION

The terminological confusion that resulted from the continuing indifference towards logic was quickly reduced to competition between a limited number of alternatives when Chinese scholars and officials eventually decided at the turn of the century that they had to come to terms with the discipline—if only because it was part of the educational system of Meiji Japan whose adoption as a blueprint for China's own modernizing efforts was advocated by a growing number of more or less influential reformers in the aftermath of the Sino-Japanese War of 1894/95.

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[34] Paul H. Perny (Tong Baolu 童保錄). 1869. *Xiyu yi Han rumen* 西語譯漢入門 . *Dictionnaire Français-Latin-Chinois de la langue mandarine parlée*. Paris: Firmin Didot, Frère et Fils, pp. 265, 330.

[35] Justus Doolittle (Lu Gongming 盧公明). 1872–1873. *Ying-Hua cuilin yunfu* 英華萃林韻府 . *A Vocabulary and Hand-Book of the Chinese Language, romanized in the Mandarin dialect*. 2 vols. Foochow: Rosario, Marcal & Co., p. 290.

[36] F. Séraphim Couvreur. 1884. *Fa-Han changtan* 法漢常談 . *Dictionnaire Français-Chinois contenant les expressions les plus usitées de la langue mandarine*. Ho Kien Fou: Imprimerie de la Mission Catholique, p. 570.

[37] Gustave Schlegel. 1886. *He-Hua wenyu leican* 荷華文語類參 . *Nederlandsch-Chineesch Woordenboek met de Transcriptie der Chineesche Karakters in het Tsiang-Tsiu Dialekt*. 13 vols. Leiden: E. J. Brill, vol. 6.

[38] Kwong Ki-chiu (Kuang Qizhao 鄺其照). 1882. *Hua-Ying zidian jicheng* 英華字典集成 . *English and Chinese Dictionary*. Hong Kong, p. 174.

1. Bianxue 辨學 *or 'the science of disputation'*

The first candidate in this competition was proposed by Joseph Edkins (Ai Yuese 艾約瑟, 1823–1905), one of the few Protestant missionaries who tried to present a picture of Western civilization in his Chinese writings that went beyond the narrow limits dictated by the demands of the Christian faith and practical utility. Already in 1857, Edkins had published a series of essays on Western literature in the *Liuhe congtan* 六合叢談 (*Shanghae Serial*) that entailed a biography of Cicero, a key figure in the development of European logic. However, in his brief outline he only mentions the young Cicero's fondness of 'rhetorics' or 'argumentation' (*bianlun* 辯論) and fails to inform his readers that it was the great Roman orator who popularized the Latin term 'logica' that was to be adapted in all European languages as the standard name for the discipline.[39]

Edkins obviously found it difficult to come up with an appropriate Chinese equivalent of the term 'logic'. In his "Yalisiduodeli zhuan" 亞里斯多得里傳 (Biography of Aristotle), written in 1875, he suggests the phonetic rendering *luojige* 羅吉格 and the paraphrase *bianbo zhi li* 辨駁之理 (the patterns of refutation).[40] In the chapter on 'philosophy' (*lixue* 理學) of his *Xixue lüeshu* 西學略述 (Brief description of Western knowledge), which was first published in 1886, he then suggests the terms *lunbian lixue* 論辯理學 (the philosophy of argumentation) and *libianxue* 理辯學 (the science of orderly disputation).[41] Probably due to the commercial success of this work, at least the term *lunbian lixue* seems to have gained some currency.[42] Nonetheless, it was soon replaced by Edkins' final choice, the much more concise *bianxue* 辨學 (the science of disputation).

Edkins introduced this new term in his *Bianxue qimeng* 辨學啟蒙 (Primer of logic), the first book on logic available in Chinese since the publication of the *Mingli tan* almost two hundred and fifty years ear-

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[39] Joseph Edkins (Ai Yuese 艾約瑟). 1857. "Jigailuo zhuan" 基改羅傳 (Biography of Cicero), *Liuhe congtan* (*Shanghae Serial*) 1.8, pp. 3b–4b; 4a.

[40] Joseph Edkins. 1875. "Yalisiduodeli zhuan" 亞里斯多得里傳 (Biography of Aristotle), *Zhong-Xi wenjian lu* 32, pp. 7a–13b; 11a.

[41] Joseph Edkins. 1886a. *Xixue lüeshu* 西學略述 (Brief description of Western knowledge). Beijing: Zong shuiwusi, ch. 6, *passim*.

[42] Cf. e.g. Zhong Tianwei 鍾天緯. 1889. "Gezhi shuo" 格致説 (An explanation of science). Reprinted in: *Huangchao jingshiwen sanbian* 皇朝經世文三編 (Third collection of essays on statecraft). Edited by Chen Zhongyi 陳忠倚. 1965 [1898]. Taibei: Guofeng, 1.203–5; 203.

lier.[43] The *Bianxue qimeng* was based on the most popular introduction to the subject in contemporary Europe, William Stanley Jevons' *Primer of Logic*.[44] Edkins intended the term *bianxue*, that he had coined after much deliberation for his translation of this work, as a loan rendition of the English 'science of reasoning' which, according to Jevons, was the most fitting definition of the discipline as a whole. In his preface, Edkins went on to explain that *bianxue* as presented in the *Bianxue qimeng* had nothing in common with the Christian 'art of refutation' as exemplified by apolegetic Jesuit treatises such as Matteo Ricci's (Li Madou 利瑪竇, 1552–1610) *Bianxue yidu* 辨學遺牘 (Testament in defence of the faith).[45] Rather, he says:

> *bianxue* teaches us to correctly discern right from wrong, and this enables us to increase our knowledge, and knowledge, as the great English scholar Bacon said, is power.[46]

Edkins' new term was thus invested with a new understanding of the science: no longer the handmaiden of the Christian faith, the 'logic' he advocated was a tool of scientific and socio-political progress.

Although the promise of this Baconian conception was precisely what more and more Chinese scholars and officials were looking for in their studies of Western knowledge, it took a full decade before the

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[43] Joseph Edkins (tr.). 1886b. *Bianxue qimeng* 辨學啟蒙 (Primer of logic), in: *Xixue qimeng shiliu zhong* 西學啟蒙十六種 (Sixteen introductions to Western knowledge). Edited by Robert S. Hart. Beijing: Zong shuiwusi.

[44] William Stanley Jevons. 1870. *Primer of Logic*. London: Macmillan (*Science Primer Series*).

[45] *Bianxue qimeng* 辨學啟蒙, p. i. Edkins only mentions Matteo Ricci. 1610. *Bianxue yidu* 辨學遺牘 (Testament in defence of the faith). Reprinted in: *Tianxue chuhan*, vol. 2, pp. 637–88, but there are many other instances of *bianxue* being used in the sense of 'apologetics' or 'the art of refutation' in Jesuit and later Protestant writings. It is therefore not easy to see on what grounds so many historians of Chinese logic (cf. all articles mentioned in footnote 9 above) credit Ricci with coining the term *bianxue* as an equivalent of 'logic', especially since the *Bianxue yidu* was in no way designed as an introduction to logic but rather as a collection of arguments refuting heretic Buddhist teachings. Equally erroneous is the claim (Masini 1997, p. 546) that *bianxue* was already used in the sense of 'logic' in Aleni's *Xixue fan*. There, *bianxue* clearly denotes 'controversy', one of the six sub-disciplines of late medieval 'logic' or *luorijia*. Cf. Aleni 1623a, p. 32. Much closer to 'logic' is a passage in the *Mingli tan* (Furtado and Li 1965, p. 36) where the term *bianxue* is employed to render 'dialectica' in the narrow sense of the 'art of opinion'. Finally, Ernst Faber had used *bianxue* as a translation of 'rhetorics' in his *Xiguo xuexiao* (cf. Faber 1902 [1873], 19.2a) but there is no evidence that Edkins was aware of this conflicting choice which may have led to confusion among monolingual Chinese readers.

[46] *Bianxue qimeng*, p. 1b.

Bianxue qimeng eventually reached a larger audience and the term *bianxue* gained wider acceptance.[47] For some time, *bianxue* then even seemed set to become the standard name for the science, if only for the rather awkward reason that it was employed in the official statutes for institutions of higher education published in 1902.[48] Solely for this reason, *bianxue* was recommended by the Office for the Standardization of Terminology at the Ministry of Education (*Xuebu bianding mingciguan* 學部編訂名詞館) in 1908[49], and it was still marked as a term 'approved by the Ministry [of Education]' (*buding* 部定) in Karl Hemeling's *English-Chinese Dictionary* of 1916.[50] Yet, despite this official backing *bianxue* was only able to oust earlier missionary suggestions—the only serious contender among these being Lobscheid's *lixue* that was revived, albeit to no avail, by John Fryer (Fu Lanya 傅蘭雅 , 1839–1928) in 1898.[51] Against terms coined and propagated by Chinese writers themselves, Edkins' invention could not stand.

2. Mingxue 名學 or 'the science of names'

The first of these new contestants was introduced in 1895 by Yan Fu 嚴復 (1851–1921), the first Chinese scholar to actively promote the study of logic, for instance, through the establishment of a short-lived Logical Society (*Mingxuehui* 名學會) and numerous public lectures.[52]

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[47] Cf. Yang Peisun 楊沛蓀 (ed.). 1988. *Zhongguo luoji sixiangshi jiaocheng* 中國邏輯思想史教程 (A course in the history of logical thought in China). Lanzhou: Gansu renmin chubanshe, pp. 291–2.

[48] Cf. "Qinding xuetang zhangcheng: qinding daxuetang zhangcheng" 欽定學堂章程・欽定大學堂章程 (Official school statutes: official statutes for universities). 1902. Beijing. Reprinted in: *Beijing daxue shiliao. Diyi juan: 1898–1911* 北京大學史料・第一卷：1898–1911 (Historical materials on Peking University. Volume 1: 1898–1911). 1993. Edited by Beijing daxue xiaoshi yanjiushi. Beijing: Beijing daxue chubanshe, pp. 97–130; 101. I am grateful to Wang Yangzong for presenting me with a copy of this very useful collection.

[49] *Bianxue Zhong-Ying mingci duizhaobiao* 辨學中英名詞對照表 (Chinese-English glossary of logical terms). 1908. Edited by Xuebu bianding mingciguan. Beijing: Xuebu, p. 1a.

[50] Karl Hemeling. 1916. *English-Chinese Dictionary of the Standard Chinese Spoken Language (Guanhua* 官話 *) and Handbook for Translators, including Scientific, Technical, Modern and Documentary Terms*. Shanghai: Statistical Department of the Inspectorate General of Customs, p. 812.

[51] John Fryer (tr.). 1898. *Lixue xuzhi* 理學須知 (What must be known about logic). Shanghai: Gezhi shushi.

[52] Cf. W. W. Yen. 1974. *East-West Kaleidoscope, 1877–1946: An Autobiography*. New York: St. John's University Press, pp. 10–1.

To be sure, Yan Fu was mainly attracted to the discipline because of the intimate connection between logic, knowledge and power that he encountered in the works of Bacon, Mill and their followers.[53] In accordance with this understanding, Yan presented logic as an "art indispensable for all scientific inquiry" in the preface to his wildly popular *Tianyanlun* 天演論 , a partial translation of Thomas Huxley's *Evolution and Ethics*.[54] Nonetheless, his rendition of the term 'logic' by *mingxue* 名學 (the science of names)[55] , which he applied consistently throughout his work, seems to have been motivated by more general concerns than the ubiquitous search for wealth and power. Thus, in the first "Note" to his translation of John Stuart Mill's *A System of Logic* (*Mule mingxue* 穆勒名學 , 1902–1905), Yan writes:

> Logic (*luoji* 邏輯) is translated here as *mingxue* [the science of names]. The meaning of the name logic goes back to Greece; it is derived from the root 'logos' (*luogesi* 邏各斯). The name 'logos' has two meanings: it is used for the ideas in our minds and the words coming out of our mouths. In extension, it is used to denote a theory or a particular science. Today, in the West the names of all the individual sciences end with *-logy* which means 'logic'. … On closer examination, 'logos' is one of the most valuable things in our life. It is precisely this thing which Buddhists call '*atman*', Christians call 'soul', Laozi calls '*dao*' and Mengzi calls 'human nature'. Therefore, the meaning of the name 'logos' is most subtle and refined, and therefore this science is called 'logic'. As Bacon said: "This science is the method of all methods, the

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[53] Cf. e.g. Zhang Zhijian 張志建 and Dong Zhitie 董志鐵 . 1982. "Shilun Yan Fu dui Woguo luojixue yanjiu de gongxian" 試論嚴復對我國邏輯學研究的貢獻 (A tentative account of Yan Fu's contribution to Chinese researches on logic), in: *Zhongguo luojishi yanjiu* 中國邏輯史研究 (Studies in the history of Chinese logic). Beijing: Zhongguo shehui kexue chubanshe, pp. 303–20; Sun Zhongyuan 孫中原 . 1992. "Lun Yan Fu de luoji chengjiu" 論嚴復的邏輯成就 (On Yan Fu's logical achievements), *Wenshizhe* 3, pp. 80–5.

[54] Yan Fu 嚴復 . 1896. "Yi Tianyanlun zixu" 譯天演論自序 (Translator's preface to the *Tianyanlun*), in: id. (tr.). 1931 [1896]. *Tianyanlun* 天演論 (Evolution and Ethics). Shanghai: Shangwu yinshuguan, p. ii. Yan had used the term *mingxue* for the first time in 1895 in his essay "Yuan qiang" 原強 (On strength).

[55] Yan's authorship of the term *mingxue* is sometimes contested with reference to a text entitled *Mingxue leitong* 名學類通 that was supposedly published by unknown Protestant missionaries at the Lexuexi tang 樂學溪堂 in 1824. Cf. e.g. Wang Dianji 王奠基 . 1979. *Zhongguo luoji sixiangshi* 中國邏輯思想史 (History of logical thought in China). Shanghai: Shanghai renmin chubanshe, pp. 405–6. However, this assertion seems hardly convincing since no one has been able to locate this text, and, to my knowledge at least, it is not mentioned in any of the bibliographies of Western knowledge or any of the scientific and philosophical texts published during the late Qing. At any rate, even if the text existed, it failed to produce any measurable impact.

science of all sciences". … The earlier translations of logic that I have seen are far too narrow. There is the *Mingli tan*, translated by Li Zhizao at the end of the Ming dynasty, and today there is the *Bianxue qimeng*, translated at the Inspectorate General of Maritime Customs. But neither 'exploration' (*tan*) nor 'disputation' (*bian*) are appropriate to express the breadth and extension of this science. In order to come closer to it, [logic] must be translated as the 'science of names' (*mingxue*). For *ming* (name) is the only word in the Chinese language that is nearly comparable in its subtlety, refinement and extension to 'logos'.[56]

Even to his contemporaries Yan's explanation seemed in many ways peculiar. Not only did he misinterpret the term *mingli tan* by suggesting that within this compound *tan* 'exploration' was meant to render 'logic'. More importantly, his argument in favour of *ming* 名 as the only possible translation of *logos* was utterly unconvincing. For why should *ming* be closer to *logos* than terms like *dao* 道, *li* 理 or even Li Zhizao's *mingli* 名理? Liang Qichao 梁啟超 was thus probably right when suggesting in 1904 that Yan Fu's true intention in the choice of *mingxue* was to appropriate Western logic, at least in name, to the *mingjia* 名家, the sophistic 'School of Names' of ancient Chinese thought that came to be known in the West as the 'Logicians'.[57] The price Yan was willing to pay in order to establish and uphold this implicit analogy was, as other critics like Zhu Zhixin 朱執信 (1885–1920) added[58], to imply that logic was still a term- or concept-based discipline, i.e., that concepts or terms rather than propositions or sentences functioned as the basic units of logical inquiry. In spite of such criticisms and unlike most of the other terms coined by Yan, *mingxue* was circulated for some decades and was even endorsed by the Chinese Science Society (*Zhongguo kexueshe* 中國科學社) in 1916.[59]

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[56] Yan Fu 嚴復 (tr.). 1931 [1902–1905]. *Mule mingxue* 穆勒名學 (Mill's *Logic*). 3 vols. Shanghai: Shangwu yinshuguan, 1.2–3, note 1. *Mule mingxue* was a summary translation of the first half of John Stuart Mill. 1879 [1843]. *A System of Logic, Ratiocinative and Inductive*. 10th edition. London: Longmans Green.

[57] Liang Qichao 梁啟超. 1904. "Mozi zhi lunlixue" 墨子之論理學 (Mohist logic), in: id. 1936. *Yinbingshi zhuanji* 飲冰室專集 (Monographs from the Ice-Drinker's Studio). Edited by Lin Zhijun 林志鈞. Shanghai: Zhonghua shuju, 37.55–72; 55.

[58] Zhu Zhixin 朱執信. 1905. "Jiu lunlixue bo Xinmin congbao lun geming zhi miu" 就論理學駁新民叢報論革命之謬 (Applying logic to refute the errors in a discussion of revolution in the *Xinmin congbao*), *Minbao* 6, pp. 65–78; 65.

[59] Zhongguo kexueshe 中國科學社. 1916. "Zhongguo kexueshe xianyong mingcibiao" 中國科學社現用名詞表 (Table of terms used by the Chinese Science Society). *Kexue* 2.12, pp. 1369–1402; 1370.

3. Lunlixue 論理學 *or 'the science of reasoning'*

Another new and for some time seemingly most successful rendition of 'logic' was introduced immediately after the turn of the century from Japan. Amidst the torrent of textbooks on scientific subjects that were translated from Japanese in the first years of the century, a small number was dedicated to logic.[60] The terms *lunlixue* 論理學 or *lunli* 論理 , which were used to render 'logic' in most of these works and quickly gained currency, were graphic loans from the Japanese translations *ronrigaku* 論理學 (lit. 'the science of the patterns of argumentation') or *ronri* 論理 ('the patterns of argumentation').[61]

Like the Chinese *bianxue*, *ronrigaku* was coined as a loan rendition of the English 'science of reasoning'.[62] The term owed its normalization above all to the interventions of Nishi Amane (西周, 1829–1897), the most prolific translator of Western thought in Meiji Japan, who had supported this choice in a short but controversial debate.[63] Nishi had championed *ronri(-gaku)* after proposing and subsequently abandoning several tentative Sino-Japanese equivalents, such as *chichigaku* 致知學 (Ch. *zhizhixue*, the science of extending knowledge) and *meirongaku* 明理學 (Ch. *minglixue*), a term he had culled from Lobscheid's *English and Chinese Dictionary*. *Ronri(-gaku)* itself was borrowed by inversion from *lilun zhi xue*, another one of Lobscheid's hitherto infertile prescriptions.[64] The most important contestants of

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[60] For bibliographical details see my "New Terms for Telling the Truth: Notes on the Formation of Chinese Logical Terminology, 1886–1911", in: Fabrizio Pregadio and Wang Chunmei (eds.). *Beyond the Four Seas: Science and Technology in China and the West, 1600–2000*, forthcoming.

[61] The earliest occurence of the terms *lunli* and *lunlixue* in a Chinese text is perhaps Ye Han 葉瀚 (tr.). 1901. *Taixi jiaoyushi* 泰西教育史 (A history of education in the West). Shanghai: Jinlizhai, 1.13a.

[62] Cf. Sōgō Masaaki 惣郷正明 and Aida Yoshifumi 飛田良文 . 1989. *Meiji no kotoba jiten* 明治のことば辞典 (Dictionary of Meiji language). Tokyo: Tokyōdo shuppan, pp. 607–8; see also Wolfgang Lippert. 1979. *Entstehung und Funktion einiger chinesischer marxistischer Termini. Der lexikalisch-begriffliche Aspekt der Rezeption des Marxismus in Japan und China*. Wiesbaden: Franz Steiner, pp. 225–6.

[63] Cf. Funayama Shin'ichi 船山信一 . 1968. *Meiji ronrigakushi kenkyū* 明治論理学史研究 (Studies into the history of logic during the Meiji period). Tokyo: Risōsha, pp. 19–38. See also Takada Atsushi 高田淳 . 1967. "Chūgoku kindai no 'ronri' kenkyū" 中国近代の'論理'研究 , *Kōza tōyō shisō* 講座東洋思想 4, Series 2: *Chūgoku shisō* 中国思想 3, pp. 215–27; 217–8.

[64] Cf. Morioka Kenji 森岡健二 . 1969. *Kindai-go no seiritsu. Meiji-ki go-i hen* 近代語の成立ー明治期語彙編 (The evolution of modern language. The vocabulary of the Meiji era). Tokyo: Meiji shoin, p. 114.

ronri(-gaku) in the Japanese debate were *ronsetsugaku* 論説學 (Ch. *lunshuoxue*, the science of argumentation and explanation), *kakuchi tetsugaku* 格致哲學 (Ch. *gezhi zhexue*, the philosophy of science) and *ronpō* 論法 (Ch. *lunfa*, the methods of argumentation), but not least due to Nishi's authority all were soon displaced and superseded.[65]

The sweeping success of *lunli* and *lunlixue* in China during the first years of the century cannot be explained by the instrinsic qualities of the terms alone. If there is any significant difference to *bianxue*, *lunli* and *lunlixue* seem to emphasize even more clearly that logic is concerned with the analysis of propositions rather than terms or concepts. However, the strongest argument in favour of the Japanese loans was the sheer numbers in which terms from Japan had begun to arrive in China. It was again Liang Qichao who highlighted this aspect with due candour when justifying his own (inconsistent) adoption of the term:

> In the Ming dynasty, the original word 'logic' was translated by Li Zhizao as *mingli*. Recently, Mr. Yan [Fu] from Houguan rendered it as *mingxue* … But with regard to the meaning of the original, [these translations] do not appear to be exhaustive. Here, I use the word *lunlixue* which is commonly used in Japan. In the future, the learned strata of our China will have intimate relations with the learned strata of Japan. Therefore, I prefer to draw … terms from Japan in order to prevent them from differing too much from future translations.[66]

Even though Liang's prophetic statement proved to hold true for some decades to come, the Chinese scholars who eventually applied themselves to the study of logic produced some more terminological alternatives. Besides several new phonetic renderings, which are listed in Table I in the Appendix, suggestions include the revival of the Jesuit terms *mingli* and *minglixue*[67], an alternative written representation of *bianxue* 辯學[68] , as well as new creations such as *tuilixue* 思理學 (the science of inference), *sixiang gongli zhi xue* 思想公理之學 (the science of the general laws of thinking)[69], *sixiangxue* 思想學 (the science

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[65] Cf. Funayama 1968, pp. 27–36.

[66] Liang Qichao, "Mozi zhi lunlixue", 37.55.

[67] Li Di 李杕 (tr.). 1908. *Minglixue* 名理學 (Logic). Shanghai: Zhendan shuyuan, p. 2a.

[68] Mateer, Calvin W. (Di Kaowen 狄考文). 1904. *Technical Terms*. *English and Chinese*. Shanghai: American Presbyterian Mission Press, p. 258.

[69] W. W. Yen. 1908. *An English and Chinese Standard Dictionary*. *Ying-Hua da cidian* 英華大辭典 . 2 vols. Shanghai: Shangwu yinshuguan, vol. 1, p. 1359.

of thinking)[70] or *silixue* 思理學 (the science of the patterns of thinking)[71]. Perhaps the most unusual and sophisticated of the new candidates was Ma Xiangbo's 馬相伯 (1840–1939) *yuanyan* 原言 (the foundations of words)[72], but this term slipped no more slowly into oblivion than the other novices.

Only *bianxue*, *mingxue* and *lunli(xue)* found their way into public discourse. Thus, by the end of the Qing the state of the Chinese translations of 'logic' resembled that of the names of most other branches of knowledge that had moved into the focus of Chinese attention since 1895: one term coined by Yan Fu competed with one or more terms borrowed from Japanese and a number of older or alternative renderings that were used significantly less often. One therefore seemed to have good reason to assume that in due course the Japanese loans *lunlixue* and *lunli* would be normalized as standard Chinese designations. But in contrast to other sciences and arts, such as physics, philosophy, sociology, politics and many more that have kept their Japanese-derived names until today, the history of the Chinese coming to terms with 'logic' took an unexpected turn.

4. WHAT'S IN A NAME?

This turn was initiated through a short essay by Zhang Shizhao 章士釗 (1881–1973). The article, first published in November 1910[73], provoked a controversy that raged on for almost a decade in journals and

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[70] Zhou Yunlu 周云路 (tr.). 1910. *Sixiangxue jieyao* 思想學揭要 (Essentials of logic). Shanghai: Meihua shudian (not seen). Cf. *Zhongguo luojishi ziliaoxuan* 1991, vol. 5.1, p. 522.

[71] Cf. Ada Haven Mateer. 1913. *New Terms for New Ideas. A Study of the Chinese Newspaper*. Shanghai: Presbyterian Mission Press, p. 66.

[72] Ma introduced a whole new system of names for the modern sciences based on the Latin roots of their Western designations.With regard to logic he argued that *yan* 言 'words' was more adequate than *ming* 名 'names', since it could refer to individual terms as well as phrases or sentences. Cf. Ma Xiangbo 馬相伯 . 1926 [1906]. *Zhizhi qianshuo* 致知淺説 (Introduction to philosophy). Reprinted in: id. 1996. *Ma Xiangbo ji* 馬相伯集 (The works of Ma Xiangbo). Edited by Zhu Weizheng 朱維錚 . Shanghai: Fudan daxue chubanshe, pp. 635–738; 640.

[73] Zhang Shizhao 章士釗 . 1910. "Lun fanyi mingyi" 論翻譯名義 (Names and definitions in translation), *Guofengbao* 1.29. Reprinted in: id. 2000. *Zhang Shizhao quanji* 章士釗全集 (The complete works of Zhang Shizhao [hereafter *ZSZQJ*]). Edited by Zhang Hanzhi 章含之 and Bai Ji'an 白吉庵 . 10 vols. Shanghai: Wenhui chubanshe, vol. 1, pp. 448–54.

newspapers, such as *Guofengbao* 國風報 , *Minlibao* 民立報 , *Duli zhou-bao* 獨立週報 , *Yongyanbao* 庸言報 and *Jiayin zazhi* 甲寅雜誌 , and involved many prominent writers. Since the arguments that were put forward by either side in the course of the debate applied no less to the translation of 'logic' than that of other foreign notions, the discussion deserves closer scrutiny.[74] Previous debates, like the fierce controversies surrounding Yan Fu's stylistic mannerisms, had failed to elaborate general principles for the creation of adequate terms. Now, the learned Chinese audience indulged for the first time in systematic theoretical reflection on the properties of ideal translation terms.

1. *Zhang Shizhao and 'the science of* luoji'

Zhang Shizhao, who incited the debate, had studied economics, law and logic in England and Scotland between 1907 and 1910. During his studies he had developed some insightful ideas on the particular problems facing Chinese translators of scientific and philosophical terms from Western languages. The term 'logic' served him as a welcome example when he expounded his views in a series of articles and many replies to critics and supporters.

Zhang's starting point is the contention that semantic loans are hardly ever able to do justice to the original terms they are intended to render. Thus, *mingxue* is in his opinion only appropriate to translate the Aristotelian or traditional notion of 'logic' but entirely incapable to denote modern 'logic' as it is commonly understood since Bacon.[75] *Bianxue* and *lunlixue* share similar shortcomings, since they are both derived from the word 'reasoning' and hence represent no more than 'one part of deductive logic' (*tida luoji zhi yibu* 提達邏輯之一部).[76] The common ill of all three terms is for Zhang the result of a specific feature of the Chinese language, namely not to allow the representation of 'words from other languages'. In general, translators have therefore no choice but to search for semantic renditions. Ideally, they look for one or two Chinese words (or characters) that have the same extension as the original term. But because they are in most cases una-

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[74] For a general assessment of the debate, cf. Chen Fukang 陳福康 . 1992. *Zhongguo yixue lilun shigao* 中國譯學理論史稿 (Draft history of Chinese theories of translation). Shanghai: Shanghai waiyu jiaoyu chubanshe, pp. 180–97.

[75] Cf. *ZSZQJ*, vol. 1, p. 449.

[76] Zhang Shizhao. 1914. "Shi luoji" 釋邏輯 (Explaining 'logic'), *Minlibao*, April 12, 1912. Reprinted in: *ZSZQJ*, vol. 2, pp. 210–1.

ble to find such words, Zhang continues, many tend to offer transla-tions of the definitions instead of the foreign terms themselves. The danger of this common procedure is that new translation terms will have to be created when the definitions on which the previous terms were based are altered or refuted. Repeated changes in terminology, however, are an obstacle to scientific and thus economic, social and political progress.[77]

The solution, which Zhang Shizhao explicitly advocates in several articles with regard to 'logic', is to abandon semantic translation alto-gether and rely on phonetic renderings instead. In the case of 'logic', he recommends to use the words *luoji* 邏輯 or *luojixue* 邏輯學 which Yan Fu had employed—for wont of an accepted Chinese syllabary—as phonetic representations of the English term 'logic' in his transla-tion of Mill's 'science of names'. The decisive advantage of these ren-derings over their competitors is, according to Zhang, that they are free from the misleading connotations inevitably invoked by semantic renditions. If there is any 'inconvenience' for the reader, he argues, it is that s/he will be forced to look up the definition of the words when reading them for the first time since they do not contain in themselves any obvious clue as to how they are to be understood.

Public response to Zhang's case in favour of presumably semanti-cally 'neutral' phonetic renderings was lively and diverse. Many com-ments are interesting in themselves as they offer valuable insights into the state of public awareness on the question of translation. Thus, a number of readers agreed with the general thrust of Zhang's argument but demanded further examples for grave misunderstandings caused by semantic borrowing. Others wished a clear-cut definition for *luoji* or asked for a hint on where to find the 'original meaning' of the com-pound and the individual characters in the ancient classics.[78] And a certain Geng Yi 耿毅 suggested to employ the word *luoji*, as Zhang had demanded, but to represent it in writing with the rare characters 儸倡 that graphically signalled a relation to mental activity through the use of the 'mind-heart' radical.[79]

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[77] Cf. ibid.

[78] Cf. the "Letters to the Editor" in *Minlibao*, April 18, 1912. Reprinted in: *ZSZQJ*, vol. 2, pp. 201–3; and *Minlibao*, April 21, 1912. Reprinted in: *ZSZQJ*, vol. 2, p. 212.

[79] Cf. *Fanyi yanjiu lunwenji* 翻譯研究論文集 *(1894–1948)* (Essays on translation, 1894–1948). 1984. Edited by Zhongguo fanyi gongzuozhe xiehui 中國翻譯工作者協會 et al. Beijing: Waiyu jiaoxue yu yanjiu chubanshe, p. 42.

2. *Semantic vs. phonetic borrowing:* luoji *and its others*

Readers taking issue with Zhang Shizhao's theoretical points were slow to respond. Their main contentions were summarized by a certain Zhang Lixuan 張禮軒 in two "Letters to the Editor" that were reproduced in the *Minlibao*.[80] In these letters, Zhang argues that phonetic loans should exclusively be employed to represent the names of individuals and places or newly discovered and invented things and substances. In all other instances, semantic loans are to be preferred: (i) because they are able to provide lay readers with an immediate understanding of the subject in question; (ii) because only semantic translations are able to preserve the connection of a term to the semantic field from which it originates in the foreign language; (iii) because phonetic loans are much more difficult to memorize; (iv) because strict application of Zhang Shizhao's principle to use phonetic renderings whenever no fully appropriate semantic translation can be found will inevitably lead to a drastic increase of 'meaningless' words and characters in the Chinese language; and, finally, (v) because phonetic renderings risk causing unintended terminological multiplication since one and the same term may be transliterated in many different ways depending on personal preferences or regional variations in pronounciation.[81]

Zhang Shizhao did not take the pains to reply in detail to each of these contentions in the course of the debate. He insisted, however, that the seemingly unproblematic provision of an immediate 'general idea', which his opponents took as an advantage of semantic translation, was more often than not the source of severe misunderstandings. In his view, it was precisely the strength of phonetic loans that readers could not "look at the characters in order to get an understanding" (*wangwen er shengzhi* 望文而生知) of an unknown term but were rather forced to inquire into its proper definition.[82] In brief, leaving foreign terms in their original alterity seemed to him as the only guar-

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[80] Zhang Lixuan 張禮軒. 1912a."Lun yiming" 論譯名 (On translation terms), *Minlibao*, May 17, 1912. Reprinted in: *ZSZQJ*, vol. 2, pp. 305–6; id. 1912b. "Lun fanyi mingyi" 論翻 譯名義 (Names and definitions in translation), *Minlibao*, July 6, 1912. Reprinted in: *ZSZQJ*, vol. 2, pp. 401–3.

[81] Zhang lists *luoji* 羅集 , *luoji* 落機 and *laojie* 老詰 as examples of further possible phonemic replicas of 'logic'. Cf. id. 1912a, *ZSZQJ*, vol. 2, p. 305.

[82] Zhang Shizhao. 1912c."Lun yiming" 論譯名 (On translation terms), *Minlibao*, May 17, 1912. Reprinted in: *ZSZQJ*, vol. 2, pp. 302–4.

antee against aesthetically more satisfying, but inescapably misleading appropriations.

It is of course difficult to assess which side convinced more readers by looking only at the published arguments. Certainly, semantic translation is still the predominant form of borrowing in modern Chinese. Nevertheless, the gradual dissemination of the term *luoji* during the first decades of the Republican period attests that Zhang Shizhao succeeded at least in this particular case to establish a phonetic rendering as an attractive alternative to existing semantic translations—despite the 'systematic pressure' exerted by the fact that the Chinese designations of all other sciences were borrowed or reimported from Japan. The terms *luoji* and *luojixue* were also applied in most translations of works on mathematical or symbolic logic when the latter began to take root in China from 1920 onwards.[83] And the arguments that were exchanged in the debate remained a common point of reference for future discussions on the problems of translation in China.

Yet, at least until 1950 when *luoji* and *luojixue* were normalized as standard designations for 'logic' in Mainland China, Zhang Shizhao did not succeed in creating a term acceptable to everyone writing on the subject. Even after the debate had come to a halt, a number of new terms were introduced. Without doubt the most prominent examples are Sun Yat-sen's (Sun Zhongshan 1866–1925) creations *lize* 理則 (the rules of reason[ing]) and *lizexue* 理則學 (the science of the rules of reason[ing]) which are routinely used, alongside or in the place of *luoji* and *lunli(-xue)*, by many logicians in Taiwan and Hong Kong, if only to express political allegiance.[84]

5. MULTIPLE IDENTITIES

Still, this is not the end of our story. In the course of the 1920s and 30s it was further complicated by the successive formation of the study of 'Chinese logic' as an independent field of academic inquiry. Against the background of the debate on 'Eastern and Western culture' (*Dong*

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[83] Cf. Lin Xiashui 林夏水 and Zhang Shangshui 張尚水. 1983. "Shuli luoji zai Zhongguo" 數理邏輯在中國 (Mathematical logic in China), *Ziran kexueshi yanjiu* 2.2, pp. 175–82.

[84] Sun Zhongshan 孫中山. 1918. "Sun Wen xueshuo" 孫文學説 (The doctrine of Sun Wen), in: id. *Guofu quanji* 國父全集 (The complete works of Sun Yat-sen). 1965. Taibei: Zhonghua shuju, vol. 1., pp. 113–73. See also Table 1 in the Appendix.

Xi wenhua 東西文化) and the 'revaluation of China's cultural herit-
age' (*zhengli guogu* 整理國古), a number of prominent intellectuals
embarked on a systematic reconstruction of the neglected logical leg-
acy of ancient Chinese philosophy. Thanks to these efforts, the ini-
tially foreign notion of 'logic' has acquired multiple identities in Chi-
nese discourses that are difficult to translate back into European lan-
guages.

1. Multiplying a discipline: 'Chinese', 'Western' and 'Indian' logic

What we have come to know as 'Chinese logic' was rediscovered in
China shortly after the turn of the century by scholars such as Liang
Qichao, Zhang Binglin 章炳麟 (1868–1936), Wang Guowei 王國維
(1877–1927) and Liu Shipei 劉師培 (1884–1920).[85] In their tentative
explorations, these early pioneers of the field applied various sets of
basic logical notions that had just found their way into the Chinese
lexicon to ancient texts like the "Dialectical Chapters" of the *Mozi* or
Xunzi's treatise on the "Rectification of Names". All insisted that the
subject matter of what they unearthed as a forgotten tradition of 'Chi-
nese logical thinking' was basically identical with European logic,
and therefore they found no reason to separate the two areas by termi-
nological means. However, the second generation of Chinese histori-
ans of 'Chinese logic' thought otherwise. In the aftermath of the May
Fourth movement, the need for a discrete Chinese identity began to
outweigh the claim to participation in universalist scientific discour-
ses.[86] Several authors now called for a terminological distinction
between the different 'logical traditions' that would reflect the pre-
sumed uniqueness of each nation's and culture's particular approach
to the subject.

   Zhang Shizhao, who had made such a strong case in favour of *luoji*
as the most adequate rendition of Western logic, was also instrumen-
tal in this new effort at terminological separation. In a series of essays

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[85] Cf. my "Matching Names and Actualities: Translation and the Discovery of
Chinese Logic", in: Michael Lackner et al. (eds.). *Translating Western Knowledge
into Late Imperial China*. Leiden: Brill, forthcoming. See also Dong Zhitie 董志鐵 .
1995. "20 shiji Zhongguo mingbian (luoji) yanjiu" 20 世紀中國名辯 （邏輯）研究
(Studies of Chinese logic in the twentieth century), *Zhongguo zhexueshi* 1, pp. 111–7.
[86] Cf. Uwe Frankenhauser. 1996b. "Logik und nationales Selbstverständnis in
China zu Beginn des 20. Jahrhunderts", in: Christiane Hammer and Bernhard Führer
(eds.). *Chinesisches Selbstverständnis und kulturelle Identität—"Wenhua Zhong-
guo"*. Dortmund: Projekt, pp. 69–80.

written between 1920 and 1923, Zhang interpreted the theoretical teachings of the *Mobian* as instances of a distinctly Chinese 'science of names' (*mingxue*) that combined basic formal insights with strong ethical aspirations.[87] Zhang's idea to employ different terms for 'Chinese' and 'European' logic was readily taken up by a host of other writers, even though not all of them agreed with his specific interpretative choices. For example, Guo Zhanbo 郭湛波 argued that 'Chinese logic' was not so much about the qualities of 'names' but rather, similar to traditional Western dialectics, about the nature and strategies of 'disputation' (*bian* 辯), and that it was therefore more fitting to call it *bianxue* 辯學 or 'the science of disputation'.[88] Wang Zhanghuan 王章煥 and others recognized this point but added that the term *mingxue* could still serve to designate a sub-discipline devoted to the 'logic of names' within the more comprehensive 'science of disputation'.[89] Finally, the renowned Buddhist logician Yu Yu 虞愚 and many others employed *lunlixue* as the general name for the science and then differentiated the sub-branches *luoji* ('Western logic'), *mingxue* ('Chinese logic') and *yinming* ('Indian logic').[90]

2. Mingbianxue 名辯學 *or 'the science of names and disputation'*

As their new and more specific uses became increasingly popular due to these redefinitions, both *mingxue* and *bianxue* were employed less and less often to denote 'Western logic', i.e. the term they had been coined to translate in the first place. Nonetheless, well into the 1940s no final agreement could be reached as to which designation was the most appropriate name for the increasingly well-established academic subject of 'Chinese logic'. Some writers tried to overcome the prevailing uncertainty by introducing a new term that combined the two aspects that had been singled out as the distinguishing features of China's logical heritage and proposed to call 'Chinese logic' *mingbian* 名辯 or *mingbianxue* 名辯學 (the science of names and disputa-

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[87] These essays are now available in *ZSZQJ*, vol. 7, pp. 575–609.

[88] Cf. e.g. Guo Zhanbo 郭湛波 . 1932. *Xian Qin bianxueshi* 先秦辯學史 (A history of pre-Qin logic). Shanghai: Zhonghua yinshuju, pp. i–v.

[89] Cf. e.g. Wang Zhanghuan 王章煥 . 1930. *Lunlixue daquan* 論理學大全 (Comprehensive compendium of logic). Shanghai: Shangwu yinshuguan, pp. 2–3.

[90] Yu Yu 虞愚 . 1937. *Zhongguo mingxue* 中國名學 (Chinese logic). Chongqing: Zhengzhong shuju, p. 3. For many other suggestions confirming the logical separation between 'Chinese', 'Western' and 'Indian' logic, see *Zhongguo luojishi ziliaoxuan,* vol. 5.1, *passim*.

tion).[91] Initially, we may note, these new hybrid creations were mainly used in polemical contexts, e.g. in Guo Moruo's 郭沫若 (1892–1979) *Shi pipan shu* 十批判書 (Ten critical essays).[92] As decidedly positive designations for 'Chinese logic' they are advocated only since the 1980s. Drawing on an early essay by the philosophical authority Zhang Dainian 張岱年[93], contemporary Mainland historians of logic, such as Liu Peiyu 劉培育 and Zhou Yunzhi 周云之, are forcefully promoting the terms *mingbianxue* and *mingbian* as the proper designations for their field of expertise.[94] Whether this effort to complete the terminological segregation between 'Chinese' and 'Western' logic will be successful, remains open. In any case, however, it is a striking example for an unpredictable transformation of a European notion in a non-European context.

CONCLUSION

The winding tale of the introduction and naturalization of the occidental notion of 'logic' in Chinese discourses allows some concluding remarks. First of all, linguists used to regarding technical terms as proper nouns which are given their meaning through the definitions of experts in specialized debate, will have assumed that looking at the different replicas that were introduced as translations of a particular notion would not tell us much about its actual understanding. From a purely linguistic point of view this may be true. However, I hope to have shown that historians of thought can gain some insights from the way in which a certain notion was appropriated in a foreign linguistic and cultural environment, particularly in periods of fundamental intellectual changes. The fervor with which Chinese scholars have debated the rendering of 'logic' testifies how much importance they attributed to the choice of adequate linguistic representations of this and other

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[91] The terms *mingbian* and *mingbianxue* can be traced back at least to the 1930s, cf. e.g. Du Shousu 杜守素. 1936. *Xian Qin zhuzi sixiang* 先秦諸子思想 (The thought of the pre-Qin philosophers). Shanghai: Shangwu yinshuguan, pp. 80–114.

[92] Cf. Guo Moruo 郭沫若. 1957 [1945]. *Shi pipan shu* 十批判書 (Ten critical essays). Beijing: Kexue chubanshe, pp. 248–308.

[93] Zhang Dainian 張岱年. 1947. "Zhongguo zhexue zhi ming yu bian" 中國哲學之名與辯 (Names and disputation in Chinese philosophy), *Zhexue pinglun* 10.5.

[94] See the account of these efforts in Zhou Yunzhi 周云之. 1996. *Mingbianxue lun* 名辯學論 (The science of names and disputation). Shenyang: Liaoning renmin chubanshe (*Guoxue congshu* 18), pp. 2–49.

originally unfamiliar notions. The terms that were suggested and the arguments which were put forward in favour of or against a specific rendering are valuable leads in the reconstruction of their intellectual affiliations and proclivities, and I would argue that there are comparable stories to be told about many more terms, especially in the realms of philosophy and political thought, that may contribute to a fuller understanding of modern Chinese intellectual history.

Secondly, the adventures of 'logic' in China illustrate that personal preferences and individual interventions can influence, at least in the initial period of the naturalization of a particular notion or branch of knowledge, not only the terms that will be used by the members of a linguistic community but also the understanding of the notion or the discipline as a whole. At times they may even determine the future course of reception and adoption. The case of Zhang Shizhao demonstrates that translators are able to make a difference, even to the extent of breaching the unifying power of seemingly well-established sets of terms, like the Chinese names for the sciences derived from Japan.

Finally, the story of 'logic' is a reminder to beware of thoughtless retranslation. While in Chinese the semantic nuances and variations of the different terms that have evolved from the Western notion of 'logic' are, as a rule, more or less clearly distinguished, foreign readers tend to retranslate all of them—*bianxue, mingxue, lunlixue, luoji, lize* as well as *mingbianxue* etc.—by the same Western term, namely 'logic'. In this way, however, the unexpected meanings and connotations which these and other terms have acquired in modern Chinese discourses—and with them many of the most intriguing aspects of modern Chinese intellectual history—will inevitably be lost. For, as Hans Blumenberg has observed:

> It would be a misconception to believe that the phenomenon is there first and only then the name is coined to locate it. A name unites all that is associated with it and evolves into a complex or, in some extreme cases, into the 'subject' of an academic discipline. From among many tentative designations one will eventually rise to plausibility.[95]

To reconstruct the motives, pretensions, causes and accidents that are involved in such processes is an indispensable part of the historical semantics of modern China.

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[95] Hans Blumenberg. 1998. *Begriffe in Geschichten*. Frankfurt/Main: Suhrkamp, p. 204. [The translation is mine, J.K.]

APPENDIX

Table 1: Chinese translations of 'logic': a chronology

Year	Chinese term		Literal retranslation
1. Jesuit terms			
1623	*luorijia (luoriga)*	落日加	---
1623	*mingbian zhi dao*	明辯之道	the way of lucid discernment
1623	*luorijia (luoriga)*	絡日伽	---
1623	*bian shifei zhi fa*	辯是非之法	the method of discerning right/true from wrong/false
1631	*mingli*	名理	the patterns of names
1631	*mingli tan*	名理探	the exploration of the patterns of names
1631	*mingli (zhi) xue*	名理（之）學	the science of the patterns of names
1631	*bianyi*	辨藝	*ars disputationis*
1631	*tuilun zhi zongyi*	推論之總藝	the general art of inference
1631	*mingbian zhi xue*	明辨之學	the science of lucid disputation
1631	*tuilun (zhi) fa*	推論（之）法	the methods of inference
2. Modern terms			
1869	*mingli*	明理	elucidating pattern
1869	*mingli zhi xue*	明理之學	the science of elucidating pattern
1869	*lilun zhi xue*	理論之學	the science of organizing arguments
1869	*si zhi fa*	思之法	the methods of thinking
1869	*lixue*	理學	the science of pattern, philosophy
1869	*gewu*	格物	the investigation of things
1873	*minglun zhi fa*	明論之法	the methods of elucidating arguments
1873	*luxi*	路隙	---
1873	*yifa*	意法	the methods of intentional thinking
1875	*luojige*	羅吉格	---
1875	*bianbo zhi li*	辨駁之理	the patterns of refutation
1878	*bianlun zhi dao*	辨論之道	the way of reasoning
1878	*bianlun*	辨論	reasoning
1880	*bianshixue*	辯實學	the science of discerning what is true/real
1882	*xuekuo xinsi zhi fa*	學擴心思之法	the methods of learning to extend one's thoughts
1884	*bianlifa*	辯理法	the methods of disputation
1886	*dao*	道	the 'way', *logos*, reason

Table 1: Chinese translations of 'logic': a chronology (cont.)

Year	Chinese term		Literal retranslation
1884	*tuilunfa*	推論法	the methods of inference
1886	*si zhi li*	思之理	the patterns of thinking
1886	*lunbian lixue*	論辯理學	the philosophy of argumentation
1886	*libianxue*	理辯學	the science of orderly disputation
1886	*bianxue*	辨學	the science of disputation
1895	*mingxue*	名學	the science of names
1896	*lujike*	錄集克	---
1901	*lunli*	論理	reasoning
1901	*lunlixue*	論理學	the science of reasoning
1902	*luoji*	邏輯	---
1902	*luojixue*	邏輯學	the science of *luoji*
1904	*bianxue*	辯學	the science of disputation
1906	*yuanyan*	原言	the foundations of words
1906	*laojijia*	牢記伽	---
1906	*luoji*	落及	---
1908	*laojike*	牢輯科	---
1908	*luoqike*	羅奇克	---
1908	*tuilixue*	推理學	the science of inference
1908	*sixiang gongli zhi xue*	思想公理之學	the science of the general laws of thinking
1908	*li*	理	pattern, reason
1910	*sixiangxue*	思想學	the science of thinking
1912	*luoji*	懪惧	---
1912	*luoji*	纙集	---
1912	*luoji*	落機	---
1912	*laojie*	老詰	---
1913	*lilun*	理論	organized argumentation, theory
1913	*silixue*	思理學	the science of the patterns of thinking
1918	*lize*	理則	the rules of reason(-ing)
1918	*lizexue*	理則學	the science of the rules of reason(-ing)
1919	*siweishu*	思維術	the art of thinking
1921	*bianlunshu*	辯論術	the art of reasoning