# Part II

# Terminology management and scholarship

**Abstract**: This landscaping study of terminology management and scholarship suggests that effective terminology management can increase productivity in translation processes and improve the quality of target translations. For enterprises such as language service providers, this can also mean reduced costs in the long term. This introduction traces terminological work in China back to 200 BCE and argues that historical terminology work has not only been a practical element of lexicography but also a political process of translating and then integrating minority languages when a new dynasty was established. However, contemporary Chinese terminology management and scholarship reflects the demands by industry and global organizations to have unified terminologies to facilitate commerce, the transfer of technology, and internationalization. The development of modern terminology management and scholarship in China can be summarized in five stages since the founding of the P. R. China in 1949. These phases range from stagnation during the Cultural Revolution to exploration, development, and eventually a boom period from 2005 onwards, characterized by accelerated progress in terminology management, scholarship, and international collaboration. It is stated that the main challenge now is that of maintaining this momentum and ensuring that its socioeconomic and cultural benefits are shared equitably from China's metropolises to its peripheries, and between all sections of society.

**Keywords**: terminology management, terminology scholarship, history, language service, internationalization

# Part II introduction

# A historical overview of terminology management and scholarship

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Terminology, as a system for studying terms and as an essential means of knowledge transfer, is of pivotal importance in language asset management and in language strategy for the internationalization of enterprises. Terminology, as a term itself, was first coined by the German terminologist Christian Gottfried Schutz in 1770 by using the Latin term *terminus* (word, expression) + the Greek *-logia* (dealing with). Terminological work itself has a long history; however, terminology as a science and a discipline was first developed by Eugen Wüster in the 1930s. His general theory of terminology influenced many contemporary terminology research studies and continues to be a reference point for modern terminology research.

Terminology management in its broader sense refers to "any deliberate manipulation of terminological information" (Wright and Budin 1997: 1). Terminology management in its practical sense refers to a set of terminological tasks centring on the handling of terminology resources and translation to fulfil specific purposes or needs, including the collection, description, manipulation, storage, editing, presentation, tracking, maintenance, and sharing of

terms, in specialized areas of one or more languages (Reynolds 2015: 276). Effective

terminology management can increase productivity in translation processes and improve the

quality of target translations. For enterprises such as language service providers, this can also

mean reduced costs in the long term.

As mentioned in the introduction to Section I, the history of terminological work in China

dates back to 200 BCE. *Erya* (尔雅) is considered to be the first recorded volume of terminology.

Terminology work in China has long been considered a part of practical lexicographical work

and more importantly as part of a political process of translating and then integrating minority

languages when a new dynasty was established. Therefore terminological work was completely

separated neither from translation nor from lexicography – the science of compiling dictionaries.

Despite its long practical history, however, terminology as a subject and a science only received

formal recognition in the 1980s in China, when the Chinese National Committee for Terms in

Sciences and Technologies (CNCTST) was set up. Today, all Chinese terminology is

standardized and approved by this Committee. The Committee is under the supervision of the

Chinese National Bureau of Technique Supervision and now works closely with international

organizations such as the ISO (International Organization for Standardization), the IEC

(International Electrotechnical Commission), and the ITU (International Telecommunications

Union). The development of terminology management in China reflects the demand by industry

and global organizations to have unified terminologies to facilitate commerce and the transfer of

technology. Contemporary Chinese terminology and terminology management have been

strongly influenced by Western scholarship and continue to be driven by globalization and

internationalization. Their development can be summarized in five stages since the founding of

the P. R. China in 1949.

The *initial* stage lasted from 1949 to 1965. During this period, terminology work was

considered an important part of the development and standardization process of the Chinese

language, as well as being a significant element of the country's national language planning and

education policy, and therefore received strong central government support. The official

terminology nominalization committee (学术名词统一工作委员会) was established in 1950 and included over 150 scientists. In 1956, this role was passed to the Chinese Academy of Science (中国科学院). The committee was also partly involved in the development of the Pinyin system (the romanization of Chinese) and the process of simplifying official Chinese characters in the 1950s (Wu 1985, 1991).

The *second* stage – or what might be termed the stagnation stage – was strongly influenced by the Cultural Revolution and domestic political reform in China between 1966 and 1984. During the Cultural Revolution, terminological work was politically and linguistically discouraged, and all terminology work came to a standstill. In 1974, the Chinese government started to prepare for re-establishing the terminology committee and restoring terminology work.

The *third* stage – which we will call the exploration stage – lasted from 1985 to 1995. This stage was marked by the official launch of the Natural Science Terminology Committee (全国自然科学名词审定委员会) by the Chinese government on 25 April 1985. During this period, the Committee drafted its working principles and methods. The Committee's Internal journal, *Terminology of Natural Science* (自然科学术语研究), which was launched in 1985, was a medium for exchanging insights into the redefinition of fundamental and applied aspects of terminology in China, as well as for introducing Western theories and practices of terminology. This laid the foundation for the establishment of the (*Journal of*) *China Terminology* (科技术语研究)[1] in 1998. The exploration stage featured three key aspects of knowledge exchange:

> Firstly, there was knowledge exchange with the Taiwan Straits in the development of Chinese language terminology work: in 1994, a knowledge exchange symposium with Taiwan was held to share information and developments in terminology work in the Chinese language with input from beyond inland China. The event marked the first attempt to harmonize and standardize Chinese terminology work; significantly, it established a dialogue of knowledge exchange with Taiwan.

Secondly, there was greater engagement with Western terminology theories and practice. Terminologists such as Wüster, Hoffmann, and Rondeau were invited to China to outline Western terminology scholarship and practice. It was in this period that different schools of terminology in the West were first introduced into China. In addition to inviting the leading figures from the different terminology schools, Chinese scholars started to translate and incorporate Western theories into their work. Fengming Wu (1985) and Zhiwei Feng (1985, 1991) were among the first Chinese scholars to introduce and discuss the four different schools of terminology at that time – the German-Vienna School, the Moscow School, the Canadian School, and the Prague School.

Thirdly, technology exchange and evolution gained momentum. Traditional methods of printing and data management (such as handwritten records) were no longer able to meet the increasing complexity of terminology work since the invention of the computer and associated technologies in the 1950s. The database management system – a "software system that enables users to define, create, maintain and control access to the database" (Connolly and Begg 2014: 3) – became one of the main parts of terminology work. Since the 1960s, many term databases, such as Eurodicautom (developed by the EU, replaced by Interactive Terminology for Europe: IATE[2]), TERMIUM (Canada, replaced with TERMIUM Plus[3]), DANTERM[4] (Denmark), and MultiTerm[5] (later changed to SDL MultiTerm) were developed. However, there was almost no such terminology database in China before 1989, according to Jin (1991). Scholars such as Ziping Wang (1991) and Zhiwei Feng (1991, 1995), were among the Chinese scholars to introduce artificial intelligence to terminology database systems and called for the development of an extensive Chinese database system. Between 1991 and 1993, funded by the Chinese government, the first Chinese database was developed.

To sum up, during this stage, many Western publications on terminology theories and practice were translated and introduced to China. The Natural Science Terminology Committee set up 49 subcommittees, employed over 1700 terminology experts, and published standardized terminology for 29 different subjects.

The *fourth* stage – to be labelled the development stage – lasted from 1995 to 2005. The 95th Congress meeting of the China National Committee for Science and Technologies marked the beginning of the development phase of terminology work in China. The name of the Committee also changed to the China National Committee for Terms in Sciences and Technologies[6] (CNCTST) (全国科学技术名词审定委员会), and its remit also included arts and humanities subjects. In 2002, the first interactive data management system was successfully built. In collaboration with Infoterm (International Information Centre for Terminology), the Termonline[7] (术语在线) official website was launched in 2003, enabling people to search for terms online for free. Terminology management, as a new term to replace terminology work, was introduced to China in the 2000s (Liang 2005). By 2005, 61 subcommittees of the CNCTST had been set up; 66 subject-specific terminology areas had been standardized. This stage featured several distinctive characteristics.

There was increasing demand for terminology standardization to facilitate global trade and communication. With the rapid development of international trade linked to China, inconsistency and inaccuracy in terminology and translation became an obstacle. In the 1990s, for example, there were many different versions of translated terms in science and technology in circulation. The World Wide Web (万维网, wànwéi wǎng) was translated as 万维网, 全球网, and 世界网; cyberspace (网络空间, wǎngluò kōngjiān) was translated as 电子空间, 网上咖啡屋, and 多维空间 in computer science. Therefore, there was an urgent demand for term standardization or nominalization. To facilitate this work, validation principles and methods were drafted in 1995. ISO standards for term translation and ISO principles and methods of terminology work were both introduced to China by Qingchang Zhou (1999).

In addition, terminology standardization in minority languages such as Uighur, Mongolian, and Tibetan started to receive recognition. Minority language experts and industry professionals were invited to discuss frameworks for terminology normalization. Minority language experts and terminologists expanded their work by using term base, corpora, and terminology management systems. This initiative subsequently led to the publication of the 汉英

维科技大词典 (hányīng wéi kējì dà cídiǎn, *Chinese Wiki Science and Technology Dictionary*) in different minority languages (CNCTST).

Importantly, there was rapid development in terminology tools and technology. The increasing integration of machine translation, artificial intelligence, large corpora, and usage of computer-assisted translation and terminology tools dramatically changed terminology work. Machine translation and terminology tools gave terminologists and translators quick access to target language terms (Reynolds 2015). In the 1980s, China developed its first machine translation system: the KY-1 and MT/EC863 English–Chinese translation system. Baidu Translation was first launched in 2000 and now has the capacity to translate and interpret over 200 different languages automatically (both in written and spoken form). AITRANS[8] (爱译), is a multinational company that used artificial neural network technology to develop both Bodiansoft-ITM and Bodiansoft crowdsourcing. Terminology tools such as Huoyun[9] (火云), Baidu[10] (百度), Youdao[11] (有道), SDL Multiterm, Trans-Mate,[12] memoQ,[13] and TermWiki[14] are extensive user-friendly repositories of linguistic data. Technological advances such as terminology management systems, machine translation, and 5G have contributed to a significant boom in terminology work.

The *fifth* stage, arguably categorizable as the boom stage, started in 2005 and continues to the present day. In this stage, international collaborations between America, Europe, Asia, and Russia have intensified, and domestic synergies between higher education institutions and industries have multiplied. The CNCTST has also evolved; its charter was established in 2016 and today it has 95 subcommittees. Some 127 different disciplines of terminology have been standardized and promulgated in China. More than 3000 experts (including more than 300 academics) from different disciplines have joined the subcommittees.

This period has featured an upsurge in the number of academic publications linked to terminology and a sharp increase in the provision of research funding. There has also been a notable expansion in the number of higher education institutions that provide courses related to this field. In 2007, the MTI (MA in Translation and Interpreting) was approved by the Chinese

Ministry of Education, and now over 270 BA and 249 MA programmes are offered in Translation and Interpreting Studies by Chinese universities, with over 30,000 graduate students every year (TAC 2018). The establishment of university programmes was a key factor in the surge of academic publications. A basic search for "terminology" using the CNKI database reveals 118,875 publication results. This is also exemplified by the nationally funded ten-volume project《中华科学技术大词典》(zhōnghuá kēxuéjìshù dà cídiǎn, *Chinese Dictionary of Science and Technologies*) by Chunli Bai and colleagues, with over 500 editors involved in the project. It was published in 2019 and included 96 different subjects, with over 500,000 terms and definitions. Another example is the publication of 《两岸科学技术常用词典》(liǎngàn kēxué jìshù chángyòng cídiǎn, *The Comparative Terms of Science and Technology*) between the P. R. China and Taiwan in 2010 by Yongxiang Lu, Qing Liu, and colleagues. It includes 19,500 terms in 31 different subject areas. In 2010, the Committee signed an agreement with Baidubaike; since then, over 100,000 standardized terms with definitions have been published via Baidubaike and are available to consult for free.

Internationally, influential Sino-Austrian collaborative projects entitled '基于 Web 的开发、分发、重新使用术语的方法' (Web-Based Semi-Automatic Term Construction) and '在汉语语料库中识别和提取新术语的方法、工具与技能' (Methods, Tools, and Strategies of Term Extraction in Chinese Corpora) were developed between 2007 and 2009 (CNCTST 2020). Automatic or semi-automatic term extraction technology was developed as part of this project. Term extraction, which makes use of corpora-based linguistic methods (e.g. part-of-speech tagging, phrase chunking) to extract term candidates and compare frequency in corpora, can be used for databases and translation memories (databases consisting of sentences, paragraphs, or sentence-like units that have previously been translated and which present matching pairs as translation candidates) and is an important component of terminology work. The Sino-Russian bilateral science and technology project in 2008–2009 and the Sino-Kazakh terminology management collaboration resulted in a multilingual term bank and a publication, 《汉、哈、英、俄科技名词大词典》 (hàn hā yīng é kējì míngcí dà cídiǎn, *The Chinese, Kazakh, English, and*

*Russian Dictionary of Technical Terms*) in 2013. A similar Sino-Korean collaboration led to the completion of a trilingual Chinese, Korean, and English term bank.

Considerable advances have also been made in terminology management training. Professional training is essential to improve the quantity and quality of terminology work. Since 2007, many CNCTST members have participated in the International Terminology Summer Schools, usually held in either Austria or Germany, for comprehensive terminology management training. In 2006, the CNCTST also started to offer annual terminology training courses, and since then there have been 15 training events. To help address the issue of a lack of necessary training in terminology management, more terminology management modules have been included in Translation and Interpreting degree programmes in Chinese universities since 2007 (Xinhuanet 2017; Xinhua News 2020).

Another element of the boom period in terminology work in Chinese contexts is the way language service industries have thrived. Language service industries, ranging from microbusinesses to multinational corporations, provide a wide range of services in translation, localization, globalization, and internationalization (Angelone, Ehrensberger-Dow, and Massey 2020). China's language service industries have collaborated with higher education institutions to provide internship opportunities and have led the way technologically by making practical use of advanced translation technologies such as CAT tools, cloud computing, artificial intelligence, and machine translation (Luo, Meng, and Lei 2018). The number of language service providers has increased exponentially from 8,179 in 2002 to 320,874 in 2018, indicating that they are integral to the growth in China's economy. The first national specification for China's translation industry – the Specification for Translation Service – was established in 2003. In the same year, the Chinese Accreditation Test for Translators and Interpreters (CATTI) was launched. Today, over 200,000 people have taken the tests, which have become a "benchmark of professionalisation" (Hu 2000: 90).

But alongside the systematic terminology management developed by the CNCTST, ad hoc terminology management is also carried out by many language service industries (Wright

2001). This work is often "hidden or blended with other tasks" (Bowker 2020: 262), and it is even the case that "very few companies do any terminology management at all" (Warburton 2015: 367). The chapters in Part II of this volume shed further light on this dual reality that characterizes contemporary terminology management and scholarship in Chinese contexts.

The following chapters outline the potential for further advances in terminology translation quality by improving term recognition techniques, by enhancing bilingual terminology compilation processes, and by identifying distinctive features of translational Chinese such as translationese and translation universals. The practical applications of such approaches are illustrated in projects which, for example, identify culturally specific terminology in literary works and facilitate its translation into other languages. Equally though, evidence emerges of the amount of work that still needs to be done in terms of implementing terminology tools in business contexts, in establishing professional terminology management processes more extensively, and in creating more term databases that are accessible to the public. The new millennium has so far been characterized by accelerated progress that has significantly improved terminology translation, management, and scholarship in Chinese contexts. The main challenge now is arguably that of maintaining this momentum and ensuring that its socioeconomic and cultural benefits are shared equitably across China, from its metropolises to its peripheries, and between all sections of society.

# Notes

[1] *Journal of China Terminology* (中国科技术语). Available at: www.term.org.cn/CN/1673-8578/home.shtml [Viewed 30 August 2020].

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