

# Towards Corpus-Based English Education and Translation of Ancient Chinese Terminology

*Jiali Du<sup>1</sup>, Christina Alexandris<sup>2</sup>, Pingfang Yu<sup>1</sup>,*

*<sup>1</sup> Guangdong University of Foreign Studies*

*Guangzhou, 510420, China*

*<sup>2</sup> National and Kapodistrian University of Athens*

*Athens, 15784, Greece*

## ABSTRACT

This paper discusses the corpus-based English education and translation of ancient Chinese terminology. China has a long history of language and culture. The recorded history of Chinese ancient characters dates back to Banpo Times about 6000 years ago. Based on statistical data from the largest academic corpus in China (CNKI), we analyze the English translation of eight typical ancient Chinese terminologies in academic articles. The corpus-based results show that sometimes English translation is rough for these traditional terminologies by researchers, and there is no further mention of the potential meaning for these special words to avoid confusion. This undoubtedly prevents the greater spread of education of Chinese ancient terminologies. The conclusion suggests that the ancient Chinese characters have independent phonological, morphological, lexical semantic systems; a substantial corpus is effective to overcome the language barriers of translation; and it is necessary for researchers to receive both Chinese and English education for translation of ancient Chinese terminologies.

**Keywords:** Terminology, Educational Systems, Translation, Ancient Characters

## INTRODUCTION

China has a long history of culture and language. The earliest Chinese Banpo Age originated from Banpo Village located in Xi'An, Shan'Xi Province nearly 6000 years ago. The ancient village relics were firstly unearthed in 1953. The archaeologists from the Institute of Archaeology (Chinese Academy of Social Sciences) carried out a series of experiments to test the remains of Banpo Village in 1972(Guo, 1972). According to archaeological research, the Banpo peoples of western China left their obvious mark (Zuo, 2015).The results of experiments of isotope carbon 14 suggested that ruins may come into being in 4000 BC. Early symbols and signs of ancient Chinese characters were found on the unearthed relics in Banpo site, which means the Banpo peoples may be the earliest earthbound human beings in China who sometimes communicated by means of written character (Li, 2011). The Banpo Age surely saw the appearance of Chinese culture and language.

China began to systematically study its language with the social development after the appearance of ancient characters. To meet the requirements of language-centered education, a special school discipline, XIAOXUE, comes into being. This discipline focuses on ancient characters' studies on phonological system (YINYUN), morphological system (WENZI), and lexical semantic system (XUNGU). The philological structure of XIAOXUE became the heart of ancient Chinese education, bringing a large number of genuinely culture-shared philological terms with the advancement of knowledge. Up until today, the study on the academic branches of XIAOXUE is still the core professions of ancient Chinese language majors.

The language systems of Chinese are very different from those of English. Many ancient philological scholars published their research papers in China, simultaneously indexed in the largest academic corpus in China (CNKI: China National Knowledge Infrastructure). Many ancient philological terminologies in the published papers are translated into English to meet the requirements of journals or conferences. However, we find that sometimes the translation of these ancient philological terms is sometimes incredibly liberal and inadequate. There is no further mention of the potential meaning for these special words to avoid cross-cultural confusion. This, undoubtedly, prevents the greater spread of education of Chinese ancient terminologies. The present paper will discuss the topics: (1) What are the real obstacles to overcome when ancient Chinese terminologies are translated into English? (2)How are ancient Chinese terminologies translated into English when they function as keywords in academic articles? (3) What should be to done for English education to standardize the translation of ancient Chinese terminologies?

### **Corpus-Based Analysis on Translation of Ancient Chinese Terminologies**

A large scale corpus is an effective tool in academic application. CNKI (<https://www.cnki.net/>) is the largest academic corpus in China. It includes nearly all

the academic papers published in Chinese by domestic scholars, including independent articles, conference articles, master's theses, and doctoral dissertations. According to academic principles, most academic abstracts are required to be translated into English to help international readers to grasp the core of the articles by means of bilingual abstracts. Therefore, an abstract should contain the most important ideas to connect an author and readers by bridging the linguistic gap between the (Mandarin) Chinese and the English language.

However, we find some errors are made by a few authors especially when they dealt with the ancient Chinese terminologies. After the extraction and classification, we also find that the errors have special systematic features. The results show that the diachronic development of language brings the linguistic deviations from the normal activities and from proper standards of interpretation. Therefore, the scholars who pay no attention to the deviations may fail to avoid the errors. Based on statistical data, we choose the top eight ancient Chinese terminologies and their English translations (the most widely cited) to discuss. The eight selective terminologies in Chinese Pinyin forms are as follows: XIAOXUE (Xiǎoxué); XUNGUXUE(Xùngǔxué); Traditional XUNGUXUE(Chuántǒng xùngǔxué); Modern XUNGUXUE (Xiàndài xùngǔxué); JINGXUE(Jīngxué); PUXUE (Pǔxué); YAXUE(Yǎxué) and SHUOWENXUE (Shuōwénxué). We shall analyze the translation's accuracy and reliability of these terms from linguistic, cultural and terminological perspectives. We show the difference of English translation of these philological terms, especially when they appeared as the keywords in the research papers downloaded from CNKI. (Table 1)

Based on the information in Table 1, we consider the fact that the translation of ancient Chinese terminologies is very poor. Some scholars do not know how to translate the culture-loaded terms into English. Therefore, they leave the terms untranslated, or they make the translation interpretive by providing too many redundant words or phrases. The high percentage of items "Untranslated" and "Interpretive" illustrates the point. We shall discuss as an example the translation of XIAOXUE to consider what standards should be used, since it is the most cited term in CNKI.

Table 1: Corpus-based English translation of ancient terms

Types	Untranslated	Transliteration		Inaccurate Translation			Accurate Translation
		Complete	Partial	Wrong Words	Partially Correct		
					In-Equivalent	Interpretive	
XIAOXUE	43.48%	8.70%	0.00%	13.04%	4.35%	26.09%	4.34%
XUNGUXUE	22.33%	2.91%	1.94%	1.94%	31.07%	36.89%	2.92%
Traditional XUNGUXUE	40.00%	0.00%	0.00%	0.00%	0.00%	60.00%	0.00%
Modern XUNGUXUE	0.00%	0.00%	0.00%	0.00%	0.00%	100%	0.00%
JINGXUE	39.32%	4.27%	0.00%	4.27%	1.71%	35.90%	14.53%
PUXUE	43.75%	15.63%	12.50%	15.63%	10.94%	1.55%	0.00%
YAXUE	46.67%	20.00%	26.67%	6.66%	0.00%	0.00%	0.00%
SHUOWENXUE	16.67%	0.00%	33.33%	0.00%	0.00%	16.67%	33.33%

## Linguistic Diversity on Translation of Ancient Chinese Terminologies

Language is considered to be among the greatest assets of any nation. Every language has its own distinct features and characteristics, with (Mandarin) Chinese and English sharing very few common features, since they belong in different language families and language groups (Sino-Tibetan Languages-Sinitic and Indo-European Languages - Germanic respectively). In light of the challenging task of translation concerning this language pair-finding the nearest possible equivalent term or expression, linguistic knowledge constitutes a valuable tool both for the translation and for the in-depth understanding of the two languages concerned.

For example, according to the logical relationships among the selected terminologies, we find XUNGUXUE(Xùngǔxué) is a hyponym of the superordinate term XIAOXUE (Xiǎoxué). Traditional XUNGUXUE(Chuántǒng xùngǔxué) and Modern XUNGUXUE (Xiàndài xùngǔxué) are subordinate terms, and they are hyponyms of the superordinate term XUNGUXUE. (Fig. 1) The other terms have different logical relationships. XIAOXUE (Xiǎoxué), JINGXUE(Jīngxué); PUXUE (Pǔxué); YAXUE(Yǎxué) and SHUOWENXUE (Shuōwénxué) are taxonyms, and they are subordinate terms of the superordinate term “GUHANYUSHUYU(Ancient Chinese Philological Terminology)”.

Some scholars are confused by Homographs. XIAOXUE (philological term) and XIAOXUE (primary school) are homographs. They are spelled the same way but differ in meaning. In ancient China, the philological term XIAOXUE refers to a special ancient language discipline which comprises phonological study (YINYUN), morphological study (WENZI), and lexical semantic study (XUNGU). Nearly all the ancient people know the precise meaning of this discipline in ancient age. In modern China, XIAOXUE refers to a school relating to the education of children between 5 and 11 years old, namely primary or elementary school. Modern ordinary people in China only consider XIAOXUE to be a co-taxonym of middle school and university.

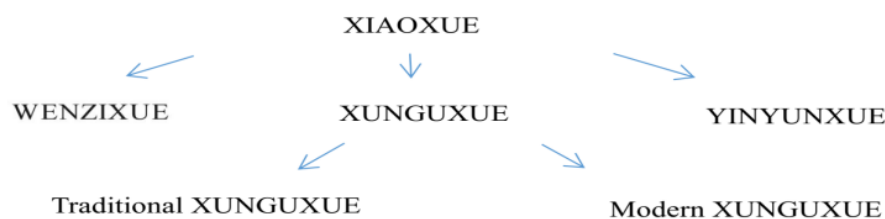


Fig. 1. The logical branches of XIAOXUE(Xiǎoxué)

However, the philological researchers today still use XIAOXUE as a branch of ancient language discipline when they are involved in academic discussion. The diversion between general field for common people and professional filed for philological scholars sometimes led to tangled confusion.

The data from CNKI in Table 1 shows that many scholars do not know how to translate XIAOXUE in the academic articles (untranslated 43.48%). They translate this term into “primary school” “Chinese primary school” “ancient primary school” (wrong words 13.04%), or leaving this Chinese term in an interpretive stage (Interpretive 26.09%). According to the discussion above, we know that XIAOXUE (philological term) and XIAOXUE (primary school) are homographs. They are not synonyms, and as a result, XIAOXUE (philological term) must not be translated into “primary school”. The ineffective translation fails to supply valid information for international scholars. A scholar has to understand the implied meaning of a term from source language, and then to find an equivalent word or phrase in target language. For example, the precise meaning of philological XIAOXUE should be grasped before it is translated. Many Chinese websites are useful to help to understand the meaning, e.g. <https://www.zdic.net/>, etc. (Fig. 2)



Fig. 2. The philological websites for studies of Ancient Chinese characters

XIAOXUE (Xiǎoxué) in Chinese is a term roughly corresponding to what “philology” means in English linguistic terminology. XIAOXUE contains an immense number of terms, carrying rich Chinese cultural information. Here, it should be noted that sometimes the cultural elements are deeply rooted in the term. XIAOXUE creates a serious barrier in the cross-cultural academic communication.

The philological terminology XIAOXUE in Chinese language is closely related to the discipline Philology in English language. The definition of “philology” in Oxford English Dictionary is as follows: “philology, The branch of knowledge that deals with the structure, historical development, and relationships of languages or language families; the historical study of the phonology and morphology of languages; historical linguistics.”

However, Chinese XIAOXUE focuses on “the historical study of the phonology(YINYUN), morphology(WENZI) and lexical semantics (XUNGU) of languages”. Therefore, philology in English language is not a perfect equivalent word for XIAOXUE in Chinese language because they do not share the same content of the study. English philology focuses on the structure, historical development, and relationships of English languages or language families. However, XIAOXUE discusses the ancient Chinese characters’ phonological system, morphological system,

and lexical semantic system. The best way to bridge the gap is to use a necessary qualifier by which a precise meaning can be acquired. The qualifier “Chinese Ancient” should be used to limit the meaning of philology, and XIAOXUE in Chinese language should be translated into “XIAOXUE (Chinese ancient philology)” in the English language.

In general usage, XIAOXUE should be translated into “primary school” to refer to the basic education to children between 5 and 11 years old. In professional usage, XIAOXUE should be considered to be “Chinese ancient philology” for the philological research.

### **Terminological Analysis on Ancient Chinese Terminologies**

Generally speaking, terminologies fall into two fundamental categories as “culture-free and culture-loaded terms”(Chen and Chen 2018, Wei 2018). The culture-free terminologies share both connotative meaning and denotative meaning between Chinese and English. For example, the meaning of English “methyltransferase” is shared by Chinese scholars, and there is an equivalent Chinese word of “Jiǎ jī zhuǎnyí méi” for the English term whose origin is actually a combination of Latin and Greek – as most scientific terms in the Western tradition. The culture-free terminologies mostly come from natural sciences such as life sciences, chemistry, etc.

The culture-loaded terminologies may have connotative or denotative difference between Chinese and English. There is no perfectly equivalent words for both languages. The divergence or deviation between Chinese culture and alien culture brings a widening gap in meaning. For example, ancient Chinese terminologies have many culture-related national characteristics. Only when the hidden meaning of ancient terms (especially in humanities and social sciences) is fully explored in articles by native scholars can English readers understand the terms to the maximum extent.

Standardization of terminology is an essential factor for achieving precision. Many international scholars discussed the importance of terminology and its systematization, modernization, simplification, application in the advancement of knowledge and understanding from perspectives of computational linguistics(Kageura, 2010; Cárdenas and Ramisch, 2019), semantics(Bertels and Speelman, 2014; Cabezas-García and Faber, 2017; L’Homme, 2020), lexicology (Dubois, 2017), etc. The Chinese government set up in 1985 a special organization, the China National Committee for Terms in Sciences and Technologies (CNTERM), aiming to introduce new terminology, endorse changes of borrowed terminology, alter the standards of terminology, explain unfamiliar terminology, and adopt practice to make terminology more accurate.(Du et al. 2021a+b). The ancient Chinese terminologies are culturally loaded, and it is very hard to find an absolutely equivalent word between Chinese and English. Therefore, cross-cultural cooperation is important for Chinese scholars to examine, standardize and validate the ancient Chinese terminologies. The cooperation can provide a comparison of development of terminology in source language with that in target language. (Alexandris, 2009; Alexandris, 2013; Du et al. 2017; Du et al. 2020)

## CONCLUSIONS

An English education is a very important tool for academic translation. Only the researchers who are good at a particular academic subject and at conveying a variety of meaning in English can influence their international readers mostly.

We focus in the discussion above on translation of ancient Chinese philological terms with cultural features. The initial purpose was to transmit information of ancient Chinese terminologies (especially in humanities and social sciences) over academic discussion to international scholars interested in the diachronic change or synchronic variation in Chinese language. Culture is self-sustaining. After the development of hundreds of years, ancient Chinese terminologies are still shared and accepted by scholars majoring in ancient Chinese philology, even though the deviation from the original basic meaning results to considerable difficulties in understanding the terminologies. Any scholar who tries to accurately translate an ancient Chinese terminology into English has to trace the Chinese term's history from the times it came into being to the present day. At the same time, he should be good at telling the difference between Chinese words used for terminologies and English words used for interpretation, to keep a balance between cultural features in Chinese language and translation in English language for ancient Chinese terminologies.

## ACKNOWLEDGMENTS

This article is sponsored by Key Post-Funded Project of China National Social Science Fund (21FYA003); China Natural Science Fund (61877013); Guangdong Social Science Project (GD20CWY01); Project of Department of Education of Guangdong Province (2018WZDXM008).

## REFERENCES

- Alexandris, C. K. (2013). *Managing Implied Information and Connotative Features in Multilingual Human-Computer Interaction*. Athens: Nova Science Publishers, Inc.
- Alexandris, C.K. (2009). "A Speech-Act Oriented Approach for User-Interactive Editing and Regulation Processes Applied in Written and Spoken Technical Texts". In: *Human-Computer Interaction. Novel Interaction Methods and Techniques*. Springer, Berlin Heidelberg. pp .645-653.
- Bertels, A., Speelman, D.(2014). Clustering for semantic purposes: Exploration of semantic similarity in a technical corpus. *Terminology*. Volume 20. pp. 279-303.

- Cabezas-García, M. and Faber, P.(2017). A Semantic Approach to the Inclusion of Complex Nominals in English Terminographic Resources. In Computational and Corpus-Based Phraseology. EUROPHRAS.
- Cárdenas, B. S., and Ramisch, C. (2019). Eliciting specialized frames from corpora using argument-structure extraction techniques. *Terminology*. Volume 25 No.1. pp.1-31.
- Chen, Y. and Chen, W. (2018). English translation of long Traditional Chinese Medicine terms. *Terminology*. Volume 24 No. 2: pp. 181-209.
- Du, J. L., Alexandris, C., Pei, Y. J, Lian, Y.M, Yu, P.F. (2021a). “Meeting the Growing Needs in Scientific and Technological Terms with China’s Terminology Management Agency”. In: *Human Interaction, Emerging Technologies and Future Applications IV*. IHIET, Springer, 1378. pp. 239-245.
- Du, J. L., Alexantris, C., et al. (2017). Controlling Interaction in Multilingual Conversation Revisited: A Perspective for Services and Interviews in Mandarin Chinese. *HCI 2017, Vancouver-Springer*. pp. 573-583.
- Du, J. L., Alexantris, C., Yu, P. F. (2020). “Comparative Research on Terminology Databases in Europe and China”. In: *Ahram T. Z. et al. (Eds.): IHIET 2020, AISC, Springer, 1152*. pp. 252–257.
- Du, J. L., Alexantris, C., Yu, P. F. (2021b). *Towards Chinese Terminology Application of TERMONLINE*. *Lecture Notes in Networks and Systems, AHFE, Springer, Volume 271*. pp. 190-198.
- Dubois, D. (2017). How words for sensory experiences become terms. *Terminology*. Volume 23 No. 1. pp. 9-37.
- Guo, Moruo(Guō mòruò). (1972). The Dialectical Development of Chinese Ancient Characters(Gǔdài wénzì zhī biànzhèng de fāzhǎn). *Archeology(Kǎogǔ)*. Volume 03. pp. 3-14.
- Kageura, K. (2010). Analyzing the status of borrowed morphemes in terminological structure: The case of Japanese terminologies. *Terminology*, Volume 16 No.2, pp. 181-216.
- L’Homme, M. C.(2020). *Lexical Semantics for Terminology: An introduction*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Li, C. Y (Lǐ chéngyàn). (2011). The Evolution of the Meaning of "Xiao Xue" in Ancient China(Zhōngguó gǔdài"xiǎoxué"hányì de yǎnbàn). *Journal of Guangxi Normal University(Guǎngxī shīfàn dàxué xuébào)*. volume 47 No.1. pp. 5.
- Wei, X. Q. (2018). Conceptualization and theorization of terminology translation in humanities and social sciences. *Terminology*. Volume 24 No. 2, pp. 262-288.
- Zuo, M. A(Zuǒ mínān). (2015). *A Detailed Study of Chinese Ancient Characters(Xishuō hànzi)*. Beijing: CITIC Press Group(Zhōngxīn chūbǎnshè).