RESEARCH ARTICLE

The Grammatical and Semantic Functions of “with” Structure in Chinese-English Translation

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ABSTRACT
This paper, taking systemic-functional linguistics as the theoretical guidance, aims to analyze the grammatical and semantic function of the preposition “with” and its relevant structures in Chinese-English translation based on a small corpus established from the authentic materials of the official version of the China Accreditation Test for Translators and Interpreters in the past ten years. The conclusion is that the grammatical and semantic functions of “with” structure in translation examination are: to simplify sentence patterns, to supplement the previous and subsequent information, to reestablish the characteristics of the English language.

KEYWORDS
System-functional linguistics, the China Accreditation Test for Translators and Interpreters, corpus, preposition structure, Chinese-English translation

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1. Introduction
The China Accreditation Test for Translators and Interpreters (hereinafter referred to as CATTI) has been published in nine languages since its inception in 2003 as the only national translation professional qualification examination. According to the CATTI’s introduction, it was established to strengthen translation industry management, standardize the translation job market, improve the quality of translators and interpreters, and scientifically, objectively, and impartially evaluate the level and ability of translation professionals so that the Chinese translation industry can further align with international standards and provide excellent and qualified translators and interpreters for the exchanges and cooperation between China and other countries in the sectors of politics, economics, culture, and education, among others.

However, as shown in Table 1, the test has a high rate of taking the exam but for a low pass rate, with the pass rate trending downward compared to the previous year. The CATTI is in line with the education of MTI in China, and those who have passed the examination are eligible for membership in the China Translation Association (Lu Min, 2013). After analyzing statistical data on the pass rate of CATTI Level II from students in some MTI institutions, Mu Lei (2020) identified some issues worthy of our attention. He claims that the increased number of exam applicants and the low pass rate may discourage translation majors if the situation is not improved. It is clear that the examination is more than just a test of candidates’ abilities; it is also a challenge and an opportunity.

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Table 1. Data of the CATTI in 2020 (Data Source: the CATTI Project Center)

<table>
<thead>
<tr>
<th>Level</th>
<th>The exam-taken rate</th>
<th>The pass rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In 2020</td>
<td>In 2019</td>
</tr>
<tr>
<td>Level II</td>
<td>75.94%</td>
<td>23.57%</td>
</tr>
<tr>
<td>Level III</td>
<td>73.63%</td>
<td>9.16%</td>
</tr>
</tbody>
</table>

1.1 The definition of English preposition
First, because prepositions belong to closed parts of speech, their total amount is minimal and stable. Secondly, there are only about 60 single prepositions in English (Shuang Wenting & Xiao Guozheng, 2018). In China, non-native English learners have been exposed to English prepositions for almost as long as they learn English. In addition, these prepositions tend to go unnoticed by Chinese learners; this is due to the fact that they are easier to spell than other parts of speech words in English. On the other hand, prepositional phrases in dialogue are frequently considerably more sophisticated and significant than Chinese learners believe. On the other hand, prepositions could not function semantically without the nouns that make up their structure. In English, this nominalization also leads to the preposition benefit. Despite the fact that the number of prepositions is not large, they are used frequently. It explains why some Chinese academics refer to English as “the language of prepositions.” In comparison to Chinese, prepositions have an important part in the articulation of the English language (Lian Shuneng, 2010, p.145).

There are 21 different definitions of the preposition “with” in Collins' Dictionary, 11 in Webster’s Dictionary, and 16 in Cambridge Dictionary. In fact, “with” has a variety of meanings in various situations, cultural environments, and grammatical circumstances. Only by correctly locating the category of the preposition structure can we appropriately examine its significance and role in the text.

1.2 The classification of English preposition “with”
Collins COBUILD Grammar Patterns 2: Nouns and Adjectives (CCGP2) is a reference book, considered the first to use a large-scale computer corpus with extensive classification. It's also a comprehensive and valuable reference book, with a comprehensive syntactic list containing nouns and adjectives (Lieven V, 2000). The preposition “with” is represented by a significant number of syntactic items in CCGP2, which are further categorized as follows (Xiaowei Guan, 2013):

<table>
<thead>
<tr>
<th>Classification</th>
<th>Examples</th>
<th>Origination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>with+N</strong></td>
<td>collocation</td>
<td>C317B</td>
</tr>
<tr>
<td></td>
<td>With+the/a/an/pron/adj/+N</td>
<td>C318B</td>
</tr>
<tr>
<td></td>
<td>With+the/a/an+N+prep+V/ing</td>
<td>C210A1</td>
</tr>
<tr>
<td></td>
<td>the/a/an/adj/pron+N+with+N+V-ing/ing</td>
<td>C219B2</td>
</tr>
<tr>
<td></td>
<td>N+with+N+for+N</td>
<td>C216B2</td>
</tr>
<tr>
<td><strong>N+with+N</strong></td>
<td>N+with+N+to+V-phrase</td>
<td>C315B</td>
</tr>
<tr>
<td></td>
<td>N+with+N+that</td>
<td>C213A2</td>
</tr>
<tr>
<td></td>
<td>N+be+adj+with+N</td>
<td>C319B</td>
</tr>
</tbody>
</table>

2. Literature Review
Being firmly established in a well-defined theory of grammatical function, according to Jacobson (1979), is a distinct advantage, and discoveries based on the theory are always more valuable than observations made at random. Functional syntactic analysis is used for meaning analysis in systemic-functional grammar (Huang Guowen, 2012), and systemic-functional linguistics emphasizes the intersection of theory and practice (Huang Guowen, 2019). As a result, applying the concepts of functional grammar to a specific text might help us better grasp the grammatical and semantic roles of syntactic structures. Some academics have discussed the grammatical functions of English prepositions and engaged in a variety of translation activities. Liu Ping (2019) believes that
the semantics of prepositions has a significant impact on the semantics of idioms; Yu Xiujin and Jia Zhongheng (2012) proposed a program to consider the coordinate construction connected by "with" as a small clause in D-structure; and Halliday, the author of An Introduction to Functional Grammar, once stated that he was committed to studying language in the political context (J. R. Martin, 2013). As a consequence, it can be concluded that the translation test with texts from various contexts has certain research value.

3. Methodology
From 2010 to 2019, this paper uses the official version of Chinese-English translation questions from the CATTI level II and level III. The text is based on the CATTI level II and level III syntax analysis, published by World Publishing Cooperation (2020). We use the following format to encode the input translation text:

a. C2 represents CATTI level II, and C3 represents CATTI level III;
b. The last two digits of the examination year indicate the examination time;
c. "A" refers to the examination held in the first half of the year, usually in May, and "B" refers to the examination held in the second half of the year, usually in November;
d. The numbers "1" or "2" after "A" or "B" refer to question 1 and question 2, respectively, because the Chinese translation part of level II includes two questions. For example, C217B1 was related to CATTI level II question 1 in November 2017.

4. Results and Discussion
4.1 Analysis of the self-built corpus
From 2010 to 2021, CATTI's official translation of Chinese-English translation includes 13926-word types and 2698 part of speech pronouns in the self-built corpus. We use an online application provided by UCREL to assign codes to the original corpus by vocabulary after it is created. We use the retrieval tool antconc developed by Professor Laurence Anthony of Waseda University in Japan to retrieve the corpus. In this paper, a small corpus is created using Antconc software, and all translations are compiled into a text named “CATTI,” which is arranged from far to nearby years. Then, in the search engine term, type "with" to receive 119 index results. The consistency diagram is shown in Figure 1:

![Figure 1. the Concordance Plot of Preposition “With” in the CATTI](image)

The frequency of utilizing the preposition "with" structure in official translation has increased over time, as seen in Fig.1. A total of 60 texts are entered into Antconc, with 40 texts in level II and 20 texts in level III, and the preposition "with" is added to the keyword search engine for indexing and placing. The preposition "with" was detected in all texts, with the highest frequency being 9 times (question 1 from the November 2012 level II translation test) and 7 times (from the level III translation test in November 2018). Further search the collocation of "with," limit the span to 5 words around the node word and get 562 index results, of which 527 collocations with MI ≥ 3, accounting for 93.77%. A total of 30 significant collocations with co-occurrence frequency of 5 times or more and MI ≥ 3 are extracted, which are arranged according to the frequency, as shown in Table 3:
Table 3 contains major collocations such as “China,” “countries,” “global,” “climate,” and “coal.” According to Huang Guowen (2009), the frequency with which a structure is used is connected to the occasion and “discourse type.” When the CATTI’s sources and themes are combined, it can be observed that it has mainly focused on political debate, news reporting, the environment, and energy in the last 10 years. Nominalization is also a typical occurrence in scientific texts. According to Alireza and colleagues (2017), physics writers prefer to use nouns followed by a string of prepositional phrases, whereas applied linguistics authors prefer to use nouns plus a few modifiers. In terms of speech, Table 3 contains only one verb, “compare,” with the remainder consisting mainly of nouns and prepositions, perfectly showing the static nature of the “with” structure. As a result, increasing the frequency with which the “with” structure is used in the CATTI is more appropriate.

Set the number of characters before and after node words to 50 to further investigate the function of the “with” structure in the CATTI, and then manually mark and make secondary statistics on 119 “with” forms in Antconc. The classification is provided in Table 4, taking Table 2 as a reference:

<table>
<thead>
<tr>
<th>Type</th>
<th>Classification</th>
<th>Total</th>
<th>Example</th>
<th>Origination</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>with+the/a/an/pron/adj++N</td>
<td>47</td>
<td>......with the times.</td>
<td>C212B1</td>
</tr>
<tr>
<td>(2)</td>
<td>with+the/a/an+N+prep+N/V-ing</td>
<td>47</td>
<td>......with an 11% increase in coal imports......</td>
<td>C318A</td>
</tr>
<tr>
<td>(3)</td>
<td>with+pron/adj++N/V-phrase/clause</td>
<td>9</td>
<td>......with distinctive characteristics gradually took shape......</td>
<td>C214B2</td>
</tr>
<tr>
<td>(4)</td>
<td>collocation</td>
<td>16</td>
<td>Endowed with moderate climate and fertile soil......</td>
<td>C315A</td>
</tr>
</tbody>
</table>

In the last ten years, the first and second categories of “with” structures have been most regularly utilized in the CATTI, according to Table 4. The first type of structure is the combination of Preposition “with” and noun, which can dynamically transform meaningful words into noun expressions; The second type of structure is the combination of the preposition “with” and other prepositions, such as “of,” “in,” and “at” in Table 3, which can be expressed in many ways; The third type of structure combines the preposition “with” with other prepositions such as “of” and “in.” The third structure uses the preposition “with” as a connecting component between verb phrases and clauses. Therefore, in translation practice, the use of “with” structure can change the position of Attributes and reveal the implied logical relationship in sentences. Collocation is the fourth category. The meaning of these terms is the Convention formulated by its language association. Many purposes, such as “be compared with,” “deal with,” and so on, can only be used according to the predetermined scope of use (Wu Jun 1997). Therefore, gathering a significant number of collocations is also a process of an in-depth comprehension of the English mindset and culture. It is also beneficial to represent English language features in the translation.

Table 5 shows the classification of the 119 Chinese sentences that contain the “with” structure according to their features (some phrases have more than one feature).
Table 5. The Classification of Chinese Sentences in the CATTI

<table>
<thead>
<tr>
<th>Type</th>
<th>Classification</th>
<th>Total</th>
<th>Example</th>
<th>Origination</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>dynamic sentence</td>
<td>70</td>
<td>中国高度重视视和积极推动以人为本、全面协调可持续......</td>
<td>C310A2</td>
</tr>
<tr>
<td>(2)</td>
<td>running sentence</td>
<td>59</td>
<td>与去年同期相比，数量有了大幅下降，但是如此数据仍令人心惊。</td>
<td>C213B1</td>
</tr>
<tr>
<td>(3)</td>
<td>parallelism sentence and long attributive sentence</td>
<td>28</td>
<td>贺兰山又是华夏土地上遗存最集中，题材最广泛，保存最完好的岩画地区之一。</td>
<td>C212B2</td>
</tr>
<tr>
<td>(4)</td>
<td>collocation</td>
<td>31</td>
<td>.......日趋紧密的命运共同体。</td>
<td>C315B</td>
</tr>
<tr>
<td>(5)</td>
<td>a simple sentence with a preposition</td>
<td>17</td>
<td>同20多个国家开展人权对话和磋商......</td>
<td>C318A</td>
</tr>
</tbody>
</table>

The first is verb conjugation, which depends on combining two or more Chinese verbs in a sentence. "Chinese is a dynamic language, and verbs are used more frequently," Lian Shuneng (2010, p.133) wrote. Therefore, using dynamic prepositional phrases in translation can limit the accumulation of verbs in translation and make Chinese English learners' text more fluent and concise.

Cai Yun (2002) defines running sentences as "phrases that are connected with parallel or complex sentences by commas rather than conjunctions, or sentences that are divided by commas but without parallelism or subordination." It demonstrates that the use of running sentences is one of the characteristics of the Chinese language. As a result, the integration of fragmented running sentences into extended sentences might meet the features of English in the English translation process.

The parallelism sentence and the extended attributive sentence fall under the third group. A parallelism sentence is one in which three or more phrases or sentences with similar meaning and structure are arranged side by side. Propositions are a frequent rhetorical method that uses repetition and emphasis on achieving a rhetorical impact. Still, they can also result in long definite articles and sentences with too many specified components. To apply new ideas and make the text logical, it is often essential to compose extensive phrases (Wang Li, 1985, p.352). The attributes modifying “county” in the example sentence in table 5 include “Guizhou Province,” “ethnic minority,” “proportion,” and “most.” However, if the qualities are pervasive, the reader will likely become “lost” due to modified noun concerns (Lv Shuxiang, 1980, p.156). Such a long attributive should be pushed back to avoid the length restriction in the English translation.

Simple sentences with Chinese prepositions (based on Chinese semantics) fall into the fourth group, such as “和,” “同,” “与,” “达,” “作.” During the English translation process, such sentences do not undergo a linguistic change but instead take the preposition "with" in their dictionary. Students must acquire the basic meaning of "with" for simple translation as a separate word.

The fifth category is comprised of standard and fixed expressions such as "socialism with Chinese characteristics," "community of destiny," “act poison with poison," and other standard terms, all of which necessitate a significant amount of knowledge input and accumulation on the part of learners.

4.1 Case analysis

In this paper, three types of Chinese sentences (dynamic sentence, running sentence, and parallelism sentence) with high frequency and distinctive features and their English translations are specifically analyzed.

A. Dynamic sentence

E.g.：G20 杭州峰会的会标，就是用20根线条， 勾勒出一个桥梁轮廓，同时辅以“2016年G20”的英文和篆隶“中国”印章。
Translation：The logo of the G20 Hangzhou summit features the outlook of a bridge with 20 lines. On top of it are the English words "G2016 China" with two Chinese characters for "China" sealed aside in the traditional Zhuan front. (Excerpted from C216B1)

This example describes the logo for the G20 summit in Hangzhou, and there are three Chinese verbs in this sentence: "用," "勾勒," and “辅以,” with extra prepositions in the translation. From the perspective of functional syntactic analysis, the target feature is translated into unrestricted clauses through the "with" structure with the prepositions "for" and "in", and there is a relationship of "carrier" and "attribute" between the two grammatical components "seal" and "Chinese characters", which serve as the complement of the preposition "with" (Huang Guowen, 2009), highlights the Chinese characteristics of the seal.
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E.g.: 本研究院拥有员工一万余人，其中包括8名两院院士，12名国家级突出贡献专家和1700多名高级专业技术人才。
Translation: Of over 10,000 employees, there are 8 academicians of CAS and the CAE, 12 experts with outstanding contributions at the state level and over 1,700 senior professionals. (Excerpted from C317A)

The example serves as a primer on the CAS’s scientific research forces and research institutes. The translation uses four separate prepositions in place of the genuine verb: “of,” “with,” “at,” and “over.” The first preposition “of” achieved the dynamic meaning of “拥有” in Chinese, and the “with” structure was employed to create “national remarkable contribution” a post attributive, in keeping with the functional syntactic principle of “syntax serving meaning.” Furthermore, although “two academies” is merely a two-character attribute in the original language, it must be stated in full in translation, i.e. the Chinese Academy of Sciences and the Chinese Academy of Engineering. The attribute is also posted using the preposition “of” by the translator. It can be seen that prepositional organization helps to prevent being front-loaded when dealing with extended attributives.

E.g.: 截至2010年7月，中国累计设立外商投资企业69.8万家，实际使用外资1.05万亿美元。
Translation: By July 2010, there had been 698,000 foreign-invested enterprises set up in China, with the actual utilized foreign capital of US $1.05 trillion. (Excerpted from C311B)

In the original text, "使用外资" is a verb phrase. However, "the actual exploited foreign capital" is a phrase in the translation that consists of adjectives modifying nouns, resulting in the phenomena of nominalization. Nouns have the benefit of making sentences more flexible and enabling the expression of more complicated ideas in English (Lian Shuneng, 2010, p.134). As a consequence, by employing the prepositional structure "with + noun + of + noun," the third phrase can be combined with the main clause in terms of content, and the information can be further supplemented.

B. Running sentence
E.g.: 天柱县总面积2201平方公里，辖16个乡镇，326个行政村。
Translation: With a total area of 2,201 square kilometers, Tianzhu County is composed of 16 townships where there are 326 administrative villages. (Excerpted from C315A)

The original text consists of three fragmented sentences, and most Chinese attributives are rather fixed, whereas English attributives can be modified flexibly, as shown above. According to Chinese, the component "area, township, and administrative village" is related to the subject “Tianzhu county,” and the translation changes the order of clauses and connects different components using the prepositional phrase "with + noun + of + of", which not only changes the order of clauses but also ensures semantic coherence. Furthermore, combining prepositional phrases with the main verb "construct" can increase the symmetry of the sentence structure and the prominence of the focus points and the efficiency of language information transmission (Shuang Wenting & Xiao Guozheng, 2018).

E.g.: 气候温和，土壤肥沃，是贵州重要粮食生产基地，享有“黔东粮仓”的美誉。
Translation: Endowed with moderate climate and fertile soil, it is an important base for grain production in the province, known as the "Granary of East Guizhou". (Excerpted from C315A)

Predicate verbs and nonpredicate verbs are two types of English verbs. In most English sentences, there is only one predicate verb, and verb usage is restricted (Cheng Xiangwen, 1998), which has contributed to the unique phenomena of nonpredicate verbs in the English language to some extent. As shown in this example, the past participle phrase can also be used as an adverb. Through the adverbial "moderate climate and fertile land," the word "endowed with" is employed in the translation to describe the qualities and state of Guizhou. A participle can generate phrases with prepositions as an ellipsis form of a clause, which can make the text pithier in written language.

E.g.: 2017年河南生产总值44,988亿元，比上年增长7.8%，人均生产总值47,130亿元，增长7.4%。
Translation: In 2017, with a total product of 4,498.8 billion yuan, its GDP ranked fifth in China, increasing by 7.8% compared with that of last year; the per capita GDP increased by 7.4% and reached 47,130 yuan. (Excerpted from C318B)

Lu Min (2013) cited numerous cases of erroneous digital translation and emphasized the need for standardized number writing formats in English-Chinese translation. When translating sentences using numbers, the usage of a monotonous sentence pattern repeatedly will result in a tedious and formulaic translation. For example, in this paragraph, there are two "with"structures. The former turns "Henan’s gross domestic product" into a phrase, but the latter uses the pronoun "that" to refer to it last year, and the preposition "with" is used to make a comparison. This results in a more concise and emotive expression.
C. Parallelism sentence and long attributive sentence

E.g.: 在世界上，中国是岩画诞生最早、分布最广、内容最丰富的国家之一。
Translation: China is one of the countries in the world which boast home to some of the earliest rock paintings, with the widest distribution range and the richest subject matters. (Excerpted from C212B2)

Because there is virtually no morphological change in Chinese, there is no need to be concerned about grammatical issues resulting from the usage of several verbs. However, in English translation, we must consider the coordination and collocation of verbs and prepositions (Shuang Wenting & Xiao Guozheng, 2018). Because numerous verbs are employed in this parallel structure in Chinese, only the verb “boast” is utilized in the translation to avoid verb accumulation. When dealing with the subject-predicate phrase, the post division structure of “with + noun” is applied, taking into mind the attribute’s reasonable segmentation.

E.g. 我们按照积极利用科学发展、依法管理、确保安全的思路，加强信息基础设施建设，发展网络经济，推进信息惠民。
Translation: Following the principles of active utilization, scientific development, the rule of law and guaranteed security, China has been forging ahead with its information infrastructure construction and network economy and making information benefit all. (Excerpted from C216B2)

There are two parallelism statements in this example. When it comes to the first, the translation comes before the core term "principle." In the second parallelism sentence, the three Chinese verbs “加强”, “发展”, and “推进” have nearly identical meanings; therefore the translation combines them into a single verb phrase, “advance ahead,” and the remaining major information in the sentence is connected by the preposition "with". According to the "end-weight" principle, the post-position structure may accommodate more contents and more complicated structures (Wang Dawei, 2007). As a result, the parallel structure with more information is pushed to the back, and the structure of "with" in the translation works to shift the definite article’s position in the original text, fulfilling the goal of stressing and highlighting the key information.

E.g.: 养老体系更加健全完善、及时应对、科学应对、综合应对人口老龄化的社会基础更加牢固。
Translation: A more sophisticated system will be fostered along with the sounder social foundations for tackling the aging problem in a timely, practical, and comprehensive way. (Excerpted from C219A1)

In the original text, the first clause’s subject is “elderly care system,” and the second clause’s subject is "social foundation." The three four-character words in the sentence are in perfect harmony, which is a feature of the Chinese language, yet it is difficult to understand as a definite article. The prepositions "for" and "in" are used to refine the same components of the prose sentence, and the structure of “with” is used to prelude the subjects of the two clauses. The adverbial adjustment restores the prose sentence’s properties. The "with" structure displays the original text’s inner logic while preserving its rhetorical strategy.

5. Conclusion
To summarize what has been stated so far, in order to gain insight into the syntactic and semantic function of the "with" structure in the CATTI, by analyzing the distribution of the preposition "with" structure and significant collocations, and by classifying the "with" structure retrieved from the text and the syntax of the original text in the official version of the CATTI Chinese-English translation in the last ten years, we discovered that the main grammatical and semantic functions could be roughly divided into three types: First, to make the expression of the translation more clear and the structure of sentence patterns more concise; second, to supplement the previous and subsequent text, and highlight the theme and focus; third, to make the translation closer to the characteristics of the target language and more authentic expression. This paper is expected to provide candidates preparing for the CATTI and other applied translation examinations with some practical value and novel ideas.

However, not all verbs must be nominalized, and prepositions must be properly collocated with verbs in order to produce sentences in the translation. It is best to avoid using too many prepositions so that the text doesn’t become cluttered with them, making it more difficult to read. As a result, during the CATTI Chinese-English translation practice and such applied translation examination, it is important to properly comprehend the context of the original text and accurately grasp the writing patterns. Additionally, a considerable number of buzzwords and their English translations that have frequently surfaced in our view in recent years must be collected through a variety of methods. Finally, to study the contrasts between Chinese and English mindsets in order to attain "elegance" in the Chinese-English translation while retaining "faithfulness" and "expressiveness."

The major limitations of the present study are that the sample size of the self-built corpus is not large enough, and more valid information may be uncovered if a sufficient authentic corpus of CATTI test-takers could be secured. Furthermore, the corpus was
only collected from 2010 to 2019, excluding the post-epidemic period. Future studies could look into if there have been any substantial changes during the pandemic era.

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