

Translation Study of Petroleum Scientific and Technological Texts from the Perspective of Text Typology Theory

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Abstract

A study of the translation skills and methods of scientific and technical texts is summarized in this paper using the Text Typology Theory as a theoretical basis. In the first part of this study, different classification methods of text types are introduced and described in detail. It is shown that scientific texts belong to the informative text category, discussing the characteristics of informative texts and their purpose; these are exactly the characteristics in which skills and methods are needed when translating scientific and technological texts; the paper summarizes, according to Reiss' description of the translation methods of informative texts and considering the language characteristics of scientific and technological texts, the general rules of terminology, sentence structure, and discourse translation for scientific and technological texts; the conclusion section summarizes the entire text, reviews the major ideas presented in this dissertation, and offers several insights into the translation of the technological text.

Keywords

Technological Text; Text Typology Theory; Petroleum; Translation Method.

1. Text Type and Functional Characteristics of Scientific and Technological Text

For different texts, different translation strategies and methods are needed. Given this, the theoretical research on text types is of great significance when it comes to translating specific texts. At present, there are different types of text classification methods. Traditional text classification, for example, divides texts into themes such as literary translation, advertising translation, scientific and technological translation, tourism translation, and religious translation; scholars such as Bell and Hartim proposed a classification method called "contextual text type", which divides texts into three categories: explanation, discussion, and instruction, based on the rhetorical or communicative purpose of the text. (Wu Feng, He Qingji, 2008:50). In the field of translation theory research, Katharina Reiss, a representative of the German functionalist school, classifies texts into three main types: informative texts focusing on "content", expressive texts focusing on "form", and operational texts focusing on "appeal effect". In addition to these three types, there is another type called audio-visual discourse by Reiss, but this type is divided according to its form rather than its function, so it is not within the scope of this paper. According to the characteristics of various types of texts, Reiss made the following summary: informative texts are used to communicate "facts", the language dimension is logical, and the focus of communication is content or theme; Expressive text is a kind of "creative writing", and the focus of the text forms; The purpose of the operational text is to "cause behavioral response" and expect the readers or "recipients" of the text to act in a certain way (Jeremy Munday, 2007:105). According to the definition of informative text, Reiss classified the following styles as informative text: press releases, specifications, patent descriptions, business letters, goods lists, papers, reports, and all documents in the humanities

and social sciences, natural sciences, and other technical fields. The function of scientific text should be to convey objective scientific facts, focusing on logic, accuracy, and objectivity.

2. The Characteristics of Science and Technology Text in the Oil Science and Technological Text

To study the translation of scientific and technological texts, one must first analyze the original language characteristics of the texts. This paper analyzes the characteristics of scientific and technological text from three levels, which are terms, statements, and discourse. The basic characteristics of scientific and technological text words are as follows: with a small number of technical words as the backbone, more semi-technical words as the entity, and a large number of non-technical words as the link, the whole words are highly formal, and common abbreviations form a special vocabulary style (Fang mengzhi, 2011:37). In terms of vocabulary, the oil technological text has the following remarkable features:

The first is the term, or technical word, which is a necessary part of the technological text. Terms are mainly used to refer to concepts in the fields of science and technology and social sciences. Precision is the main requirement of these terms. Terms record and describe the different names of various states, phenomena, and processes, and mark the progress in these fields (Fang mengzhi, 2011:38). In the scientific and technological text, scientific and technological personnel exchange ideas, and research results will inevitably use some professional terms. These terms represent only a small portion of the vocabulary over the entire length of the article, but they will recur and are a key part of the entire article. The word's meaning is relatively fixed, not because of the following changes. Here it is summarized as the fixed characteristics of the term.

In addition, as far as English technological text is concerned, semi-technical words are widely used in discourse, and the development of scientific thought and technical content mainly depends on semi-technical words. In terms of its composition, most of the semi-technical words come from the co-core part of the English vocabulary, which has certain technical meanings and is common to each subject (Fang mengzhi, 2011:52). Semi-technical words are common in different disciplines, but their specific meanings will also be modified. In addition, many semi-technical words are very flexible, and even in the same article, the meaning of semi-technical words is different due to the joint relationship of words, or different word classes. In the text on petroleum technology, the words closely related to the central content are mostly technical words, that is, professional terms, while the words representing basic scientific knowledge or technology are mostly semi-technical words. Only the concept of technical specificity can be reflected through the auxiliary interpretation of semi-technical words and ordinary words. Therefore, the semi-technical word plays a very important role in exchanging scientific research results between scientific and technological personnel and understanding the content of the report.

Finally, on the premise of accurate language and clear semantics, scientific and technological texts pay attention to simplicity. There are many ways to achieve concise writing, and the most common one in English technology texts is to use compound words to represent complex semantic relationships. There are many ways of composing compound words in English technological text, among which the most common compound word is "noun + noun". In this structure, the preceding noun is used as a fixed language, which indicates the use, characteristics, affiliation, and action object of things (Fang Mengzhi, 2011:60). In the text of oil technology, compound words appear frequently, mostly "noun + noun" combined with the form of "adjective + noun" or "ing + noun". The usage of these compound words is one of the remarkable features of technological text, and their application in technological reports contributes to the concise and objective report. In terms of statements, in order to reflect the

objectivity and scientific nature of the text, the English technological text widely uses the nominalization structure, the passive language form, and various compound sentences, so the sentences are long and complex in structure. Special science and technology style is the written language of communication between scientific and technological personnel, and the content is scientific facts. Therefore, scientific and technological texts pay attention to clear, accurate, concise, rigorous logic, and objective narrative in writing. In terms of the English-tech text, Quirk and the other four people mentioned in *Modern English Grammar* that the complex grammatical relationships in technological languages are reflected in the commonly used dynamic and nominalization structures (Quirk, 1972:934).

First, the combination of nominalization structures is relatively flexible, and short structures can be used to express complex meanings. In this way, it helps to simplify the sentence structure and make the sentences concise, rigorous, and more objective. It is well suited for highly formal scientific texts. In the text of petroleum science and technology, the phenomenon of nominalization is mainly reflected in the formation of behavioral nouns by adding suffixes such as "sion", "ion", "ment", "ance", "ence", "ity" after verbs or adjectives. These nouns can express not only behavior and action but also meaning, state, existence, and result. Nominalization helps to improve the preciseness, objectivity, and formality of scientific and technological report language expression. Second, the scientific and technological style focuses on the narration and interpretation of theories or facts, strives to make accurate and objective statements or arguments, and taboos subjective assumptions and imagination. Therefore, language should embody objectivity and universality. In order to highlight the subjectivity of objective things as the object of scientific research, English-language scientific and technological texts will be widely used. In addition, the first person and the second person should be used as little as possible in scientific and technological texts (when necessary, the first person should also be expressed by "we"). On the contrary, the sentence pattern with the research object as the sentence subject (that is, the non-human sentence with objective things as the description subject) will be widely used. In the text of petroleum science and technology, the passive voice has also been used many times and can be found everywhere. In addition, English is a hypotaxis language. English sentences pay attention to the integrity of form and structure. The sentence pattern is generally long, which is similar to "a big tree with luxuriant branches and leaves". A remarkable feature in English science and technology texts is that there are many long sentences and complex sentence structures. This is because various kinds of clauses, adjective phrases, prepositional phrases, participle phrases, or adverbs are used as post attributives when explaining the internal relationship of scientific terms or scientific phenomena (Wu Feng, He Qingji, 2008:114). In EST, the rigorous logic contained in the text is realized through this interlocking syntactic structure. In the text of petroleum science and technology, almost all of them are long sentences, and the longer sentences can reach 50 or 60 words. Although the sentence is long, the logic in the sentence is strict, the semantic relationship is clear, and there will be no ambiguity.

In addition to terms and statements, technological discourse focuses on narrative logic, clarity and smoothness in expression, and precise structure. First of all, the oil technology text belongs to the typical informative-type text. The main discourse function is to describe the facts. The language dimension is logical. In view of the functional characteristics of the technological text, the English technological text is specially created to maintain the logic inside the text. In terms of semantic logic, the theme or central content expressed in each paragraph or sentence in the discourse is logically connected and smooth. Common logical relations include sequential relationship, causality relationship, condition and result relationship, concession and turning part, contrast relationship, progressive and supplementary relationship, etc. Therefore, the internal paragraphs of technological text articles are not isolated from each other, and deleting paragraphs or changing the sentence order will cause logical confusion for the readers. In order

to make the reader understand the content more intuitively, in English discourse, connecting words are usually used to connect the discourse, making the internal logic of the discourse more explicit. Secondly, the science and technology language tries to be concise and smooth, and the discourse will use a lot of cohesion means. Han and Hasan (Halliday & Hasan) divided the English language into five categories: appropriate, alternative, omitted, connected words, and vocabulary. In addition to the usage of logical connectors mentioned in this article, a large number of references, substitutions, and omissions are also used in the technological text, on the one hand, to avoid language repetition and praise, on the other hand, to increase the adhesion between paragraphs and sentences.

Finally, cohesion is the semantic relationship between a language component and another component that can be explained with it, that is, using short references (such as personal pronouns, indicating pronouns, pronouns, adverbs, comparison levels, etc.) to express what has been mentioned or will be mentioned in the context, helping to enhance the compactness of the discourse structure. Alternative cohesion means that a language project is replaced by another language project and, as appropriate, relies on some alternatives. The difference between the two is that the pronoun used is index while the substitution used is not index. The common alternatives used for alternative cohesion are: one, one, the same, do, so, not (Dongfeng Wang Dongfeng, 2009:110). These alternatives can avoid repetition and help to maintain the coherence and brevity of scientific and technological discourse. The omitted connection is the language projection of the corresponding syntactic unit through the incomplete syntactic unit in a small sentence. The omitted part is a certain component of the sentence (nouns, verbs, short sentences, etc.) (Wang Dongfeng, 2009:115). It makes the language structure clear and avoids complex sentences.

3. Application of Technology Text Translation Method in Petroleum Technology Text

According to Catalina Reiss's Text Typology Theory, the technological text is an informative text. She suggested that "different types of text adopt different translation methods" (Reiss, 2004:20). The informative text should be translated with inductive or conceptual content, using straightforward and non-redundant language and using explicit techniques as needed. When translating technological text, the function of informative text should be fully considered, and the translation method should be combined with the characteristics of English technological text. In general, vocabulary translation should pay attention to professionalism and accuracy; statement translation should reproduce the logic and adopt the Chinese expression habits in expression; translation sentences should be concise and semantically clear; while translating, it should faithfully follow the original content and logic, pay attention to the coherence of the translation, and maintain the integrity of the chapter. The translation of the informative text is both objective and accurate. In general, the translator should select the relevant professional and technical dictionaries according to the content of the translated articles. The translation of professional terms in the technological text must be unified before and after, especially when some terms have multiple translations. Several translations cannot be mixed in the same discourse, otherwise, it is easy to misunderstand readers and produce dyslexia.

According to the Text Typology Theory, the first requirement of informative text translation is accurate information transmission. In addition, the target language should be straightforward and without redundancy. There are many nominalizations in oil technology texts, and the concepts of many terms need to be expressed by nouns, prepositions, etc., which requires special attention in translation. Similarly, the translation of passive sentences should also meet the requirements of information-based text translation. On the premise of ensuring the accurate transmission of information, Chinese readers should use language that conforms to

Chinese expression habits. In the oil technology text, passive sentences are used more frequently. But in Chinese text, the passive voice sentence is used less frequently. This is because passive language is an “unfortunate language” in Chinese, which mainly expresses some unpleasant things. Although the scope of “literal” in Chinese has been expanded, the main driving force is still implicit (Lian Shuneng, 2002:92). In order to enhance readability, English passive sentences can be converted into Chinese active sentences.

According to the article translation method of the informative text mentioned above, the scientific and technological text translation should reproduce the semantic logic of the original text and keep the discourse coherent. Therefore, translators should pay attention to the connection between articles when translating articles. In the oil technology text, the various parts are formally connected, semantically coherent, and should be faithful to the internal logic of the text in the Chinese translation. Translators should first distinguish between the type of connection meaning in the text and its role in the semantic coherence of the original text. Coherent and fluent Chinese language expressions without changing the logic of the original text are the most important things for readers.

4. Conclusion

This paper explores the translation method of technological texts. The main part of the full text includes the following aspects: first, it explains the type and functional characteristics of the text; then it analyzes the language characteristics of the text from terms, statements, and discourse; and finally, it summarizes the general rules of the words, sentences, and chapters with the guidance of the theory of text typology. High-quality scientific and technological translation needs the guidance of translation theory; theory plays a prominent guiding role in translation. Theory and practice can be effectively combined in translation practice to produce a specific analysis of specific situations. As a translation learner, it is essential to ensure an accurate understanding of the internal logic of professional vocabulary translation and presentation.

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