Translation Strategies of Scientific and Technological Texts under the Guidance of Translation Compensation Theory

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Abstract

Based on the theory of translation compensation, this paper tends to explore translation strategies of scientific and technological texts, which mainly includes three parts: a brief introduction of translation compensation theory, characteristics of scientific and technological texts and compensation of sci-tech text translation both at linguistic and aesthetic terms. In this way, functional equivalence between the original and target text can be maximumly achieved.

Key words: Translation compensation theory; Scientific and technological text; Functional equivalence

INTRODUCTION

As the bridge of cross-cultural communication, translation is not just about converting one language to another, but also involves transformation of other factors, such as culture, style, and art. Therefore, when the source text is translated, there must be some translation losses, such as information loss, culture loss and style loss. Translation compensation strategy is used to make up for these losses.

Scientific and technological texts are characterized by objectivity, accuracy and logicality. In order to maximize the image of the original text to the target language readers, translation compensation is always used in the process of scientific and technological text translation. Therefore, this paper explores translation strategies of scientific and technological text under the guidance of translation compensation theory.

First of all, this paper gives a brief introduction of the translation compensation theory from three aspects: definition, classification and necessity. Secondly, this paper explores characteristics of scientific and technological texts. Then it analyzes translation losses in scientific and technological texts from the aspects of linguistics and aesthetics, and then gives corresponding compensation strategies.

1. A BRIEF INTRODUCTION OF TRANSLATION COMPENSATION THEORY

1.1 Definition of translation compensation theory

Translation is not just about verbal consistency or conformity, but involves a lot of factors. Therefore, losses often occur in the process of translation and testing the translation is an essential step. "This step should cover the entire range of possible problems: accuracy of rendering, intelligibility, stylistic equivalence, etc" (Nida & Taber, 2004). Therefore, translation compensation is quite essential. According to Xia Tingde's A Study On Translation Compensation, Compensation is to repair or make up for the potential or incurred losses in the translation process according to the type of text and the purpose of translation, mainly by means of ways in the target language and supplemented by other language methods that conform to the rules or norms of the target (2004).

1.2 Classification of Translation Compensation

Since the 1980s, translators have classified compensation in different ways. Some scholars such as Hervey and Higgins divide translation compensation into four categories: compensation in kind, compensation in place, compensation by merging and compensation by splitting (Hervey & Higgins, 1992). Xia Tingde put forward eight compensation strategies and six compensation principles in his book *A Study on Translation Compensation*, which further detailed the classification of translation compensation.

1.3 The Necessity of Translation Compensation

According to Catford, translation may be defined as the replacement of textual material in one language (SL) by equivalent textual material in another language (TL) (1965). Due to the differences of language systems, cultural backgrounds and other factors between the two countries, there must be some translation losses in the process of translation, so equivalence is difficult to achieve. Translation activities are complex. On the micro level, the meaning of language can be divided into referential meaning, intralingual meaning and pragmatic meaning. From the macro level, translation involves not only transformation of two different languages, but also involves that of culture, style and other aspects. When the text is translated, the target text must conform to the purpose of translation and norms and customs of the society. Therefore, the complexity of translation determines the emergence of translation losses in the process of translation. Translation compensation is the strategy to make up for translation losses and achieve equivalence when there is no equivalent concept and appropriate expressions in the target language. From the translator's point of view, translation compensation theory can make up for the lack of expressions in language, culture and aesthetics, and make the style and expression of translated text close to the source language. From the reader's point of view, when they read the translated text, they can better understand translated works through using the translation compensation theory.

2. CHARACTERISTICS OF SCIENTIFIC AND TECHNOLOGICAL TEXTS

2.1 Vocabulary Features

2.1.1 The use of proper nouns

technical translation is primarily distinguished from other forms of translation by terminology (Newmark, 2001). The use of scientific and technological vocabulary is a major feature in scientific and technological texts. Each field has a unique set of terminology. For example, in the oil-related text, there are many professional terms related to oil, such as oil field, crude oil, hydrocarbon industry.

2.1.2 Special use of common nouns

Some words are common in daily life, but have special meanings in some professional and technical fields. For example, the word "opening" is translated as "开始；开端" in daily texts, but in petroleum-related texts, it refers to "开发"；Similarly, the word "production" should be translated into "产量" rather than "生产", and the word "exploration" should be translated as "勘探" rather than "探索".

2.1.3 Simplicity and clarity of words

Scientific and technological texts require that the words used in the text must be simple and clear, so as to keep faithfulness, expressiveness and elegance of the translated text.

Example

Source text: By February, Alpine's production had already hit the plant's maximum output of almost 90,000 barrels a day.

Target text: 到今年二月，阿尔卑斯油田日产量近9万桶，达到历史新高。

In this example, based on the word order of the original text, the sentence should be translated into "到今年二月，阿尔卑斯油田的产量已达到该油田最高产量，日产量近9万桶。" But due to the simple nature of the scientific and technological text, the translator has to adjust the word order of the original text on the premise of ensuring the accuracy of the translation. Therefore, it should be translated into "到今年二月，阿尔卑斯油田日产量近9万桶，达到历史新高。"

2.2 Syntactic Features

2.2.1 The use of long sentences

Scientific and technological texts emphasize accuracy, strictness and logicality, which are embodied in the use of long sentences in syntax. Many modifiers, parenthesis and participles, are combined to make English sentences appear complex. When we translate long sentences into Chinese, we should first understand and analyze the sentence structure, grasp the main structure of the sentence, turn the long sentence into several short sentences, and finally integrate them according to the grammatical rules of Chinese.

Example

Source text: It is named for the section of the Alaska National Interest Lands Conservation Act of 1980 that set aside 1.5 million acres of federal property in deference to geologist's guesses that the region entombs billions of barrels of oil and trillions of cubic feet of gas.

Target text: 该地区根据美国1980年《阿拉斯加国家利益土地保护法》中的某章节命名，由于地质学家猜测该地区蕴藏着数十亿桶石油和万亿立方英尺的天然气，根据这一猜测，该法案预留了150万英亩的联邦财产。

In this example, the translator first has to divide the sentence into several meaning groups: It is named for /the section of the Alaska National Interest Lands

Conservation Act of 1980 /that set aside 1.5 million acres of federal property /in deference to geologist's guesses that/ the region entombs billions of barrels of oil and trillions of cubic feet of gas. /

Then the translator connects the individual components according to logical order.

2.1.2 The use of passive sentences

The passive is generally more commonly used in informative than in imaginative writing, notably in the objective, non-personal style of scientific articles and news items (Lian, 2010). Scientific and technological texts reflect mostly scientific facts and are close to objective reality. Therefore, fictional and subjective assumptions are not allowed in such texts and passive voice is often used.

Example

Source text: It was built with the future in mind, and from Alpine the future of the hydrocarbon industry on the North Slope heads in three directions at once.

Target text: 该油田在建造时着眼于未来，从阿尔派恩油田开始，北坡的油气工业在未来将同时向三个方向发展。

2.2 Text features

According to Peter Newmark says, technical translation is one part of specialized translation; institutional translation, the area of politics, commerce, finance, government etc., is the other (2001). Due to the scientific nature, logicality and objectivity of scientific and technological texts, the translated texts should also be characterized by accuracy, conciseness, objectivity and scientific nature.

3. TRANSLATION COMPENSATION FOR SCIENTIFIC AND TECHNICAL TEXTS

The premise of compensation is to fully understand the original text and to analyze and study all the meanings that the language used in the original text may contain. The second is to find out the expressions and compare them with those in the original text (Wang, 1988). Compensation is meaningful only if the original text is fully understood and appropriate expressions are found in the target language. Translation compensation is often divided into two aspects: one is linguistic-related, including lexical compensation, grammatical compensation and discourse compensation; the other is aesthetic-related, including the functional compensation of aesthetic form, the conflict of values and the unity of form and meaning (Yue, 2011).

3.1 Linguistic Compensation in Translation of Scientific and Technological Texts

3.1.1 Vocabulary compensation

Due to the inherent language characteristics of Chinese and English and the lexical characteristics of scientific and technological texts, word meaning losses often emerge in the process of translation. Translation compensation strategies mainly include addition, generalization, concretion and substitution at the lexical level.

Example 1

Source text: Regarding climate change, the Macri administration declared its commitment to tackle climate change at COP21, as a first demonstration of the country's changing position.

Target text: 在气候变化方面，马克里政府在第21届联合国气候变化大会（COP21）上宣布了应对气候变化的承诺，这是该国第一次转换立场。

One of the characteristics of Chinese is the use of category words, so in the process of translation compensation, translators should use the strategy of addition to make the translated texts intelligible and smooth.

Example 2

Source text: Computers may be classified as analog and digital.

Target text: 计算机可分为模拟计算机和数字计算机两种.

Both words "analog" and "digital" are adjectives, but both are intended to describe the word "computer". Based on the above-mentioned characteristics of technical and English, namely, the use of proper nouns, translators need to adopt compensation strategies to complement the attributes of the two words. At the same time, it can be seen that the translated text further highlights the number of categories through generalization.

Example 3

Source text: The expense and complexity of the regimen keep them out of reach for the 9 out of 10 patients who live in developing nations.

Target text: 由于价格昂贵，疗程复杂，对于那些发展中国家的病人来说，十有八九都不能享用这些药物.

The original meanings of "expense" and "complexity" are "费用" and "复杂性" respectively. In the target text, it is better for translators to compensate the implied meanings of the original text by concretion. Based on the fact that technical and scientific English prefers simplicity and clarity of words, four-character words are used here to highlight that feature.

Grammatical compensation

From the grammatical level, Chinese and English are very different. For example, English has tense, while Chinese does not; passive voice is often used in English, while Chinese often uses active voice; In English, nouns can be singular or plural. Therefore, in the process of translation, the translator needs to compensate for the implied grammatical meanings.

Example

Source text: This change in Argentina's position was confirmed by its ratification of the Paris Climate Change Agreement on 20 September 2016.

Target text: 2016年9月20日，阿根廷正式批准了《巴黎气候变化协定》，证实了阿根廷立场的这一变化。

One of the biggest differences between Chinese and English in grammar is that Chinese prefers active voice while English prefers passive voice. Based on the previously mentioned syntactic feature, that is, the using of passive sentences, translators need to convert the passive voice "was confirmed" into active voice.

Discourse Compensation

Discourse compensation is mainly reflected in the logical compensation of the original text, that is, the translator needs to compensate the implicit logical meaning of the original text.

Example

Source text: The resistance being very high, the current in the circuit was low.

Target text: 由于电阻很大，所以电路中的电流就小。

In this example, it is not difficult to see that the original text has implicit causality, so the translator needs to supplement the logical relationship of the original text through conjunctive words "由于……所以".

Aesthetic compensation in translation of scientific and technological texts

The aesthetic compensation of scientific and technological texts is based on the characteristics of these texts, but it is not the same as the translator's compensation for them at linguistic level. Therefore, translators need to give full play to their subjective initiative and seek the beauty of scientific and technological texts in the aspects of accuracy, conciseness, objectivity and scientific nature.

Example 1

Source text: Flying from Deadhorse, Alaska, west to Phillips Petroleum's new Alpine oil field, you can watch the evolution of oil development on the North Slope scroll below like a time-lapse film.

Target text: 东起阿拉斯加的死马镇，西至菲利普斯石油公司新开发的阿尔派恩油田，乘飞机向下俯瞰，就可以欣赏到犹如延时电影般展开的北坡油田开发画卷。

In this example, it can be seen that the source text itself carries literary color. Therefore, what translators need to do is to retain the literary color of the original text on the premise of ensuring the accuracy, conciseness and scientific nature of the translation. The translated text retains the rhetoric of the original text and forms the target text by arranging the groups of meanings.

Example 2

Source text: This method effectively reduces the impact of urban bridge construction on ground transportation, breaks through the difficulties of urban bridge construction traffic guidance，poor environmental adaptability, long construction period and improves the technical level of viaduct construction.

Target text: 这种方法不仅有效降低了城市桥梁建设对地面交通的影响，还成功突破了城市桥梁建设交通引导难度大、环境适应性差、施工周期长等难题，从而提高了高架桥施工的技术水平。

In this example, The target text not only compensate the logical sense of the original text through adding conjunctive words "不仅……还"，but also transforms the original structure " attribute+ noun" into the parallel structure, which is simple and clear, and enhances the aesthetic effect of the translation.

CONCLUSION

This paper explores the translation strategies of scientific and technological texts from the perspective of translation compensation. It is around three aspects: a brief introduction to translation compensation, characteristics of sci-tech texts and the application of compensation strategies in sci-tech texts.

Compared with the translation of literary texts, although the translation of scientific and technological texts is relatively simple, this does not mean that the translation of them is only a linguistic transformation. As an important step in the translation of scientific and technological texts, translation compensation is helpful for translators to explore the translation strategies of scientific and technological texts at a deeper level, that is, to compensate for the losses of scientific and technological texts both at the linguistic aspect and aesthetic aspect. On the basis of fully understanding the original text, the translator can further improve the quality of the translation in terms of vocabulary, grammar and discourse, and then realize the functional equivalence between the original text and the target text.

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