The Application of Functional Equivalence Theory in Scientific Translation: A Case Study of the Translation of Shipbuilding English

Ziqi LIU
Jiangsu University of Science and Technology

Abstract: Translation of the scientific and technological articles can not simply convey the basic information of the source text literally by means of word to word or phrase to phrase. Instead, the differences on the characteristics and styles of the Chinese and English scientific articles should be noticed during the translation process and acceptable sentence patterns and expressions may be used to adapt to the reading habits of the target language readers. Scientific articles strive to express meaning by economy of the language and simple language is applied to explain professional problems in order to make the article understood. Under the guidance of the functional equivalence theory, this article studies four equivalent paths in the process of translation activity from Chinese to English, which can provide some learning for the people who are doing scientific translations in the field of shipbuilding English.

Key words: Functional Equivalence Theory, Shipbuilding English

1. Introduction

The ultimate goal of translation is to achieve the equivalence between the target text and the source text. However, during the process of intralingual communication or interlingual communication, two languages with total different features cannot be absolutely equivalent. What translators can do is to make the target text close to the source text as far as possible, thus achieving the closest equivalent. Besides, the target text should be fluent and natural, smooth and easy to understand, which is similar to the theory put forward by Nida that the target language should be the closest natural equivalent of the source language message (Nida, 2001:91)\textsuperscript{[1]}. The theory implies that, “the equivalent” functions during the delivery of the information of the source text;
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“natural” means the target text should be smooth, fluent and easy to understand; “the closest” means the target text should be infinitely close to the source text both in the aspects of information delivery and writing style.

Functional Equivalence consists of four aspects: (1) lexical equivalence; (2) syntax equivalence; (3) textual equivalence; (4) stylistic equivalence. According to Nida's theory, in the process of translation, the translators should regard these four aspects mentioned above as the principles to realize the communication and interaction between the source language and the target language. Therefore, based on these four aspects, this thesis focuses on the discussion of problems people often come across in the process of translation.

2. The Application of Functional Equivalence Theory in the Target Language

(1) Lexical Equivalence

As the minimal language unit which can be individually used, the word is considered as a unified whole connecting voice, meaning and grammar, which possesses some kind of form and expresses some meanings. Therefore, the understanding and translation of lexical meaning is the foundation of translation activities and the errors in lexical translation are bound to result in the errors in sentence translation.

In the scientific translation, scientific terms are the carriers of the scientific information and it plays an important part in the process of information delivery (Fu Yonglin, Tang Yueqin, 2012: 27)[3]. As we know, scientific articles have the speciality categories, which decides that these articles are strongly terminological (Feng Zhijie: 1998:26)[2]. As the important part of the scientific theory, the terminology is of fundamental significance whose semantic is rigorous and single. A lot of terms and professional vocabularies often emerge in the scientific articles, which bring some difficulty to the translation activities. To do the scientific translation well, it is extremely important to correctly translate these terms and professional vocabularies. Only when these vocabularies are accurately conveyed and they are equivalent between the content and form, the target text readers can receive the message which is close to the source text so as to achieve the communicative function.

1) The Translation of Shipbuilding Terminology

As what is mentioned before, this thesis mainly focuses on the professional lexical translation of the ship. To realize the communicative function in the process
of translation activity, we must achieve the equivalence in content and functions, trying to make the target text readers accurately understand what the source text writers want to express. The translation of some words and phrases may fixedly exist in the field of ship, nevertheless, non-professionals can be unfamiliar with them. During the translation activities, we must combine relevant professional knowledge, the context and apply various translation techniques together to finish the translation which is the most closest to the source text rather than follow our inclinations or translate whatever we want.

E.g.1: Gourds, rafts and leather bags are original tools which can be used to wade in the water.

E.g.2: Hollow gourds, rafts and aired hides are original tools which can be used to wade in the water.

These two simple sentences include three primitive tools for wading in the water. We can easily know that “Gourds”, “rafts” and “leather bags” in the first sentence have the same meaning with “Hollow gourds”, “rafts” and “aired hides” in the second sentence. However, according to the context, the “Hollow gourds” is better than “Gourds” in that in ancient times, to add the buoyancy, people had a tendency to empty the “Gourds” whose volume could be controlled by people and whose height is around 40-50 centimeters and the belly mean breadth is around 30-50 centimeters. As a matter of fact, the top of the “Gourds” ought to be cut and the inside of it ought to be emptied and then people used canes to connect them one by one, so the “Gourds” become hollow. Therefore, although there is no specific introduction of the empty “Gourds”, we must add a modifier into it when translating to make its meaning more accurate. The translators have made sure of the accurate delivery of semantic meaning, which realizes the principle of “Content first, form second”.

Similarly, we use “aired hides” rather than “leather bags” in that according to the context, the tool mentioned in the article for wading in the water is made of the hide of the cows or sheep. “Leather bags” usually refers to the synthetic leather made by human while “hide” refers to the skin of the large animal. Based on the context and basic knowledge, we can know that the tool is made of animals’ skin. Therefore, “hides” is better than “leather bags “in this translation. What’s more, these hides need being filled with air, so we need to add a modifier “aired” in front of the “hides”. Hence the phrase “aired hides” comes.
E.g.3: Hollow gourd waist boat

E.g.4: Hollow gourd “waist boat” (people tied the hollow gourd to the waist to cross the water, so it was called waist boat.)

E.g.3 and E.g.4 are basically the same but they differ in that the E.g.4 gives a further explanation of the phrase “waist boat”. This is absolutely necessary in that the target readers of this article are all foreigners. If they are simply looking at the phrase “waist boat”, they may feel puzzled or confused that whether it is the boat which looks like the waist or the boat which is tied in the waist. Since the ordinary readers may never have the chance to see this ancient tool by their own and experience the way of wading in the water, it is hard for them to imagine the specific situation. Hence, in order to make sure the accuracy and objectivity of the information delivery, the translators must add comment to it that “people tied the hollow gourd to the waist to cross the water, so it was called waist boat”, which can help set the explicit limitation and definition for these ambiguous words so that the translators are able to make readers know the relevant information of the source text.

2) The Translation of the Culture Proper Nouns

In the document of the history about shipbuilding, there is no denying the fact that it has many literal description about the ancient history which may include some words and phrases associated with the Chinese culture. These words and phrases are difficult to find the equivalence in the target language. Therefore, in the process of the translation activities, we must take some techniques and strategies to translate these words and phrases which are strongly connected with Chinese culture.

E.g.5: *Shih Chi Biography of Xia* had recorded that tributes from Yangzhou were transported along the river to the sea and then were taken to the north along the sea. Next, they were brought to Huai River and Si River, at last to central plains. (in today’s Henan Province)

As a Chinese geographical concept, “central plains” is literally defined as “a plain in the middle”. Since the area of China experienced endless changes, our country has ensured the territorial scope until modern times. Generally speaking, there are two different kinds of versions: one is the literal translation--central plains, and the other one is to add comments for “central plains”, so we can’t simply take a literal translation when translating this phrase.
It is illustrated in the Great Dictionary of American Heritage that the word “China” has something to do with the Qin Dynasty. And what describes in the following is the Xia Dynasty, which is more earlier than Qin Dynasty. Therefore, the translators find that “plains” of the Xia Dynasty mainly refers to the area in Henan, which can naturally be translated into “central plains”. Finally, they can add the comment to signify the position of the province.

(2) Syntax Equivalence

There is a majority of differences between English and Chinese, which can be seen obviously between the sentences and lines. English emphasizes the form while Chinese emphasizes the meaning; English uses more impersonal structures than Chinese does; English uses more passive voice while Chinese uses more active voice; English highlights the static expression while Chinese highlights the dynamic expression. Various differences between English and Chinese in syntax make request for the syntax translation. To make sure the source text readers and the target text readers achieve almost the same reading experience, the translators should take into consideration the difference of the syntax and translate the sentences into what target text readers are familiar with.

The objectivity of the scientific articles decides that there are many non-subject sentences in them. Since much information is conveyed in the scientific articles, the scientific articles consist of many long difficult sentences. As a matter of fact, the information in the scientific articles is often strongly professional.

The sentences of the scientific English have four major features: the abundant use of the passive voice to make statement objects more objective, the use of long sentences to make statement objects more complete, the use of the special sentence patterns to make the scientific English different from others, and the frequent use of the nouns which can describe the movement and the state. This is best reflected by E.g.6, E.g.7 and E.g.8.

E.g.6: It is found that the final weld metal has a high plate dilution.

E.g.7: Subsequently it was discovered that by dipping the wire in lime a more stable arc was obtained.

E.g.8: The process is more suitable for welding plates in the thickness range of 13 to 50 mm with square or vee edge preparations and is therefore used for ship-building purposes in the welding of vertical butts when erecting side shell panels or for the vertical shell butt joints when joining building blocks on the berth or dock.
(3) Textual Equivalence

Text refers to a set of discourses or sentences that are different in lengths, of grammatical utterance and semantically coherent. It has both spoken language and written language (Fu Yonglin, Tang Yueqin, 2012: 170). The text usually focuses on the specific gist and has some logic. The discourses and sentences of the text are connected by means of the logical relationship and structure. In the process of doing translation activities, to make the target text more logical, we must clearly understand the gist and structure of the source text. We should make clear the structure of the text from the whole and understand the logical relationship and the connecting devices from the local. Only in this way can we form the thesis structure and logical coherence in the target text which is equivalent to the source text that can be well-recognized by the target text readers.

E.g.9: South China abounds with bamboos, so bamboo rafts were widely used there. First, use fire to bake the bottom of bamboos to make it cocked, and then bind them together with rattan and wild flax. Thus, when paddling it, the resistance will be much smaller, especially when it floats downstream the speed is amazing the bamboo raft in the Taiwan Strait has sail, so it is not very far from now.

From the sentence above, we can easily come to the conclusion that the source text concentrates on the description of abundance of bamboos in the south area and the relevant procedures of making bamboo rafts. Generally speaking, in the Chinese text, there is no obvious marking words to explain the procedure of making bamboo rafts but people whose mother tongue is Chinese are easy to understand. It is the bamboo rafts rather than other kinds of rafts such as wooden rafts or leather rafts that are used spread because the south area is rich in bamboo, which provides the convenient condition for making bamboo rafts. Going forward, the procedure of making bamboo rafts is step by step and it is a united procedure. Going ahead, the source text tells us that the rafts drift down the river and the clause “the speed is amazing “gives us the further explanation for the resistance mentioned ahead. In the English, the translators should first use a word “so” which implies a kind of causation relationship is used to totally convey the message that the bamboo bridge can be made just because of the abundance of bamboo in the south area. What’s more, the words “first” and “and then” tell us the order of making bamboo rafts. Due to the elaborate making procedures, the resistance of the raft is smaller. The word “thus” naturally brings us the consequence while the adverb “especially” is used to further emphasize the quick speed of the rafts drifting down the river. In the process of translation activity, we should clearly understand the relationship between sentences so as to make the message delivered wholly and achieve the textual dynamic equivalence.
(4) Stylistic Equivalence

Different English articles may have different styles of writing, consistent with their own expression of spiritual emotions. Therefore, high-quality English translation emphasizes the stylistic equivalence which means that the translators should deeply study the style of the source text to build a bridge between the writer and readers for effective communication and interaction. For example, in the translation of English business letters, we should pay attention to the use of polite words, and fully express the contents of the letter, in order to establish a good relationship between the two cooperative parties to make them deeply feel each other's sincerity which helps to promote more profound and lasting cooperation. Besides, for the translation of business contracts, translators should pay attention to the economy of language and accurately and completely convey information with simple words and sentences so that readers can understand according to the key words. This is also important for readers to improve their reading efficiency and comfort. In this process, translators need to carefully consider the contents of the contract and avoid information omissions or misunderstanding which can cause property loss for the company. In addition, the scientific translation lays high emphasis on rigorousness of logical structure. In the field of Western studies, no undetermined argument can be quoted freely, and in many arguments there is usually only “YES” or “NO”. Therefore, in scientific translation activities, we should respect the rigorous scientific tradition of Western research and do not add any subjective content with personal emotion in the whole article structure and language style arrangement.

3. The Strategies of the Functional Equivalence Theory in Scientific Translation

(1) Clearly understanding the scientific concepts and transforming the key points

In the scientific paper, there are a lot of new and complex scientific concepts which bother people in a way. In this case, the translators need the experts in the field of the science and technology to make clear these complicated concepts in the paper and find key points in these concepts. Finally, they translate these concepts under the guidance of the lexical equivalence theory.

(2) Making clear the logical relationship of the source text and translating with different methods

The complex logical argumentation is frequently used in the English scientific paper. Which we translate between Chinese and English, we can express in different form. For instance, we can use the chart translation approach. The translators
can firstly list arguments one by one and associate them with the conclusion by chart which can bring a more vivid experience for readers. Actually, the translators can use the arguments readers are familiar with, which helps them experience the target context on their own.

(3) Closely grasping the style of the source text

Based on a serious scientific perspective, the scientific articles are equipped with rigorous argument process, precise logical structure, and the strict textual structure. Therefore, in the process of scientific translation, the translators should closely grasp the structure and language style of the source text.

4. Conclusion

Based on Nida’s functional equivalence theory, this thesis illustrates the principles of equivalence by the examples of scientific translation of shipbuilding and proposes some translation strategies for people who are doing scientific translations.

Works Cited